# CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
# OFFICE OF PUBLIC HEALTH PREPAREDNESS AND RESPONSE (OPHPR)
# BOARD OF SCIENTIFIC COUNSELORS (BSC) MEETING

## SUMMARY REPORT / RECORD OF THE PROCEEDINGS
## APRIL 7-8, 2014
## ATLANTA, GEORGIA

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**CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)**
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**BOARD OF SCIENTIFIC COUNSELORS (BSC) MEETING**

**1600 Clifton Road, NE**
**Atlanta, GA**
**April 7-8, 2013**

## MONDAY, APRIL 7 (MEETING DAY 1)

### WELCOME AND CALL TO ORDER / INTRODUCTIONS AND OPENING REMARKS

Thomas Inglesby, MD, Chair, OPHPR BSC, called the meeting to order. He recognized and thanked OPHPR leadership and their staff for organizing the meeting. He acknowledged new board members: Richard Smith and Suzet McKinney.

Opening remarks

- Preparedness is important to the country
- OPHPR's work is essential for the current time
- Purpose of this meeting
    - Engage and hear about OPHPR's work since the last engagement
    - Provide feedback, constructive comments, and guidance

**ROLL CALL AND REVIEW OF FACA CONFLICT OF INTEREST**

Samuel L. Groseclose, DVM, MPH, Associate Director for Science, OPHPR and the Designated Federal Official (DFO) for the OPHPR BSC

BSC meeting called to order. Roll call taken. BSC Special Government Employee (SGE) Board Members, Ex Officio Board Members, and Liaison Representatives participating by phone and in person are listed in Appendices A and B. Quorum met.

Dr. Groseclose reviewed the duties of the Board per BSC charter. Dr. Groseclose asked for members to self-identify any conflicts of interest.

Drs. Quinlisk, Inglesby, McKinney, and Levine acknowledged receiving funding through CDC for preparedness efforts.

## 2014 PRIORITIES

**ALI KHAN, MD, MPH; DIRECTOR, OPHPR**

Welcoming Comments

- No requirement for OPHPR to have a BSC, but CDC has found that the BSC is a very valuable tool
- Wide range of fields reflected on the board and the selection was by design
- Commended Dr. Inglesby for helping create a very robust agenda

2014 OPHPR Priorities

- Framed in the context of the current fiscal environment
- Diminishing size of the public health workforce is alarming
- Time has come to talk about what risks the nation can accept
- Necessary to examine different risk models

Three key priorities

- (1) Innovation: novel activities to assist with preparedness
  - National Health Security Preparedness Index (NHSPI)
  - Operation Dragon Fire (collaborative project with National Voluntary Organizations Active in Disaster [NVOAD] to harness information potential of social media to improve situational awareness and response and recovery)
- (2) Community resilience and Global Health Security
  - Examine gaps in preparedness
  - Reach out into communities
  - Global health security (also a priority for the CDC Director)
- (3) Increase efficiency and effectiveness across all the areas of OPHPR

**INTERVAL UPDATES – OPHPR DIVISION DIRECTORS**

**PHIL NAVIN, MA, BS; DIRECTOR, DEO, OPHPR**

CDC's Emergency Management Program

- Most important elements to Emergency Operations Center (EOC): trained people, processes, procedures, tactics, and techniques
- Office of Personnel Management approved Job Series 0089: allows a federal employee to traverse levels across federal agencies as emergency managers
- First federal program to receive Emergency Management Accreditation Program (EMAP) accreditation (October 2013).

DEO goal: improve processes across the board

- Department of Health and Human Services (HHS): examining the EMAP and its 64 standards
- Other organizations and countries being taught how to conduct EMAP accreditation
- Workforce constantly being taught
  - Emergency Management skills
  - Working with the international community

EOC is looking at countries where CDC presence exists (India, Thailand, Philippines, Ethiopia, Tanzania, Kenya, South Africa, Kazakhstan, Georgia, and Jordan)

- Goals: (1) develop implementation plans; (2) devise ways to evaluate current plans; and (3) provide technical assistance on how to make improvements
- CDC, HHS, and the Assistant Secretary for Preparedness and Response (ASPR) are working on creating a standardized doctrine for emergency management in among members of the international community
- Desire: create a coalition of individuals from several federal agencies to create standardize process for international countries

Priorities going forward

- Global health security
- Individual and collective skill sets for Job Series 0089
- Maintain and sustain the Emergency Management Accreditation Program
- Provide assistance domestically and internationally

Q & A with Mr. Phil Navin

Liaison Rep: Are you getting more funding for this?

CDC: We are not, but in the President's budget there's a separate line for 2015, so we anticipate there will be more funding available. For now we are being very thoughtful with what we have.

CDC: We are being very careful not to cannibalize domestic activities for the sake of global activities.

Liaison Rep: Would you say CDC is the lead in the standardization charge?

CDC: [Internationally] we look towards the World Health Organization (WHO) and domestically to the Federal Emergency Management Agency (FEMA) and the Department of Homeland Security (DHS). CDC staff members have

been working very hard with the WHO on projects such as Red Sky (situational awareness dashboard; replaces text-only daily report for CDC senior leaders with a geospatially-based representation of critical CDC and public health events currently present around the world).

SGE: What is the mechanism for engaging state and local agencies?

CDC: Anyone who needs our assistance can come straight to us. They may use our documents or our resources, e.g., teleconference capability. So there's multiple ways to provide assistance and that also includes international countries. If states and local agencies want help with standardization, we do provide technical assistance for that as well. We are the focal point for emergency management and we can always be reached.

Liaison Rep: I do not see any Central and South American countries that you are assisting with the [setting up] EOC. Is there a reason why?

CDC: The Center for Global Health does have a presence in places like Guatemala in Central America. We went for countries where we could get the biggest bang for our buck.

SGE: Is there are checklist of things CDC is offering these countries?

CDC: We basically put items in three major buckets: infrastructure, staff, and systems. In some cases, countries know their gaps from the beginning. They submit a self-assessment that says whether they have fully-functional EOC. In the assessment, they can also spell out areas that need strengthening. We have also been asked by some countries assess their processes. We do that as well as provide suggestions of what they should do and what we can do making improvements over time.

Ex Officio: Is coordination happening with the United States Agency for International Development (USAID)?

CDC: We have ongoing coordination with them. USAID has programs to help teach, so it's easy in some cases to ask them to do certain activities. But, in some cases, it can be difficult and that is mostly due to the constraints of the country.

**ROBBIN WEYANT, PHD; DIRECTOR, DSAT, OPHPR**

Four areas worked on in the last year

- New regulations
- Work to enhance interagency relationships (executive order)
- Biosafety response activities
- Global health security

In late 2012, DSAT published the New Select Agent Regulations

- April 2013: Regulations went into effect
- Subset of agents from the select agent list identified as agents of highest concern – special security parameters established around those agents
- Efforts to put special security parameters into action have been undertaken
- 14 guidance documents published on new regulations
- DSAT website has 77 frequently asked questions
- New inspection video created on new requirements
- Security risk tool created
- Import Permit Regulations updated

Enhancing collaboration between federal agencies

- Workgroup of stakeholders involved in the oversight of select agents
- First inspector training exercise developed

Biosafety-related activities

- Two Morbidity and Mortality Weekly Report (MMWR) notices: H5N1 strains (A/goose/Guangdong lineage) and biosafety guidelines for those working with the emerging H7N9 influenza viruses
- DSAT hosted 4th biannual international meeting: 11 nations represented with similar regulatory programs
- Active participant in International Group of Experts in Biosafety and Biosecurity

Planned activities in the future

- Finalize work to make mobile devices available for lab inspectors in the field for entering data in real time
- Address flu biology and synthetic biology
- Develop oversight schemes
- Create a list of agents being examined

Protecting global health security

- Subset targeted specifically to bio-health and biosecurity
    - 12 nations targeted for greater CDC involvement
    - 6/12 have resources related to biosafety or bio-health
- DSAT tasked by the Defense Threat Reduction Agency (DTRA) to provide a document for nations who want to develop an oversight program

Q & A with Dr. Rob Weyant

Liaison Rep: I am concerned about specimens, which may contain one of the harmful agents, still being worked on, on the bench rather than in a hood. It could lead to exposure due to mishandling of specimens.

CDC: In late 2012, we published an article on select agent theft/loss/release incident data. Incident reporting is part of the regulations. Diagnostic labs have reporting requirements and we have been doing better in following up on [potential exposure incidents]. A follow-up paper will be published this year that takes a deeper dive into the theft/loss/release data.

Liaison Rep: Public health laboratories and the Association for Public Health Labs (APHL) are working on updating the sentinel lab procedures and APHL will produce informational cards specific to procedures for handling suspected specimens.

SGE: Do you have a special approach to the new category of [controversial (e.g. gain of function)] research now being conducted in labs?

CDC: If the starting material is something we regulate, like H7N1, we'll have a good idea of what is occurring in the labs and we have certain procedures. Since the technology is evolving so quickly, we need to look beyond the lists of named infectious agents.

SGE: Under challenges [in your report], it says addressing risks associated with rapid advances in science and technology. Would this fall into your new thinking on how to properly manage these kinds of risks?

CDC: Yes. The Public Health Act has broad statutory authority. The Bioterrorism Response Act is a lot tighter. So we're looking to see what can be done under the broader Public Health Act.

SGE: Is there a safe way for people to report that something has gone wrong without worrying about the repercussions?

CDC: We have systems in place for those who report and we provide guidance on how to prevent those problems in the future. Now, if an incident occurred and it's not reported, we take a different philosophy. The primary concern we have is for potential exposure incidents to be investigated.

SGE: And you also have an anonymous way of reporting?

CDC: Yes, through HHS, we do have a way to report anonymously.

**STEVE BOEDIGHEIMER, MBA; DEPUTY DIRECTOR, DSLR, OPHPR**

DSLR

- Mission: to ensure the nation's public health systems are prepared to respond to and recover from a public health emergency
- Units: (1) Applied Science and Evaluation Branch; (2) Program Services Branch; (3) Field Services Branch; (4) Medical Countermeasures Unit
- Is moving to a capabilities-based model in order to set standards for preparedness
- Partners to the Assistant Secretary for Preparedness and Response in the Hospital Preparedness Program through HHS
    - Funding streams under one funding opportunity announcement
    - Perform joint site visits, conduct single awardee teleconferences, and meetings with the awardees

Medical Countermeasures Unit – formerly part of DSNS

- Merged with DSLR to enhance efficiency

State Coordination Taskforce

- Created to make sure states and locals get what they need from CDC
- Recent response activities: MERS-coronavirus and H7N9

Applied Science and Evaluation Branch

- Discovering ways to fill knowledge gaps in preparedness and response practice to have an impact
- Monitoring Public Health Emergency Preparedness (PHEP) Cooperative Agreement performance

Program Services Branch

- Released $612 million to 50 states and 8 territories as part of the PHEP Cooperative Agreement
- Integrate medical countermeasures distribution mission into DSLR
- Created the *Medical Countermeasure Readiness Assessment Tool*
    - Operational readiness component added to assess how well awardees execute their mission
    - Instead of assigning a score, the tool looks at the operational readiness of a jurisdiction for medical countermeasures

Field Services Branch (created October 2013)

- The Career Epidemiology Field Officers (CEFO) Program—provides situational awareness for CDC
- Preparedness Field Assignee Initiative: fellowship program for young people with two years of general training—provides a mechanism for extending their experience

Q & A with Mr. Steve Boedigheimer

SGE: I understand that one way efficiency is being enhanced is by using a dual role for project officers. Are there plans to expand the number of PSB staff serving dual roles?

CDC: We've established a medical countermeasures team focusing on the technical content of medical countermeasures planning. Staff will be cross-trained in preparedness and medical countermeasures. We will use science to identify gaps, strengths, and weakness.

Liaison Rep: How much coordination is occurring with the public health accreditation board? We don't want to have too many silos.

CDC: We are aware of public health accreditation activities. We use the Public Health Emergency Preparedness (PHEP) directors themselves and our

partners at the Association of State and Territorial Health Officials (ASTHO) and the National Association of County and City Health Officials (NACCHO) to inform the 15 PHEP capabilities and to determine if they need to be reevaluated.

