

Center for Preparedness and Response (CPR)
Board of Scientific Counselors (BSC) Fall Meeting

October 29- 30, 2018

Roybal Campus,
GCC, Building 19, Auditorium B3
Atlanta, Georgia

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Day 1, Monday, October 29, 2018

Roll Call, Introductions, and Review of Federal Advisory Committee Rules

Kimberly Lochner, ScD; Deputy Associate Director for Science, CPR and Designated Federal Official, CPR BSC

The Center for Preparedness and Response (CPR) Board of Scientific Counselors (BSC) Fall Meeting began at 10:48 am. Dr. Lochner conducted roll call and established that quorum was met. Senior CPR staff, BSC members, and presenters were introduced.

As a membership update, BSC Members, Drs. Dawn Wooley and Suzet McKinney have resumed their positions on the board. Dr. Anthony Macintyre will serve as an ex officio member on behalf of the Department of Homeland Security (DHS). Drs. Benjamin Chan and John Dreyzehner are new liaison members representing the Council of State and Territorial Epidemiologist (CSTE) and Association of State and Territorial Health Officials (ASTHO), respectively.

The meeting was chaired by Dr. Inglesby. Discussions and deliberations were among BSC Members, Ex Officio Members, and Liaison Representatives. Voting was conducted only among the BSC and Ex Officio Members. The public was allowed to comment during the Public Comment portion of the agenda only. All speakers were asked to identify themselves and all participants agreed to have their comments monitored and recorded.

Quorum must be maintained, and members must be present during any voting periods; therefore, members were asked to notify Dr. Lochner before leaving portions of the meeting to ensure that quorum is maintained.

Dr. Lochner reviewed the BSC responsibilities as per its charter, as well as conflict of interest waivers. Members were asked to complete and return Confidential Financial Disclosure Report Update Forms to Dr. Lochner prior to the meeting, if there were any changes made since last submitted. Members were asked to identify any conflicts of interest. Drs. Thomas Inglesby and Cathy Slemper, as reported in prior meetings, are working on two projects that are funded by CDC for resilience and risk communication, but do not believe they cause a conflict of interest.

The meeting was then turned over to Dr. Inglesby for opening remarks.

Welcome, Call to Order, and Opening Remarks

Thomas Inglesby, MD; Chair, OPHPR BSC

Dr. Inglesby, after calling the meeting to order, thanked the CPR leaders and their staff for the huge effort it took in preparing the meeting and gathering the BSC membership. He expressed excitement over the topics to be discussed and reviewed the agenda for both days. He concluded his remarks encouraging the BSC to be candid in their comments and to contribute their valuable feedback.

CPR Update

RADM Stephen C. Redd, MD; Director, CPR

Dr. Redd began with an update on organizational changes. The Office of Public Health Preparedness and Response (OPHPR) has changed its name to the Center for Preparedness and Response (CPR). The change in name has not altered the Center's work. Also, the Strategic National Stockpile (SNS) has completed its move to the Office of the Assistant Secretary for Preparedness and Response (ASPR), in the U.S. Department of Health and Human Services. Dr. Redd also provided an update on some of CDC's response activities. The first current activity was that of Ebola outbreak response in the Democratic Republic of Congo. As of Friday, October 26, 2018, there were 251 cases of Ebola and more are expected because the outbreak is not under control. There are ten health zones affected. CDC deployment capability is limited due to security issues in North Kivu. It is unlikely the security issues will change in the near future; therefore, strategies are being devised on how to operate given the constraint. The areas of most concern are the increasing proportion of cases identified that are not from known chains of transmission, as well as, community deaths identified and confirmed as Ebola but are not part of known chains of transmission. However, laboratory capacity is quite strong, so there is reference capability nearby; vaccine has been deployed and 20,000 individuals have been vaccinated. The limited ability to identify contacts in a timely matter is hindering the vaccination efforts because there's no way to ensure the correct individuals are being vaccinated. The [CDC] Emergency Operations Center (EOC) was not activated for the Ebola response due to the excellent coordination occurring between the Center for Global Health and the National Center for Emerging Zoonotic Infectious Diseases.

