

**CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)**

**OFFICE OF PUBLIC HEALTH PREPAREDNESS AND RESPONSE (OPHPR)**

**BOARD OF SCIENTIFIC COUNSELORS (BSC) MEETING**

**SUMMARY REPORT**

**MAY 1-2, 2012**

<b>Table of Contents</b>	<b>Page Number</b>
<b>Welcome / Introductions / Opening Remarks</b>	3
<b>Review of Federal Advisory Committee Act (FACA) Conflict of Interest</b>	3
<b>Review of Updates to OPHPR Responses to BSC Work Group Reports and Recommendations</b>	4
<b>CDC Laboratory Preparedness: Science and Practice</b>	7
<b>Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review</b>	14
<b>Research Portfolio Budget: Introduction and Overview</b>	15
<b>Anthrax Management Team Activities</b>	18
<b>Public Comment Period – Day 1</b>	24
<b>Strategic National Stockpile: Novel Approaches to Antiviral Delivery</b>	25
<b>CDC's National Health Security Preparedness Index</b>	29
<b>Updates from Liaison Representatives</b>	35
<b>Division of Strategic National Stockpile (DSNS) Programmatic Review: Proposal</b>	37
<b>Preparedness and Emergency Response Research Centers (PERRC) Response to External Peer Review</b>	42
<b>Public Comment Period – Day 2</b>	43
<b>Ask-the-Board: Estimating the Cost of Preparedness</b>	44
<b>Adjourn / Certification</b>	47
<b>Appendix A. OPHPR BSC Membership Roster</b>	48
<b>Appendix B. BSC Meeting Attendance</b>	50
<b>Appendix C. Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review</b>	51
<b>Appendix D. Preparedness and Emergency Response Research Centers (PERRCs) Response to External Peer Review</b>	58
<b>Appendix E. Acronyms</b>	70

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BOARD OF SCIENTIFIC COUNSELORS (BSC) MEETING**

**1600 Clifton Road, NE  
Atlanta, GA  
May 1-2, 2012**

**DAY 1**

**WELCOME / INDIVIDUAL INTRODUCTIONS / OPENING REMARKS**

Thomas Inglesby, MD, Chair, OPHPR BSC, and Ali Khan, MD, MPH, OPHPR Director, welcomed all participants to the BSC meeting. Dr. Khan remarked on the constantly changing threat environment, noting recent news in *The Economist* regarding experimental modification of the flu virus virulence, and thanked the Board for coming together to provide OPHPR guidance and advice and for their assistance to help CDC think critically about our efforts to keep our country safe.

**REVIEW OF FACA CONFLICT OF INTEREST**

Daniel M. Sosin, MD, MPH, Deputy Director and Chief Medical Officer, OPHPR and the Designated Federal Official (DFO) for the OPHPR BSC called the BSC meeting to order and took roll. BSC Special Government Employee (SGE) Board Members, ex officio Board Members, and liaison Board Members participating in-person and by phone are listed in Appendices A and B. Quorum was met.

Dr. Sosin reviewed the duties of the Board per the BSC charter. Dr. Sosin asked for members to self-identify any conflicts of interest; none noted. Dr. Sosin asked that if, in the process of the two days of deliberations, a BSC Member believed that they did have a conflict of interest, s/he should draw that to his attention.

**REVIEW OF UPDATES TO OPHPR RESPONSES TO BSC WORK GROUP REPORTS AND RECOMMENDATIONS**

For each recommendation for which the BSC requested an updated response, OPHPR provided written updates to the BSC members prior to the May BSC meeting. OPHPR provided responses to BSC Work Group reports and recommendations from the following Divisions:

- Division of Emergency Operations
- Division of Select Agents and Toxins (DSAT)
- Division of Strategic National Stockpile (DSNS)
- Division of State and Local Readiness (DSLRL)

BSC members were invited to comment on or ask questions regarding the updated responses in the order listed above.

**Division of Emergency Operations (DEO)**

SGE: Is the emergency operations center (EOC) to be tasked with providing all public health actions associated with CDC's polio eradication effort?

CDC: Primary leadership and response management for polio eradication will remain with CDC's Global Immunization Division in the Center for Global Health. DEO has created the supporting infrastructure and standard operating procedures within the CDC EOC.

SGE: What's the capacity of the CDC EOC to respond to the next incident?

CDC: Our capacity within the Division is very limited. At a minimum, we try to support coordination of emergency travel in support of the response. If it is a more complicated or larger response, then we have to bring in additional resources from throughout CDC to respond. In a scenario in which the DEO EOC has to support the response to more than one event at a time, it is challenging to determine when and how to effectively shut down one event response and transition support to the remaining event.

**Division of Select Agents and Toxins (DSAT)**

SGE: Responses to several of the BSC recommendations indicate that an information system to be functional in 2014 will address the issues raised in the BSC recommendation: "Can CDC be confident that the identified solution will meet future needs? That is, is DSAT 'skating to where the puck will be'?"

CDC: This BSC review was done in 2008, but many of these issues still need to be addressed. A lot of the issues are information technology (IT)-related and are being informed by current events. It is a very fluid environment, and there are political and programmatic overlays to this. If there is a topic that warrants more work with the workgroup, we can do that.

- SGE: What is the current status of SARS-associated coronavirus on the special agents and toxins list? University of Pittsburgh did a critical risk assessment of this agent and recommends special handling for similar agents that have the potential to initiate large scale epidemics.
- CDC: The Special Agents and Toxins regulations are being rewritten now. SARS-associated coronavirus will be included in the new regulations.
- SGE: **BSC Request for Information (RFI)**: At a future BSC meeting, OPHPR should consider providing the BSC a demonstration of the SABRE-CAT and other biosecurity risk evaluation software products that are being evaluated for use by DSAT and USDA.

### **Division of Strategic National Stockpile (DSNS)**

- SGE: What is the reading level of the information materials distributed by DSNS to support distribution of emergency medical supplies? CDC should ensure that the health education materials distributed make sense to our public. There's a huge body of literature that speaks to the reading level to use, the number of pictures supplementing text, etc., depending on the population we're speaking to.
- CDC: CDC reviews educational material for reading level and comprehension and agrees with the BSC comment.
- SGE: **BSC Request for Information (RFI)**: Within the DSNS response, it would be useful to know a little more about what the statement, "The principal barriers are leadership, apathy, decreasing grant funds and the lack of personnel to mount a large-scale dispensing effort." means. "Whose leadership?"
- CDC: As DSNS staff was unavailable to respond during the discussion period, CDC will provide follow-up to this question.
- SGE: What does "DSNS analyzed the utility of the 12-hour push package" mean?
- CDC: DSNS is reevaluating where they can move materials and the exact items that people need rather than sending the whole push package in the first 12 hours following the initiation of a federal response. As a result of this assessment, DSNS is slowly phasing-out some of the 12-hour push packages, but not all. In addition, CDC has multiple redundant transportation contracts – both air- and land-based. So DSNS is determining the circumstances in which they should move away from the push package to a modality that provides "just what you need."
- SGE: Another area is the issue of pediatric formulation.
- CDC: That is not a part of the DSNS review per se, but it is noted as an issue that needs to be considered.
- Ex Officio: Many of the emergency medical products needed for pediatric populations aren't actually available in the SNS but need to be developed. ASPR consults with a group of pediatrics specialists on these issues.

SGE: DSNS should also look at the extent to which we are working with other vulnerable groups to make sure they get the countermeasures they need.

CDC: CDC agrees with the BSC member statement.

**Division of State and Local Readiness (DSLRL)**

SGE: Several of the DSLR responses to BSC recommendations marked “concur in principle” have now been addressed. Did money materialize to allow DSLR to address?

CDC: No, new funding was not provided to DSLR for this purpose. DSLR established a governance board, and is using that board to define and implement a more formal process for Public Health Emergency Preparedness (PHEP) and Hospital Preparedness Program (HPP) grant alignment and performance monitoring. DSLR met the intent of what the Board had recommended in those instances where the recommendation is reported as having been addressed.

SGE: Can you speak to the prioritization shift from the Targeted Capabilities List?

CDC: OPHPR wound up with 15 PHEP capabilities and prioritized those capabilities into Tier 1 and Tier 2.

## **CDC LABORATORY PREPAREDNESS: SCIENCE AND PRACTICE**

Joanne Andreadis, PhD, OPHPR's Senior Advisor for Laboratory Preparedness

- Provided an overview of the laboratory portfolio that OPHPR funds across the agency
- Shared information on collaborative projects with other federal partners
- Introduced speakers who briefed the BSC on specific laboratory initiatives at CDC that address preparedness and response.

Laboratory portfolio

- Internally focused (PHEP is externally focused). NOTE: Both the lab portfolio and PHEP support CDC's National Strategic Plan for Public Health Preparedness and Response.
- Objective 4 of the National Strategic Plan: Advance surveillance, epidemiology, and laboratory science and service practice by integrating public health preparedness and response data reporting systems and processes, as well as increasing surveillance, epidemiology, and laboratory science research, equipment, modeling, and tools
- FY2012 lab portfolio funding ceiling: \$36,505,389

Public health labs

- Must be ready 24/7 to respond
- Federal, state, and local public health laboratories are part of a national network serving as the first line of defense against public health threats
- Engage in activities such as:
  - Investigative & emergency response
  - Surveillance
  - Training and education
  - Applied research

CDC's Laboratory Response Network (LRN)

- Integrated national and international laboratory network
- Coordinates rapid responses to public health threats

Laboratory Portfolio

- Three areas of focus
  - Public health and applied research
  - Information management
  - Laboratory diagnostics deployment and use
- Main objective: Support coordinated investments that improve our ability to identify threats, guide treatment, and inform public health action
- All-hazards approach, in support of the PHEP, includes events that are natural or environmental, chemical, biological, radiological, and explosions or trauma
- Future goals: Support development of advanced (faster, broader, more informative) diagnostics including
  - Test methods that allow us to look for thousands of targets in a single test
  - Syndrome-based panels
  - More open-ended diagnostics

Main aims/concerns for FY 2012

- Maintain and improve LRN capability and capacity
- Develop a range of capabilities (infrastructure, workforce, and diagnostics) to identify, characterize, and respond to priority known, emerging, and unknown health threats
- Improve information management systems to translate data to actionable information
- Improve methods to report and share data electronically

OPHPR funding is developing next generation laboratory capabilities

- **Public Health & Applied Research:** 36% of lab budget (~ \$12.95 million)
  - Goes toward methods and diagnostics development
  - Methods and diagnostics development helps to
    - Identify, characterize, and sequence new strains that cause disease
    - Maintain and improve methods for chemical agent detection in human samples
    - Develop nucleic acid amplification-based public health actionable assays for identification and characterization of high priority threat agents (e.g., *F. tularensis*)
    - Expand mass spectrometry toxin detection methods for botulinum toxin, anthrax lethal factor, and ricin
- **Laboratory Reporting and Data Exchange:** 14% of lab budget (~ \$5.27 million)
  - Supports the following initiatives
    - Collaborate with the Council for State and Territorial Epidemiologists (CSTE) to develop, evaluate and endorse standards for electronic detection and reporting of notifiable diseases
    - Continue Public Health Laboratory Interoperability/Electronic Test Order and Result Reporting project with the Association of Public Health Laboratories (APHL) to create seamless connectivity between CDC and partnering public health Laboratory Information Management Systems (LIMS)
    - Support secure real-time information exchange among public health partners through LRN Results Messenger (160 labs) and expand deployment of next generation Laboratory Information Management System Integration (LIMSi)
- **Agent Detect Capacity, Reagent/Supplies, and Training:** 50% of lab budget (~ \$18.28 million)
  - Supports the following
    - Specialized LRN technical training; proficiency testing; equipment maintenance; and calibration; supplies; exercises; coordination with federal, state, and local partners required to maintain a 24/7 robust response capacity for biological, chemical, or radiological health threats
    - Implementation of Quality System Regulation to improve production, inventory management, and effectiveness of LRN-B reagents and support FDA 510K regulatory submissions
    - Provide centralized specimen receiving, processing and distribution services; storing and distribute specialized reagents and kits to the LRN

CDC collaborations with other Federal Partners

- CDC cultivates collaboration with the Biomedical Advanced Research and Development Authority (BARDA), Department of Homeland Security (DHS), and Department of Defense (DOD)
- Because collaborations have been successful, we've decided to scale these projects so that we can identify areas where we can work together and have a more cooperative approach rather than going alone
- Goals of collaboration
  - Develop bioinformatics capability

- Create federal databases and a shared specimen bio-bank
- Cultivate new diagnostic assays and performance standards
- Develop standardized validation panels

### **Anthrax Diagnostics: Priority Gaps and Actions**

Conrad Quinn, PhD, Senior Fellow, National Center for Immunization and Respiratory Disease (NCIRD) described current work on the anthrax Diagnostic Development Strategy

#### Anthrax Diagnostic Development Strategy

- Aligned with the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) Scenario-Based Analysis
- PHEMCE Biologics Working Group high and medium priority anthrax diagnostics recommendations
  - *High priority*: rapid assay for the differential diagnosis of early inhalational anthrax in symptomatic individuals
  - *Medium priority*: support research on biological markers of asymptomatic infection to *B. anthracis*

CDC recommendations to address gaps fell into two groups

- **Current confirmatory diagnostics**
  - Methods include
    - Culture of isolates
    - Non-culture methods that are positive late in the course of disease
  - Antimicrobial susceptibility may not be available within a clinically relevant period
- **Improved diagnostics**
  - Goals include
    - Supporting the earliest diagnosis of infection
    - Impacting effective treatment
    - Helping define the exposure zone
    - Providing information to help triage of limited resources

CDC identified high and medium priority needs/gaps

- **High priority needs/gaps**
  - Pre-symptomatic anthrax diagnostics
  - Deployment of rapid antimicrobial susceptibility testing (r-AST) in the LRN
  - Minimizing risk of latent infection from residual spores
- **Medium priority needs/gaps**
  - Qualified user accessible, high-fidelity, whole genome sequence database for *B. anthracis*
  - Method for collection and quantification of viable airborne *B. anthracis* spores
  - Rapid culture independent tests to confirm *B. anthracis* antimicrobial susceptibility

Exposure & Pre-symptomatic Anthrax Diagnostics Program

- Involves three difference CDC National Centers
  - National Center for Immunization and Respiratory Diseases ( NCIRD)
  - National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
  - National Center for Environmental Health (NCEH)
- BARDA-funded thru FY 2013-Q1
- Designed to

- Sustain CDC Subject Matter Expertise in anthrax diagnostics, vaccines and Laboratory surge capacity
- Provide cross-trained laboratory staff for laboratory surge capacity (NCIRD-NCEZID- NCEH)
- Support development of *B. anthracis* exposure and pre-symptomatic anthrax point of care and laboratory-based diagnostic tests
- Build on CDC intellectual property and accomplishments

#### Additional Anthrax Management Team laboratory accomplishments

- Establishment of dried blood spots as a matrix for anthrax serology
- Draft laboratory diagnostic testing priority plan to guide program activities.