**CAPT DEBORAH LEVY, PHD, MPH; CHIEF, HPA AND ACTING DIRECTOR, DSNS, OPHPR**

Anthrax 60-day planning

- Efforts to identify detailed requirements and plans for a full 60-day response to mass anthrax exposure
- DSNS workgroups delivered recommendations on deployment strategies for review
- Work continues with DSLR for review and integration with the SLTT plans

Federal Medical Station (FMS) reconfiguration

- Will provide flexible deployment options
- 50 bed (i.e., smaller) asset configurations will be deployable (in addition to current 250-bed configuration)
- Result of a collaboration between CDC and ASPR to improve FMS
- Currently searching for locations to execute new strategy

Shelf-Life Extension Program (SLEP)

- DSNS continues to reap the benefits of SLEP
- Cessation of re-labeling for most SNS SLEP products
- Reduced overhead without increasing dispensing concerns, but needed to address communications challenges with CDC, FDA, and state, local, tribal, and territorial (SLTT) partners

DSNS has also partnered with the Federal Emergency Management Agency (FEMA) Center for Domestic Preparedness (CDP) for training needs

- Improved support for SLTT partners and students traveling for SNS courses
- Funded by FEMA CDP
- Provides better integration with FEMA
- If pilot program is successful, multiple courses will be offered

The New York City engagement and CHEMPAK

- DSNS is increasing its collaboration with directly funded cities by addressing changing needs and capabilities
- Brought New York City staff to CDC on March 17, 2014 to share their perspective and capabilities with the DSNS/OPHPR
- New CHEMPACK container type implemented in March

Community resilience activity

- Advancing successful partnership engagements
- Two nationwide big box retailers and one faith-based organization involved
- State and local partners help to coordinate countermeasure activities

The Healthcare Preparedness Activity

- Conducting surge capacity workshops and stakeholder meetings for
    - Rural communities
    - Emergency Medical Services (EMS) providers
    - Healthcare Executives

Cost savings initiatives activities resulted in restructured contracts

- Saving $7 million per year in each of the next 4 years
- Reduce costs by over $500,000

Challenges

- Saline shortages – need to identify triggers for releasing stockpile assets during a commercial shortages
    - Forming partnerships with HHS and industry to develop solutions
- Nerve agent antidote auto-injector production issues
    - Production currently shut down
    - Necessary to replace expiring product across the nation
    - DSNS working with manufacturer and FDA to sustain CHEMPACK

Goals

- Mandated review of the SNS via an Institute of Medicine (IOM) review
    - Discussions to initiate in FY14; expected completion in FY15-16
- 12-hour Push Package configuration review
    - Several changes made since the initial development
    - Need to make contents mission dependent
    - Further study necessary to identify next steps and to examine what other configurations that will work better

Q & A with Dr. Deborah Levy

SGE: You mentioned five identified risks you are working on. Is that something you've already covered?

CDC: With program integrity, it means looking at potential risks in the SNS to identify challenges or risks to accomplishing mission. Through the program integrity process, five areas were identified. From there, mitigation strategies are being determined for the risks.

Liaison Rep: Where are we with federal agencies taking ownership of developing closed pods?

CDC: That is incorporated in Executive Order 13527. It varies depending on the jurisdiction but it is part of the work in progress in the executive order.

**OPHPR POLICY UPDATE**

**BRADLEY DICKERSON, PHD; ACTING DEPUTY ASSOCIATE DIRECTOR, OPPE, OPHPR**

Pandemic All-Hazards Preparedness and Reauthorization Act (PAHPRA)

- Signed into law, March 2014
- Reauthorizes Pandemic All-Hazards Preparedness Act (PAHPA) with additional items and significant effect on national strategies
    - Health Security Strategy
    - Situational Awareness
    - Emergency Use Authorization
- Current theme: develop priorities that can actually be accomplished in light of the fiscal limitations
- Temporary reassignment of federal staff assigned to state and local health departments
    - Feedback from community and stakeholder organizations: provide greater latitude in using federal public health personnel to serve states
    - Previous restrictions caused problems in the H1N1 response efforts
    - Memo on delegation of authority: in clearance
    - DSLR will draft guidance on procedures

Section 202 of PAHPRA

- Allows for carryover of non-obligated funds to the next fiscal year with restrictions, provided awardee has
    - Achieved PHEP benchmarks
    - Submitted a pandemic influenza plan
- DSLR working to mitigate impact to states

Expanded use of the Emergency Use Authorization (EUA)

- New mechanisms authorized to facilitate medical counter measures preparedness response activities
- Allows a designated HHS official to create emergency use instructions (EUIs) for medical countermeasures
- CDC now in the process of writing the EUIs

National Health Security Preparedness Index (NHSPI) and the budget

- Positive feedback received regarding the Index from Congress

February 27, 2014: Greg Burel (Director, Division of Strategic National Stockpile, OPHPR) testified at House Appropriation Subcommittee regarding

- Public Health Emergency Medical Countermeasure Enterprise (PHEMCE)
- SNS' role with respect to acquisition, storage, and delivery of medical countermeasures
- Impact of public health job losses in state and local jurisdictions
- Effects of declining funds on public health preparedness capabilities

Q & A with Dr. Bradley Dickerson

SGE: Can anything be done at the federal level to track the consequence of lack of funding and how it affects preparedness? This will help people understand the repercussions of budgetary constraints.

CDC: The index will help and once we get enough data in we can do that. PHEP capabilities reporting will also speak to that matter.

Ex Officio: There are certainly efforts through the PHEMCE to do that. We are in a better place on countermeasure to explain the impact.

CDC: It's clear we need to address how many people we are losing and it needs to be done jointly. We need local and state partners to report the effects of budget constraints.

Ex Officio: How much will the current federal focus on safeguarding global health buy down the U.S. health risk? We need to quantify that.

## NATIONAL HEALTH SECURITY PREPAREDNESS INDEX (NHSPI) UPDATE

**THOMAS INGLESBY, MD; CHAIR, OPHPR BSC**

NHSPI

- Initiative began two years ago in response to request from Dr. Khan and other CDC leadership
- First attempt to measure preparedness
- Examines health security preparedness by looking at states with focus on public health and health care

Why is NHSPI important?

- Most comprehensive set of measures
- Can be used by policymakers to guide improvement efforts
- Can assess if nation is prepared for emergencies
- Includes many elements and sectors

Guiding principles of NHSPI

- Fully/accurately reflect health security preparedness of nation and states
- Include many influencing factors of US health security
- Emphasize shared responsibility for US health security among whole community
- Align with existing national health security and preparedness frameworks
- Use Presidential Policy Directive (PPD)-8 preparedness definition
- Make NHSPI practical and of greater use than what is currently available
- Build on public-use data; no added data collection burden to practitioners

- Group information into more meaningful picture than sum of its parts
- Advance the science of measuring health security preparedness
- Include a transparent process of continuous improvement, stakeholder involvement, and real-world experience

Major domains and sub-domains used for measurement

- Major domains: health surveillance, community planning and engagement, incident and information management, surge management, and countermeasure management
- 14 sub-domains
- 128 measures adopted out of more than 1,000 proposed

Index constructed using public health practice, academia, and policy experts—level of engagement between the index development group and state level stakeholders was unique

Measures

- Five step process: (1) identification; (2) selection; (3) application of National Quality Forum (NQF) criteria; (4) calculation; (5) vetting
- Examples of measures used in NHSPI:
    - Health Surveillance
        - Y or N? State health department has electronic syndromic surveillance system that can report and exchange information
        - What is the proportion of food-borne illness outbreaks reported to CDC for which an etiologic agent is confirmed?
        - Y or N? State health department has at least one Biological Terrorism/Threat Lab (Biosafety Level-3 Lab)
    - Community planning
        - Is your state education agency a member of the state emergency planning committee?
        - Does your state have a "children with special needs" plan?
        - How many pre-registered Medical Reserve Corp volunteer physicians per 100,000 people in your state?
        - What is the percentage of residents doing favors for neighbors?

**THOMAS INGLESBY, MD; CHAIR, OPHPR BSC—CONTINUED**

Results

- 39 states involved; multiple respondents for each aspect of the Index
- 14,430 structured and 3,344 free-form comments generated
- Respondents: preparedness directors, epidemiologists, state and local health agencies and external partners
- Index can be viewed at National Health Security Preparedness Index
- Measurements for the sub-domains can be acquired
- Measurements do not reflect sustainability in light of the fiscal constraints

Launch of Index: December 2013, Capitol Hill

- Drew 100 attendees: congressional staffers; representatives from state, federal, and local governments; and individuals from national associations and the private sector

NHSPI can be used

- To identify preparedness and response strengths and weaknesses
- To track progress over time
- By policymakers, practitioners, researchers and academics, and communicators

Future goals

- Produce annual index
- Add recommended domains and sub-domains (e.g., healthcare, emergency management, environment and occupational health)
- 10/1/2014: transition "ownership" to Robert Wood Johnson Foundation (RWJF)
    - Create new website for Index with RWJF "brand"
    - National Program Office to take on all operations
    - RWJF will serve as final decision-making body
- Create National Advisory Committee
- Next version of Index planned for release in Winter 2014

**THOMAS INGLESBY, MD; CHAIR, OPHPR BSC—CONTINUED**

2014 stakeholder engagement and communication activities

- Support index communications
- Continue engaging stakeholders
- Expand the number of stakeholders
- Enhance Index's use and usefulness
- Advance efforts with key organizations and federal partners to use the index

Q & A with Dr. Tom Inglesby

SGE: How will we insure that the index is institutionalized from the perspective of data collection (in states)?

SGE: From the beginning this was meant to be a sustainable project. It will evolve over time because measures get better and some go away. But it will not be an increased burden on states. Being that RWJF will take ownership of the Index, it will help ensure that it will not depend on federal funding to exist.

Ex Officio: My concern is the National Preparedness Report that says healthcare preparedness is currently 98 out of 100. Part of our role is how we can translate some of this into useable measures for the National Preparedness Report because until we have it measured against other areas of preparedness, I don't see us getting us any traction with decision makers.

SGE: At the National Security Staff level, they want it to be integrated and to be the same process. They offered a lot of favorable feedback, so they've been impressed so far. Before the Index came out, people were surprised by the values that came out of the preparedness report. This offers a more systematic way of contributing to that report.

J. Links (guest): We think in terms of extremes but there's a huge area that exists between the extremes. The conceptual model or theoretical framework is more important than the actual measures and numbers. The process actually intrinsically informs our thinking in more profound ways than the numbers.

The second point is around simplification. Preparedness is really complicated and we should resist the temptation to simplify it. The index process has taught us how many elements are involved in preparedness, and we've only scratched the surface in identifying all the practices that are contributory to health security. So it has to be simple enough to talk about the numbers, but we do not need to oversimplify the index because it should reflect the inherent complexity of the world.

Ex Officio: I would agree but it has to be communicated in the same language for other groups who don't understand the context of the scientific community. It has to be put into language that they can understand if we want it to be adopted widely.

**OPHPR RESILIENCE RESEARCH—AN OVERVIEW**

**ERIC CARBONE, BS, MBA, PHD; CHIEF, APPLIED SCIENCE AND EVALUATION BRANCH, DSLR, OPHPR**

Caveats

- This presentation provides an overview of initiatives led or sponsored by OPHPR and/or its component organizations
- Center has primary oversight and responsibility for all programs that comprise CDC's public health preparedness and response portfolio
- Many programs and activities across CDC likely have a positive impact on community health resilience

Community resilience

- Sustained ability of communities to withstand and recover from adversity
- Enhanced resilience critical to mitigating vulnerabilities, reducing negative health consequences, and rapidly restoring community functioning

Resilience work parallels that done by Department of Defense (DoD)

- 8 years ago, DoD started looking at community resilience related to Post-Traumatic Stress Disorder (PTSD)
    - DoD recognized individual and societal costs of PTSD and other mental health sequelae
    - DoD found that eliminating risk of exposure was impossible
    - Goal: move toward building the resilience of soldiers to reduce incidence, severity, and duration of mental health problems
- Public health's new focus on resilience led to creation of programs like Psychological First Aid and "Total Force Fitness"

To improve resilience: need better constructs and measurement tools

Composite of Post-Event Well-being (CoPE-WELL)

- OPHPR-funded collaboration with Johns Hopkins University and University of Delaware Disaster Research Center
- Aim: develop and validate models and tools to predict post-event functioning and use the tools to design and evaluate effective and efficient interventions for communities affected by disasters
- Preliminary CoPE-WELL scores computed for all 3,144 US counties

**ERIC CARBONE, BS, MBA, PHD—CONTINUED**

2012 Broad Agency Announcement funded two multi-year research projects designed to study factors associated with disaster recovery

- Projects used mixed-methods research to gain insights into individual, community and systems factors across multiple geographic regions and disasters
- Two incidents are being studied: Hurricane Irene and Superstorm Sandy
- Projects created to address mental health issues and to identify quantitative and qualitative factors useful to local public health departments, mental health providers, and other stakeholders