During this year's hurricane season, the EOC was activated for Hurricane Florence. The activation lasted two weeks. There were 51 total deployments. The Center is currently working on the environmental hazards such as carbon monoxide poisoning, generator safety, flood water, and concentrated animal feed operations. It's tasked with providing mainly epidemiology and communication support. For Hurricane Michael, there was one Disaster Medical Assistance Team (DMAT) deployed and three CDC staff deployed. Super Typhoon Yutu was a devastating event to the Northern Mariana Islands. Three staff have been deployed to the area. CDC is working through ASPR for requests for clinical staff. There's been a change in the epidemiology of hepatitis A. For the last year and a half, there have been outbreaks occurring, on a state-by-state basis, among the homeless and individuals who use intravenous drugs. It's been a challenge to control the outbreaks. So far, there are 7,200 cases, 4,200 hospitalizations, and 74 deaths due to the hepatitis A outbreak. Thirteen states have been affected. Last week, the Advisory Committee on Immunization Practices weighed in and included homelessness as a risk factor and recommended that these individuals be vaccinated. This work has required significant coordination at the state-level around emergency preparedness, immunization, and epidemiology.

A flu exercise was convened September 12-15, 2018. Over the last six years, there have been no flu exercises due to the overwhelming and extensive outbreak and event responses that required CDC's involvement. The timing scenario of exercise was 35 days into a pandemic flu outbreak, which is later than the start times practiced in the previous seven exercises. There will be an update on the exercise later during the meeting.

CPR Update - Continued

There was also a two-hour tabletop exercise held in late June 2018 related to anthrax. The purpose was to review the response process for an anthrax event with the CDC Director and leadership. CPR is continuing its series of nuclear detonation exercises and is working internally to exercise the areas CDC will be tasked with during emergency response.

Another change in the CPR is the departure of Mr. Jeff Bryant, former Director, Division of Emergency Operations (DEO), who is now with the Bureau of Census in the Department of Commerce. Mr. Ed Rouse has been appointed as the Acting DEO Director.

CPR is at the late stages of reaccreditation through the Emergency Management Accreditation Program. The Center believes it has satisfied the requirements and is waiting on the final notification. This program has a five-year accreditation cycle.

The Division of State and Local Readiness is using the Crisis Notice of Funding Opportunity (NOFO) to fund two activities. The funding opportunity is used as a vehicle to move funds more quickly through CDC, thereby overcoming delays in response due to the appropriation process. Roughly, \$70 million has gone through the supplemental funding to nine jurisdictions. These are coordinated efforts between Environmental Health, Emerging and Zoonotic Infectious Diseases, and the National Institute for Occupational Safety and Health (NIOSH) to fund state health departments. The CPR NOFO mechanism is also being used to distribute \$155 million to 54 state and local health departments for the opioid response.

The Division of Select Agents and Toxins (DSAT) continues to update its electronic information management system. The inspection module was being updated and is now part of the electronic system. The Import Permit Program moved from information collection using paper spreadsheets to the modern information system in September 2018. Also, in August, the Division convened the Responsible Officials and 837 individuals were trained. The annual report from the meeting is in the late draft phase and is expected to be published soon.

A farewell event was held for the DSNS a month ago. CDC will continue to work with the strategic national stockpile through ASPR on the medical countermeasure mission. The SNS staff will remain in Atlanta but will relocate to a different campus. The move should be completed after the first of the year.

Dr. Redd concluded by asserting that CPR's mission has not changed. Its purpose is to ensure effective responses and to make certain all resources are in place for a response. He echoed Dr. Inglesby's sentiments in asking the board to be frank in their comments and feedback. The BSC's advice makes CPR more efficient and effective in their responses.

The BSC asked a few clarifying questions regarding the information provided by Dr. Redd but **no further recommendations** were given in response to his report.