### **Laboratory Response Network Diagnostics Initiatives**

Toby Merlin, MD, Director, Division of Preparedness & Emerging Infections, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), provided an introduction to the Laboratory Response Network (LRN)

#### LRN

- Network of membership labs
- Labs provide highly standardized and accurate testing that can assist and inform public health or law enforcement in their decisions or actions
- Started with a focus on biological agents but has also moved to include chemical agents
- An end-to-end test development and deployment system
  - Assay development
  - Assay performance validation
  - Proficiency testing
  - Operational diagnostic testing

#### LRN structure

- **National Labs** (n=3): responsible for
  - Specialized strain characterizations
  - Select agent activity
  - Working with highly infectious biological agents and toxins
- **Reference Labs** (n>150) responsible for investigation and/or referral of samples
  - Includes public health, military, veterinary, agriculture, food, and water testing labs
- **Sentinel Labs** (n~1,000s)
  - Responsible for
    - Routine diagnostic services
    - Rule-out diagnostic testing
    - Referral steps in specimen identification process
  - Can test samples to determine if they should be shipped to reference or national labs for further testing

Current efforts in LRN testing (in collaboration with Department of Homeland Security) will yield

- Improved ricin antigen detection assay
- Improved *F. tularensis*, *Y. pestis*, and *Burkholderia* species real-time polymerase chain reaction (PCR) assays
- Rapid antimicrobial susceptibility testing for *B. anthracis* and *Y. pestis*

- *Rickettsia* species real-time PCR assay
- Strain repositories to support Public Health Actionable Assay (PHAA) standards

#### R&D efforts

- Use a tiered technology approach to pathogen identification including the following
  - MassTag PCR: supports rapid multiplexed PCR detection of up to 20 known biothreat agents)
  - Microarray testing: uses microarrays for identification and characterization of unknown or emerging biothreats
  - High throughput sequencing and metagenomic analysis: uses advanced laboratory instrumentation and robust bioinformatics to identify and characterize advanced or unknown biothreats

#### Current LRN challenges

- Declining preparedness funding
- Technology decision points (e.g., when/how to move from uniplex to multiplex testing)
- Increasing need for bioinformatics
- Surge capacity

### **CDC Laboratory Response to Chemical and Radiological Threat Agents**

Jim Pirkle, MD, PhD, Director, Division of Laboratory Sciences (DLS), National Center for Environmental Health (NCEH), discussed the chemical and radiological side of a laboratory response

NCEH laboratory group (~ 430 staff)

#### Chemical threat agents

- Goals
  - Improve rapid detection, diagnosis, treatment and prevention of unsafe exposures to chemical threat agents
- Methods
  - Rapid Toxic Screen (developed by DLS)
    - Measures 150 chemicals in the blood and urine
    - Requires the use of 22 mass spectrometers and 100 people
    - Chemicals included in the Rapid Toxic Screen include
      - Nerve agents (sarin, soman, tabun, VX)
      - Mustards (nitrogen and sulfur) and incapacitating agents
      - Ricin, mycotoxins
      - Cyanide-based chemicals, toxic metals
      - Drugs of abuse
- Surge capacity
  - DLS accesses all mass spectrometry laboratories and staff
  - NCEH cross-trains its staff
  - Can expand to state Public Health Laboratories to help analyze samples

#### Radiological threat agents

- Goals

- Improve rapid detection, diagnosis, treatment and prevention of unsafe exposures to radiological threat agents by measuring as many radionuclides as possible in urine
- Methods
  - DLS is developing screen to rapidly measures 22 different radionuclides
  - Requires 20 instruments and 44 people
- Concerns
  - Lesser: Nuclear blast or a dirty bomb
  - Greater: Poisoning and dispersive devices
- Challenges
  - Radionuclides come in several forms
  - Radioactive isotopes release alpha, beta, and gamma radiation
- Surge capacity
  - Surge capacity for large numbers of samples is currently zero
  - No additional capacity within DLS due to unique instrument requirements
  - No state Laboratory Response Network-Radiological (LRN-R) exists
  - Current plans are for the establishment of 10 state LRN-R's, but funding for this initiative is pending

#### QUESTIONS & DISCUSSION (LABORATORY PREPAREDNESS)

SGE: To what extent are you trying to use a large database to be used by others in the future?

CDC: CDC built MicrobeNet, a user-friendly online database for pathogen identification which will allow us to share our phenotypic and genotypic knowledge of our vast microbial collection with the public health, medical and scientific communities and allow them even faster access to information that could lead to rapid response to emerging infectious disease problems. We also have the ability to link what we're doing together with other federal agencies. We believe in liberating data and information.

SGE: On the chemical side, how soon can you get lab results back?

CDC: About 8 chemicals within 4 hours; everything else within 36 hours.

SGE: Can you talk more about mass spectrometry and using it in toxics identification? How deployable is it and is that an important part of the system?

CDC: We need to make sure we have a good capacity. We need to have the ability to perform 5,000 assays a day and right now we're at 400. Therefore it makes sense to have dedicated labs with mass spectrometry expertise, and once you get the lab capability established in several places you can have these laboratories to run it through. In the next 5 to 7 years, we need to have those dedicated labs.

Liaison: It was agreed that we need to preserve the capability to perform microorganism cultures. So we need to devise a system to maintain those capabilities. We also need to recognize that metagenomics is the future and begin to plan for that transition now.

- CDC: I would put in a plug for improved sample collection that will enable us to have a preserved sample that is there so that you can reference it in the future.
- CDC: Part of the CDC strategy is to stand up additional bioinformatics capability here so that we can be more involved. And the interagency activities we're involved in are helping us to do that.
- SGE: To what extent can we measure degradation of public health lab capacity? Getting information on what is happening in the field is critical.
- CDC: There are a series of PHEP laboratory capability measures which should be sensitive to those changes. The LRN has identified some weaknesses in their capabilities including limited radiological lab capability.

**CAREER EPIDEMIOLOGY FIELD OFFICER (CEFO) PROGRAM RESPONSE TO EXTERNAL PEER REVIEW**

John Horan, MD, Director, CEFO Program, OPHPR, responded to the BSC working group's nine (9) recommendations – concurring or concurring in principle with all recommendations (see: Appendix C)

**QUESTIONS & DISCUSSION (PROGRAM RESPONSE TO CEFO PEER REVIEW)**

SGE: I understand the practical aspects of figuring out what CEFOs do in order to define core competencies, but it is overly restrictive. This approach may be a very circular way of defining CEFO core competencies that provide the states with greater service. I would urge you not to stop there. It may be a good place to start but not to stop there.

SGE: This is a wonderful program, but it's not clear what it wants to be. How do you know that the CEFOs are in the right place, doing the right thing? The CEFOs come from many backgrounds; there's got to be a vision of what the states need and what the CEFOs can bring to bear. This will help to prescribe a career growth for the CEFO and then you have a win-win scenario.

SGE: I'm struck by the fact that you can't offer assurance of continued employment. Is this a position that's considered risky and if so, are you getting the best people?

CDC: Yes, some people have indicated that they're concerned about risk. Whether the risk is deterring others from coming into the field, I'm not sure. It may be the line of really good people is not as long as it used to be, but the ones we have are top-notch.

SGE: When did this get started?

CDC: It started in 2002 very closely related to the events that occurred in the fall of 2001.

SGE: Is this the maximum number of CEFOs in the field?

CDC: Currently, 32 CEFOs are in the field. We have requests from two states to fill two additional CEFO positions.

SGE: You said ASPR declined participation in cost-sharing to help sustain one or more CEFO field positions. Can you tell me why?

CDC: Lack of money in the Hospital Preparedness Program (HPP).

Ex officio: While the PHEP and HPP cooperative agreements were aligned, funding wasn't merged. There are different authorizations for the two programs and you have to work carefully around that.

SGE: It seems that one of the issues is to ensure that CEFOs are as successful as possible in their places. I think a mentoring or coaching program for the CEFOs to deal with issues that arise in the working place would be helpful.

## RESEARCH PORTFOLIO BUDGET: INTRODUCTION AND OVERVIEW

Bill Digioia, MBA, MA, Associate Director for Financial Resources Office (FRO), OPHPR, provided an overview of the OPHPR budget for FY 2012

OPHPR receives Congressional appropriations in the form of budget activities

- FY012 ceiling: \$1,280,632,457
  - \$152 million goes to other CDC Centers and Offices to support strategic objectives
  - OPHPR is one of the few centers within CDC that disseminates funds to other Centers and Offices within the Agency
  - Bulk of the money funds multi-year projects originally awarded as continuation projects for a specified time period.
- Two project review periods per annum (Reporting Period 1 and 2)
  - CDC programs report what they are doing with the money
  - Objectives and deliverables defined
  - Progress toward achieving objectives and deliverables is reported

OPHPR portfolio

- Projects divided into the following categories (% of Total FY 2012 OPHPR funds per category):
  - State/Local Public Health Preparedness (48.8%)
  - Strategic National Stockpile (36.0%)
  - Response/Recovery & Program Support (6.0%)
  - Epidemiology and Surveillance (2.9%)
  - Laboratory (2.9%)
  - Medical Countermeasures (3.4%)

OPHPR-funded epidemiology and surveillance projects at CDC

- 19 projects (largely conducted outside of OPHPR)
- Three centers/offices receive the most funding: National Center for Environmental Health (NCEH), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), and Office of Surveillance, Epidemiology, and Laboratory Services (OSELs)
- Projects examples include
  - **Data Exchange and Dashboard Platforms:** web-based system to join together epidemiologic and laboratory data in real time and enhance electronic information sharing of surveillance, outbreak, recall, and other data sharing
  - **Epidemiology Tools for Response:** developing new functionality in Epi-Info to quickly create questionnaires based on standard vocabulary from the Public Health Information
  - **Preparedness and Response Operations:** providing training and tools necessary for public health professionals to prepare and respond effectively to nuclear or radiological events
  - **Preparedness Modeling:** providing the quantitative analytical expertise to comprehend the public health impact of, and to forecast the effects of interventions for a broad spectrum of public health sequelae associated with natural and human-caused disasters, including but not limited to disease outbreaks, chemical releases, radiological exposures, explosions, and natural disasters

- **Training/Capacity Building:** enhancing state and local epidemiologic capacity for public health preparedness and response by assigning CDC epidemiologists to state and local health departments.
- **Surveillance Systems:** utilizing poison center data for real-time national surveillance

OPHPR-funded laboratory projects at CDC:

- 19 projects
- Project examples include
  - **Agent Detection:** radionuclide screening and maintenance of laboratory capacity to detect and characterize 22 priority radionuclides, likely to be used in terrorist attacks
  - **Data Exchange:** maintenance and support in developing and promoting standard solutions for laboratory data management and exchange
  - **Method and Assay Development:** mass spectrometry toxin detection (botulism, anthrax and ricin) to strengthen diagnosis, treatment and prevention
  - **Reagents/Supplies:** providing reagents, equipment and supplies to Laboratory Response Network (LRN) laboratories
  - **Training:** support of existing and new LRN protocols (maintaining bioterrorism agent detection proficiency)

OPHPR-funded Medical Countermeasures projects at CDC

- 19 projects
- Project examples include
  - **Development of Informational Resources:** quick reference cards for hazardous agents generically referred to as *Non-Traditional Agents*
  - **Stakeholder Participation and Priority Setting:** Coordination with partner agencies such as FDA in healthcare delivery and adverse drug event (ADE) monitoring
  - **Achieving Regulation Compliance:** ensuring that the receipt, storage, deployment and utilization of all current and future SNS-stockpiled investigational medical countermeasures for CBRN and other public health threat agents comply with FDA regulations (Code of Federal Regulations Title 21)
  - **Vaccines:** maintenance and storage of smallpox therapeutics and ensuring a continuous manufacturing capability allowing for a surge capacity if needed

FY2013 funding allocation process

- OPHPR is currently soliciting new projects from the CDC community that address any one of 39 initiatives that align with OPHPR's 8 strategic plan objectives

**QUESTIONS & DISCUSSION (RESEARCH PORTFOLIO BUDGET)**

SGE: What will OPHPR's FY2013 budget look like if there's a continuing resolution, and what does sequestration do to the office?

CDC: If there's a continuing resolution (CR), CDC programs can spend funds equivalent to the amount they had spent historically during the previous year. We look at what was obligated in the previous year and that's what we will have to operate with under the CR. If sequestration occurs, all bets are off in relationship to this. We will have to go back to the budget reduction amount, determine where we can sustain the cuts, and go from there.

SGE: So there will be a target for the office?

CDC: Sequestration is applied at the budget authority level. So there's some latitude but only within those lines. We used to have very broad budget authority, but now there's not a lot of latitude.

CDC: OPHPR does get significant dollars, but our current budget is about two-thirds of what it was a decade ago. By the time you do the slice and dice, there's not a lot that goes to the local level, and we know what those impacts are. The other thing that's gone is the evidence base for the public health preparedness program. There are no additional dollars for research and learning centers. Over half the money received by our office goes out to other programs. We would like to make sure we retain this funding approach going into 2013. Preserving those dollars for state and locals is extremely important. We try to be strategic in where we make the cuts so it's not slice and dice across the budget. We try to be creative when looking at project costs and cost-savings so there is minimal impact.

SGE: The last set of tables of initiatives that align with OPHPR strategic objectives -- talk about how that was put together and where does that come from?

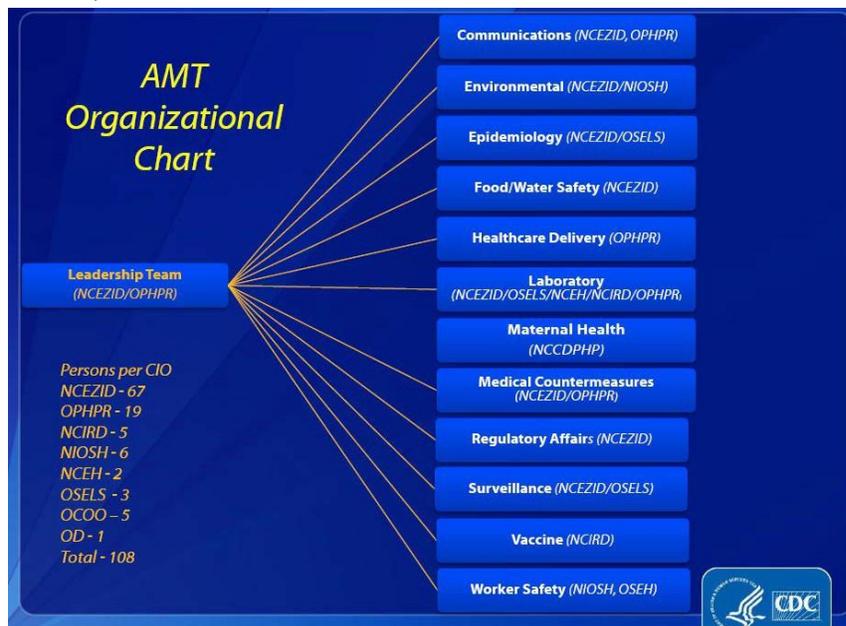
CDC: These initiatives were defined by workgroups. CDC and OPHPR stakeholders came up with these initiatives. CDC programs will be able to propose projects that address specific initiatives. After all project proposals come to OPHPR and are reviewed and scored, decisions are made on which to fund.

## ANTHRAX MANAGEMENT TEAM ACTIVITIES

Tracee Treadwell, RN, DVM, MPH, Associate Director for Infectious Disease Preparedness, National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), provided an introduction to the activities of CDC's agency-wide Anthrax Management Team

### Anthrax Management Team (AMT)

- Addresses a broad range of topics including
  - Surveillance
  - Epidemiology
  - Outbreak response and control
  - Identification and characterization of organisms
- Created to prioritize government activities to address anthrax threats and increase downstream impact of medical countermeasure-related activities
  - 2001: interest in anthrax peaked; interest has been increasing over last 1-2 years
  - Limited staffing and resources currently available
- Goals
  - Coordinate, integrate, and prioritize activities
  - Improve external engagement and visibility of issues
  - Utilize resources efficiently
  - Improve tracking and follow-through of the activities
- Structure
  - Agency-wide effort
  - AMT has been structured to address the 12 functions described in the AMT organizational chart (see Figure)
- Achievable priorities
  - Identified by AMT, agreed upon by senior CDC leadership, reviewed and approved by CDC Director
  - Spend plan for priorities submitted to OPHPR



## AMT (continued)

- Activities
  - Consolidation of information about anthrax in one place on the CDC website
  - Several meetings around medical countermeasures concerning treatment of exposed populations
  - Worker health and safety: update health guidance documents for workers involved in conducting environmental sampling
- Challenges
  - Gaps in the science
  - Lack of established processes
  - Eroding LRN laboratory capability and capacity
- Needs
  - Better coordination and integration of anthrax activities
  - Identified and redirected resources and personnel
  - Enterprise-wide commitment and engagement for critical studies to inform public health policies and clinical utilization above and beyond what is needed for an Emergency Use Authorization (EUA) or licensure
  - FDA commitment to address regulatory scientific challenges

**Approaches to Prioritize Use of Anthrax Vaccine**

Ray Strikas, MD, MPH, Education Team Lead, National Center for Immunization and Respiratory Disease, reported on efforts to define approaches to prioritize use of Anthrax Vaccine Absorbed

## Anthrax Vaccine Absorbed (AVA)

- Marketed as BioThrax
- Only licensed anthrax vaccine for use in the United States
- Licensed for persons aged 18-65 years of age for pre-exposure use as a series of five-intramuscular injections
  - Use of AVA in ages <18 or >65 not approved
- For post-exposure prophylaxis (PEP): CDC recommends 60 days of antimicrobials in combination with 3 subcutaneous doses of AVA
  - PEP use of AVA not approved

## Current work with FDA

- AVA use as an Investigational New Drug (IND) for PEP in adults and children (non-mass event)
- IND for PEP in children during mass event (non-research and research)
- Emergency Use Authorization (EUA) for PEP in adults in an event