Additional opportunities

- 2014 DSLR Broad Agency Announcement
    - Will fund innovative research on resilience
    - Emphasis on applicability to state and local public health
    - Integration with health care system is a major interest
- 2014 OPHPR Health Security Innovation and Research Initiative
    - Will provide research funding for Schools of Public Health to conduct research in community health resilience
- CDC, HHS, and ASPR have created the Federal Community Health Resilience Coalition and the Science Preparedness Research Interagency Team
- DSLR provides funding, guidance, and technical assistance to the states and major city health departments to build capacity and capabilities in 15 areas
    - Program goals include
        - Monitoring progress
        - Ensuring quality improvement
        - Assuring accountability
        - Identifying best practices
        - Building an evidence base

Program data sources include:

- Capabilities Planning Guide
- Awardees mid-year and end-year progress reports
- Financial reports
- Site visits
- Programmatic performance measures
- Assessment tools

2014: Tools for PHEP awardees created (are currently being evaluated and are likely to be revised in the future)

- Community Preparedness Evaluation Tool
- Community Recovery & Mass Care Evaluation Tools

Engagement with private sector to support medical countermeasure (MCM) distribution

- DSNS Community Resilience Activity
    - Engaged private, public and community based organizations to leverage state/local MCM dispensing efforts
- Planning Tool Kit
    - Developed for the hospitality industry
    - Outlines how to establish dispensing operations in hotel settings

2013: DSLR initiated national level pilot preparedness and response projects (4 states) with two retail store chains

- Stores serve as volunteers to support emergency MCM dispensing
- Stores conduct planning with local public health authorities to develop closed Points of Dispensing (PODs) – company facilities where medication is made available exclusively to a company's employees and family members
- Stores have also agreed to explore using their facilities as open PODs—i.e., open to the public

## COMPOSITE OF POST-EVENT WELL-BEING (COPE-WELL)

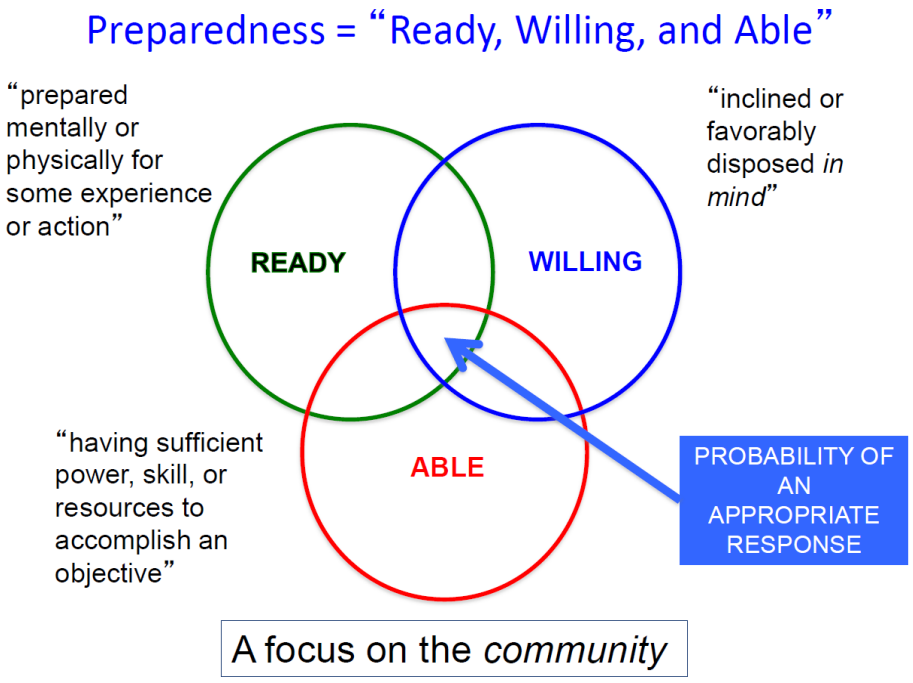
**JONATHAN LINKS, PHD; DIRECTOR, CENTER FOR PUBLIC HEALTH PREPAREDNESS, JOHNS HOPKINS U.**

The Johns Hopkins Center for Public Health Preparedness

- Founded in 2002 to focus on mental and behavioral health issues in disasters
- Funded by CDC's Centers for Public Health Preparedness, Preparedness and Emergency Response Research Center (PERRC) Program, and the Preparedness and Emergency Response Learning Center (PERLC) Program
- Activities: curriculum development, training, technical assistance, research
- Portfolio of over 700 field studies in the aftermath of disasters, catastrophes, and community crises

Ready, Willing, and Able Model

- Community focused; culmination of several efforts over the years
- Measuring resilience before a disaster not possible, only predictions



Ideas guiding researchers

- Parameter of interest: post-event functioning and well-being
- Post-event functioning
  - Directly dependent on nature and characteristics of hazard
  - Dependent on a number of variables, including pre-event functioning (of particular and direct causal dependence)
- Pre-event functioning
  - Pre-event activities explicit and directly measurable
  - Effect modifiers of the relation between the hazard and post-event functioning
  - Resistance ("hardness") and resilience ("flexibility") not directly measurable pre-event – latent properties that only manifest upon the perturbation caused by the hazard
  - Previous community resilience models have inappropriately conflated pre-event functioning and resilience

Goal: build a conceptual and computer model and answer applied research questions about the sensitivities of resilience

- How does resilience vary in different communities, and in response to different types of hazards?
- What are the best interventions for specific communities and specific types of hazards?
- What if a county is deficient in one resilience domain, but surrounded by other counties strong in that domain?

CoPE-WELL conducted over three years

- Year 1 (completed) aims
  - Fully and critically examine efforts to date to measure community resilience at the population level through composite indices or use of proxy measures
  - Fully develop detailed roadmap and set of research procedures for achieving a comprehensive, validated predictor (including the identification of data regularly collected at the national, state, and local levels that could compose a viable index)
  - Begin work on development of the predictor itself, based on the roadmap
- Year 2 (completed) aims
  - Perform hypothesis generating and qualitative hypothesis testing activities on the conceptual model developed in the first year, through analysis of historical disaster data
  - Build "Version 1.0" of the operational model; apply it nation-wide
- Year 3 (current year) aims
  - Continue to refine the model, through a combination of optimization of the systems dynamics (SD) model, incorporation of additional measures, and optimization of measures (e.g., to account for statistical collinearity)
  - Continue to perform hypothesis generating and qualitative hypothesis testing activities on the conceptual model developed in the first year, through analysis of historical disaster data
  - Prepare for, and execute if the opportunity arises, quick-response research to validate the conceptual and computer models

CoPE-WELL conceptual model (basic approach)

- Identify domains within each construct
- Identify measures available at the county level for each domain
- Normalized values rolled up within each construct and then model implemented via systems dynamics

Domains quantified for community function

- Nurturing and care
- Medicine/Healthcare
- Religion
- Government
- Functioning
- Education
- Public Safety
- Economy
- Sustenance (energy, food, water)
- Transportation

CoPE-WELL SD Model

- Developed through a series of equations
- Area of greatest interest is the drop=resistance and rise=resilience
- Preparedness is about resistance and minimizing the initial drop

Q & A with Dr. Jonathan Links

SGE: How do you get a sense of what you [inaudible]?

J. Links: I see a direct parallel challenge for the Index in this project. The 2013 version of the Index already had things beyond preparedness (small "p"), like social capital, cohesion, and community engagement. The National Health Security Strategy [the Nation's comprehensive strategy focused on

protecting people's health in case of an emergency] definition of preparedness calls that "the big 'p'" and it includes resilience. It is reflected in the final Index structure. There were two overarching areas: (1) federal contributions to preparedness and (2) pre-event community functioning. Have we done all we can to position a community in the face of different hazards? To the extent we haven't, what should be strengthened?

A series of milestones need to be achieved to know that resilience has been ultimately achieved. The first step is "face validity": Can I explain the Index or CoPE-WELL? The second step is to use the data we have from the University of Delaware library for disasters and see if the model predicts what actually happens; we are doing that both qualitatively and quantitatively. We've created a tool to go through carefully selected cases and extract the data. The tool then maps to the domains in our model. On top of that we are picking several cases where we can obtain county data before and after a disaster for a quantitative analysis. The third step is "utility." We are putting it out to the community and asking: "How does this change your decision making?" We're looking to put CoPE-WELL on the CDC website to receive validation that we're doing the right thing, but how the Index and the CoPE-WELL were developed was not linear.

Ex Officio: When you talked about resistance vs resilience and separated the two, that made sense to me. Some people may look at that as mitigation versus preparedness.

J. Links: One thing we found challenging is the complexity of the language. It's hard scientifically, in terms of the practice, and in the fact that so many different disciplines have to be involved, like engineering, sociology, mental health, and epidemiology. The language is so different among the disciplines and this can be challenging. So maps were made using rate constants to get around this challenge.

Liaison Rep: What works for me is that it has face validity. I've always been challenged with preparedness because that was an element that was missing.

J. Links: One of the big things we already heard is that there is stuff outside our control. And our response was that's the whole point. National health preparedness cannot be in the domain of one agency or organization or be owned by one agency organization. The notion of "whole community" is also whole of domains and if you want preparedness, "big 'p'," you have to consider and make a key part of that preparedness, "little 'p'."

Liaison Rep: All this is good but I'm wondering where we can get the biggest bang for the buck or where is the tipping point.

SGE: For me in measuring and modeling, determining the interrelationships between the domains is hard, because those will drive the dips and recovery rates immediately. It's not hard to explain domains and measures but explaining how to take those and put those in a dynamic model and make it work can be.

J. Links: What we know is based on literature and is done empirically. One of my colleagues talks about generative science. When you get to the point where you think there's utility in the message the models are giving you, then the idea is to listen to the model. We're trying to get to the point where the predictions are consonant with the literature on disasters and then listen to what the model is telling us. What we want to listen to the most is what the model is telling us that we did not know or messages that are different from what we originally believed. Those revelations will change your decision making.

SGE: I would at some point like to better understand the formulas you used, and we can discuss them in some future discussions because it's important to understand the equations and determine if they are

believable or valid. But I like the way you're leading this effort and the maps are amazing.

SGE: I think the maps are valid. A group that we are concerned about is people who are socially isolated. We're trying to figure out ways to do interventions to increase their level of function, so in essence their preparedness.

J. Links: We went to the smallest geoscale possible but still keeping the data and we don't think the county is the right geoscale. So part of this is for predictions and the other part is for the "what-ifs."

Liaison Rep: In looking at resilience, why are the counties different from the state?

J. Links: That would require us looking more at the equations to gain a better understanding of what makes them vary.

## OPHPR RESEARCH AGENDA AND HURRICANE SANDY RESEARCH COOPERATIVE AGREEMENTS

**CAPT MILDRED WILLIAMS-JOHNSON, PHD; DIRECTOR, ERPO, OSPHP, OPHPR**

Issues for BSC to consider

- To what extent should CDC's research
  - Explicitly require SLTT participation in its conceptualization and conduct
  - Focus on a public health systems approach
  - Include a community-based participatory research approach

Preparedness and Emergency Response Research Centers (PERRCs)

- Authorized by the 2006 Pandemic & All-Hazards Preparedness Act (PL 109–417)
- Developed to conduct public health systems research on preparedness and response capabilities at national and SLTT levels
- Focus on a public health systems approach and include community-based participatory research approach
- 2008: 7 PERRCs funded
- 2009: 2 additional PERRCs funded
- Funding since 2008: slightly more than $57 Million
- Focus in years 5 and 6 on three areas: (1) knowledge transfer for a new outcome; (2) expanding impact of tested outcome regionally or nationally; (3) use of technology to enhance accessibility of research outcomes

PERRC Program Review

- 2011: OPHPR BSC charged ad hoc working group to conduct mid-term review to assess functioning and research progress of the PERRCs toward achieving near-term impact
- Review findings
  - "In general…excellent progress had been shown thus far from the PERRCs…."
  - Overarching Observations - "Research…by the PERRCs…will benefit the public health system as a whole…"
  - By Review Objectives: the portfolio targets a wide geographic area and at-risk populations, bridges research and practice through collaborative partnerships with State and local health departments, and is generating promising practice and policy tools but with only local impact
- BSC Review recommendations (19 total)
  - Priority should be to fund research to (1) address a practice need; (2) evaluate new interventions; (3) demonstrate regional or national impact; (4) focus on dissemination/translation
  - Program concurred in principle due to discontinued funding (i.e., resource limitations)

Examples of PERRC outcomes

- Demonstration of validity and reliability of performance measures for exercises and drills
- Field test mobile technology product—texting to delivery emergency information
- Web-based vulnerable and at-risk populations resource guide
- Intent of the 6$^{th}$ year of funding: PERRCs will translate their research findings and make them accessible to health departments

**CAPT MILDRED WILLIAMS-JOHNSON, PHD—CONTINUED**

Hurricane Sandy Recovery Research Program

- Authorized by 2013 Disaster Relief Appropriations Act
- Purpose: support research that will aid in Hurricane Sandy recovery
- September 2013: CDC awarded more than $7 million dollars to 13 grantees
- ASPR provided 9 grant awards; 8 other grant awards provided by National Institutes of Health's (NIH) National Institute of Environmental Health Sciences (NIEHS)
- January 2014: joint grantee meeting held
- Current activities: informational webinars to grantees, state PHEP directors, and CDC
- Four working groups created
    - ASPR: (1) Community Resilience Working Group & (2) Methodology Working Group
    - CDC: (3) Data-Sharing Working Group & (4) Evaluation Criteria Working Group

Small Business Innovation Research Program

- Authorized by the Small Business Administration to fund startup and development stages
- Purpose
    - Stimulate high-tech innovation to meet federal research and development needs
    - Encourage commercialization of technology, products, or services
    - Stimulate US economy

Additional Comments from Dr. Groseclose

- OPHPR is pursuing a rapid response research project intended to increase our ability to conduct research during response (a component of science preparedness). It will address issues such as:
    - Public health practice versus research
    - Key research questions by scenario and informed by state and local input
    - Independent research review committee to prioritize knowledge gaps
    - OMB data collection/human subjects review of preconfigured questions/protocols
    - Funding
    - Research partners/networks
- Project includes collaboration with an interagency working group comprised of ASPR, NIH, and CDC

Q & A with Dr. Mildred Williams-Johnson and Dr. Sam Groseclose

Liaison Rep: Is there any part of the process or capabilities framework that can be used to generate research questions?