Interval Updates – Samuel S. Edwin

Samuel S. Edwin, PhD; Director, Division of Select Agents and Toxins

DSAT has two programs under its umbrella. The first is the Federal Select Agent Program (FSAP), which regulates all entities that possess, use, or transfer biological agents or toxins that have the potential to pose a severe threat to public health and safety, animal or plant health, or animal or plant products. The second is the CDC Import Permit Program (IPP). This program regulates the importation of infectious biological agents, infectious substances, and vectors that can cause disease in humans. The Division also promotes laboratory biosafety and biosecurity.

With regard to the FSAP, the focus continues to be on improvement of entity oversight, customer service, incident response, and transparency and engagement. Entity oversight includes facility inspections and inspection reporting. Close engagement with its stakeholder entities is essential to improvement. More time is being spent with inspectors, and reporting will be conducted through a highly secured portal, which will allow changes to be viewed in real-time. The new portal will also be used to track trends in program activity. The electronic system also provides transparency between the FSAP and its entities. Enhancements also have been made to the incident reporting form, which now allows the collection of more specific information. Data from these forms also can be used for trend analysis, particularly for commonly occurring incidents.

This is the third year DSAT will issue an annual report. The report provides aggregated programmatic performance statistics and does not allow the identification of BSAT entities. The Federal Bureau of Investigation (FBI) said this is the best way to disseminate information without causing negative effects on the entities. Next year's report will be completed more rapidly due to the capabilities of the electronic system.

DSAT has a new Agriculture Select Agent Services National Director. Dr. Adis Dijab, DVM spent eight years as a small animal veterinary practitioner in Kentucky and began his Animal and Plant Health Inspection Service (APHIS) career in 2004. He has served in leadership roles at U.S. Department of Agriculture's (USDA) Food Safety and Inspection Service and APHIS' Veterinary Services.

The DSAT Inspection Report Processing Annual Summary was released in May 2018. The data from the report shows that DSAT continues to make substantial improvements in its ability to provide timely feedback to entities. The report also outlined other major findings. Approximately 96% of its inspection reports in 2017 were issued within DSAT's target of 30 business days, which means only 6 reports out of 142 did not meet the goal. This reflects an improvement of 32% over the 2016 data and a 50% improvement since 2015. Moreover, this improvement was made even with an increase in the number of inspection reports issued. Furthermore, the Division has again improved report timeliness across all inspection types, with particularly significant advances in maximum containment inspections. Once entities and staff are comfortable with the new electronic system, the goal is to bring the reporting time down to two weeks.

In June 2018, the U.S. Department of Health and Human Services - Office of Inspector General (HHS-OIG) released its report and review of DSAT. It stated, "Entities generally met Federal Select Agent Program internal inspection requirements, but CDC could do more to improve effectiveness." FSAP has taken a number of steps to increase the efficacy of entity annual self-inspections through inspector training and for the regulated community using policy and guidance documents created to assist entities in meeting these regulatory prerequisites.

Interval Updates – Samuel S. Edwin --Continued

DSAT is in the process of developing an application (app) for internal inspections. Stakeholders will be involved in the app development process to ensure that the changes are helpful and help increase efficiency.

The 2018 Responsible Official Workshop was held at CDC in Atlanta, on August 15-17, 2018. This workshop was for Responsible Officials (ROs) and Alternate Responsible Officials (AROs). There were 137 attendees. The agenda topics included the FSAP's new electronic information system (eFSAP);

regulatory requirements for inactivation of select agents; shipping; inspections; and the APHIS/CDC Form 3 reporting. The workshop not only provided information, but it afforded an opportunity for ROs and AROS to network.