## Wide-area aerosol exposure event

- Refers to a large outdoor aerosol attack
- Potential to expose hundreds of thousands of people to anthrax spores
- Primary and secondary aerosols may occur
- Risk of spore inhalation better understood for primary aerosolization, compared to re-aerosolization
- Primary interventions (e.g., administrative and engineering controls): effective ways to limit responder exposure, protect health

Vaccine distribution/administration focused on post-event AVA prioritization in the case of wide-area anthrax aerosol attack

- AVA supplies may be insufficient to protect the entire potentially-exposed population in wide-area anthrax aerosol attack

Policy for post-exposure prophylaxis AVA use after a wide-area anthrax aerosol attack

- Subject to change when (or if) new information becomes available
- Coordinated with ([Guidance for protecting responders' health during the first week following a wide-area aerosol anthrax attack](#))
- Summer 2011: first draft of PEP AVA use policy
  - Eleven subject matter experts reviewed guidance, provided input
  - Public focus groups held to validate whether guidance makes sense
  - Briefings within CDC and with other federal partners have been planned
- Next steps and anticipated timeline
  - April-May 2012: Finish meetings with focus groups and review focus group work
  - June-July 2012: Reassess and meet with steering group, experts
  - Fall 2012: Finalize findings, federal review, policy guidance approval
  - 2013: Develop implementation guidance with partners
- Policy document assumptions
  - Limited amount of AVA will be available post-event
  - Vaccination won't begin until 7-10 days post- event
  - Directed toward Federal, State, and local health and emergency management officials
- Policy does not consider
  - Long-term exposure risks to anthrax aerosols (> 6 months)
  - Prioritization for antibiotics
  - Specific worker safety requirements (e.g., personal protective equipment [PPE])
  - Policy decisions regarding **pre-event** AVA vaccination
  - How to operationalize or implement the plan

Important prioritization principles

- Primary aerosolization poses a greater risk than secondary aerosolization
- Responder categories based on activity and not by job title

Prioritization scheme designed to tell who should receive vaccination post exposure

- **TIER 1**
  - Individuals with potential exposure to primary aerosols of *B. anthracis* during the initial release
  - Category 1 responders (i.e., forensic investigators, environmental remediation)
- **TIER 2**
  - Individuals without exposure to primary aerosols of *B. anthracis* BUT at potential risk for exposure to secondary aerosols of *B. anthracis*
  - Non-Category 1 responders and laboratorians without exposure to primary aerosols of *B. anthracis*
- **TIER 3**
  - Individuals traveling through affected areas
  - Individuals living in areas bordering affected areas

Focus groups (20 groups each containing 7 to 9 people)

- Input sought from the public on prioritization criteria and recommendations
- To be comprised of members of the general public, first responders, public health workers
- Being held in two cities: Seattle and one other (to be determined)

#### Additional vaccine team activities

- Developing vaccination cards
- Pediatric post-exposure prophylaxis protocols
- Continuing discussions with FDA regarding route of vaccine administration and dosing schedule

#### **Anthrax Management Team (AMT) Communication Activities**

John O'Connor, MS, Associate Director for Communications Science, National Center for Emerging and Zoonotic Infectious Diseases, reported on the AMT's communications activities

#### AMT Communications Team identified

- CDC communications gaps related to the release of weaponized anthrax
- Need for consistent, up-to-date information that people can easily find at a single website ([CDC Anthrax Information Page](#))
- Need for off-the-shelf communications products to be used immediately after an anthrax attack

#### Dual phase plan for addressing communication gaps, focusing on risk communication

- **EARLY PHASE**
  - Communication products directed at the general public
  - Focusing on first 72 hours post attack
  - Sample messaging: *Every day counts, get treatment, stay alive*
- **LATE PHASE**
  - Communication products for other audiences (e.g., healthcare providers)
  - Focusing on 72 hours and later

#### Communication-specific goals

- Maintain credibility and public trust
  - Provide regular, timely, accurate, accessible, consistent and comprehensive information
  - Avoid speculation and conjecture
  - Dispel rumors, misinformation and misperceptions ASAP
- Identify, train, and use highly credible spokespersons
- Use all available channels of communications to ensure accessibility and availability in languages other than English

#### Results of a national survey conducted to help inform messaging (3,698 respondents)

- Is inhalational anthrax a life-threatening disease?: >50%: did not know or were not sure if inhalational anthrax is life-threatening
- Can inhalational anthrax be passed from one person to another?
  - 37% of respondents knew that anthrax is not a contagious disease
  - ~50% were unsure
  - 14% thought inhalational anthrax is contagious
- Would you comply with treatment?
  - ~84% of respondents agreed to take antibiotics for a full 60 days if prescribed by a physician
- If instructed to stay in place, would you do so?
  - Only ~27% of respondents said they would stay in a community contaminated by anthrax if officials told them to stay there; suggests that messaging is needed for individuals evacuating as well as those staying in place

Under development: two CDC anthrax websites

- Website 1: Day-to-day CDC website with consistent, up-to-date information about anthrax
- Website 2: Activation-ready site for use only if an attack occurs
  - To include information that people need to know to survive
  - Scenario-specific information can be added when available
- Timeline for website completion
  - FY 2012
    - Mar: Vet website designs with AMT leadership and CIOs
    - Apr-May: Build out both websites
    - May: Test and review websites
    - Jun-Jul: Finalize designs and content for websites, vet with AMT
    - Aug: Clear content
    - Sep: Launch day-to-day website; dark site ready when needed
  - FY 2013
    - Update with new guidance and communications materials

Additional communication steps

- Producing videos (at the request of the AMT) for use during a response
- Testing anthrax messages and materials with various audiences
- Work with partners and stakeholders
- Media training

Questions for the BSC

- Are these key messages appropriate during and event?
- Are there things we're missing?
- Do the key messages make sense?

#### **QUESTIONS AND DISCUSSION (ANTHRAX MANAGEMENT TEAM ACTIVITIES)**

BSC: I know there was a very well publicized exercise, in 2001, focused on smallpox, and its finding was that we're not prepared. How are we using past lessons learned? To what extent are you working with lawyers and ethicists to find out if people resist care and or if they don't want countermeasures? Are you working with those individuals?

CDC: A lot of exercises have occurred. One of the first things we did was to review after action reports. We found that many of the AMT-relevant priorities are not unique to an anthrax event response. The AMT is also trying to leverage what our colleagues in influenza are doing. Some preparedness and response processes are not specific to a disease and we're looking to see how we can use those more globally. That is also the same for communications – to try to learn about what worked and didn't work. We have had several ethicists review the guidance draft and have gathered their input. We're working regularly with our general counsel and FDA's guidance council on what can be put into a guidance document. We can anticipate some of the issues. We want to first figure out what are the barriers, so we are in the early stages of this process.

BSC: If it's a wide-spread release, no matter how robust the response, you can't get everyone through the system at once. So it goes beyond communication. How do we summon people? Do we do it alphabetically or by zip code or eye color? And those questions need to be look at with ethicists as well.

- CDC: That is very dependent upon the jurisdiction and what the mass prophylaxis campaign is. Each jurisdiction has some special considerations, and so they need to make some decisions on how they plan to operate based on those. There is no homogenous solution. It depends on each individual state's plans.
- Liaison: So maybe there should be a sharing of best practices.
- CDC: Good point. We have tried to promote the sharing of best practices and will help facilitate that. We operate several listservs. We have some large scale and regional summits where folks are brought together and we could use those for disseminating best practices. You are also saying that we need a backup plan. If so, who should facilitate that?
- Ex Officio: The DOD has been very good about stepping up to the plate and offering their resources. There're discussions on expanding the US Postal Service model. There is a lot of innovation out there and a number of exercises going on.
- CDC: The dispensing cycle is the hardest piece of this to make work. There are so many different modalities. We've created some partnerships with some non-traditional partners to assess this.
- CDC: So we need to consider multiple strategies to address dispensing?
- Ex Officio: We try to make these guidelines very static and they're not. It's not one size fits all. There are a lot of moving parts, and it continues to evolve.
- BSC: Are all the critical people involved in the process? You could try different models and see if they work. Doing that might reveal individuals who are being left out. Or you could superimpose your model over the top of an already used model and see where the outliers are or what is not being included.
- Liaison: By the time this prioritization is released, will the pediatric issues have been resolved?
- CDC: There's agreement that if children have had exposure we recommend the use of the vaccine. We heard from individuals who provide vaccine that the word "investigational" makes people think that you're using their children to test the vaccine. The LRN staff will be recommended for pre-exposure vaccination. CDC has begun to survey the staff to see if they would like it. Vaccination is voluntary.
- Liaison: You talked about a video and I'm thinking about the distribution model. The messaging and the way you distribute become complicated when looking at how to message for children and adult.
- Liaison: I didn't hear anything about laboratory testing and I think that's an area where we need to manage the public's expectation.
- CDC: We'll add it to the communication products, including fact sheets.

- BSC: I didn't hear about getting input from first responders in the focus groups. I know that in some of the planning we were doing, we ran into some unexpected responses from first responders.
- CDC: We did meet last week with first responders; we'll do more of that going forward.
- BSC: You should explore having conversations with Google and other search engines that if an event happens they flip a switch so that anthrax information would be the first thing to populate in the search.
- Liaison: A template for state and local health departments and templates for nongovernmental groups should be accessible for press release. And can you elaborate on the vaccine card?
- CDC: It is part of the toolkit. We're guessing a little bit on what the scenario would be like. For example, if a person moves from one place to another, they need to have access to that information because each locale is not homogeneous in their processes.
- BSC: Physicians and hospital communities also need messaging. They need information in a way that is useable to them.
- CDC: As guidance is being recommended, we have access to members in American College of Obstetrics and Gynecology (ACOG) to help develop communication materials for their constituency.
- BSC: Communications have to be multifaceted.
- CDC: We're working on a couple of different levels right now. If an event were to occur today, there's a group that gets activated. They will provide communications on a variety of fronts. They check on various media outlets to see where there are inconsistencies and they address those miscommunications. There is no one easy way to communicate.

### **PUBLIC COMMENT PERIOD (DAY 1)**

No public comments were made.

**STRATEGIC NATIONAL STOCKPILE: NOVEL APPROACHES TO ANTIVIRAL DELIVERY**

Anita Patel, PharmD, MS, Division of Strategic National Stockpile (DSNS), OPHPR, reported on CDC's work to evaluate different strategies for distribution of antivirals during an influenza pandemic or a similar scenario

Timely antiviral treatment during an influenza pandemic

- Depends on success at every step
- DSNS wanted to evaluate possible process improvements
- In the 2009 H1N1 pandemic, commercial supply of antivirals was adequate but state and local health departments reported challenges
  - Planning assumptions did not match reality of the actual pandemic
  - Lacked visibility of commercial supply chain and state/local stores of antivirals
  - Pediatric formulation temporarily unavailable at peak
  - "Spot" shortages reported
  - Lack of standardized tracking methods
  - Staffing issues (in some states) impacted ability to distribute and dispense antivirals

Question: Can everyday systems be used to effectively distribute and dispense antivirals during a pandemic?

- Three large distributors distribute 90-95% of all pharmaceuticals in the US
  - Delivery options: next-day, same-day or emergency
  - Expertise: meeting demand, ordering, forecasting, inventory management, tracking, distribution
- ~60,000 pharmacies in the United States
  - Pharmaceuticals are their core business
  - Accessible with convenient hours
- Pharmacists
  - Highly trusted
  - Can identify high risk patients
  - Expertise in medication distribution, dispensing, tracking, monitoring, patient counseling
- ~93% of Americans currently live within 5 miles of a retail pharmacy

DSNS Antiviral Dispensing Project

- May 2011 through August 2012
- Key partners: ASTHO, NACCHO, American Pharmacists Association, National Association of Chain Drug Stores, National Community Pharmacists Association, and Rx Response
- Goal: improve availability of and access to antivirals during an influenza pandemic
- Key activities
  - Explore feasibility, acceptability, cost, and impact of leveraging existing systems by sending SNS antivirals to pharmaceutical distributors and pharmacies to distribute and dispense
  - Develop processes to align with usual commercial system practices (inventory control, pharmacy ordering, tracking, billing)
  - Explore innovative financing mechanisms, e.g., how dispensing fees could be covered for uninsured/underinsured
- Key areas for investigation

- What is the right proportion of antivirals that DSNS should sent to state health departments and what proportion to distributors?
- What should be the triggers for release of DSNS stockpiles?
- How does DSNS best leverage the inherent strengths of its key partners?
- How should state/locally stockpiled antivirals be used?
- Appropriate distribution strategies: “Prime the pump”? Per-capita? Demand-based? Mixed model?
- Financing: How does the USG assure that cost/payment is not a barrier

A successful alternative antiviral drug distribution plan must

- Be feasible
- Address legal barriers, commercial partner interest, retail pharmacy throughput/simulations, and reach to non-pharmacy locations
- Meet the needs of uninsured
- Have the ability to track assets
- Support cost analysis
- Be accepted by public health, distributors, pharmacy executives, pharmacists, providers, and the public

#### **QUESTIONS & DISCUSSION (SNS: NOVEL APPROACHES TO ANTIVIRAL DELIVERY)**

Ex Officio: How do you track who pays for what?

CDC: Users could be charged a dispensing fee. But “Who should pick up that charge?” is a concern and an issue we’re trying to address.

BSC: Texas used this model, and the state contracted with the pharmacy. Physicians identified patients as uninsured or insured to determine which stockpile was used.

Liaison: Tracking was the biggest issue. A different Medicaid number was to be used for antivirals that came from the stockpile. My concern was people coming by and getting medication over and over again. But it worked very well in Virginia.

BSC: I am a little concerned with the process model that indicates that state or local health departments would be responsible for providing antivirals to the uninsured. This isn’t prophylaxis. This is filling physician prescriptions. LHDs are not equipped to do this efficiently.

CDC: We did some modeling with Cornell University investigators based on adjusted epidemiological estimates derived from 4 previous pandemic scenarios. The goal was to maximize the percent of clinically ill people who can get their antiviral prescription filled at a pharmacy during a pandemic. We were looking at flu epidemiology to help predict triggers for release of federal assets. We wanted to minimize stock outs at store levels by optimizing inventory in the supply chain.

We hope that this model will allow us to estimate the approximate burn rate of antivirals distributed through commercial systems in relation to epidemiological data. We are trying to establish how many partners we want in order to determine how many

distributors/pharmacies are needed and the impact of one vs. multiple commercial partnerships.

The pharmacy simulations are being done in collaboration with ASTHO, National Association of Chain Drug Stores (NACDS), and National Association of Community Pharmacists (NACP). The focus of the simulations is to examine throughput and surge capabilities of average pharmacies. The independent pharmacy simulation occurred in March 2012, so we have some information. The large scale simulation will be in June 2012. The simulations look at dispensing under traditional pharmacy practice principles. The pharmacy will operate at surge levels and this will mirror the normal prescription environment. We are looking to capture details on prescriptions filled and patients served concentrating particularly on: quantity, accuracy, time, and quality of care.

The simulation will identify bottlenecks in dispensing and provide potential solutions.

It is absolutely critical that we have asset visibility, be able to pull and manage the data, and be able to determine the appropriate level of information sharing for partners.

BSC: How are you working with vulnerable populations (e.g., the elderly, disabled)?

CDC: We found that many of those individuals have already partnered with pharmacies that deliver to them. We assume that those pharmacies will still be offering that as a service. But if that changes, we will need to look at that.

BSC: I would suggest that we don't completely assume business as usual.

BSC: Have you simulated a scenario that required use of surge capacity?

CDC: From a distribution standpoint, it's not a problem. From a pharmacy position, it depends on how much they can handle. We're simulating an alternative supply chain solution. It doesn't try to model the existing pharmaceutical supply chain process. Real operations have not been applied here.

BSC: I'm concerned that you may be comparing apples to oranges in these systems.

CDC: I think it is apples and oranges. We would not compare what we're doing here to that of an anthrax response. We believe we have the capability and we should leverage that. However, we may need to reconcile our outcome measures.

Liaison: I think we should use the commercial supply chain to get things to people. The illustration indicating that health departments would dispense to underserved and tribal nation populations and to those attending public health clinics does not represent all the dispensing locations. Also, how do you avoid the public health system competing with the commercial supply chain? I think that's an important issue. Public health is there to serve underserved populations.

BSC: And I don't think we [public health] should [serve the underserved populations] because we might exacerbate the problem. I would say setting up a two-tiered system may make things worse.