CDC: OPHPR will be getting state and local input to identify capabilities for which they need more technical assistance help. With respect to "after action" activities, we are looking at the federal level but I'm not sure if we're assessing at the state level.

Ex Officio: Re: the whole rapid cycle used by the military I would be interested in learning where it lives in other federal agencies

SGE: I wonder if there's a way to get a group of research teams pre-qualified to conduct research using a set of parameters you set and if there is a disaster you can use those teams to make immediate assignments, like a taskforce. It may save some time because contracts have already been applied.

CDC: That is being investigated. The basic idea is to have an umbrella contract and protocols written that can be activated when an emergency occurs. It's similar to the umbrella contract in ASPR and it can be scaled up to a greater degree if needed. Protocols may still have to go through Institutional Review Board (IRB) consent.

CDC: There is an effort to build a science network and to have the various investigators populate the network. That would be a resource pool that can be utilized.

Liaison Rep: I can't imagine looking at response without having participation of each level of the public health system. The place to do it is in the

conceptualization, so that the practicality of doing the research is done to reach the right outcome. And it should be done ahead of time.

As far as community-based participatory research at the state level, we often feel bound by the ivory tower concept of academic research. But, to be effective, we have to have some kind of community-based participation. It is the only place where action is going to matter.

SGE: I like the idea of a research agenda and it's where we should be going but the research must be informed by the practice and must seek the input of practitioners that do the work every day.

I do think you can leverage some aspects of community-based participatory research with the grantees using public engagement processes. They are engaging the public and communities as a part of their requirements, so this will not impact funding.

Liaison Rep: We have put a lot of efforts into putting together coalitions and there are opportunities to do easier community based participatory research by adding on to the locations that already exist.

CDC: For some Sandy grantees, there were no mechanisms for sharing funding between state and local government and academic institutions and there were issues with the bandwidth of staff at the state and local health department to enable them to be co-investigators. We wanted to get some sense of where we should be on the continuum and how to make that happen in the best possible way.

Liaison Rep: I encourage you to continue to push the idea of doing research on public health practice. Practice-driven research is difficult, but for the people who are trying to create action to bring about change, which really is the only

research that makes a difference. So keep on focusing on that practice or action-based research and find out what is the outcome of the action.

Ex Officio: And you need more close ties between academia and public health out in the field. Students need more experience doing public health work. There has been a divide and we have to break down barriers. Academia can help and academic institutions want grants. They can build linkages with the community. It takes effort but the payoff is tremendous. Tying it to money makes a big difference in the results.

Liaison Rep: You mentioned that the PERRCs have to have an advisory board that includes local health practitioners. I sat on three of those. The degree to which advisory board members were engaged and allowed to provide input varied dramatically. It is a viable option because it has worked in a couple instances, but there has to be more push. The advisory board must include more than one local health jurisdiction, particularly in large states. Make sure the advisory board has the opportunity to actually provide advice. If all of that is done, it is helpful to the researchers.

SGE: In our state we've been part of a group of organizations doing focus groups on what citizens in our state would do in the case of scarce resources. The things we learned are very useful and ideas varied significantly. We did that with ASPR's support and it's been very useful.

Ex Officio: We did the same thing in our state on medical countermeasures and people got really engaged and made some key decisions that were important for their community.

CDC: I have been frustrated with our program's inability to really articulate the importance of research to push health practices forward and the health security agenda. The dollars we got for [Hurricane] Sandy [research] represent the first time ever after a disaster that someone suggested

funding for public health research. I hope it's a long-term model. Sandy research money and funding for our PERRCs and PERLCs are all coming to an end. So we could use input on how to articulate the value of supporting public health research in the disaster arena.

SGE: Let's think on that and maybe provide some suggestions tomorrow.

## PREPAREDNESS UPDATES FROM LIAISON REPRESENTATIVES

### CHRISTINA EGAN, PHD, DBSP; LIAISON REP., ASSOCIATION OF PUBLIC HEALTH LABORATORIES (APHL)

Current APHL activities

- Working on the Revised Select Agent Rule and Tier 1 Public Health Lab requirments
  - Holding quarterly calls to provide recommendations, guidance, share best practices
- Laboratory Response Network restructuring efforts
- First responder issues
  - Stakeholder Panel for Agent Detection Assays, to determine issues and standards needed by first responders and the public health lab community

### MARISSA LEVINE, MD, MPH; LIAISON REP., ASSN. OF STATE & TERRITORIAL HEALTH OFFICIALS (ASTHO)

Current ASTHO activities

- Following up on the after action H1N1 activities – received great input on resources needed at January meeting in Tennessee
- Sought feedback on CDC update to *Framework for Describing Influenza Pandemic Progression: Intervals, Triggers for Decision Making, and Actions for Novel Influenza A Virus Events*
- Put in formal comments to Center for Medicare and Medicaid Services' proposed new rule on emergency preparedness requirements for participating providers – included important element: role of state and local public health departments
- Working on challenges related to returning to a level of confidence from the public

**PATRICIA QUINLISK, MD, MPH, LIAISON REP., COUNCIL OF STATE & TERRITORIAL EPIDEMIOLOGISTS (CSTE)**

Current CSTE activities

- Major concern is funding and grants – substantial decreases
- Programs helping state and locals get qualified epidemiologists in the field
    - OPHPR's Career Epidemiology Field Officers (CEFOs) can supply expertise
- Conducting proficiency exams helps ensure epidemiologists are working with partners

**KAREN SMITH, MD, MPH, LIAISON REP., NAT'L. ASSN. OF COUNTY & CITY HEALTH OFFICIALS (NACCHO)**

Current NACCHO activities

- Trying to navigate Hospital Preparedness Program budget reductions
- Helping local departments and partners define and manage health coalitions with fiscal constraints
- Translate OPHPR Operational Readiness Framework down to the local area
    - Suggest beta testing be expanded further because there were challenges with the last version of Technical Assistance Review (TAR)
- Using technology and social marketing platforms for new tools: app to track training activities and share information
- Digital disease detection using social media: *Flu Near You*
- Local health departments doing health assessments and creating partnerships to develop health improvement plans to engage the community

## PUBLIC COMMENT PERIOD / DAY'S RECAP / ADJOURN (DAY 1)

No public comments.

Dr. Inglesby adjourned Day 1 of the meeting**.**

## TUESDAY, APRIL 8 (MEETING DAY 2)

### WELCOME & CALL TO ORDER/ ROLL CALL & REVIEW OF FACA CONFLICT OF INTEREST

Thomas Inglesby, MD; Chair, OPHPR BSC, welcomed the Board back.

Samuel L. Groseclose, DVM, MPH, Associate Director for Science, OPHPR, and the Designated Federal Official (DFO) for the OPHPR BSC called the BSC meeting to order. Roll call taken. BSC Special Government Employee (SGE) Board Members, Ex Officio Board Members, and Liaison Representatives participating by phone and in person are listed in Appendices A and B. Quorum met.

### INTERVAL UPDATES – OPHPR SENIOR ADVISORS & LIAISONS

#### JOANNE ANDREADIS, PHD; SR. ADVISOR, LABORATORY PREPAREDNESS, OPHPR

OPHPR laboratory portfolio

- Purpose: to invest in innovative people, processes, and products to advance CDC preparedness and response to CBRN threats
- Focus: (1) public health and applied research; (2) information management; (3) operational deployment, sustainment and use

Anthrax

- Anthrax Laboratory Functional Surge Exercise and After Action Report
    - Cross-CDC effort: National Center for Emerging and Zoonotic Infectious Diseases (NCEZID); National Center for Environmental Health (NCEH); National Center for Immunization and Respiratory Diseases (NCIRD); National Institute for Occupational Safety and Health (NIOSH); Center for Surveillance, Epidemiology, and Laboratory Services (CSELS); and OPHPR
    - Goal: assess CDC's laboratory surge response to anthrax release in multiple cities
    - 216 participants, 8 CDC wet labs, EOC, and internal and external evaluators

    - Areas tested: incident management; receipt, accessioning, and triage; logistics; data management; results reporting and communication
- Successes
    - Developed pilot tool to integrate, visualize, and securely share surveillance, epidemiology, laboratory, and environmental data
    - Developed culture-independent point of care diagnostics
    - Began development of culture-independent antimicrobial functional susceptibility test

Chemical threats

- Goal: to become better and faster, in responses, by expanding USG Laboratory methods to identify and characterize nerve agents and toxins
- Partnering with NCEH
- Objective: develop/validate novel diagnostics; expand/improve detection capabilities
- Successes
    - Validated agent protein adduct diagnostics methods (extend timeline for nerve agent exposure detection)
    - Added new capability to detect five nerve agent phosphoric acid metabolites
    - Evaluated new method to differentiate nerve agent exposures (using urine and serum)
    - Developed new method to detect saxitoxin and neosaxitoxin
    - CDC one of the top 4 institutions publishing on organophosphate nerve agent exposure analysis

Botulinum toxin assay

- Objective: develop in vitro botulinum toxin activity assay to replace the mouse bioassay at CDC and US public health laboratories
- Work conducted by NCEH and NCEZID
- Successes
    - CDC developed/validated first mass spectrometric method
    - Established performance specifications
    - Technology transfer to the CDC National Botulism Laboratory Team in progress
    - Instrument deployed to 15 Advanced LRN Laboratories

Restructure LRN configurations

- Work conducted by NCEZID, PHPR, and Association of Public Health Laboratories (APHL)
- Objective: Ensure that all 50 states, plus D.C., New York, and Los Angeles, as well as the Urban Area Security Initiative (UASI) jurisdictions can provide a standard battery of tests for high priority biological threats and emerging infectious diseases
- Successes
    - Established three levels of reference laboratories (limited, standard, advanced) based on testing capabilities
    - Established capability and capacity requirements for standard level LRN laboratories

Defining all-hazards capabilities

- Will occupy most of the efforts over the next six months
- Objectives: (1) set agency priorities, (2) inform investments, (3) measure progress toward achieving goals by developing common agenda for surveillance, epidemiology, laboratory preparedness and response activities
- Goals: (1) develop a system with metrics to track and evaluate overall portfolio performance and public health impact; (2) meet strategic needs; (3) foster innovation and growth
- Partnering with CDC Centers/Institutes/Offices to
    - Develop cross-cutting implementation plan for OPHPR laboratory, epidemiology, and surveillance portfolios
    - Inform investments, partnerships and accelerate the achievement of needed capabilities

Q & A with Dr. Joanne Andreadis

SGE: In terms of capabilities needed, what's limiting? What bottlenecks do you face?

CDC: Culturing is the bottleneck and can be a blessing and a curse. Cultures are often needed for some of the confirmatory results. Technologies using a

mass spec approach are helping in that regard, so we're trying to move to direct testing methods, which is faster.

The lesson we've learned in the last five years is trying to figure where we need to place our next bets. We need to look at other methods of technology to build new capabilities (for proteomics work).

SGE: What is the thinking about a strategy to compensate for loss of cultures?