The FSAP and IPP Strategic Plan: FY18-21 has been created. DSAT is currently at the stage of implementation. The goals for each are as follows:

FSAP Goals:

1. Ensure the recruitment, development, and retention of a knowledgeable and professional FSAP workforce
2. Harmonize FSAP organizational processes and inspections
3. Leverage data-driven, risk-based approaches to guide FSAP operations
4. Engage, increase transparency, and highlight program benefits with FSAP's diverse stakeholders

IPP Goals:

1. Ensure the recruitment and development of a knowledgeable and professional IPP workforce
2. Improve and sustain IPP regulatory oversight
3. Leverage data-driven, risk-based approaches to guide IPP operations
4. Engage, educate, and increase visibility with IPP's diverse stakeholders

DSAT has also had some IT updates. eFSAP is a new secure information system used to submit and share select agent program information with entities. The system will increase effectiveness by significantly enriching information exchange between FSAP and registered entities. It is currently being presented to users at registered entities. The system is valuable because it's a protected, web-based user interface or portal that will result in a decrease in paperwork and processing time for requests, while enhancing proficiency, as well as the ease of validating and submitting information. It also is searchable and will provide instant, real-time information on the location of select agents. Some updates to eFSAP include:

- Email notifications
- System-wide data table redesigns and enhancements to file upload features
- Entity amendment history redesign
- Historical select agent strains and select toxin serotypes (APHIS/CDC Form 1 Section 7b)
- Historical buildings, rooms, and suites (APHIS/CDC Form 1 Section 6)
- Inspection module
- Regional training workshops in five cities across the country
- Continued updates to online eFSAP Resource Center
 - Contains information to help users gain access to and use eFSAP
 - Includes a full library of training materials, reference guides, instructional videos, FAQs, etc.
 - Materials continue to be added over time

The Import Permit Program (IPP) transitioned to its new secure information system, eIPP, in September 2018. This is a two-way portal for submitting and sharing information and is accessible by both the program and those seeking import permits. eIPP is electronic, user-friendly and allows for real-time updates on the status of pending applications. Use of this system is now obligatory for anyone requesting a CDC import permit. It utilizes the recently updated, OMB-approved application, which was

modified to better assess biosafety measures at an applicant's facility. Applicants no longer have the choice of presenting paper forms. DSAT has held multiple trainings to assist potential users.

The eIPP also has several benefits. It leads to faster processing time for permits and provides a centralized location where applicants can get status updates. The program saves user time when applying for future permits and provides applicants with a historical record of permits. Lastly, it has improved communication between the applicants and IPP.

The eIPP Resource Center was launched online in September 2018. It contains information to help users access and use eIPP. It also consists of basic information about the system, training materials and other resources, contact information for any questions, and a link for logging on to the system. Materials will continue to be added over time as necessitated.

DSAT's future efforts include continuing to develop and increase the capabilities of the eFSAP information system. Data from the new electronic systems will be used to write the 2018 Annual Report of the Federal Select Agent Program.

Interval Updates – Teresa Smith

Teresa Smith, MD, MPH, Associate Director for Science, Division of State and Local Readiness

Dr. Smith presented the update for DSLR in Ms. Chris Kosmos' absence. She began by reviewing DSLR's Strategic Priorities, which include:

- Focus on Operational Readiness
 - Medical Countermeasure (MCM) Operational Readiness
 - Operational Readiness Review (ORR) Expansion
- Threat-Specific Planning
- PHEP Notice of Funding Opportunity Requirements
- Field Staff Support and Targeted Technical Assistance
- New Strategies for Territories, Tribal Nations, and Children
- Updated Preparedness and Emergency Response Capabilities