- BSC: The system has to be customized for each jurisdiction. There are some health departments that do provide services to the poor and uninsured, and others have community health locations.
- CDC: We also need to take into account the learning curve of the pharmacy staff. We need to brief them pre-pandemic so they will be more prepared.
- BSC: What about allergies?
- CDC: As part of the simulation we included individuals with asthma and chronic obstructive pulmonary disease. The pharmacy was aware of the preexisting condition and 3 out of 4 of those individuals were properly identified
- BSC: And the pharmacy should be a secondary check point.
- CDC: Regarding the disabled and vulnerable populations, we're looking at faith-based community as well as other key partners to assist with that. We are also testing the willingness of others to go out and get the prescriptions for them. There's high acceptability from the states to send someone out to gather their prescriptions.
- BSC: The assumption is that everyone will see a physician to get a prescription?
- CDC: Yes, and we're also thinking of a nurse triage line. If people qualify for a prescription, that prescription will be called into the pharmacy.
- BSC: There's a shortage of pharmacists; so in a surge, I'm not sure if they're the way to go.
- BSC: You don't anticipate changes in antiviral thresholds?
- CDC: We could see some adjustments and changes. You will see a maximum on the throughput end. Scalability of the model is there.

**ADJOURN DAY 1**

**DAY 2****CDC'S NATIONAL HEALTH SECURITY PREPAREDNESS INDEX**

Yoon Miller, Health Scientist, Office of Policy, Planning, and Evaluation, OPHPR provided an introduction to CDC's National Health Security Preparedness Index (NHSPI) project

## Measuring preparedness

- Since 2001, many different benchmarks employed to measure preparedness
- No composite representation of preparedness capabilities across the public health spectrum currently exists
- Over the past decade, significant resources have been invested in developing and strengthening the national health security infrastructure
- Current measurement needs
  - Quantify preparedness at state and local levels
  - Evaluate/quantify progress
  - Estimate return on investment for preparing and protecting domestic health security

## National Health Security Preparedness Index (NHSPI) is designed to

- Identify best practices
- Identify gaps (to provide opportunities for improvement)
- Raise awareness of next generation trends (to allow more effective response to emerging threats)
- Support evidence-based decisions
- Provide guidance on how to build/strengthen preparedness

NHSPI not designed to be used punitively

## NHSPI

- Developed by ASTHO under cooperative agreement with CDC
- Project team structure being used to design and launch NHSPI
- Scope
  - Make use of already established, relevant and applicable metrics
  - Designed to create new metrics only where gaps exist
  - To include viewpoints and feedback from the broader preparedness community
- Mission
  - Present an accurate portrayal of public health and health system preparedness
  - Provide relevant, actionable information to drive decision-making and continuous improvement of national health security
- Structure
  - **Steering committee** (16 members; supported by CDC and ASTHO)
    - Provide guidance, direction, and assistance in decision-making
    - Protect integrity of project charter, mission, vision
  - **Governance workgroup**
    - Serves the Steering committee
    - Advises the steering committee on major decisions
  - **Model Design and Stakeholder Communications**
    - Are under the Governance workgroup
  - **Invited observers:** healthcare system oriented individuals and organizations

**NHSPI: Year 1 Project Plan**

- Four phases: ***kickoff and requirements; design; test; and launch***
- Under each phase, several activities scheduled to occur
- Kickoff (March 8, 2012) included the following activities
  - Mission statement created and adopted
  - Purpose of NHSPI defined along five dimensions
  - Chairs and members seated for all workgroups
  - Invited observers invited to represent key stakeholders so they can shadow process
  - Research agenda established – Association of Schools of Public Health (ASPH) and Preparedness and Emergency Response Research Center (PERRC) principal investigators participating in two topic areas
  - Public website for project under development by ASTHO
  - List of potential Index measures generated and compiled

**National Health Security Preparedness Index Stakeholder Feedback**

James Blumenstock, MA, Chief Program Officer, Public Health Practice, ASTHO, serves as ASTHO's project director and reported on initial stakeholder feedback regarding the NHSPI project

**2012 Public Health Preparedness Summit: NHSPI stakeholder feedback**

- First opportunity to get feedback on NHSPI from the practice community
- Overall reaction: very guarded support
- Two primary concerns from state and local public health
  - “Will this be used punitively?”
  - “Is there an actual need for NHSPI considering the development of measures for the 15 public health preparedness capabilities and PHEP/HPP Grant Alignment?”
- Additional thoughts/comments/concerns/questions
  - How will NHSPI provide benefit in dealing with policy and strategy issues?
  - Wouldn't it have been better to have done this two years ago? Is this really the right time to advance a new public health emergency preparedness metric?
  - First decide what will be measured, then move on to how to measure
  - Will this mean more work for public health program directors?
  - How much do traditional public health activities incorporate NHSPI elements?
  - Need to use a scientific method to determine what questions are most important
  - Need to include aspects of healthcare system preparedness, especially with HPP/PHEP alignment coming up
  - NHSPI cannot be a freestanding, isolated entity
    - There are other efforts underway, like Project Public Health Ready and the Public Health Accreditation process – are these efforts independent of one another or do they support and feed into each other?
  - How will unintended consequences arising from use of NHSPI be mitigated/managed?
  - Should NHSPI report a single numerical value for each state, or is it more worthwhile to break out each component that goes into the Index? Or both?
  - Is it appropriate (or even possible) to create a “one size fits all” measure of preparedness, given variability in state size, population density, home-rule issues, etc.?
  - NHSPI “ownership”
    - Who will manage, maintain, distribute?
    - Who owns NHSPI will affect level of respect and impact given to the Index

NHSPI workgroup brainstorming exercise to develop measures for the index model

- Generated 218 unique responses that fell into seven different themes/categories
  1. Communication/Coordination w/ partners
  2. Workforce
  3. Public Communication/Outreach
  4. Surveillance
  5. Laboratory Capacity
  6. Response Readiness
  7. Funding

Four questions for the BSC

- Are the top categories of suggested Index measures what you expected?
- Are any important measures missing from this list?
- Should preparedness measures for the Index focus on **capacities** (structure, assets, resources) or on **capabilities** (processes, operations, performance) or both?
- Are there any outcome measures of preparedness that can/should be used in the Index?

**QUESTIONS & DISCUSSION (CDC'S NATIONAL HEALTH SECURITY PREPAREDNESS INDEX)**

- CDC: The Index will not be everything for everybody. We plan to bring a better evidence base to our monitoring of preparedness than there is currently out there.
- Liaison: Some of the feedback we received is that people are supportive of this effort and getting it right, but there are others who are worn out. They have been evaluated for the last 10 years, and it has caused more harm than help. So, for ASTHO, our biggest challenge is to be respectful of that and to help states understand that if we do this right, it will be the best effort to date. It will be better than Trust for America's Health (TFAH).
- BSC: It is critical that we document what the preparedness money is buying us and what impact it is having on our effectiveness.
- BSC: It seems one of the critical issues related to the index is a crosswalk between the categories you're talking about and how they tie into what public health says it does on a day-to-day basis. We also want to make sure that the index is reflecting the competencies we've identified.
- BSC: I want to make sure you take into account the need for closeness with the legal department around this issue. It should not be ignored.
- Ex Officio: There was discussion of whether this would come down to a single national index. Will that still happen?
- Liaison: Index measures will be state-specific but we also have to help our federal partners. We're hearing that we need to look beyond state and local systems/jurisdictions. Others say to also evaluate the federal in addition to state and local. So we need to decide where we draw the line on that.
- BSC: Make sure you're getting the size correct.
- Liaison: And we heard that one-size does not fit all. So we do have to wrestle with that notion.
- Liaison: I think it's important not to lose the policy focus. Some of the things I saw were very operations-focused.
- BSC: We're looking to the Model Design Workgroup to assist with that.
- Liaison: And we need to make the point that it's not just operational.
- BSC: I was initially skeptical and had similar concerns but with more discussion found that it would be a very valuable tool. We heard someone from the White House say that they've gotten questions about whether we're through with preparedness and shouldn't we be done with it. And we need to do a better job of explaining this to OMB and Congress. We need to make it sharper and not punitive. TFAH is doing what they're doing to be proponents of public health. NHSPI will help us get the resources for things that are not

currently performing well. There is also some talk of adding healthcare measurements into this down the road but right now we're focused on public health.

- Ex Officio: We want to make sure the healthcare system is an integral part of this. There is also going to be a National Preparedness Report. We've pushed to make it clear that this is a first report and things may change in the future. The report is not ideal, but it will be there every year. It is descriptive and based on the state preparedness report provided by emergency management.
- Liaison: Some states had great input and others none. So next year we want to fix that and have more front-end input.
- BSC: Are we making efforts to get the story out there on a routine basis to let people know the effect of budget cuts? It doesn't seem like we're telling that story and fighting back. Why isn't that a priority for CDC and public policy?
- CDC: We try to reach to the media all the time to convey the consequences that these cuts will cause, but unfortunately it's not as sexy as some of the other stories. This project is an effort to relay to the public what is happening or not happening.
- BSC: There needs to be clarity of vision because the data does not tell the complete story. If this is about providing state and locals with the knowledge that they need to have, then clarity of mission is necessary.
- BSC: The Trust made a shift from a ranking of the states to a description of the deterioration of the public health system and indicated that this was no time for the government to stop supporting preparedness activities. On another note, I see preparedness and response but I don't see much here in the index related to recovery and resiliency, which are often ignored in preparedness.
- Liaison: I think recovery and resilience can be more challenging.
- BSC: Mitigation is also not clear.
- BSC: I don't know if this is a good time to stick your head up. The Prevention and Public Health Trust Fund may be viewed by some as a "slush" fund. I also think we have to convince the field of public health itself of what the money is purchasing and what the index will do.
- Ex Officio: It's no longer enough to say my constituents want it. Congress needs these reports to justify why they are supporting programs. Trust for America's Health has been the best we can offer right now, so I think the Index will give you a chance to influence decision makers. Otherwise the hemorrhaging will continue. Anything you can do to make this better will be helpful. You're not alone in this. Other federal agencies like FEMA are also experiencing this. Don't underestimate power. Find those advocates and provide them with the right tools and they can push this.
- CDC: I agree. It is incumbent on all of us, not just CDC, to convey the role of public health. Also, with the index we need three to five clear measures that get right to the point.

- BSC: People working on the index are trying to do this with minimal burden. We need to find a place where this index will be trusted by the feds and locals, so ownership needs to be given significant thought and input from the community.
- BSC: I think the real issue [for some jurisdictions] is being measured poorly. People support being measured well. If there's a lot of counting stuff that doesn't truly show your true effectiveness, it can be a deterrent.
- Liaison: We hope there will be a measured systematic approach going forward. Thank you to those that have been engaged to date and we look forward to getting more feedback.

**UPDATES FROM LIAISON REPRESENTATIVES****Association of Public Health Laboratories (APHL)**

- ABSENT

**Associations of Schools of Public Health (ASPH)**

- ABSENT

**Association of State & Territorial Health Officials (ASTHO)**

- Nurse triage lines
  - We are looking at creating a national network of nurse triage lines to handle the surge that may occur to get antivirals into the community
  - We are developing a conceptual model for that
  - Poison control centers are definite players in that as well
- Assessment of available respiratory personal protective equipment
  - We are looking to do an assessment of the nation's hospitals and how much respiratory personal protective equipment they have on hand
- Radiation readiness is growing
  - We have a clearinghouse available at Radiation Ready.Gov and a peer review group that looks at common practices
  - We have a report that provides a very high level view of the strengths and weaknesses in domestic response
- Emergency care drug shortage
  - ASTHO has taken the lead on this issue
  - We have presented the status of why this is an issue now and also provided some coping strategies
  - It was sobering to hear the horror stories occurring around the country due to lack of medication, suboptimal dosing, or substitutions
  - ASTHO is working to develop some better measures to improve this area.
- ASTHO toolkits
  - We are rolling out four toolkits to help the practice community deal with federal law, regulations, policy, etc.
  - Data sharing and volunteer management toolkits are also under development
- Additional activities
  - We have been engaged in the Pandemic and All- Hazards Preparedness Act (PAHPA) reauthorization process

- There's also continued discussion with the FDA and the HHS/ASPR Enterprise Executive Committee on medical countermeasure shelf life expansion, legal authority, and what makes sense from an economic perspective

### **Council of State & Territorial Epidemiologists (CSTE)**

We recognize the increasing pull on members to be involved in the index and have created a subcommittee. We are involved in a lot of the informatics activities and covering a lot of meetings that are occurring on that topic.

We're also looking at lessons learned during H1N1 and ways to improve our processes. CSTE also has an Applied Epidemiology fellowship program that includes preparedness competencies for the fellows.

### **National Association of County & City Health Officials (NACCHO)**

The Medical Reserve Corp (MRC) continues to expand. There are 630 MRC members and we are continuing to get applications for additional individuals. The Project Public Health Ready (PPHR) has 270 health partners in 26 states that received PPHR status and several are apply for recertification.

We are trying to find additional funding to look at biosurveillance. We want to make sure we don't lose any of the tools developed.

We have put together a Preparedness Policy Advisory Group including preparedness coordinators from every state. They want to have well-informed decisions around policy and strive to reflect the broad diversity of local health departments throughout the country.

We have been working with ASTHO, CDC, and ASPR on administrative preparedness. We are looking at opportunities and barriers to public health preparedness in that regard.

We have also designed a database for the preparedness coordinators that covers a variety of topics of interest.

### **National Indian Health Board (NIHB)**

- ABSENT

## **DIVISION OF STRATEGIC NATIONAL STOCKPILE (DSNS) PROGRAMMATIC REVIEW: PROPOSAL**

Daniel Sosin, MD, MPH, OPHPR's BSC DFO introduced OPHPR's proposed request to conduct a Programmatic Review that relates to the future responsibilities and activities of the Strategic National Stockpile. CDC wants the Programmatic Review to be a collaborative effort between the BSC and ASPR's National Biodefense Science Board. We have laid out a series of review topics and we will need to designate at least two individuals from our BSC, a co-chair and a member, to participate with this.

For this review, the working group will do research and gather data to inform the recommendations. We want to have a process of eliciting responses from senior leaders about what is missing, what should be there, and suggested approaches to managing emergency medical supply chain capabilities so that we can anticipate the tools we need for the stockpile. There is also the need for metrics for reporting program capability and informing improvement.

So the three proposed foresight review topics:

1. Validate the anticipated responsibilities of the SNS in the year 2020;
2. Recommend approaches for meeting those responsibilities as efficiently as possible; and,
3. Propose metrics.

### **Strategic National Stockpile Overview**

Greg Burel, Director, Division of Strategic National Stockpile, OPHPR, provided an overview of the evolution of the SNS.

1999: first iteration of SNS

- Limited availability of materiel
- Limited or virtually no guidance on what the stockpile should look like
- Limited appropriations

CDC decided that creation of an organic transportation network **not** reasonable; opted instead to leverage existing transportation networks (robust, move product every day)

CDC also engaged with other federal agencies (e.g., Veteran's Administration) that do nothing but buy pharmaceuticals and medical devices

CDC interaction with state and local partners

- Technical assistance given so that state and locals could effectively manage and use the materiel provided in case of a public health incident
- Non-punitive reviews of state plans: red (bad), yellow (areas of concern identified), green (good)

SNS: much more than warehousing and buying "stuff"

Considerations

- **Packaging:** how can materiel be used appropriately and in the most rapid fashion
- **Placement:** where should materiel be stored around the country so it they can be moved in the most rapid and effective way

- **Storage:** need to ensure that SNS complies with regulations around holding products
- **Partner development:** need to develop multiple partners in various sectors to effectively use materiel
- **Guidance and policy development:** need to create guidance and policies around countermeasure response, including clinical guidance and application of regulatory management
- **Subject Matter Expertise:** SNS provides expertise to states and locals and have moved to evidence-based scoring for state plans

SNS has multiple focus areas

- Provide commercial off-shelf packaging
- Work on supporting national health security by collaborating with partner organizations
  - Working on a cooperative agreement with the American Academy of Pediatrics (AAP) to update guidance on anthrax
  - Working with the FDA on additional medical countermeasures
  - Work with vulnerable population workgroups
- Materiel storage and deployment
  - Contracted with organizations that do management logistics
  - Buy access to products from manufacturers – allows the manufacturers to rotate stock into pre-existing private-sector market so that we don't deal with expiring product
  - Moving push packages to centralized inventory allows SNS to deploy them as rapidly as before and for less money
- Team management
  - Deployable teams allow SNS to mount an appropriate response to assist state and local governments
  - Effective training with state and local public health means that in a response we don't have to be present on the day materials arrive – states and locals are able to self-manage meaning cost savings for SNS
- Decreasing budget
  - More budget reductions anticipated
  - SNS continues to work on reducing operating costs and identifying sound investments for the future

#### QUESTIONS & DISCUSSION (DSNS PROGRAMMATIC REVIEW)

Ex Officio: ASPR is very excited about being involved in this. This will have an impact on the stockpile long- and short-term, and this is truly a collaborative effort.