CDC: Honestly, we don't have a good answer for that, but we don't know what we don't know. If we do away with the culture, we may miss the possibility of better understanding systems, so we need to preserve cultures.

SGE: It's good that you guys are thinking in that manner. I see you are co-developing something with the Defense Threat Reduction Agency (DTRA). Will that be in complement with phenotypic resistance from culture?

CDC: We're looking at growth but we're using technology to look at single cell growth and looking at biomarkers for susceptibility to antimicrobials. It will be a functional test.

SGE: When you develop a test at CDC and transition it to the labs, what is the ongoing cost for labs in the field to maintain these tests?

CDC: It's a mixture. LRN is responsible for manufacturing and distributing reagents and test kits. We are providing training to state public health laboratories and money for them to train sentinel laboratories. State public health laboratories, however, do need to maintain their workforces and need to continue to hire proficient and capable people who can do the work. We're working to make sure that we're aligning PHEP to where it's needed most.

SGE: With chemical assays, there are a lot of advances in the technology but there's a big up-front investment that has to be made. How do you deal with that?

CDC: We would like to see a business approach taken. The more you utilize the equipment the more you can buy down the cost, so we're examining how that can be done.

SGE: Are there efforts to look at partnering or looking to other institutions?

CDC: I think we can do a lot more thinking along those lines and would invite your thoughts on that.

SGE: Could other universities who do that type of work cost share with you?

CDC: Yes, I think there's real opportunity in that space.

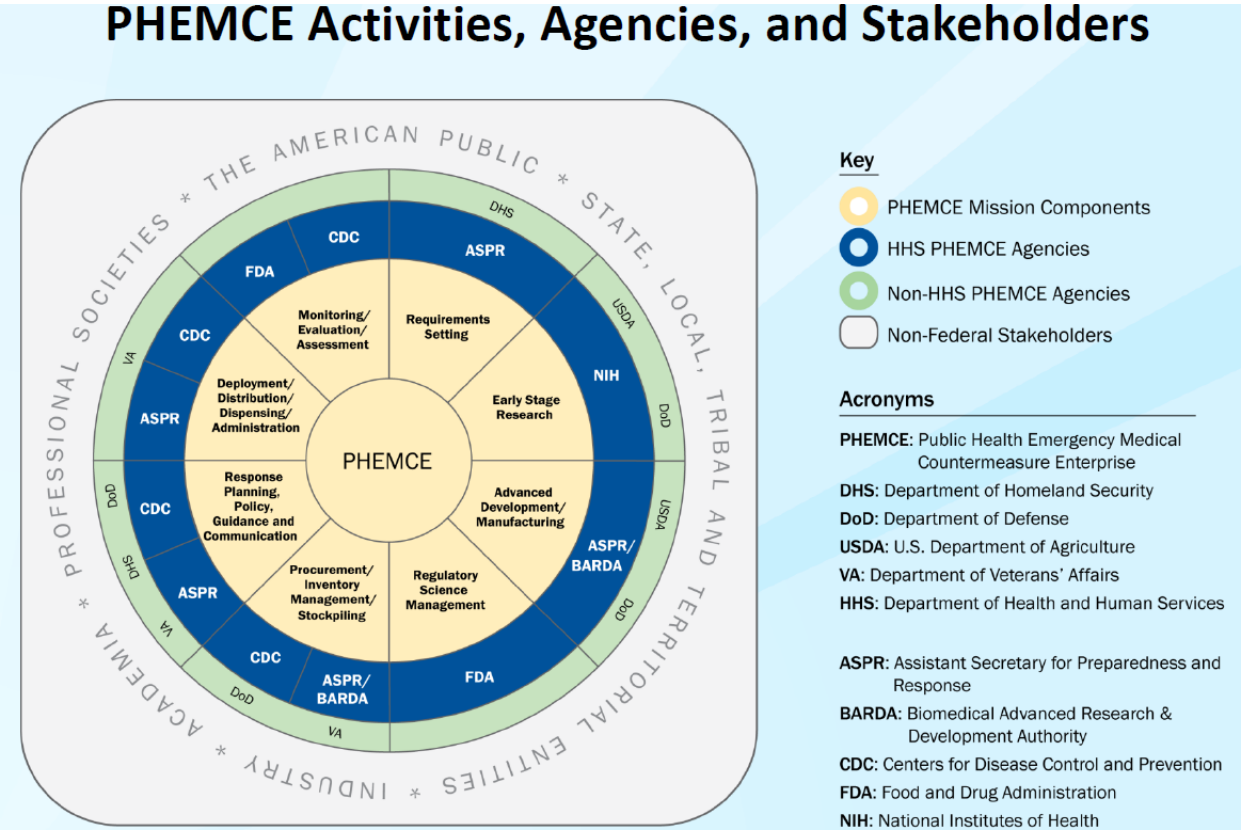
SGE: We share our resources with universities. Visiting scientists really help increase the morale, and we fund universities. We do not sponsor environmental testing; it's a line that we cannot cross.

**CAPT CAROL PERTOWSKI, MD; SR. ADVISOR, MEDICAL COUNTERMEASURES, OPHPR**

PHEMCE

- Established under the authority of the Assistant Secretary of Preparedness and Response (ASPR), 2006 Pandemic and All Hazards Preparedness Act (PL 109-417)
- Governance structure has emerged and evolved
- Comprised of HHS internal agencies and supporting members (Department of Homeland Security, Department of Defense, Veteran's Administration)
- Mission
    - Define and prioritize requirements for public health emergency medical countermeasures (MCMs)
    - Integrate and coordinate research, early and late stage product development, and purchase and stockpiling activities
    - Set deployment and use strategies for MCMs held in the Strategic National Stockpile
- Organizational structure
    - Enterprise Senior Council (ESC): responsible for policy and strategy decisions
    - Enterprise Executive Committee (EEC): tasked with setting requirement prioritization
    - Integrated Program Teams (IPTs): have a threat/ scenario- specific focus
        - 10 IPTs organized according to threats
        - Pediatrics is represented
        - A new monitoring and evaluation IPT is being formed

PHEMCE Activities, Agencies, and Stakeholders (illustrated)




Current PHEMCE activities

- Guidance development for products in SNS
  - Anthrax treatment for adults and pregnant women (completed)
  - Smallpox vaccine (use of smallpox vaccine post-incident), anthrax treatment for children and in mass incidents, botulism antitoxin, and radiation induced neutropenia (under development)
- Writing Group and CDC staff prepare draft guidance vetted by partners and experts before release
- Establish coordinated capability to monitor and assess MCM use through data collection and analysis during and after an emergency event to enable assessment and decision-making

Q & A with Dr. Carol Pertowski

SGE: You had a successful meeting of the anthrax group. When will documents become public for state and local use?

CDC: It's out but not published. It's in clearance. The MMWR is interested in publishing it, and once it gets out of clearance it's a matter of getting it on the agenda for MMWR.

SGE: Does the anthrax IPT gather on a regular basis?

Ex Officio: Each of the IPTs has a work plan to address issues and it is in consultation with the EEC. If the EEC feels the IPT needs to address something, they will bring that up.

Also we have overlap because IPTs have broader mandates. There's even a new IPT to look at post-event assessment of use of medical countermeasures. They have a charter and a set membership for two years. The membership is decided with all members of the PHEMCE and 25 members is the limit for the IPTs. It was a very loose process in the beginning and has become more structured due to the leadership of George [Korch] and others.

CDC: I think the process that's in place produces a lot of documents and is highly structured, which is a big change from before. Getting the right amount of structure is a challenge.

A couple of things impressed me. One is the work the PHEMCE has to do, which is something I didn't really understand. A lot of work is congressionally mandated, where several things need to be accomplished.

From the CDC side, it's a challenge to get everyone to understand how complicated the process can be.

Ex Officio: The documents go from threat risk assessment to requirements, product specific scenarios, etc., so it's a lot of work that they do. I have been very pleased with the new structured processes because work is getting completed. The work here on the clinical guidance is something that has needed to be completed for a long time. Also presented last week was a tiered system on how to use the smallpox vaccine. It matches with the 2012 strategy and implementation plan. So I am enormously impressed with how much better things work.

Liaison Rep: What will the communication strategy be when the guidance documents are completed?

CDC: We will make some decisions on that. We gave a presentation on smallpox at the Preparedness Summit and there will be publication in MMWR. It's a little early to make a comment on the anthrax portion.

CDC: We need to better job of integrating state and local health in this process so that it's not a surprise when guidance is published.

CDC: I forgot to mention that we made an effort to reach out to public health and clinics partners, and communities that have specific concerns, like pediatrics, OB/GYN, and immunosuppressed populations. Most of the most interested clinical societies groups have seen the smallpox guidance.

Ex Officio: I think CDC and other PHEMCE colleagues have done an incredible job of putting together the key stakeholders. The range and amount of people at the table is impressive. This will produce something that we've never had before. I agree that communications will be key and the most challenging communications will be if we had an event and if we had to use the

guidance, but we have gotten input ahead of time. I'm not sure if there's more we can do at this point.

**CDR JESSE GEIBE, MD, MPH, MBA; DOD LIAISON TO CDC**

Appointed by Assistant Secretary of Defense for Health Affairs, Dr. Woodson

- Purpose: to enhance collaboration between DoD and CDC in order to protected their respective beneficiary population from adverse health impacts

Key activities

- Provides information on the capacities of DoD to CDC
- Member and liaison Emergency Operations Center
- Advisory Member and DoD Representative to Advisory Committee on Immunization Practices
- Anthrax, influenza, encephalitis, vaccine, and Yellow Fever working groups (with FDA)
- Assists CDC in communication with the DoD on DoD-related inquires
- Involved in the DoD Global Health Group (enhance and foster collaboration on projects related to global health and health diplomacy)

## INQUIRY SYSTEMS: THE FOUNDATION FOR SYSTEMS THINKING

**IAN MITROFF, PHD; BOARD MEMBER, OPHPR BSC**

5 models of basic information or knowledge systems

- Expert consensus—most commonly used
- Scientific modeling
- Multiple models or assumptions
- Conflict
- Systematic Pragmatism

Model 1, Expert Consensus

- Two major assumptions: (1) future will be like the past; (2) phenomena well-structured/understood

Model 2, Scientific modeling

- Two major assumptions: (1) phenomena are well understood; (2) phenomena are "well behaved" and so can be modeled

Model 3, Multiple Models/Assumptions

- Three major assumptions: (1) decision-maker will be informed, not confused; (2) optimal way to surface underlying assumptions exists; (3) decision-maker will be able to derive a better model

Model 4, Conflict

- Three major assumptions: (1) decision-maker will be informed, not confused; (2) optimal way to surface underlying assumptions exists; (3) new synthesis will emerge

Model 5, Systemic Pragmatism

- Seriously incomplete as a measurement of risk
- Measurement of risk not equivalent to crisis management
- Interactions are key. No one thing stands on its own. Mess management is modifiable.

Dr. Mitroff then presented a series of flowcharts that illustrated the five models.

Q & A with Dr. Ian Mitroff

SGE: Can you give us examples of organizations that use models 3 and 4?

I. Mitroff: Those types of organizations are high up in the innovation curve. What prompts them is that their traditional business practices are being threatened by competitors. They are constantly challenging the assumptions and will have a command center where they take

assumptions and test them to see if they are still valid. They validate all assumptions about the business.

SGE: Your examples have to do with risk. Are you suggesting that this is a way of assessing risk?

I. Mitroff: Really, it's a way of assessing any phenomenon. I just used the term risk. The models are dependent on what you are willing to deposit. If things are pretty straightforward, stick with Models 1 and 2. I used risk as an example because it's considered an easy and well understood concept, but it actually is not.

SGE: I'm not sure if it's Model 3 or not but my thought is that an organization the size of CDC would be engaging in multiple approaches depending on the problem. The model would be adjusted according to the problem on the table.

I. Mitroff: There are too many assumptions floating around to think that and we need to have to look at two different approaches to inform our thinking. I'm also looking the variables that were excluded [from consideration] and weighted differently because those variables can come back to haunt you.

SGE: I think there is a tradeoff between how much time you invest in different models and how many different models you have. I think if you have multiple models, you use pretty simple things and then see how the models compare and figure which to follow.

I. Mitroff: Franklin Roosevelt said he didn't feel he was well advised unless he heard two radically different presentations on a topic. He was not comfortable with consensus. So this is more of a way of thinking and how you feel about the phenomena you want to understand.