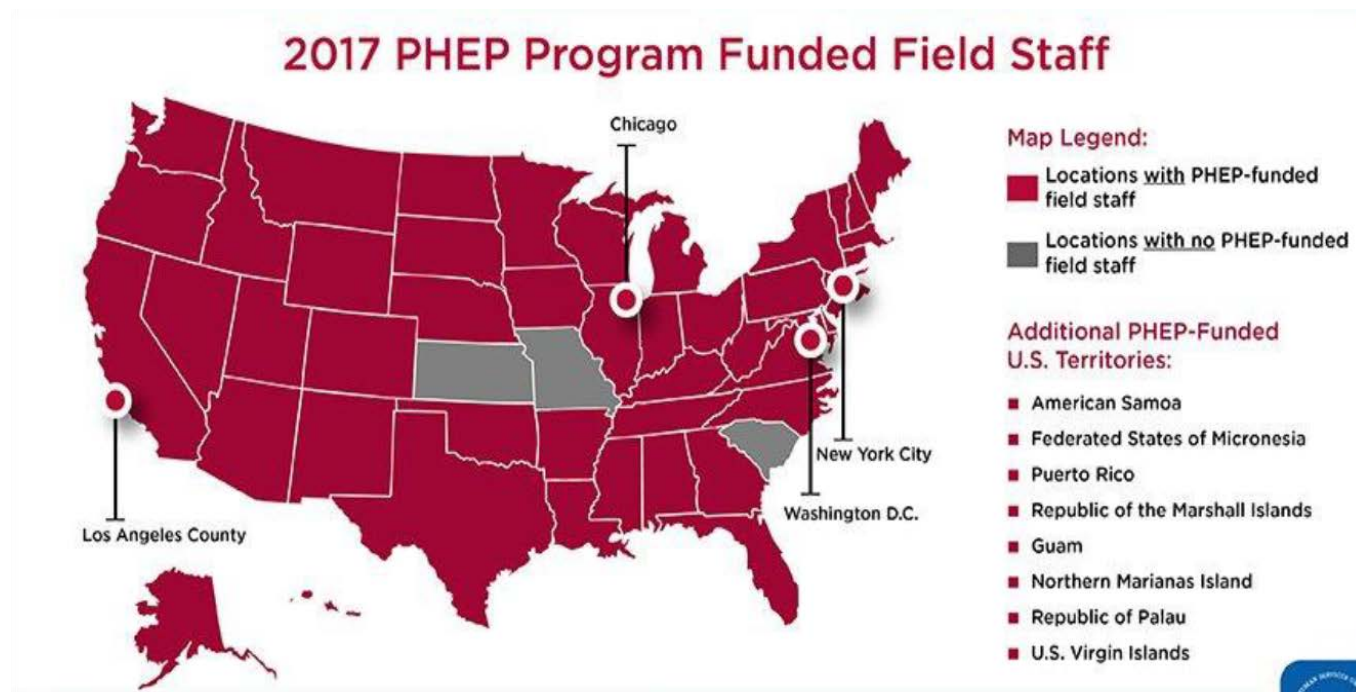
The focus on Operational Readiness will ensure operational readiness of medical countermeasures (MCM) distribution and dispensing by 2022 and the remaining capabilities by 2024. The focus also comprises threat-specific planning, first for Anthrax and pandemic influenza and then radiological/nuclear preparedness.

Through the Operational Readiness Review Expansion Initiative, DSLR is increasing the ORR to encompass all of the 15 public health emergency preparedness and response capabilities. This expansion will allow the ORR to be used as the one tool for measuring PHEP recipient planning and operational strengths, areas of improvement, and technical assistance necessities across all capabilities. It also precisely evaluates program standards throughout jurisdictions and delivers meaningful data to demonstrate program influence. Furthermore, it paints an exact picture of public health preparedness abilities across the nation. Implementation of the expanded ORR is planned for July of 2020.

Another priority is the PHEP Notice of Funding Opportunity (NOFO) for 2019-2024. This funding opportunity promises operational readiness of MCM by 2022 and the remaining capabilities by 2024. It

integrates updated capabilities and employs forecasting for multiple-threat scenarios. The NOFO also contains new strategies for territories, tribes, and children.

One of the tools DSLR utilizes is its funded field staff. The Public Health Emergency Preparedness (PHEP) Program-funded field staff have increased in number. The map below illustrates the location of field staff along with additional territories.