BSC: What should be the elements or features of the review?

CDC: This is a draft charge. We wanted to make sure that this is clear, and then you can formulate how you can help us with it.

BSC: Were there problems, challenges or dilemmas that cause this list?

CDC: It's the combination of a fluid environment, changing scope in mission with the stockpile, and a number of forthcoming activities that could change the way we envision this stockpile enterprise. We want to continually progress the stockpile to where it needs to be in the next 10 years. We also want to be efficient and save money while achieving the goals of the stockpile. And we can only document improvement by having metrics that are

reliable. We want this group to take a look at the metrics and how we should be measuring the success of the stockpile.

- CDC: We now better understand how to mount a response and work with states and locals to make it successful. This is our thoughtful approach on how to intervene in the supply chain process.
- Liaison: I don't see the word "vaccine" in the review. How we acquire the vaccines or stockpile them is important to the state.
- CDC: Vaccine management is definitely included in this as well. We are working more closely with the healthcare sector to make sure we are coordinating our efforts.
- BSC: I think the review should pay attention to demographic changes and mitigating health inequities.
- BSC: Can you clarify how this is different from the prior review of SNS?
- CDC: Previously, we looked at modeling the logistics of supply chain, and that's not entirely what we're talking about now. We have not worked out the mechanics of this review. It will be larger, harder and may take several months, about 6 months with data collection in between.
- BSC: The previous BSC review of the SNS couldn't conclude anything or were the reviews general?
- CDC: They were general.
- Ex Officio: The important part is how does it flow, what are we missing, and what can improve the flow? How are you looking for us to validate this?
- CDC: The workgroup should lay out the mission of how it sees things going forward. That could be done one-on-one or the DHHS Enterprise Executive Committee can work on a list and we refine that. We want you to inform the decisions. We want to make sure you're in agreement with where we're going.
- BSC: I have some uneasiness about this. The next question after validating is the requirements of the countermeasure of an emergency management system, and I don't know that we have the expertise to answer that on this board. What does this system look like? If we think about this process of doing the requirements, we could look at the models used by Apple, as an example.
- CDC: So you're suggesting bringing in someone from Apple to work in a consulting manner?
- Ex Officio: You can do workshops or invite people to be part of this group. Or we can ask certain expertise but we might have some conflict of interest in those expertise.

- BSC: When the military wants to do the next biggest thing with planes, for example, they take two or three of the big vendors and say give us your best plan for what we're trying to accomplish.
- CDC: This is a good time to ask the fundamental question of what is the best way to do medical countermeasures. This is very different from past reviews. We are going to give you an opportunity to say what our program should look like.
- Ex Officio: This does not lend itself to one solution. I don't believe there's one concrete strategy. You will ebb and flow and twist and turn all the way through this. So don't put it all on paper but give yourselves that flexibility to move.
- BSC: And your committee should change as these emerging strategies come up.
- CDC: This is helpful. There will be specific ideas that come to mind whether Apple or some other logistic supply chain. We'll do some follow-up emails to solicit additional information.
- BSC: I would think that we can establish general strategic principles and separate those from the operational issues and goals.
- CDC: We also have a concern about the anthrax vaccine (AVA). We want to leave with a clear set of issues that we need to address. Department of Homeland Security has questions regarding use of the licensed AVA for pre-exposure. We do provide anthrax vaccine for laboratorians that work with anthrax. This is a licensed pre-event vaccine and the vaccination program is entirely voluntary. The first responder community needs to be assessed to see who would want to take advantage of this vaccine. We have the opportunity to make it available.
- We have an opportunity, without putting at risk the stockpiling of AVA, to use that vaccine. We can also learn from this. Not all communities are going to want to do this. But for those that are interested, it will provide us lessons on how to safely use the vaccine, the side effects, etc. and better prepare public health.
- I want to preface this discussion by saying there's no new money to do this. Some of you have heard a lot about this and we want to hear your opinions.
- Ex Officio: The questions we normally get is, "Whom do you vaccinate?" It's hard to develop a risk profile. Questions regarding AVA use came to us from states and locals. We want to make sure all checks and balances are in place. It's been a win-win effort and exciting to work on.
- This is the AVA distribution pilot. This is a resource that's available only to the federal government. It has a short shelf life. We're hearing that people want it, but we want to provide it in a responsible manner. If first responders feel that they are at risk, they can access this on a voluntary basis. This will differ state to state and will begin on a small level, two cities or two states initially. We need to identify those initial partners and determine if a national rollout is warranted. We will start getting ASTHO and NACCHO involved on that feedback. We want this to be a dialogue.

- Liaison: How do we deal with the regional variations? What's the right size of public health engagement? Let's have public health see this first and provide some input.
- Liaison: We need as much time as you can give us to vet this with the first responder community.
- CDC: It is expected to be early July and last to the end of August for the proposal. We're seeking organizations that meet the requirements of the pilot. We would like to know who would like to do it and tell us how you would do it. There will be 6 to 8 weeks to respond to that.
- Ex Officio: We're hoping that at least 50 to 100 folks will be interested in being vaccinated in those pilots.
- BSC: Communication is going to be critical on this. Everyone needs the same message to reduce damage control particularly related to risk versus cost.
- Ex Officio: The vaccine is free of charge. We will have to work on shipment and management.
- BSC: Begin with a disclaimer that this is not an effort to get rid of a bunch of vaccine. We have to be careful not to set ourselves up for political backlash. There may be also the thought that we're experimenting on first responders, so we have to be ready to communicate well on that issue, as well. First responders are a community that has its own ethos and we need to understand that ethos.
- BSC: There are a lot of command and control issues, and you need to figure out how you're going to deal with that individual who refuses.
- Ex Officio: We're not interested in this being forced upon an individual. Do you think that we are very explicit in our guidance kit about that?
- CDC: I think you're saying we need to protect people from coercion and put that in our guidance.
- BSC: There has been a lot of recent work that we can use as models to anticipate some of the problems and resistance that might arise.
- Liaison: I worry about risk communication with state health officials.
- Ex Officio: I'm sure people are planning to consult with DoD about our vaccination plans.
- Ex Officio: We have consulted with DoD and have gotten information from them as well as the FBI, who has a small program. So we are continually looking for lessons learned.

## **PREPAREDNESS AND EMERGENCY RESPONSE RESEARCH CENTERS (PERRC) RESPONSE TO EXTERNAL PEER REVIEW**

Mildred Williams-Johnson, PhD, Director, External Research Program Office (ERPO), OPHPR, provided the program response to the BSC PERRC Program external peer review recommendations (Appendix D).

ERPO received the final BSC review report on January 3, 2012, and shared the report with the PERRC Primary Investigators to gather their input.

Of the 19 recommendations, ERPO:

- Concurs with recommendations 1, 4, 6, 10b, 14, 18; [see Appendix D]
- Concurs in principle with recommendations 2, 3, 5, 7, 8, 9, 10a, 10c, 10d, 11, 12, 13, 15, 16, 17, 19

Concurrence in principle (rather than concurring in full) generally due to lack of resources: time, staffing, funds

ERPO is providing the Board with suggested response should resources become available in the future

ERPO is requesting input from the Board on whether our proposed ideas are reasonable and adequate or if there are other avenues that we might pursue in response to these recommendations

FY 2012

- Unexpectedly received ~\$4 million to support PERRCs
- ERPO considered the funding priority criteria defined by the BSC working group's recommendation 2
- Based on the project period and the limited information available to discriminate PERRCs' research performance, ERPO decided on equal funding to all PERRCs (approximately \$430,000 per) and asked them to focus their efforts on dissemination and translation of research outcomes

### **QUESTION & DISCUSSION (PROGRAM RESPONSE TO PERRC PEER REVIEW)**

BSC: I am wondering if there's an effort to determine what we want to get out of this for this last year as we wrap up because some of these recommendations no longer apply.

CDC: Upon successful CDC review of their continuation applications, each PERRC will be awarded \$430,000 in FY 2012 funds. The intent of the FY 2012 funding is to put their work into practice in some form or fashion, and they have to work with their practice partners to do that. If they come across something that's innovative, they can use their current funds to expand upon that. North Carolina was able to do this. With ERPO approval, PERRCS will use funding from prior years to fund activities that they need to do to finish a project they began in previous funding periods. New FY 2012 funding is for translating research to practice.

BSC: There were really only two recommendations from the working group. One was to save the Centers and the second was to figure out how to market what the Centers do so that they get more recognition. We also believed that a center model was not the

appropriate model for the future but more of an individual model. So we said if any money became available, a FOA-type funding should be used.

BSC: Is there a mechanism for no-cost extension to evaluate the outcomes of the research?

CDC: The principal investigator can ask for more time to finish their work without any additional funds.

BSC: That's great to hear and this can show the positive effects.

BSC: Can OPHPR still fund individual projects?

CDC: It is possible. You can create mechanisms with grants or working with key partners, but current resources are not able to sustain the work. We're trying to identify opportunities to innovate and use our resources creatively.

BSC: Isn't there a mechanism for creating a BSC workgroup to look at the final report of the products that come out?

CDC: There is an opportunity, but it requires careful discussion. You have to quantify and qualify your time and other factors.

BSC: Will there be a final report of the PERRC's work?

CDC: Yes, from each of the centers and hopefully one from the program.

BSC: Going back to the Index, we talked about federal support for discovery. This seems to be going downhill based off what we just heard.

Ex Officio: It's painful. There's no funding for projects like this, and this is occurring in all of our programs. "Unfortunate," is an understatement. It puts everybody in a bind. How do you measure effectiveness when everything is being cut to the bone?

## **PUBLIC COMMENT PERIOD (DAY 2)**

No public comments were made.

**ASK-THE-BOARD: ESTIMATING THE COST OF PREPAREDNESS**

Lynn Austin, PhD, MA, Deputy Director, OPHPR, presented an overview of an OPHPR initiative to estimate the cost of preparedness.

Negative impacts on public health preparedness include:

- Decreasing public health infrastructure funding
- Increasing recognition that CDC core preparedness and response capabilities are affected
- Increasing recognition that State/Local Public Health Emergency Preparedness capabilities and public health infrastructure are impacted by continual funding reductions severely impacting State/Local ability to respond
- Increasing recognition that State/Local staffing has been weakened from funding reductions, furloughs, layoffs, and turnover

Last year, CDC conducted a project at CDC to try and estimate the cost of responding to the 15 DHS all-hazards national planning scenarios

- Developed a template to calculate costs in as many as 19 functional areas
- Looked at the costs of cross-cutting responses across the Agency
- Overarching areas of consideration
  - Cost of fully implementing the overarching Preparedness Strategic National Plan
  - Cost of fully meeting the PHEMCE recommendations for the Strategic National Stockpile as well as MCM research and operational costs
  - Cost of fully achieving State/Local PHEP Capabilities

To determine cost of implementing the CDC National Strategic Plan for Public Health Preparedness and Response, CDC needs to

- Align existing funded projects with the strategic plan
- Identify "gaps" where initiatives are not currently funded
- Cost out projects to address these gaps
- Calculate cost of core preparedness/response activities, funded and unfunded

OPHPR needs input from grantees regarding the cost of implementing PHEP capabilities

- What capabilities are currently funded?
- At what level are capabilities currently funded?
- What is the gap between what has been funded and what has not?
- How do we measure the cost of implementing capabilities not funded?
- How do we measure the gap between what is funded and need if fully implemented?
- What is the ongoing cost to maintain capabilities?

The first approach will be a modest effort to estimate costs. Questions:

- What are the key cost sectors to include in this estimate?
- What methods might be appropriate to the time and use we intend for this estimate?
- How should the results be displayed and used?
- Who are key stakeholders or consultants to involve in this effort?
- What existing data resources or similar efforts in other fields should we try to access?
- How to address core Public Health infrastructure - 10 essential public health services?

**DISCUSSION (ESTIMATING THE COST OF PREPAREDNESS)**

- BSC: I think to get at the last point of total cost, you need to determine the cost of infrastructure.
- BSC: We did a cost of failure that looked at the cost of healthcare if there wasn't health reform. We also did an analysis of the avoided deaths around immunization. We found 1400 cases that would have occurred if there was no immunization. Compare Top-Off 1 with Top-Off 2 and you can quantify what happens in a system that is prepared compared to one that's not. Also look at natural disasters in communities that have performed well and those that have not and extrapolate the cost.
- BSC: With the cost of preparedness, you want to say this is our vision of preparedness and here's the cost. So maybe you can include some of those events that are memorable. We need to be less process and more, "This is what America needs." I like the idea of extrapolating out cost avoided. That is how WHO gets a lot of its cost like days avoided in the hospital, etc.
- BSC: We also need to capture the cost due to waste in our degradation of the infrastructure. We need to link cost to value in a very direct way. CDC may not be the best entity to do this work due to conflict of interest. Maybe some outside entity or funder could do this analysis.
- BSC: There may be some places where objectives might be split between groups to increase synergy.
- Ex Officio: The IOM on catastrophic disasters has some models presented that may partially inform your research.
- BSC: I was thinking about the question you asked earlier, "Why aren't we done with preparedness?" Do we have a standard answer to that? Maybe we need to have a bullet point answer for when we are asked that.
- CDC: It's not about buying preparedness equipment or materials. This is not about buying an insurance policy. It's about what's happening in state and local health departments every day.
- BSC: So maybe we need to really develop an answer to that because it sounds like there is resistance. After 10 years, people feel like "preparedness" should be done.
- CDC: You are spot-on and we are working on message mapping. We are having difficulty making that argument because public health is invisible to the public. At the next meeting, we will show you some of the CPG guidance work. This will give you an answer as to why we're still not further along in our preparedness work.
- Ex Officio: Stories are powerful and sometimes we don't recognize the value of the stories. Stories resonate with people. That kind of information made more of a difference than actual data. You need a hook to pull in the public. Also, we must look at cost of failure and how to demonstrate that as well. So much is based on your current public health structure. If you

don't have one, what does that mean? And, if you do, what does that mean? We can look at that.

BSC: If I were asked that question by a legislator, I would say prepared for what? Not all hazards cost the same amount. We've had more crises in emergencies in the past years, and those crises vary. So it's not a simple answer even after 11 years.

CDC: Right. We have so many crises that go unnoticed and therefore are not counted.

BSC: The measures we have developed over the years have gotten better and better. It's the big impacts that get the most attention.

CDC: When you do hook the public and others with the stories, have the data and measures to back it up.

BSC: What was your goal in the timeline?

CDC: For strategic planning, given what we're hearing now of the FY 2013 budget, we might want to go ahead and act on some of the activities proposed sooner rather than later.

**CLOSING REMARKS**

Dr. Dan Sosin, OPHPR BSC DFO, after thanking the Board for its hard work asked members to respond separately in writing to each of the following questions:

- What went well with this meeting?
- What needs work?
- What topics would you like to see presented at future meetings?

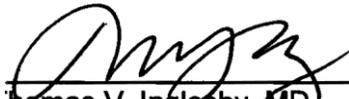
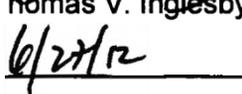
Dr. Inglesby and Dr. Khan thanked everyone for their hard work and wished everyone safe travels.

**ADJOURN**

With no further business raised or discussion posed, Dr. Tom Inglesby officially adjourned the meeting.

**CERTIFICATION**

I hereby certify that to the best of my knowledge, the foregoing minutes of the May 1-2, 2012 meeting of the OPHPR BSC are accurate and complete.