## PROBLEM SOLVING: SCIENTIFIC APPLICATIONS IN DISASTER MANAGEMENT

Phil Navin, MA, BS; Director, Division of Emergency Operations (DEO), OPHPR (moderator)

### FRANK BADER; PLANS, TRAINING, EXERCISE AND EVALUATION BRANCH, DEO, OPHPR

Decision-making is part of the Incident Management System (IMS)

- Four phases in the IMS decision-making process: (1) understand the question or mission; (2) develop the goals and objectives; (3) generate, develop, analyze and compare courses of action developed in silos; (4) make recommendation

Plans Decision Unit in DEO

- Uses a collaborative team, common approach for making decisions
- Weighted criteria used
    - Maximize lives/life years saved
    - Preserve functioning of society
    - Retain US public confidence
    - Feasibility of implementation
    - Retain State and professional confidence

Course of action (COA) analysis matrix (example)

- COA with the highest number is "best"
- Final recommendation submitted with explanation of why it was chosen

## COA Analysis Matrix

DRAFT

| Criteria | COA 1<br>Use all vaccine for all | COA 2<br>Use best vaccine for critical infrastructure | COA 3<br>Use best vaccine for high risk populations |
|---|---|---|---|
| Maximize lives saved 2.0 | 2<br>8 16 | 3<br>6 12 | 1<br>10 20 |
| Preserve functioning of society 1.9 | 2<br>8 15.2 | 1<br>10 19 | 3<br>6 11.4 |
| Retain US public confidence 1.8 | 1<br>10 18 | 3<br>6 10.8 | 2<br>8 14.4 |
| Feasibility of implementation 1.6 | 1<br>10 16 | 2<br>6 3.2 | 3<br>6 9.6 |
| State & professional support 1.4 | 1<br>10 14 | 3<br>6 8.4 | 2<br>8 11.2 |
| TOTAL | 79.2 | 53.4 | 66.6 |

highest number best

Considerations

- Can a decision be made without having all the desired information?
- Is there a common process or framework?
- What are the time and timeliness tradeoffs?
- Is the process neutral or is there bias?
- Can you teach, train, and do?

Future considerations

- Routinely applying the decision-making process to strengthen CDC's public health efforts
- Continually using and training CDC to use the decision-making process
- Expanding and teaching international communities under Global Health Security initiative
- Developing an orientation to the decision-making process for new leaders at the branch and division level

**RADM STEPHEN REDD, MD; ACTING DEPUTY DIRECTOR AND CHIEF MEDICAL OFFICER, OPHPR**

Real-life examples of the decision-making process

Leadership briefing process

- May require one to several days to prepare
- Must amass expertise present
- 20-30 minute presentation
- 30-40 minute discussion
- Briefing should explore all key issues
- Recommendation may or may not be accepted
- Decision-summary at conclusion
- Can be challenged if deemed inaccurate

Example 1: CDC recommended school closures for confirmed cases of H1N1 (March 2009)

- State and local governments and White House disagreed with this approach
- Briefing ordered to provide scalable guidance regarding school closures

**RADM STEPHEN REDD, MD—CONTINUED**

Evident facts

- Novel influenza A virus with sustained human to human transmission in US and elsewhere
- Rapid spread with increasing number of cases
- Incubation period: 1-5 days
- Children and young adults highly susceptible and shedding virus for a longer period of time than adults
- No specific vaccine currently available – preliminary lab data suggests no protection from seasonal influenza vaccine
- Hospitalized cases in the US
    - Increasing number of hospitalized young infants, pregnant women, those with chronic medical conditions
    - One death in the US (to date)
- Severe cases and deaths in Mexico (case fatality rate not established)
- School and university outbreaks in US
    - Large numbers of ill students
    - Explosive outbreaks
    - Schools provide effective settings for transmission of respiratory illnesses
- School closure
    - No Federal guidance for severe seasonal influenza related to school closure
    - Data are limited regarding effectiveness of school closures; suggestion of partial effectiveness when implemented early and in combination with other measures
    - Social and economic consequences of this intervention
    - Some local decisions regarding school closure have already been implemented
    - Schools will be closed for the summer in just a few weeks

**RADM STEPHEN REDD, MD—CONTINUED**

Assumptions

1. Closing a school will reduce morbidity in students and secondary transmission
2. Early intervention will be more effective for school closure
3. Transmission similar to seasonal influenza
4. Large segment of the population is susceptible
5. There will be many school outbreaks in the US
6. There will be severe cases requiring hospitalization in the US
7. Deaths will occur
8. Schools are an amplifier for transmission in the broader community
9. Transmission is occurring outside the school setting in families, etc.
10. Vaccine will be available later this year (~fall)
11. Healthcare system and antiviral availability will continue to be stressed
12. Likely to be variability in acceptance of any recommendation
13. Asymptomatically infected people can transmit the virus
14. Transmission in the U.S. will be reduced during the summer, similar to seasonal influenza

Proposed options

1. No school closures
2. School closures (based on specific case criteria)
3. Pre-emptive school closures

Strength and weakness analysis conducted and decision matrix developed

- Option 2 (School closures on the basis of specific case criteria) selected
    - Specific case criteria: case definition, number of cases, location of cases, timing of illness onset
    - Elements of recommendation: school vs. district vs. region vs. state, length of closure
- May 2009: guidance reissued

Example 2: Decision-making process used regarding vaccination clinics located in schools (January 2010)

Purpose: identify triggers for states/project areas to consider for stopping school located vaccination clinics

- Using the same process as above, decision made to base decision on specific criteria
- Rationale
  - Science-based and sensitive to local conditions (permissive guidance)
  - Keeps multiple vaccination venues open to meet local need and demand (i.e., provides additional flexibility for state/local public health departments)
  - Remains state/local centric
  - Wise use of resources
  - Informal feedback from states/locals indicates they are adjusting programs as necessary
  - Sets clear time/event guidance

Concluding thoughts

- Decision-making process focuses on critical issues
- Few decisions implemented without higher level review
- Underappreciated factors: perceptions of the audience and general public and the feasibility of implementation
- Continued training and exercising needed to gain proficiency

Q & A with Mr. Frank Bader and Dr. Steve Redd

Liaison Rep: How do you decide on the weighting criteria? That's where we have the most conflict.

CDC: You can use pluses or minuses, scores, or even a grading system like the one used in schools. The grading system seems to be the most preferred. The group has to consider what the options are and what they want to

use, and as long as you have a common ground, you move forward with that.

Liaison Rep: My question is about next steps. I think people have a right to know what went into the thinking process. How do we become good communicators and give people the rationale on how we arrived at a decision without being too detailed?

CDC: That is important and it's the flipside of the acceptability question. There are times when what people want to do isn't the right thing. The only thing you can do is say, "Here are our decisions," and give a much abbreviated explanation of the factors.

Liaison Rep: I think that's why it's important CDC provides reasons for making a decision—so we can translate that to our public. Sometimes the public will ask how come what one state is doing differs from another state.

CDC: All incident response begins at the local level. One thing is to make sure you have the right people at the table.

Liaison Rep: When we get a CDC recommendation, we "Iowanize" it. We put out the CDC's version and Iowa's version. We try to explain why there is a difference between the two.

CDC: During H1N1 we got strong advice on simplifying what we were producing. We had a 20-page guidance that was filled with jargon. We finally decided on 2 to 3 pages with annexes. Having it in plain language is key. Providing an opt-out option is also essential.

Liaison Rep: In each scenario the need for the guidance was yesterday. How much did the time crunch factor go into the process and did that change the process?

CDC: Yes. This was done in one day and there was guidance out there, so it does affect the process. Also you're never going to have all the ideal information, but it cannot keep you from making a decision.

SGE: I really like the fact that our decision alternatives include "do nothing" or "stay the course." How do you identify the alternatives for the objectives that you are going to achieve? Do you ever do sensitivity analysis?

CDC: I'm sure there is a more systematic approach than what we used. There was not a formal sensitivity analysis, but in the discussion people would disagree or agree and we did the math on the fly.

SGE: Let me go back to the family vacation example. Multiple criteria are not the same as multiple criteria set. I've never seen any process that is neutral. It is vital for people to know how CDC comes to its decision and the point is in certain situations a person may want to see side by side what are the outcomes. My presentation was premised on this. The issues we're talking about are so complex, one has to find a way to demonstrate without overwhelming.

CDC: I think the next time we approach this we'd like to use Model 5 [see model description above] but sometimes we can't. I think it's important to understand which model we're using and also having sufficient input. I do like where you have opposing views.

Liaison Rep: Oftentimes the states or locals have already started to put out a set of guidance or recommendations. To keep from confusing the public, that guidance they've created should be taken into account when making your federal guidance.

SGE: How much decision-making at CDC goes through this process?

CDC: Because we have institutionalized this across CDC, more and more leaders are using it to come to a recommendation. In OPHPR this is used on a regular basis. It may not be the ideal format but it will be the same process. We have been using it since 2006, and we have to recognize that events will be modified depending on the event we're confronted with.

Liaison Rep: The Foodborne Diseases Branch at CDC has pulled together a Wise People Group comprised of states not involved in the outbreak. This was done to avoid taking staff away from the frontline response. The participating states, however, were ones familiar with the types of outbreaks for which they were providing decisions.

## PROGRAMMATIC REVIEW UPDATES – DISCUSSION AND Q&A

### STRATEGIC NATIONAL STOCKPILE (SNS) IN THE YEAR 2020—AN EXAMINATION WITH RECOMMENDATIONS

Q & A with CAPT Deborah Levy, PhD, MPH; Chief, Healthcare Preparedness Activity and Acting Director, Division of Strategic National Stockpile, OPHPR

SGE: We thought these were good recommendations. There were some small differences but nothing earth shattering.

CDC: Exactly. We, for the most part, agreed [with the BSC recommendations]. [Trying to accomplish some things in] one year was a push and so that was the only area we felt would be difficult.

Liaison Rep: You were asking some feedback. And my thoughts are to consider who you're trying to communicate with.

SGE: One purpose of the report was to explain to "policy" Washington about the SNS so you may want to include in plain language the high level capabilities. Give a list of fundamental capabilities, for example. You could

in a one-pager describe SNS and the policy role with a little more detail. It sounds like you're selling as opposed to describing.

SGE: I think of different ways of representing the decision structure. I would like to see the technical points of view of how you handle the stockpile. I don't want a detailed model, but are there certain other perspectives beyond the normal that we would like to expand and examine? The issue is what can be done to improve the processes even more. What are the takeaways? What can be folded into a process?

CDC: One piece that's missing is periodically going back to the states and locals to find out what's going on in the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) process. They cannot always be a part of the weekly discussions and it makes it hard for them to plan when they don't know what's going on with the PHEMCE.

SGE: Has anyone tried to build a model for some state outliers and how they responded in order to obtain [values for a model] variable? It would be enlightening to see what the different criteria are.

CDC: Part of medical countermeasure planning is leaving it to the state and locals to decide how they will use those capabilities. The stockpile does not dictate that. State and local health departments engage with project officers and it is then passed on to us.

I did want to address your question from yesterday on the five risks. There's a financial risk, compliance with laws, public community risk, information technology risk, etc.

Liaison Rep: I notice there was a note that the CEFO Program moved over to DSLR. Were there issues, problems or opportunities?

CDC: I've been the chief for two months now, but have worked with CEFOs previous to that at CDC. The movement of the Program to DSLR has allowed us to come into more alignment with the DSLR mission and I view that as a positive.

Liaison Rep: Will it allow the program to expand in light of the budget cuts?

CDC: It's too early to tell what the impact will be in that area but there are issues that need to be addressed prior to expansion. We do have a strong commitment from the division leadership to the CEFOs. They have contacts in state and local health departments and those state and local health departments know the benefits of having a CEFO. There are some funding models and considerations that should be addressed.

The second issue is the ability of the program in Atlanta to supervise, integrate and support CEFOs. We want to make sure the CEFOs have ties to Atlanta. When possible we will fill additional supervisor positions. We have seen some cuts, but are still looking for more ways to support the CEFOs in the field.

SGE: A lot has gone on since we last reviewed this and I like your description of core competencies. For the performance metrics that were identified, it would be valuable to systematically get feedback from the states and locals as part of the metrics. This could give some meaning to those numbers. It's how valuable the CEFOs are to the states and locals that needs to be understood. But I commend you because this has really come together in the last couple of years.

Liaison Rep: Documenting is important and not just what the states do on the day-to-day but also the role CEFOs play in that state and being able to respond to an event.

SGE: We heard in the past that CEFOs because they were out in the field so much felt disconnected from their home office in Atlanta. But it sounds like you have taken steps to fix that.

CDC: I think the connection [between CEFOs in the field] to CDC will be continually worked on and I am committed to doing that and to even advance what we've been able to achieve already. Peer-to-peer mentorship we have also found to be very valuable. Connection to the different CIOs is of value. Making the case of the value in the day-to-day business and emergency response is where the rubber hits the road. In an unexpected event or an event that requires immediate gear-up, their skills make them qualified to step in and help.