Field staff are part of multiple programs. The Career Epidemiology Field Officer (CEFO) Program gives jurisdictions direct connection to CDC expertise, resources, and technical assistance. These individuals perform significant response roles during emergencies. There are 30 CEFOs in 30 jurisdictions. The Preparedness Field Assignees (PFAs) are public health advisors, who aid in improving preparedness capabilities. There are 16 in 15 jurisdictions. Regional MCM Specialists provide frontline support and technical assistance across the spectrum of MCM-related capabilities and assist with planning, training, and exercising activities. Lastly, the Public Health Advisors give direct technical assistance to state PHEP programs.

Interval Updates – Teresa Smith - Continued

DSLRL has been bolstering its technical assistance capabilities to bring more utility across CPR. The Division provides technical assistance to PHEP recipients to assist with program improvement. This technical assistance encompasses but is not restricted to:

- Project officer day-to-day assistance;
- Resources, guidance, and tools;
- Training: capability-focused courses and exercises, in-person and virtual; and
- Subject matter expertise.

Dr. Smith gave a summary update of the Online Technical Resource and Assistance Center (On-TRAC) data as of October 16, 2018. Since November 2017, DSLR has responded to more than 240 technical

assistance requests: 28% SNS formulary, 21% PHEP planning guidance, 15% systems and tools , and 11% Public Health Preparedness Capabilities. The regions filing the largest number of technical assistance requests are Region 5, the Midwest-Great Lakes area, (51%) and Region 4, Southeast, (17%). The Resource Center contains more than 500 resources, indexed by capability and have been reviewed by subject matter experts. There have been 3,067 On-TRAC visits in the last 90 days. Of those, 1,462 were unique addresses/individuals. “Hot Topics” has been the most viewed page during that time. “Technical Assistance Requests” and “Resource Library” are also available.

The Capacity Building Branch has created a new technical assistance resource, *Preparedness and Safety Messaging for Hurricanes, Flooding, and Similar Disasters*. It retains messages on common public health issues related to hurricanes, flooding, and similar disasters but was expanded in scope to include messages on preparedness, safety, and recovery. The new tool is available in English and Spanish. It can be quickly accessed, and the key messages can be added to jurisdictions’ documents as a resource to their communication plans or altered to be specific for their communities.

DSLRL also is identifying more specific strategies for populations with specialized needs. In the U.S. territories, that means focusing on planning and gap-based training; more sustainable exercise plan and modified requirements to fit unique needs; different program administration and reporting requirements; and flexible methods of reporting. With regard to tribes, the focus will shift from tribal input to engagement. Engagement activities will be incorporated into work plans and project narratives. There will be an emphasis on planning for unengaged populations. Moreover, the new Pathways to Preparedness pilot will strengthen tribal preparedness programs. Lastly, for children, the focus will be on pediatric planning and partnerships to address the specific needs of children.

The 2018 Public Health Emergency Preparedness and Response Capabilities were published on October 25, 2018. The document is located on the CDC website at [Public Health Preparedness Capabilities](#). The capabilities provide a framework for state, tribal, local, and territorial health departments to prepare for, respond to, and recover from public health emergencies. This is the first update since the preparedness capabilities were debuted in 2011. Updates were made based on a variety of inputs from stakeholders and experts.

Interval Updates – Ed Rouse

Ed Rouse, MS, MPA; Acting Director, Division of Emergency Operations

Mr. Rouse’s presentation covered three areas that were discussed during a previous telephone update: preparedness efforts, results of the pan-flu exercise, and developing EOC expertise as part of global health security.

The EOC has the Incident Manager Training and Development Program (IMTDP). This program was developed as part of a gap analysis. The program continues to be successful. It has increased the CDC’s incident manager (IM) cadre by 205% (from 18 IMs to 55 IMs). A total of 39 individuals have graduated from the program in the last 2 years. These IMs are spread across ten of CDC’s centers, institutes and offices. Of the graduates, 49% served in leader roles for seven major preparedness and response events in 2018, which include the following:

- 2017/2018 Hurricane Responses
- Ebola in Democratic Republic of Congo Response

- Hepatitis A Outbreak Response
- Opioid Response
- Anthrax TTX for CDC Director
- Pandemic Influenza Functional Exercise

The next cohort will begin training in January 2019. The aim of this program is to prepare subject matter experts for scenario-specific readiness such as anthrax, smallpox, pandemic influenza, opioid, chemical, and nuclear/radiological emergencies. The response leader curriculum will also be disseminated to others in IMS leader roles like task force leads, team leads, and operations coordinators. Selection of the next cohort is anticipated to begin in November 2018.