  
Thomas V. Inglesby, MD  


**APPENDIX A: OPHPR BSC MEMBERSHIP ROSTER****Chair**

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

**Designated Federal Official**

Daniel M. Sosin, MD, MPH, FACP  
Deputy Director and Chief Medical Officer  
Office of Public Health Preparedness and  
Response  
Centers for Disease Control and Prevention

**Special Government Employee Board  
Members**

Don Burke, MD  
Dean, Graduate School of Public Health  
University of Pittsburgh  
Pittsburgh, PA

Sharona Hoffman, JD, LL.M.  
Professor of Law and Bioethics  
Case Western Reserve University School of  
Law  
Cleveland, OH

John R. Lumpkin, MD, MPH  
Senior Vice President and Director Health Care  
Group  
Robert Wood Johnson Foundation  
Princeton, NJ

Ellen MacKenzie, PhD  
Professor and Chair  
Department of Health Policy and Management  
Johns Hopkins University Bloomberg School of  
Public Health  
Baltimore, MD

Herminia Palacio, MD, MPH  
Executive Director, Harris County Public Health  
and Environmental Services  
Houston, TX

Louis Rowitz, PhD  
Director, Mid-America Regional Public Health  
Leadership Institute  
University of Illinois at Chicago, School of Public  
Health  
Chicago, IL

Robert J. Ursano, MD  
Chairman, Department of Psychiatry Uniformed  
Services University of Health Sciences  
Bethesda, MD

Elaine Vaughan, PhD  
Research Professor and Professor Emerita  
Department of Psychology and Social Behavior  
University of California, Irvine, School of Social  
Ecology  
Irvine, CA

**Ex Officio Members**

US Department of Health and Human Services  
RADM Nicole Lurie, MD, MSPH  
Assistant Secretary for Preparedness and  
Response  
Washington, DC

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  
Alexander Garza, MD, MPH  
Assistant Secretary for Health Affairs and  
Chief Medical Officer  
Washington, DC

US Department of Defense  
COL Michael G. Butel, DVM, MPH  
Assistant Secretary of Defense (Health  
Affairs), Force Health Protection and  
Readiness  
Director, Global Health Surveillance  
Arlington, VA

**Liaison Representatives**Association of Public Health Laboratories  
(APHL)

Mary J. Gilchrist, PhD, DABMM  
Consultant, Public Health  
Solon, IA

## Association of Schools of Public Health (ASPH)

James W. Curran, MD, MPH  
Dean, Rollins School of Public Health  
Co-Director, Emory Center for AIDS  
Research  
Emory University  
Atlanta, GA

Association of State and Territorial Health  
Officials (ASTHO)

Jean O'Connor, JD, DrPH  
Deputy Director, Public Health Division  
Oregon Health Authority  
Portland, OR

James Blumenstock (Alternate)  
ASTHO Chief Program Officer  
Arlington, 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

## National Indian Health Board (NIHB)

Stacy A. Bohlen, MA  
NIHB Executive Director  
Washington, DC

**APPENDIX B****BSC Meeting Attendance****Atlanta, GA -- May 1-2, 2012**

<b>NAME</b>	<b>AFFILIATION</b>	<b>DAY 1 (MAY 1, 2012)</b>	<b>DAY 2 (MAY 2, 2012)</b>
Inglesby, Thomas	Chair and SGE	Present	Present
Burke, Don	SGE	Present	Absent
Hoffman, Sharona	SGE	Present	Present
Lumpkin, John	SGE	Present	Present
Palacio, Herminia	SGE	Present	Present
Rowitz, Lou	SGE	Present	Present
Vaughn, Elaine	SGE	Present (by phone)	Present (by phone)
Butel, Michael	Ex officio (DoD)	Present (by phone)	Present (by phone)
Garza, Alexander	Ex officio (DHS)	Present	Present
Kaplowitz, Lisa	Ex officio (HHS)	Present	Present
Getchell, Jane	Liaison (APHL)	Present	Absent
Blumenstock, Jim	Liaison (ASTHO)	Absent	Present
O'Connor, Jean	Liaison (ASTHO)	Present	Present
Danila, Richard	Liaison (CSTE)	Present	Present
Smith, Karen	Liaison (NACCHO)	Present (by phone)	Present (by phone)
Bohlen, Stacy	Liaison (NIHB)	Present (by phone)	Absent

**APPENDIX C****Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review**

The Career Epidemiology Field Officer (CEFO) Program thanks the Board of Scientific Counselors and the Program Review Workgroup for the thorough review of our program and the thoughtful recommendations for sustaining and improving it. This report provides an update on our responses to the recommendations. For each recommendation we present responses in one of three categories:

- *Concur*: We agree and we have funding, staff, and control over the means to begin addressing or implementing the recommendation
- *Concur in principle*: We agree, but we do not presently have either the funding, staff, or control over the means to begin implementing the recommendation
- *Non concur*: We disagree with the recommendation and provide the reasons for the disagreement.

1. The CEFO Program should develop an overarching, long-term strategic plan (e.g. 5-10 year) which should be informed by an initial gap analysis of jurisdictional needs for the services provided by CEFOs.

**Program response: ~~Non concur~~ Concur in principle (Amended April 2012)**

OPHPR recently completed a broad strategic planning process and a review of strategic priorities that sets the environmental scan for selecting priority areas of work. We will use that work as a foundation for CEFO Program shorter-term tactical planning rather than initiate additional strategic planning specific to the CEFO Program.

The CEFO Program tactical plan includes overall priorities for headquarters staff work for the next one-to-two years, including consideration of the relative priority of response to the other BSC Recommendations, # 2 – 9, and implementation plans including timelines and roles and responsibilities. Currently the CEFO Program headquarters is focusing on these immediate needs

- Address immediate and imminent funding problems for CEFO positions by pursuing options articulated in BSC recommendation #3
- Address a key consequence of the funding problems – out-placement of CEFOs who are in positions that will be unsupported by PHEP funds in FY 2013
- Following recent headquarters staff changes realign roles and responsibilities of headquarters staff to enable supervisors to focus more on epidemiologic leadership of field staff

2. The CEFO Program should measure its performance by
  - a. Implementing and measuring performance metrics that enable CDC officials to provide empirical data that accurately reflect CEFO program success, challenges and areas for improvement
  - b. Using other innovative approaches

**Program response: Concur**

OPHPR is organizing a process to develop performance metrics, including

- Review existing performance metrics related to epidemiology, surveillance, and emergency operations coordination. (See: [OPHPR Public Health Preparedness Capabilities: National Standards for State and Local Planning](#))
- Use these as a basis to develop draft metrics that can be applied to CEFO activities

- Convene a workgroup including OPHPR staff, CEFOs, and stakeholders (state epidemiologists and preparedness directors) to finalize pilot metrics
  - Inform CEFOs and stakeholders of the pilot metrics and how the information will be used to monitor program progress.
  - Pilot test performance metrics, analyze quarterly reports, summarize the results, disseminate report of results, and refine metrics as necessary.
3. CDC should explore alternative funding sources that preserve the positive characteristics of the program (flexibility and simplicity) including
- a. Allowing jurisdictions to use multiple, non-PHEP CDC funding sources, with the caveat that OPHPR would be the program administrator
  - b. Exploring other internal funding sources by cross-leveraging resources at other CDC Centers, Institutes, and Offices (CIOs), with the caveat that OPHPR would be the program administrator
  - c. Exploring non-CDC external funding sources, with the caveat that OPHPR would be the program administrator
  - d. Enabling jurisdictions to use other resources under their control to fund CEFOs
  - e. Enabling jurisdictions to share CEFOs

**Program Comment:** Unless a more sustainable funding model for the program is identified, consideration must be given to the use of alternative funding sources to maintain the CEFO workforce, including all of the options noted above.

**Program Response (3a and b): Concur**

The CEFO Program is leading development of a systematic approach to support CEFO positions through a cost allocation/split funding process. We are engaging staff from key CDC administrative offices

- Financial Management Office (FMO)
- Procurement and Grants Office (PGO)
- Office of General Counsel (OGC)

Staff from several CDC programs or offices that currently support or have expressed interest in supporting field-based epidemiologists, including

- Division of State and Local Readiness, OPHPR
- Immunization Services Division, NCIRD
- Division of Preparedness and Emerging Infections, NCEZID
- Division of Healthcare Quality Promotion, NCEZID
- Office on Smoking and Health, NCCDPHP

This process includes development of formal documentation addressing program administration and management (including supervision) and written agreements to ensure the goals and objectives for the field assignee for each participating group are delineated. We are working to obtain adequate, secure funding while preserving the program's flexibility and simplicity.

**Program Response (3c): Concur in principle**

We have inquired about collaborating with two programs external to CDC – the Hospital Preparedness Program managed by the Office of the Assistant Secretary for Preparedness and Response, and the BioWatch Program overseen by the Department of Homeland Security. Although both programs currently have funding constraints, we are keeping open the possibility of future collaboration.

**Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review (continued)****Program Response (3d): Concur in principle**

While we are open to state or local health agencies using other (non-CDC) resources under their control, in the current economic setting such resources may be scant. When we have had discussions with a few jurisdictions about using other funding resources under their control, neither they nor we have identified an available source of such resources.

**Program Response (3e): Concur in principle**

We have not actively promoted this approach. No jurisdictions who have a CEFO or who have expressed interest in a CEFO have requested to share a CEFO. Some CEFOs have noted concerns that their value as integral members of the health department team could be substantially diminished if they served two independent jurisdictions. We recommend considering this approach on a case-by-case basis.

4. The CEFO Program should clarify supervision and coordination of CEFO supervisor management by implementing the following
  - a. Ensuring improved coordination between CDC and field supervisors
  - b. Exploring the feasibility of providing greater access to and use of scientific support and consultation as a core headquarters management capability
  - c. Adopting a proactive (lean forward) approach to linking CEFOs with key operational resources across CDC CIOs such as informatics, statistics, Geographic Information Systems, etc.

**Program Response (4a): Concur**

We have begun offering quarterly conference calls with CEFOs and their field supervisors to review their quarterly reports and/or address other relevant issues.

In FY 2012 we completed site visits for CEFO assignments in Michigan, Mississippi, and Nevada, and we have scheduled visits to Arizona, California, Florida, Maine, North Dakota, Tennessee, Texas, Vermont, and Wyoming.

We continue to

- Use the opportunities at scientific conferences – e.g., the CSTE annual and regional conferences, the Public Health Preparedness Directors Conference, the Public Health Preparedness Summit – to meet and network with CEFOs' field supervisors
- Ask field supervisors for their input on performance evaluations in both the Commissioned Corps (Commissioned Officer Effectiveness Report, annually) and Civil Service (Performance Management Appraisal System, June and December each year) systems.

**Program Response (4b) and (4c): Concur**

OSPHP hired a PhD statistician in 2011, and one of her main responsibilities is to provide consultation and technical assistance for CEFOs. We are encouraging CEFOs to attend and participate in a new series of webinar presentations that she has organized on statistical topics. The presentations in February, March, and April are on multivariate analysis and statistical model building. The statistician has also begun providing consultation and support to individual CEFOs on study design and data analysis.

As in past years, CEFOs participate on the planning committee for the CEFO Annual Meeting (Aug 21-23, 2012) to identify key topics to be discussed/presented and scientific sessions.

**Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review (continued)**

We are planning to link with a database of CDC Subject Matter Experts (SMEs) that is being organized by the OPHPR Division of Emergency Operations. This database is intended to provide a single, accurate, readily accessible source of contact information for CDC SMEs.

We are working with the staff from CDC's Epidemiology and Analysis Program Office who developed Epi Info 7, free software that can support surveillance, outbreak investigations, database management, statistical analyses, and GIS mapping. We have encouraged and supported CEFOs to serve as "beta testers" for this software and to receive training in its use.

If funds become available in the future, we plan to implement a program of "reverse site visits" by CEFOs to CDC. The purpose of such a visit is for the CEFO to meet with CDC staff to exchange information relevant to the CEFO's responsibilities, and to strengthen the CEFO's role as a resource for technical advice needed by the state and local health departments. During the 2-3 day visit the agenda would include, as needed, one-on-one meetings with CDC subject matter experts, program staff, and project officers, an oral presentation by the CEFO in an OPHPR or other CDC CIO seminar series, and time to meet the CEFO's needs and obligations such as computer software upgrades, respirator fit-testing, etc.

5. CEFO Program strategy and policy should ensure greater assurance to CEFOs of continued employment and opportunities for advancement within the context of available funding levels. The workgroup was impressed with the high quality of the CEFOs based on their presentations as well as the resumes that were part of the review material. CEFO managers and CEFOs both noted that the two-year initial field placement followed by optional annual renewal created significant anxiety and insecurity. Anecdotal evidence indicated that this reduced the potential pool of high quality CEFOs. Some of the CEFOs also expressed concern about the perceived lack of value that CDC places on CEFO field work assignment and the subsequent implications for career advancement."

**Program Response re: Greater assurance to CEFOs of continued employment: Concur in principle**

See response to Recommendation #3 above. The CEFO Program Senior Advisor is leading the direct assistance cost allocation/split-funding initiative in collaboration with interested programs, FMO, PGO, OGC, and DSLR.

We acknowledge the problems related to limited duration of assignments. However in the current funding circumstances, some states cannot commit PHEP funds more than one year at a time for supporting CEFO positions.

If any CEFOs' field assignments must end in a particular jurisdiction due to lack of funding, the CEFOs will have the same "rights" as counterparts in headquarters positions. CDC/PHPR will have the same level of commitment to retaining them on staff.

**Program Response re: Greater assurance to CEFOs of opportunities for advancement: Concur**

The CEFO Supervisory Epidemiologists, in their role as mentors, will continue the support they provide editing scientific writing, advising on analytic methods, and assisting in identifying and ensuring that CEFOs can access relevant training (e.g., on-line or classroom CDC University courses).

The CEFO Program will continue supporting CEFOs when they are requested to take on larger responsibilities. For example, two are performing the duties of State Public Health Veterinarian, one is serving as Disease Control Division Director, and one has served as Acting Chief of the Communicable

Disease Emergency Response Branch. These roles require CEFOs to use leadership and management skills and allow them to gain experience that enhances their professional development and improves their eligibility for professional advancement.

6. The CEFO Program should ensure CEFOs have a defined set of core competencies by
  - a. First defining the basic set of core competencies
  - b. Ensuring this includes cross-cutting competencies such as leadership, policy analysis and development, and informatics
  - c. Ensuring cross-discipline competencies, including environmental and chronic disease epidemiology, are addressed
  - d. Ensuring continuous professional development through the CEFOs tenure

**Program response (6a): Concur in principle**

Sets of professional core competencies have been developed by expert groups in the domains of applied epidemiology, informatics, and public health preparedness and response. We will use two of these sets to identify competencies relevant for CEFOs. We plan to have the CEFOs complete a self-assessment of their competencies, based on:

- the Applied Epidemiology Competencies (AECs) developed by CDC and CSTE ([CDC and CSTE Applied Epidemiology Competencies Brochure](#))
- the Public Health Preparedness & Response Core Competency Model developed by OPHPR and ASPH ([OPHPR and ASPH Public Health Preparedness and Response Core Competency Model](#))

We will then use this information to identify the areas where CEFOs have self-perceived proficiency and the areas where they have self-perceived gaps that may benefit from targeted training.

In taking this approach, we are not directly addressing the first item in the recommendation – define the basic set of core competencies. Instead, we’re taking the competencies already developed by CDC in collaborations with CSTE and with ASPH, and using them as the basis to survey CEFOs about what they’re expected to do, what they’re good at, and what they want or need to get better at. Once we have that information, we would use it as the basis for defining CEFOs’ competencies. We realize this is an indirect approach - first tell us what’s expected of you and what you can and can’t do well, then we’ll decide what you’re supposed to be able to do. But this is a practical way to address this issue.

**Program response (6b) re: Leadership, policy analysis and development: Concur**

**Program response (6b) re: Informatics: Concur in principle**

The Applied Epidemiology Competencies (AECs) do include leadership and policy development.

Informatics competencies for public health professionals ([University of Washington School of Public Health and Community Medicine Northwest Center for Public Health Practice Informatics Competencies for Public Health Professionals](#)) and competencies for public health informaticians

(<http://www.cdc.gov/InformaticsCompetencies/>) have been developed. While it is important for CEFOs to have functional knowledge of how informatics supports public health practice, including public health preparedness, we do not expect CEFOs to be the leaders in providing that support for states. CDC’s Division of Informatics Practice, Policy & Coordination is developing the first Career Informatics Field Officer (CInFO) field assignment, at the request of the Los Angeles County Department of Public Health, and the CEFO Program has provided advice and consultation for them.

**Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review (continued)****Program response (6c): Concur in principle**

Environmental and chronic disease epidemiology-associated competencies are included in the AEC basic public health science competencies. But for environmental epidemiology we are not certain whether the assessment form developed for the AECs will help accurately identify relevant strengths and gaps for CEFOs (What is it that you need to know or be able to do, that you currently don't know or can't do?). If not, we may need to develop or identify an assessment tool for this purpose.

**Program response (6d): Concur**

Concerning continuous professional development throughout the CEFO tenure, we will use the information on competencies to help determine which areas to address to enable career progression for individual CEFOs and enhanced contributions by them in their assignments.

7. CDC leadership should reinforce and expand the role of the CEFO as a facilitator of bi-directional communication and coordination between CDC and assignee jurisdictions.