Their direct connection back to CDC is invaluable to our state and local health departments and we want to maintain that ability and grow it.

## HEALTHCARE PREPAREDNESS ACTIVITY

### CAPT DEBORAH LEVY, PHD, MPH; CHIEF, HPA AND ACTING DIRECTOR, DSNS, OPHPR

Healthcare Preparedness Activity (HPA)

- Part of the Division of Strategic National Stockpile since October 2011
- Focuses on healthcare preparedness and integration with public health and emergency management
- Team expertise: epidemiologists, medical officer, nurses, public health advisors, emergency management specialists, and executive assistant
- Website: Healthcare Preparedness Activity

- During emergency operations activations, HPA staffs the Healthcare Systems Response Team

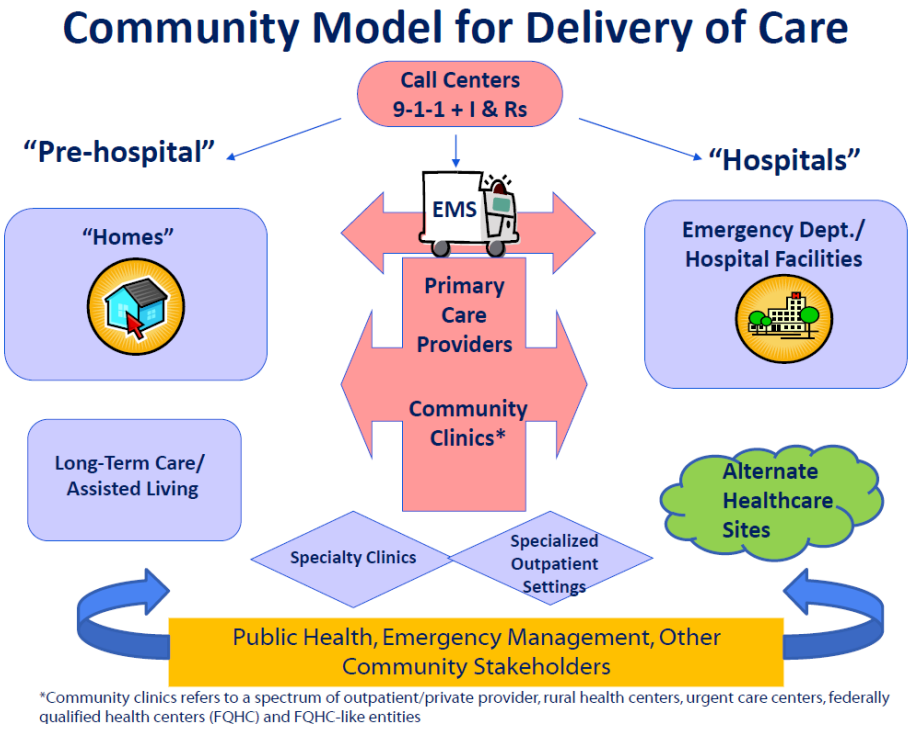
HPA

- Vision: have healthcare systems effectively prepare for and respond to emergencies
- Mission: support public health, healthcare, and emergency management working together to safely deliver the right care at the right time and in the right place
- Tasks
    - Develop content for and/or provide input on policy documents; tools, templates, and checklists, as well as, guidelines, recommendations, clinical protocols and algorithms
    - Provide technical assistance to state, tribal, local, and territories stakeholders
    - Serve as a liaison with public and private partners
    - Participates in responses, exercises, drills and federal workshops

Current challenges—How to

- Bring healthcare preparedness technical assistance to scale?
- Assess impact and return on investment?
- Engage healthcare execs and primary care providers in community preparedness planning?
- Leverage activities under the Affordable Care Act (Community Health Needs Assessment)?

Community model for the delivery of care




HPA community workshops for healthcare delivery in an influenza pandemic

- Communities are integral in the planning
- Various healthcare sectors involved
- HPA helps identify existing and needed resources
- Workshop engagement process
  - Begins 3 to 6 months prior to workshop
  - Interactions continue 6 months to a year after conclusion of workshop
  - Increased vaccination rates above surrounding communities and media coverage

**CAPT DEBORAH LEVY, PHD, MPH—CONTINUED**

HPA's Essential Health Services – supplementary to the PHEP Cooperative Agreement

- Coordination for unrelated healthcare delivery resources
- Stakeholder meetings
- Tools developed to integrate public health, healthcare, and emergency management: (1) "Pan Flu Scramble" exercise; (2) Pandemic influenza community triage and resources; (3) Long-term care organizer planning guide
- Tools in development: (1) Community healthcare planning framework; (2) Workshop in a box; (3) Exercise in a box; (4) Disaster resource manual for supply chain manager; (5) Scramble scenarios (10 KT improvised nuclear device, earthquake)
- Tools posted on HPA website
- SNS putting together a training package for DSLR
- Curriculum developed for NACCHO to use at Preparedness Summit

Medical care and countermeasures

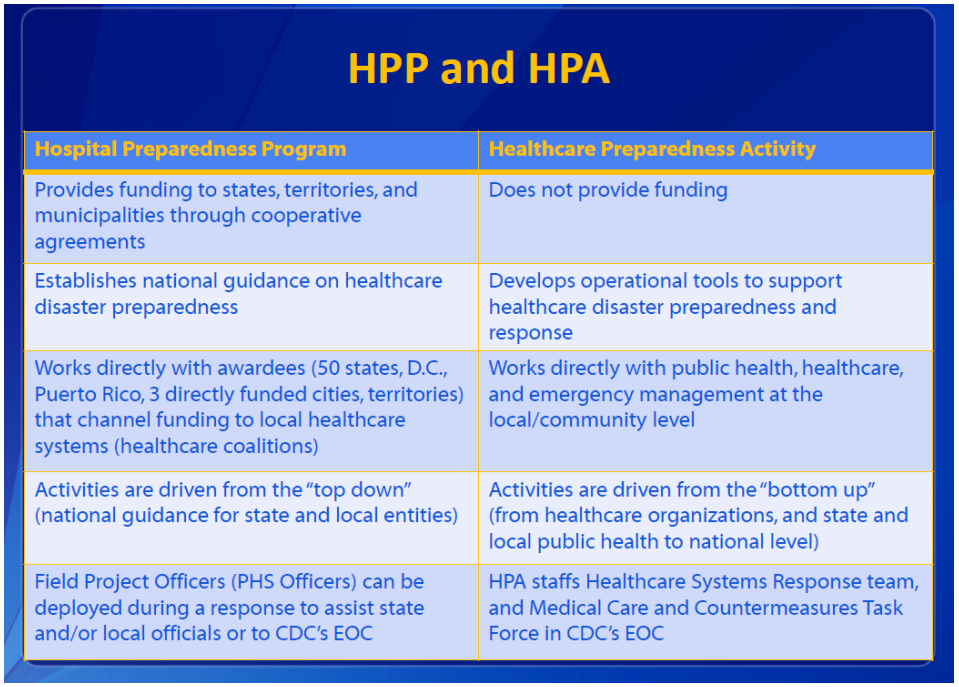
- Deliberations and Recommendations of The Pediatric Emergency Mass Critical Care Task Force (Pediatric Critical Care Medicine, November 2011, Volume 12, Issue 6)
- Partnership with FDA: intra-event monitoring and assessment of medical countermeasures
    - "PHEMCE Action Plan for Developing an Enhanced National Capability for Monitoring and Assessing Medical Countermeasures during Public Health Emergencies"
- Text messaging protocols to encourage compliance
- Next steps: Develop messages for vulnerable populations and explore options for operationalizing and exercising protocols

Medical Care and Countermeasures Task Force

- Reviews policies, guidance, and messaging that affects healthcare staff, delivery settings
- Coordinates with federal agencies, external partners, and CDC centers, institutes, offices (CIOs) to resolve issues that affect healthcare delivery
- Provides technical assistance
- Develops tools to support response through engagement of partners and stakeholders

**CAPT DEBORAH LEVY, PHD, MPH—CONTINUED**

Differences between Hospital Preparedness Program (HPP) and HPA



**HPP and HPA**

| Hospital Preparedness Program | Healthcare Preparedness Activity |
|---|---|
| Provides funding to states, territories, and municipalities through cooperative agreements | Does not provide funding |
| Establishes national guidance on healthcare disaster preparedness | Develops operational tools to support healthcare disaster preparedness and response |
| Works directly with awardees (50 states, D.C., Puerto Rico, 3 directly funded cities, territories) that channel funding to local healthcare systems (healthcare coalitions) | Works directly with public health, healthcare, and emergency management at the local/community level |
| Activities are driven from the "top down" (national guidance for state and local entities) | Activities are driven from the "bottom up" (from healthcare organizations, and state and local public health to national level) |
| Field Project Officers (PHS Officers) can be deployed during a response to assist state and/or local officials or to CDC's EOC | HPA staffs Healthcare Systems Response team, and Medical Care and Countermeasures Task Force in CDC's EOC |

Q & A with Dr. Deborah Levy

Ex Officio: What's your dissemination plan or are there any stories of things that have taken place?

CDC: Now that we've grown a little bit we hope to do more training and information dissemination. We are also looking to the Center for Disaster Preparedness to help roll out some of the materials as well.

SGE: How did HPA come to be housed in SNS?

CDC: It was not a simple process. I was one person doing this in Healthcare Quality Promotion. After 9/11 and with Dr. Frieden's emphasis on better integration with preparedness, it made sense for us to move in with the group doing preparedness. There was some discussion of working with OD, but it seems the SNS is a better fit. But we do work with both. We

also work with CDC's Center for Surveillance, Epidemiology and Laboratory Services (CSELS). But it probably doesn't matter where we sit because we really could work with anybody.

Liaison Rep: How can you connect with the opportunities under the Affordable Care Act (ACA) and leverage them? It's hard to engage with physicians but when we do, we need to be prepared to look at the whole picture. So your collaborative approach of working throughout CDC might better inform us on how to do that.

CDC: We believe in targeting patient care providers and talking to them about doing community planning.

SGE: Given the number of hospitals, practices, healthcare departments, etc., with whom are you most engaged? Have you had to triage because there are so many different interests you are involved in?

CDC: As far as engagement I would say local public health knows us best because what we do is so operational. California is a good example of that because what we do in urban areas is very different from rural. From the healthcare sector side, I would say EMS. They are very engaged from bottom level to the top and are always looking for more engagement. It's interesting during the workshops to see the light bulbs come on with the [healthcare] executives as the notion of surges is introduced.

SGE: [For a community to be considered for a workshop] does somebody have to know you personally or how do they find you?

CDC: We can usually do only one of these [community workshops at a time] because of the [necessary] lead time and the post [workshop activities]. We will put out a request and it's a short application about 4 pages. The communities have to demonstrate that they've started [developing their

own] partnerships. We have other criteria we use to identify candidate communities and then we conduct interviews. It's a heavy lift as we go through the plans. If a community has not done anything, a workshop is not going to work because there are so many more things that are needed to get them where they need to be. We do ask about specific needs so we can be sure to bring along some helpful tools.

SGE: In terms of getting estimated return on investment (ROI), if you could find a way to summarize how locals have been relying on you—even if you can't be quantitative but have qualitative statements—it will help others understand more concretely and they will want to take part. The more they clamor for you, the better you make your case. That may keep you from having to figure out ROI.

CDC: Recently we held a workshop demonstrating our tools and it was very successful. NACCHO has asked us to do more.