**Program response: Concur**

We are continuing to encourage and enable CEFO participation in CDC workgroups and committees. For example

- *PHPR Strategic Plan implementation.* One CEFO is participating in the working group focused on advancing surveillance, epidemiology, and laboratory science and service practices
- *Community Assessment for Public Health Emergency Response (CASPER) Subject Matter Experts Conference.* Three CEFOs participated in this CDC-sponsored 2-day meeting in November 2011 to review and improve the methods and tools for CASPER surveys
- *State, Tribal, Local, & Territorial (STLT) Surveillance/Biosurveillance Work Group.* This group has been organized by CDC's Public Health Surveillance Program Office to enable CDC's STLT partners to provide input on policy development and other issues relevant to design, implementation, and use of surveillance systems and data. The group has monthly teleconference meetings in which several CEFOs have participated as their time allows.

We are working with OPHPR's Division of Emergency Operations to develop a standard operational procedure for EOC-CEFO communications. The impetus for this comes from our experience during the Hurricane Irene response in September 2011. CEFOs in eastern states struck by the hurricane (Florida, North Carolina, Virginia, Pennsylvania, New York, Vermont, and Maine) participated by teleconference in daily CDC staff meetings and were able to provide valuable "front line" updates about the storm's impact and the public health response. However, most of these CEFOs were also playing essential roles in their states' response activities, and it was difficult or at times impossible for them to participate fully in both roles.

8. The CEFO Program should ensure widespread dissemination of CEFO products. The workgroup heard testimony from stakeholders and CEFOs regarding CEFO enhancements in epidemiology systems, training, drills and exercises, etc. These work products, enhancements to system operations and other innovations developed by CEFOs were determined to be of value to the entire public health preparedness field.

**Career Epidemiology Field Officer (CEFO) Program Response to External Peer Review (continued)****Program response: Concur in principle**

These are some examples of CEFOs' contributions in preparedness and response

- Use of CASPER surveys in non-disaster settings, thus obtaining health assessment data for communities while providing state and local health department staff with training and experience that prepares them to perform post-disaster surveys.
- Training of state and local health department staff to use Epi Info 7 software for outbreak investigations, post-disaster surveillance, and other public health needs. In addition, during a CEFO's temporary detail to assist epidemiologic capacity development in Haiti, she trained several local staff in use of Epi Info 7 as a key element in advancing their reportable disease surveillance from a paper-based system to an electronic one.
- Development of a partnership among a state's public health agencies, schools of public health, and healthcare organizations. Through shared support for staff training and student practicums they are strengthening epidemiologic capacity despite budget constraints and personnel shortages.
- Development of a statewide policy for hospital surge capacity, to coordinate public health, emergency response, and healthcare agencies' roles and responsibilities in disaster response.

We will begin or continue to disseminate information about these and other CEFO contributions (including work products, e.g. guidelines or protocols) by various routes

- Presentations at scientific conferences
- Reports in scientific literature
- Summaries posted on the web, with links to more detailed information

9. CDC and the CEFO Program should enhance the visibility of the program by promoting the products of the CEFOs work, such as publishing an annual report demonstrating the success of the program.

**Program response: Concur in principle**

We are drafting a manuscript: *Improving Epidemiologic Capacity in State and Local Health Departments: The CDC Career Epidemiology Field Officer Program* that will describe the CEFO program and its contributions to public health preparedness and response.

As noted for Recommendation 8, sharing CEFO work at conferences, in publications, and via electronic media can enhance program visibility

**NOTE:** The CEFO program has completed only limited planning and implementation for responses to recommendations 8 and 9; time and effort have mostly been focused on the preceding 7 recommendations.

**APPENDIX D****Preparedness and Emergency Response Research Centers (PERRC) Response to External Peer Review****BACKGROUND**

An ad hoc Board of Scientific Counselors (BSC) workgroup performed an external peer review of the Office for Public Health Preparedness and Response (OPHPR)-funded Preparedness and Emergency Response Research Centers (PERRCs) Program review.

The review included activities conducted within the first 2.5 years at seven PERRCs (Harvard School of Public Health, University of North Carolina, Johns Hopkins University, University of Pittsburgh, University of Washington, Emory University, and University of Minnesota; funded in September 2008).

Activities conducted within 1.5 years were evaluated for PERRCs at the University of California, Berkeley, and University of California, Los Angeles (funded in September 2009). The workgroup was charged with the assessment of the functioning of the administrative core (Objective # 1), and progress of the individual and inter-related research projects of each PERRC toward achieving results for near term impacts on public health preparedness and response systems (PHPRS) (Objective # 2).

This review was focused specifically on an evaluation of

1. The conduct of required activities (as specified by the funding opportunity announcement (FOA) in the administrative core and the support and oversight of individual, inter-related research projects. Reviewers were asked to evaluate
  - a. The support and development of pilot research projects and new investigator training and the potential public health impact from these activities
  - b. The role of an established Advisory Committee and evidence that this body has provided meaningful support and guidance to research at the PERRC
  - c. Centralized scientific guidance and financial administration for the individual and interdependent research projects
2. The progress in a PERRC's individual and inter-related research projects toward achieving original research goals and the potential for ongoing research to yield near-term results (3-5 years) to help strengthen practice in the public health preparedness and response system (PHPRS). In evaluating the research, reviewers will be asked to assess the
  - a. Development of transferable knowledge to improve the PHPRS or development of tools, models, and other practical applications for response to all hazards. This may include a consideration of
    - i. Evidence that the projects have yielded research findings that have been transferred to practice and helped improve preparedness and response capabilities and performance (e.g., as a result of research findings, practitioners have changed their behavior resulting in more effective or science-based approaches to practice)
    - ii. The future potential for the projects to yield results that can be transferred to practice and improve or strengthen preparedness and response capabilities and performance

- b. The extent to which a public health systems research approach is used and the extent to which research partnerships are a key factor in achieving research results. This may include a consideration of the quality and quantity of
  - i. Collaborations with state and local public health and organizations across the PHPRS
  - ii. A multidisciplinary research team
- c. The adequacy of methods to disseminate research findings that are accessible and appropriate for multiple audiences, in particular public health preparedness and response practitioners and policy makers
- d. The metrics and indicators developed for this evaluation to illustrate and measure the impact of research outcomes on PHPRS.

The PERRC external peer review was conducted by a 7-member ad hoc BSC workgroup with two members of OPHPR's BSC serving as workgroup co-chairs and five invited expert reviewers external to the BSC. The workgroup met for 3.5 days on August 9 - 12, 2011 in Atlanta, GA.

In a report to the BSC, the workgroup made 19 recommendations, of which two were overarching recommendations, eight related to the core (Review Objective #1), and nine related to the progress in individual research projects and evidence of impact (Review Objective #2). The findings and recommendation from the workgroup were presented to OPHPR's BSC in a meeting held on January 3, 2012. All the 19 recommendations were approved by the BSC.

The PERRCs' work is monitored by OPHPR's Extramural Research Program Office (ERPO or "the program"). The ERPO response to each BSC recommendation is provided below. ERPO worked with PERRC Principal Investigator workgroup for their input on how to address the recommendations that require PERRCs active engagement for implementation. It is worth mentioning that it is the same workgroup that provided input to ERPO in developing metrics for PERRC mid-project review.

For the purpose of these program responses

- *Concur*: ERPO agrees with the recommendation and has the funding, staff, and the resources to implement and address
- *Concur in principle*: ERPO agrees with the recommendation, but at this time lacks the funding, staff, or other resources to implement. In such cases, ERPO has developed proposals to address the recommendation should funds become available. Further action would require additional OPHPR resources (funding, staff, or other resources).

**PERRC Program Response to External Peer Review (continued)****Overarching Recommendation**

1. Financial support of research centers should be continued to ensure sustained development of scientific evidence and research capacity in support of best practices for the field of public health preparedness and emergency response.

**Program response: Concur**

With resources available in FY2012, the ERPO will address this recommendation to the extent possible through the following activities

- Fund the continuation of PERRC program activities that are determined to yield the most promising results that can be translated to support best practices for preparedness and response
- Encourage PERRCs to seek funding from other sources. The existence of these research centers has enabled several investigators to attract more than \$188 million in additional funding from USAID, USDA, NSF, NACCHO, Kaiser Foundation, Robert Wood Johnson Foundation, etc. (reported from PERRCs at Pittsburgh, UNC, Harvard, Washington, Minnesota, Emory, and Johns Hopkins). It is unknown how much, if any, of these funds are directed to addressing public preparedness and response research
- Continue to actively identify and share information with PERRCs on potential funding opportunities and research collaborations, including potential public and private funding organizations that have aligned research interests. Examples of successful collaborations are given below:
  - ERPO connected UNC, Pittsburgh, and Minnesota PERRCs with DHS's National Center for the Study of Preparedness and Catastrophic Event Response
  - Washington PERRC is working with DHS in developing protocols and procedures related to sending public health emergency information via text messaging (SMS)
  - PERRC's connections across CDC resulted in additional funding from the CDC H1N1 Task Force to Pittsburgh PERRC (\$336,720), OPHPR's Division of State and Local Readiness to Johns Hopkins PERRC (\$299,656), and National Center for Injury Prevention and Control to Washington PERRC (\$98,735)
  - A research collaboration was established between the Berkeley PERRC and NCEH (Environmental Public Health Readiness Branch) to address chemical event preparedness and response-related research

**Overarching Recommendation**

2. If additional funding were to become available for the existing PERRCs, priority should be given to funding centers that meet the following criteria
  - a. A record of exceptional past performance based on both the quantitative and qualitative metrics used in the mid-course review
  - b. The use of a truly multi-disciplinary and systems-based approach to research in public health preparedness and response
  - c. A proposed research plan that addresses recognized needs in the field, that can be completed within the time frame of the additional funding, and that has the potential to yield results that can inform practice
  - d. Evidence of ongoing projects that are evaluating new interventions or comparing existing programs or practices to identify what works best

**Program response: Concur in principle**

The PERRCs were funded under a competitive funding opportunity and grant policy requires that all selected grantees must be funded at some level if funds are available. The criteria detailed in this recommendation provide an order of priority for achieving program goals and will be considered within the context of departmental and agency regulations for funding research grant awards.

**PERRC Program Response to External Peer Review (continued)****Core Recommendation Re: Pilot Projects**

3. A database of pilot projects completed by the PERRCs should be developed to include a description of the overall project, a summary of results, documented or potential impact of the results, an assessment of what worked and what did not work, lessons learned and recommendations for next steps. This information should be made broadly available to the research community.

**Program response: Concur in principle**

The program currently receives information regarding research findings, work products (final, published or public products intended for use and/or dissemination), and success stories related to the pilot projects in interim and annual progress reports. Additional resources are needed to retool an existing program database to expand the information collected on each of the pilot projects, conduct a synthesis of that information, and develop a mechanism to provide public access.

Pending the availability of resources to support these efforts ERPO will work with the PERRCs to determine

- The type of information or products that should be made available from CDC-funded PERRC research work and products
- When that information or product should be shared (e.g. pre- or post- publication)
- The methods or venues for dissemination of this information (e.g. via internet homepages of PERRCs, ASPH, NACCHO, ASTHO, and OPHPR and newsletters of ASPH, NACCHO, OPHPR and ASTHO)
- The extent to which the PERRCs can develop this additional information and work with the OPHPR Office of Communication to develop a strategy for making the information publicly available

**Core Recommendation Re: Pilot Projects**

4. Any future PERRC funding opportunities should continue to encourage grantees to consider the balance and diversity of research partners and populations served in the selection of pilot projects.

**Program response: Concur**

The Pilot projects have involved research partners from across the public health system (e.g., 11 in case of Minnesota's three pilot projects), and have served different geographic areas and different types of at-risk populations (e.g., University of Pittsburgh's pilot and supplemental studies of vaccine acceptability among minority populations, UNC pilot studies about communicating emergency information to homeless populations, Washington PERRC pilot studies about communicating public health emergency information to Limited English Proficiency populations, etc.).

The PERRCs that elected to continue pilot projects, despite funding cuts, were advised to address the diversity consideration in their selection process, e.g., PERRCs at the University of California at Berkeley and Los Angeles.

The program is also addressing this recommendation by including the following points in guidance sent to the PERRCs for preparing their progress report and FY 2012 applications for continued funding

- Consider the balance and diversity of research partners and populations served in the selection of pilot projects if funding is available for this activity in the future
- Describe in the interim and annual progress reports the diversity in the partners participating in and populations served in completed pilot projects

**PERRC Program Response to External Peer Review (continued)****Core Recommendation Re: New Investigators**

5. While the PERRCs have been successful in engaging new investigators from varied disciplines in their work, they should pay particular attention to ensuring greater diversity, especially of under-represented minorities.

**Program response: Concur in principle**

PERRCs have engaged new investigators from at-risk and under-represented minority populations, including deaf and hard of hearing (UC Berkeley) and minority populations (e.g., University of Minnesota, and Harvard University). However, this was not a requirement stipulated in the FOA for the PERRCs, and extensive data on the level of diversity among the new investigators has not been captured. To address this recommendation, the program will encourage the PERRCs to make greater efforts to ensure diversity among new investigators through the following

- Include institutions that represent under-represented minorities in their call for applicants if funds are available for this activity in the future (See: [US Department of Education Lists of Postsecondary Schools Enrolling Populations with Significant Percentages of Minority Students](#)).
- Report their efforts to ensure diversity among new investigators in their interim and annual progress reporting

**Core Recommendation Re: New Investigators**

6. PERRCs should track the extent to which new investigators retain their involvement in public health preparedness and emergency response research. Overall, PERRCs should develop a more systematic way of assessing the impact of PERRC training on the careers of researchers who are new to the field.

**Program response: Concur**

ERPO has taken the initiative to track new investigator involvement by assessing the impact of PERRC training on the careers of new investigators by tracking publications, conferences proceedings/abstracts, and other types of products or tools where new investigators' work was involved, as reported by PERRCs in interim and annual reports.

ERPO will compile a list of new investigators trained in PERRCs and will track their research interest based on their future publications in peer reviewed journals. ERPO will update the list semiannually.

It is important to note that without significant PHPRS research funding, it is difficult to attract and retain researchers. With diminishing research funding, new investigators will look for opportunities in other fields there will be long-term career benefits even if not directly linked to public health preparedness science.

**Core Recommendation Re: New Investigators**

7. If there are future funding opportunities for research in PHPRS, they should continue to encourage awardees to train new investigators and students, in order to grow the multidisciplinary field of PHPRS researchers.

**Program response: Concur in principle**

To address this recommendation, as allowed by departmental and agency regulations for funding research grant awards and as appropriate for the objectives of the research initiative, OPHPR will include language in future PHPRS-related FOAs to encourage applicants to train students and new investigators. For

example, as appropriate, this criterion can be included as a FOA Additional Review Criterion, and considered among the funding priorities during the programmatic review of applications.

**Core Recommendation Re: Advisory Committees**

8. As appropriate, PERRCs should consider enhancing the involvement of: the business community, elected officials, public safety professionals and emergency management personnel. In addition, they should ensure representation of academics from disciplines often under-represented in public health preparedness and response systems research (e.g., business, engineering, psychology, sociology, anthropology, political science, economics, social work, and other health science professionals).

**Program response: Concur in principle**

To address this recommendation the program will encourage the PERRCs to enhance the involvement of members, as appropriate, from these other areas. Current Advisory Committee membership across the PERRCs include individuals from diverse disciplines, who have been involved since the start of the PERRCs (including the disciplines called-out in this recommendation), and have a depth of knowledge of the PERRCs.

At this point in time, the PERRCs are winding down their research projects and there may be less benefit from adding new advisory members. However, in guidance sent to the PERRCs for preparing their progress report and FY 2012 applications for continued funding, ERPO has included language encouraging the PERRCs who are rotating in new Advisory Committee members to consider filling the gaps with individuals representing the range of disciplines and domains mentioned above, especially as relevant to the research areas of the PERRC.

**Core Recommendation Re: Advisory Committees**

9. The workgroup encourages greater use of project-specific advisory groups where appropriate. The expanded participatory advisory committee concept already adopted by some PERRCs, with greater committee "hands-on" project participation is a good one worth expanding.

**Program response: Concur in principle**

PERRCs will continue to use project-specific advisory groups to the extent possible. Those independent projects that do not have specific advisory groups will be encouraged to continue to obtain advice or input on the research from partners and organizations across the public health system at conferences, meetings, and through other avenues. The PERRCs are winding down their research projects and there may be less benefit from establishing a new advisory group or creating new project-specific advisory committees at this point in the project cycle.

**Core Recommendation Re: Collaboration across Centers**

10. Mechanisms should be created to enhance networking of both new and established investigators across centers. These mechanisms could include development and implementation of
  - a. A searchable database of PERRC investigators to include research interests and disciplinary foci
  - b. A web-based forum to allow investigators to interact with each other around specific topics of mutual interest
  - c. A clearinghouse of surveys, tools, research findings accessible by PERRC investigators
  - d. Monthly webinar series organized by topic areas or cross-cutting research themes for the PERRCs to share research result and lessons learned

**PERRC Program Response to External Peer Review (continued)****Program Response to 10 (Overview)**

ERPO concurs in principle with the recommendation to create mechanisms for enhancing the networking of investigators across centers. Some of the suggested mechanisms are already in place. For example, ERPO holds networking sessions of PERRC investigators across centers during PERRC annual meetings, the NACCHO Public Health Preparedness Summit (2011, 2012), and the Public Health Services and Systems Research Keeneland Conference (2010). These meetings have been excellent venues for fostering networking, and the program will continue to do so to the extent possible.

**Program Response (10a): Concur in principle**

Significant resources will be needed to develop any searchable database. As an alternative the ERPO will engage the ASPH to determine their ability to develop a Microsoft Excel or Access file and provide this information to PERRC investigators thru the secure PERRC Workgroup site ([Association of Schools of Public Health PERRC forum](#)). If possible, we could then request updated information about research interests and disciplinary focus from all PERRC investigators.

**Program Response (10b): Concur**

A secure web-based forum for PERRCs already exists at ([Association of Schools of Public Health PERRC forum](#)) and was made available by the ASPH at the program's request. All PERRC investigators were provided with login credentials for free access to the site. ERPO is working to encourage the PERRCs' use of this site by posting program-related announcements and documents on the ASPH workgroup website.

**Program Response (10c): Concur in principle**

To address this recommendation, ERPO will engage the ASPH to determine their ability to develop, with the help from PERRCs, a clearinghouse of surveys, tools, and research findings. If possible, ERPO would then work with ASPH to make this information available, with consent from PERRC investigators to post any unpublished data collection methods and findings, on the ASPH website ([Association of Schools of Public Health PERRC forum](#)). The access to that site is restricted to PERRC investigators to safeguard PERRC investigators' intellectual property.

**Program Response (10d): Concur in principle**

ERPO established monthly webinars at the beginning of the program. During the subsequent Annual Program meeting, the PERRCs expressed their lack of enthusiasm about continuing the webinar series because of the time commitment in preparing for them. Alternatively, ERPO has encouraged PERRC investigators to visit CDC to give seminars on their research depending on their funds and availability. Since May 2010, ERPO has featured eight seminar presentations at CDC, which are also scheduled as webinars to allow other PERRC investigators, collaborators and practice partners at state and local health departments to participate. ERPO has arranged PERRCs participation/presentations in the monthly Biosurveillance Forum meeting of CDC's Office of Surveillance, Epidemiology, and Laboratory Services. In addition, the program has collaborated with OPHPR's Division of Emergency Operations to feature PERRC webinar presentations thru the Clinician Outreach Communication Activity (COCA) calls with clinical practitioners. In 2012, the ASPH will host four PERRC webinars that will be advertised to a much wider audience of public health researchers and practitioners including those from the state and local health departments. To further address this recommendation ERPO will explore the availability of resources and level of participation for reinstating a monthly webinar series with the PERRCs that is organized by comparable topic areas and/or cross cutting preparedness themes for the PERRCs to share research results and lessons learned.

**PERRC Program Response to External Peer Review (continued)****Recommendation Re: Progress in Individual Research and Evidence of Impact**

11. OPHPR should work to develop an updated research agenda for public health preparedness and response systems. The updated agenda should build upon the IOM recommended research priorities that are the focus of the PERRCs. Future funding opportunities for PHPRS research should emphasize
- a. Systems research that addresses the challenges of integrating across the components of the public health system
  - b. Interventional research (i.e. development and evaluation of new interventions)
  - c. Comparative effectiveness research (i.e., comparing what practices work best for whom and why)
  - d. Translational or implementation research (i.e., research into the barriers and facilitators of implementing strategies of proven efficacy across different settings and at-risk populations)
  - e. Mechanisms to encourage collaboration on joint research projects among awardees

**Program response: Concur in principle**

ERPO is conducting a systematic assessment of research that has been funded by OPHPR over the last five years. The report from this assessment is intended to provide foundational information to support the development of an updated preparedness research agenda for OPHPR. The report will discuss the outcome of previous research and how these results could be expected to contribute to preparedness and response practice. A workgroup of practice partners, including preparedness systems researchers, is planned to provide some insight on additional needs to be addressed with an agenda for new research. ERPO is planning to share the report with BSC in early 2013.

ERPO recognizes the scientific values of the recommendations 11a-d and will discuss with OPHPR leadership how this recommendation may influence our research agenda.

**Recommendation Re: Progress in Individual Research and Evidence of Impact**

12. In moving forward, there should be greater emphasis on demonstrating impact at the regional and national levels.

**Program response: Concur in principle**

ERPO is requesting the BSC provide clarification whether “regional level” impact references the 10 HHS regions or other. ERPO will continue to work with the PERRCs to assess and demonstrate the impact/potential impact of research findings at the regional and national level, such as the information that presented to the Ad Hoc Workgroup in the Research Impact Briefs. Although a limited selection of Research Impact Briefs (only one per PERRC) appeared in the program review materials, other examples exist.

To further address this recommendation, the ERPO is currently developing a framework for translating PERRC and other OPHPR-funded research findings to preparedness practice, (anticipated to be available in early 2013). Implementation of the framework is intended to help OPHPR reach a broader audience of preparedness and response practitioners and facilitate the use of science-based evidence to impact preparedness practice on the regional and national level.

**Recommendation Re: Progress in Individual Research and Evidence of Impact**

13. As future funding opportunities for research in PHPRS become available, priority should be given to demonstrating longer term impact and scalability of interventions and strategies.

**Program response: Concur in principle**

ERPO concurs in principle with the recommendation. ERPO will work with the Office of Science and Public Health Practice, PHPR's Division of State and Local Readiness, and the Office of the Director to determine how best to address this recommendation when future funding opportunities for PHPRS research become available. Efforts to address this recommendation are subject to conditions set forth by departmental and agency regulations for funding research grant awards and as aligned with the objectives of the applicable research initiative. ERPO has included in the guidance that is sent out to PERRCs for their progress reporting a request to identify the research outcomes that are expected to have a long term impact, and the potential for scalability.

**Recommendation Re: Progress in Individual Research and Evidence of Impact**

14. The further development and dissemination of research impact statements should be given priority over the next 12-18 months. These impact statements should be used more effectively to engage with key policymakers and decision makers at the state and local levels.

**Program response: Concur**

ERPO will

- Continue working with PERRCs to update already developed Research Impact Briefs
- Engage the PERRCs in determining additional examples of research impacts and develop a timeline to prepare additional briefs for other research outcomes. In some situations, the dissemination of some of the briefs may need to wait until the research results have been published in peer-reviewed journals.
- Work with the OPHPR Office of Communication and the Office for Policy and Program Evaluation, with input from the PERRCs, to develop a strategy for using these briefs more effectively to communicate the preparedness and response impact of PERRC research. For example, hard copies of PERRC approved briefs were shared with practitioners at the 2012 Public Health Preparedness Summit. This strategy may identify more effective ways to use the briefs to engage relevant policymakers and decision makers.
- After the Briefs-related information has been published in peer reviewed journals or the investigators give consent to share the Briefs containing unpublished research findings, these documents will be posted on secure ASPH website ([Association of Schools of Public Health PERRC forum](#)) to share among all PERRCs.

**Recommendation Re: Progress in Individual Research and Evidence of Impact**

15. Wherever possible, PERRCs should use well-established methods for constructing case examples for return on investment (ROI) of their research.

**Program response: Concur in principle**

ERPO will encourage the PERRCs to develop examples of ROI, to the extent possible, from the varied research outcomes. There is one example from UNC PERRC where research evidence suggested changes to improve the use of regional response teams and the NC surveillance systems. The state health department implemented changes based upon the research outcomes and saved one million dollars, a 30% savings. Due to the reduction in UNC PERRC funding, plans to evaluate the benefits of implementing that change have been placed on hold.

To further address the recommendation, during the PERRC annual meeting (Feb 20, 2012), the ERPO encouraged the PERRCs to find ways to demonstrate ROI in their research, if their resources allow to do so. The construction of case examples on ROI can be considered in future FOAs, as another way to address this recommendation.

**PERRC Program Response to External Peer Review (continued)****Recommendation Re: Dissemination**

16. OPHPR should establish a working group of PERRC investigators and key stakeholders to develop a strategy for dissemination that can be implemented over the next 12-18 months. Particular attention should be paid to developing a strategy that will reach underrepresented minority groups and organizations involved in preparedness (e.g., minority-serving institutions, Historically Black Colleges and Universities, National Association of Black Social Workers). The workgroup should work closely with experts in communication and best practices in dissemination and translation. In developing the strategy, attention should be paid to clearly defining target audiences and how best to convey findings to those audiences, in terms of both dissemination channels and re- packaging the content to be practice friendly and relevant to the audience. The strategy should also be sensitive to the framework of the public health paradigm (e.g., essential public health services) to ensure relevance to the broad public health community.

**Program response: Concur in principle**

On the basis of resource availability, ERPO would like to conduct the following activities to address this recommendation

- During the Annual PERRC Program Meeting, the ERPO discussed with PERRC PIs the idea of establishing a workgroup of PERRC investigators and key stakeholders, to ensure that the dissemination of research outcomes reaches underrepresented minority groups and organizations, such as those listed on US Department of Education site ([US Department of Education Lists of Postsecondary Schools Enrolling Populations with Significant Percentages of Minority Students](#)) and elsewhere. Although it was agreed that was a worthwhile endeavor, the PERRC PIs cited the lack of resources for such an effort-intensive activity
- ERPO has consulted with OPHPR's Office of Communication about developing proposals for disseminating research findings to make them accessible to the practice community. ERPO will involve preparedness practice stakeholders in a workgroup to provide input on a framework to facilitate the dissemination and translation of research findings to the practice community

**Recommendation Re: Dissemination**

17. The workgroup felt strongly that a robust website should be an important component of any dissemination strategy. The website should be accessible to key audiences and include PERRC research findings, practice tools, peer-reviewed articles, abstracts, pilot projects, and new investigators. An example of a website that could be emulated in part was the Cancer Control P.L.A.N.E.T. website (e.g., <http://cancercontrolplanet.cancer.gov/>).

**Program response: Concur in principle**

ERPO does not have the resources needed to develop a site comparable to the Cancer Control P.L.A.N.E.T. at this time. ERPO continues to use alternate means for dissemination. For example the ERPO arranged to post a brief statement about the Washington PERRC's research findings about text messaging during emergencies (in the format of video series) in the Public Health Preparedness and Response Connector newsletter. This information was then picked up and widely disseminated via newsletters from the Division of Strategic National Stockpile, and the Division of State and Local Readiness. In other instances PERRC findings have been disseminated through publications by ASTHO and NACCHO.

The ERPO presented these examples to the PERRCs during the Annual Program Meeting (February 20, 2012). ERPO encouraged PERRCs to prepare brief statements about their research findings that can be comparably disseminated, and to identify other active approaches for dissemination of PERRC findings.

The ERPO has reached to the OPHPR Communications Office for assistance to develop a strategy and initiatives to better disseminate PERRC findings.

At present, ERPO has a website ([CDC OPHPR Extramural Research Program PERRC page](#)) that is accessible outside CDC. This website has links to the individual PERRCs homepages and includes a list of the peer reviewed articles published by the PERRCs with links to freely- available articles or a link to PubMed for other articles. The site is regularly updated. The list of publications is organized by IOM PHPRS research priorities as well as by the cross-cutting priorities.

#### **Recommendation Re: Dissemination**

18. The broader CDC community should become more knowledgeable of the PERRCs, their activities and the implications of their research for public health practice more broadly (beyond preparedness and emergency response). OPHPR should collaborate with PERRCs to organize a seminar at CDC that would attract a large and diverse audience.

#### **Program response: Concur**

Some examples of CDC community's knowledge of the PERRC activities and resulting CDC-PERRC collaborations are provided in our response to the recommendation number 1.

A series of PERRC seminars has been organized at CDC since May 2010. The announcement about the PERRC seminars is made CDC-wide. CDC programs known to have a direct interest in or current work on the PERRC research topic are invited to schedule in-person meetings with the PERRC presenters during their visit and seminar announcements are targeted to specific program areas that have some relation to the public health research outcomes or approach. These seminars have been well attended (with more than 50 attendees in person and thru LiveMeeting). These presentations are also scheduled as webinars so that the CDC community at different campuses and field staff around the country can have access.

To further address this recommendation, ERPO will initiate a program effort to work with all of the PERRCs to identify CDC program areas related to their research outcomes and will proactively share research information with CDC investigators to facilitate some interest and potential collaboration.

#### **Recommendation Re: Metrics used for evaluating PERRCs**

19. Overall, the metrics developed by ERPO with input from the PERRCs are appropriate and comprehensive. Caution should be used in their interpretation as many of the indicators are merely counts of activities and do not address issues of quality. These metrics will be useful in benchmarking future progress. If new metrics are needed in moving forward, a similar process to develop new metrics should be used but with greater attention to quality and not just quantity.

#### **Program response: Concur in principle**

ERPO recognizes the limitations of interpreting quantitative data by itself. The survey of PERRC program outcomes requested both quantitative and qualitative data and results from both were analyzed and interpreted in the report. In the event there is a need of developing additional metrics ERPO will continue to pay greater attention towards developing appropriate and comprehensive qualitative metrics to measure impact of PERRCs research on quality of preparedness and response.

**APPENDIX E: ACRONYMS**

<b>AMT</b>	Anthrax Management Team
<b>APHL</b>	Association of Public Health Laboratories
<b>ARRA/HITECH</b>	American Recovery and Reinvestment Act/Health Information Technology for Economic and Clinical Health Act
<b>ASPH</b>	Association of Schools of Public Health
<b>ASPR</b>	Assistant Secretary for Preparedness and Response (HHS)
<b>ASTHO</b>	Association of State and Territorial Health Officers
<b>BSC</b>	Board of Scientific Counselors
<b>CDC</b>	Centers for Disease Control and Prevention
<b>CEFO</b>	Career Epidemiology Field Officer
<b>CSTE</b>	Council of State and Territorial Epidemiologists
<b>DEO</b>	Division of Emergency Operations (CDC)
<b>DHS</b>	US Department of Homeland Security
<b>DoD</b>	Department of Defense
<b>DSAT</b>	Division of Select Agents and Toxins (CDC)
<b>EHR</b>	Electronic Health Record
<b>ERPO</b>	Extramural Research Program Office (CDC)
<b>ExO</b>	Ex Officio
<b>FACA</b>	Federal Advisory Committee Act
<b>FDCH</b>	Federal Document Clearing House
<b>FOA</b>	Funding Opportunity Announcement
<b>FRO</b>	Financial Resources Office (CDC)
<b>HPP</b>	Hospital Preparedness Program
<b>HHS</b>	US Department of Health and Human Services
<b>IOM</b>	Institute of Medicine
<b>IT</b>	Information Technology
<b>LO</b>	Learning Office (CDC)
<b>LRN</b>	Laboratory Response Network
<b>MASO</b>	Management Analysis and Services Office (CDC)
<b>NACCHO</b>	National Association of County and City Health Officials
<b>NCEH</b>	National Center for Environmental Health
<b>NCEZID</b>	National Center for Emerging and Zoonotic Infectious Disease
<b>NCIRD</b>	National Center for Immunization and Respiratory Diseases
<b>NIHB</b>	National Indian Health Board
<b>NIH</b>	National Institutes for Health
<b>OD</b>	Office of the Director
<b>OID</b>	Office of Infectious Diseases (CDC)
<b>OPHPR</b>	Office of Public Health Preparedness and Response (CDC)
<b>OPPE</b>	Office of Policy, Planning, and Evaluation (CDC)
<b>OSPHP</b>	Office of Science and Public Health Practice (CDC)
<b>PERRC</b>	Preparedness and Emergency Response Research Center
<b>PAHPA</b>	Pandemic and All-Hazards Preparedness Act (PL 109-417)
<b>PHEP</b>	Public Health Emergency Preparedness