## GLOBAL HEALTH SECURITY AGENDA

**JORDAN TAPPERO, MD, MPH; DIR., DIV. OF GLOBAL HEALTH PROTECTION, CTR. FOR GLOBAL HEALTH, CDC**

Three risks to global health security from bio-pathogens

- Emerging organisms (new outbreaks)
- Drug resistant-organisms
- Intentional creation

Global Health Security (GHS)-Demonstration Project for Uganda

- Goals
  - Strengthen disease surveillance system's capacity for detection, specimen referral and laboratory confirmation of multidrug-resistant and extensively drug-resistant tuberculosis, cholera, and viral hemorrhagic fever or the Ebola virus
  - Establish a functional public health Emergency Operations Center (EOC) and an integrated data system using the EOC as the hub
    - Improve real-time detection, transport and confirmation through new District Health Information System (DHIS) 2 disease specific modules
    - Have laboratory results interlinked via the EOC through Short Message Service (SMS); online reporting and tracking via DHIS 2
    - Develop dashboards and reports for access by health system stakeholders at all levels on a "need to know" basis
- Tools used
  - The U.S. President's Emergency Plan for AIDS Relief (PEPFAR) had already established locations where maternal-child HIV prevention activities were being conducted—these same hubs used for GHS-Uganda
  - Motorcycles used to make daily routes enhancing the specimen transport system
  - GPS-equipped cooler boxes used to carry specimens; track and monitor temperature

**JORDAN TAPPERO, MD, MPH—CONTINUED**

Global Health Security (GHS)-Demonstration Project for Uganda

- Success
  - Establishment of the Uganda EOC
  - Four full-time staff: (1) EOC Manager; (2) Geographic Information Systems; (3) DHIS 2; (4) Ministry of Health Administration
  - Linked with the World Health Organization (WHO) Country Office
  - Recent activations: (1) November 2013 solar eclipse in Pakwach (the center of Uganda's eclipse celebrations); (2) Ending Mother to Child Transmission of HIV
  - Successful pilots in two countries
  - 2014: $40 million initiative launched with DoD and Defense Threat Reduction Agency
  - 2015: proposal for $45 million in funding to catalyze progress in 10 more countries
- Ultimate goal: within 5 years, in at least 30 countries, with a cumulative population of at least 4 billion people, to prevent, rapidly detect, and respond to epidemic threats

Divisional targets: (1) prevention; (2) detection; (3) response

- Prevention
  - Surveillance to monitor antimicrobial resistance, with >1 laboratory (in-country) capable of identifying >3 of 7 World Health Organization (WHO) priority drug resistant pathogens
  - A whole-of-government national biosecurity system operating under established biosafety/biosecurity best practices
  - Adopted behaviors, policies, and practices to minimize risk of spread of zoonotic disease into human population
  - Immunization of >90% of the country's one-year-olds with at least one dose of measles-containing vaccine
- Detection
  - Nationwide laboratory system to reliably conduct >5 of 10 core tests from 80% of districts
  - Surveillance for 3 core syndromes indicative of potential public health emergencies
  - Country and regional capacity to analyze and link data with real-time biosurveillance systems

    - Timely and accurate disease reporting according to WHO, World Organisation for Animal Health (OIE) and Food and Agriculture Organization of the United Nations (FAO) requirements
    - Workforce of physicians, veterinarians, biostatisticians, laboratory scientists, and >1 trained field epidemiologist per 200,000 people
- Response
    - Public Health (PH) EOC functioning according to minimum common standards and capable of activating coordinated multi-level emergency response within 120 minutes of identification of a PH emergency
    - In the event of suspected or confirmed biological attack, have capacity to link public health and law enforcement for purpose of attribution
    - National framework for sending and receiving medical countermeasures and public health and medical personnel from and to international partners during public health emergencies

**JENNIFER BROOKS, MPH; EMERGENCY MGT. SPECIALIST, DIVISION OF EMERGENCY OPERATIONS, OPHPR**

OPHPR's international activities

- Two intensive training sessions to EOC staff plus additional trainings in Viet Nam
- Formal curriculum may be developed to address growing interest from other countries

Emergency Management Preparedness (EMP) Video Project

- EOC helps identify gaps in other EOCs
- 8 five-minute videos segments that explain CDC's Emergency Management Program
- Targeted audiences: national and internal public health programs developing emergency management programs

Q & A with Dr. Jordan Tappero and Ms. Jennifer Brooks

Liaison Rep: How connected are you to Global Health activities occurring in academia?

CDC: Because we are just now thinking about these, not very much.

SGE: Do you already have a presence in the ten countries where you will be working?

CDC: In two we have no presence. Four of the countries are CDC PEPFAR countries. We wanted experience in trying to do demonstration projects. The two countries we chose in 2013 were PEPFAR countries.

SGE: Would that be ten additional countries?

CDC: We would have to see. We can't put the monies in cooperative agreements. Congress has to approve appropriations and countries have at least a five-year timeline to go through the targets of the agenda. Each of the elements of the agenda has some additional resources. It will be roughly a $50-million investment per country.

We normally work very closely with the Ministries of Public Health in those countries. But this time, we had to first come together in CDC and figure out ways to create technical guidance. We now have 18 countries represented and we have a set budget for 2014 and 2015.

**PUBLIC COMMENT PERIOD**

No public comments.

**MEETING RECAP & EVALUATIONS, ACTION ITEMS & FUTURE AGENDA**

Samuel L. Groseclose, DVM, MPH, Associate Director for Science, OPHPR and the Designated Federal Official (DFO) for the OPHPR BSC

Dr. Groseclose thanked the BSC for its participation in the conversations. He invited the members to feel free to continue to provide suggestions and feedback. He also thanked the presenters and the OPHPR staff for putting the meeting together. He concluded by saying that he looked forward to the next engagement.

Ali Khan, MD, MPH; Director, OPHPR

Dr. Khan assured the BSC that CDC takes their comments very seriously and are committed to making the necessary changes to strengthen OPHPR.

Thomas Inglesby, MD; Chair, OPHPR BSC

Dr. Inglesby thanked OPHPR for the work done in preparing the meeting.

**MEETING ADJOURNMENT**

Thomas Inglesby, MD; Chair, OPHPR BSC

With no other comments, the meeting was adjourned at 2:33 PM.

**CERTIFICATION**

I hereby certify that to the best of my knowledge, the foregoing minutes of the April 7-8, 2014 meeting of the OPHPR BSC are accurate and complete.

| | |
|---|---|
| 6/30/14 | /s/ |
| Date | Thomas V. Inglesby, MD<br>Chair, Board of Scientific Counselors, OPHPR |

## APPENDIX A: OPHPR BSC MEMBERSHIP ROSTER

### Chair

Thomas V. Inglesby, MD
CEO and Director
Center for Biosecurity – UPMC
Baltimore, MD

### Designated Federal Official

Samuel L. Groseclose, DVM, MPH, DACVPM
Associate Director for Science and Public Health Practice
Office of Public Health Preparedness and Response
Centers for Disease Control and Prevention

### Special Government Employee Board Members

Ruth G. Bernheim, JD, MPH
Chair, Department of Public Health Services
William Hobson Associate Professor of Information Sciences
University of Virginia School of Medicine
Charlottesville, Virginia

Margaret Brandeau, MS, PhD
Coleman F. Fung Professor
School of Engineering
Stanford University
Stanford, CA

Suzet McKinney, DrPH, MPH
Deputy Commissioner
Bureau of Public Health Preparedness and Emergency Response AND Division of Women & Children's Health
Chicago Department of Public Health
Chicago, IL

Ian I. Mitroff, PhD
Adjunct Professor, College of Environmental Design
Research Associate, Center for Catastrophic Risk Management
Haas School of Business, University of California, Berkeley
Oakland, California

Carol S. North, MD, MPE
Professor of Psychiatry and
Director, Division of Trauma and Disaster
The University of Texas Southwestern Medical Center
Dallas, Texas

Richard Smith, PhD
Battelle Fellow and Chief Scientist
Environmental Molecular Sciences Laboratory and Biological Sciences Division
Pacific Northwest National Laboratory
Richland, WA

**Ex Officio Board Members**

*US Department of Health and Human Services*
Lisa Kaplowitz, MD, MSHA (Alternate)
Deputy Assistant Secretary for Policy
Office of the Assistant Secretary for Preparedness and Response
Washington, DC

*US Department of Homeland Security*
Kathryn Brinsfield, MD, MPH
Assistant Secretary for Health Affairs and Chief Medical Officer
Washington, DC

Sally Phillips, RN, PhD (Alternate)
Deputy Director, Health Threats Resilience Division
Office of Health Affairs
Washington, D.C.

*US Department of Defense*
CDR Jesse Geibe (USN), MD, MPH, MBA (Alternate)
Defense Department Liaison Officer
Centers for Disease Control and Prevention
Atlanta, GA

**Liaison Representatives**

*Association of Public Health Laboratories (APHL)*
Christina Egan, PhD, DBSP
Chief, Biodefense Laboratory
Wadsworth Center
Albany, NY

*Association of State and Territorial Health Officials (ASTHO)*
Marissa Levine, MD, MPH
Commissioner, Virginia Department of Health
Richmond, VA

*Council of State and Territorial Epidemiologists (CSTE)*
Patricia Quinlisk, MD, MPH
Medical Director and State Epidemiologist
Iowa Department of Public Health
Des Moines, IA

*National Association of County and City Health Officials (NACCHO)*
Karen Smith, MD, MPH
Public Health Officer and Director of Public Health
Napa County Health and Human Services Agency, Public Health Division
Napa, CA

## APPENDIX B

## BSC Meeting Attendance Roster
## Atlanta, GA – April 7-8, 2014

| NAME | AFFILIATION | DAY 1 (APRIL 7, 2014) | DAY 2 (APRIL 8, 2014) |
|---|---|---|---|
| Inglesby, Thomas | Chair and SGE | In person | In person |
| Bernheim, Ruth | SGE | By phone | By phone |
| Brandeau, Margaret | SGE | In person | In person |
| McKinney, Suzet | SGE | In person | In person |
| Lumpkin, John | SGE | Absent | Absent |
| MacKenzie, Ellen | SGE | Absent | Absent |
| Mitroff, Ian | SGE | Absent | By phone |
| North, Carol | SGE | In person | In person |
| Kaplowitz, Lisa | Ex Officio (HHS) | In person | In person |
| Geibe, Jesse | Ex Officio (DoD) | By phone | By phone |
| Brinsfield, Kathryn | Ex Officio (DHS) | In person | Absent |
| Phillips, Sally | Ex Officio (DHS) | Absent | In person |
| Levine, Marissa | Liaison (ASTHO) | In person | In person |
| Curran, James | Liaison (ASPPH) | Absent | Absent |
| Egan, Christina | Liaison (APHL) | By phone | By phone |
| Quinlisk, Patricia | Liaison (CSTE) | In person | In person |
| Smith, Karen | Liaison (NACCHO) | In person | In person |

## APPENDIX C ACRONYMS

| | |
|---|---|
| **AMT** | Anthrax Management Team |
| **APHL** | Association of Public Health Laboratories |
| **ARRA/HITECH** | American Recovery and Reinvestment Act/Health Information Technology for Economic and Clinical Health Act |
| **ASPPH** | Association of Schools and Programs of Public Health |
| **ASPR** | Assistant Secretary for Preparedness and Response (HHS) |
| **ASTHO** | Association of State and Territorial Health Officers |
| **BSC** | Board of Scientific Counselors |
| **CDC** | Centers for Disease Control and Prevention |
| **CEFO** | Career Epidemiology Field Officer |
| **CSTE** | Council of State and Territorial Epidemiologists |
| **DEO** | Division of Emergency Operations (CDC) |
| **DHS** | US Department of Homeland Security |
| **DoD** | Department of Defense |
| **DSAT** | Division of Select Agents and Toxins (CDC) |
| **DSLR** | Division of State and Local Readiness (CDC) |
| **DSNS** | Division of Strategic National Stockpile (CDC) |
| **EHR** | Electronic Health Record |
| **ERPO** | Extramural Research Program Office (CDC) |
| **ExO** | Ex Officio |
| **FACA** | Federal Advisory Committee Act |
| **FDCH** | Federal Document Clearing House |
| **FOA** | Funding Opportunity Announcement |
| **FRO** | Financial Resources Office (CDC) |
| **HPA** | Healthcare Preparedness Activity (CDC) |
| **HPP** | Hospital Preparedness Program |
| **HHS** | US Department of Health and Human Services |
| **IOM** | Institute of Medicine |
| **IT** | Information Technology |
| **LO** | Learning Office (CDC) |

| | |
|---|---|
| **LRN** | Laboratory Response Network |
| **MASO** | Management Analysis and Services Office (CDC) |
| **NACCHO** | National Association of County and City Health Officials |
| **NCEH** | National Center for Environmental Health |
| **NCEZID** | National Center for Emerging and Zoonotic Infectious Disease |
| **NCIRD** | National Center for Immunization and Respiratory Diseases |
| **NIHB** | National Indian Health Board |
| **NIH** | National Institutes for Health |
| **OD** | Office of the Director |
| **OID** | Office of Infectious Diseases (CDC) |
| **OPHPR** | Office of Public Health Preparedness and Response (CDC) |
| **OPPE** | Office of Policy, Planning, and Evaluation (CDC) |
| **OSPHP** | Office of Science and Public Health Practice (CDC) |
| **PERRC** | Preparedness and Emergency Response Research Center |
| **PAHPA** | Pandemic and All-Hazards Preparedness Act (PL 109-417) |
| **PHEP** | Public Health Emergency Preparedness |
| **SGE** | Special Government Employee |
| **SLTT** | State, Local, Tribal, and Territorial |