In terms of overall national preparedness, ASPR is urging support of national planning in two areas: ASPR Adaptive Planning for Repatriation and ASPR Recovery Preparedness Initiative. The goal is to develop educational materials that highlight HHS programs and efforts that support disaster recovery. CDC also provided public health planning expertise to create the FEMA/DHS Lifelines concept for senior leadership briefings in the 2018 Hurricane Responses. There will be updates to CDC's internal plans in conjunction with HHS update initiatives for hurricane, earthquake, chemical, and nuclear/radiologic responses. Monitoring support will also be provided to other programs for national public health topics regarding the opioid crisis.

As Dr. Redd previously mentioned, CDC has not held an agency-wide pandemic influenza functional exercise since 2012. Therefore, a three-day exercise was held in 2018. Over 400 CDC personnel participated in the exercise. The exercise has set the stage for continued public health partnerships among CDC, federal, state, and local jurisdictions and agencies; and other public health partners for more exercises in the future.

The Global Emergency Management Capacity Development Branch is utilizing the EOC's expertise to improve global preparedness in four areas: technical assistance; standards, accountability and inquiry; community of practice; and partnerships. Each area has been tasked with the specific activities outlined below.

Technical Assistance: Work with partner nations to enhance infrastructure; train staff; and develop policies, plans, and procedures for public health emergency management (PHEM).

Standards, Accountability, and Inquiry: Identify the principles, criteria, core competencies, and performance measures necessary for efficient/effective PHEM.

Community of Practice: Build interoperable networks of practitioners who use common PHEM elements.

Partnerships: Leverage engagements with USG, international, and multilateral partners to streamline resources and reduce duplication of efforts.

Interval Updates – Ed Rouse - Continued

Building the community of practice is one of the biggest benefits to foreign countries. It affords them regional partners they can turn to in the time of an emergency. This is one of the key benefits of the PHEM Fellowship because it allows for face-to-face trainings that can continue to be utilized once the

fellows return home to their countries, and it builds connections across borders. Cohort 9 contains 14 fellows, who will graduate on November 16, 2018. Cohort 10 will begin on January 21, 2019.

Some of the DEO staff supported the Democratic Republic of Congo's Ebola response. Staff provided in-country support through the DEO subject matter experts and three of the PHEM Fellow graduates, who were from the Democratic Republic of Congo. Response activities included but were not limited to coordination of response activities; epidemiology and surveillance; and conducting PHEM training to response staff.

Mr. Rouse gave a summary of some of the Excellence in Response Operations (ERO) strategies that have been developed. Below is a list of the strategies and a brief description of their aims.

- Deploy.CDC.gov –“one-stop shop” intranet site for responders
- Dare to Respond Campaign –poster and video series designed to encourage CDC staff to engage in emergency response activities
- Responder Readiness Fair –recruitment and workforce preparedness opportunity
- Traveler Alerts Dashboard–improved situational awareness and timely accountability of staff
- CDC Neighborhood–identification and rostering of staff for response efforts
- G-MOM (Global Management Overseas Manual)–consolidated, written guidance on how to conduct emergency response operations internationally
- Morning Stand-Up Huddle –daily situational update on operations during responses
- Responder Data Collection–automated and consolidated responder monitoring and evaluation tool
- SitRep Tool –structured reporting of task force activities aligned to response objectives, including monitoring and tracking of trends during and across responses to identify challenges in real-time
- Cultural Humility Workshop –training designed to increase responders' awareness of the personal and professional cultural influences on behaviors, values, and norms
- CDC Situational Health Awareness Reporting Environment (SHARE)–interoperable systems support
- Resource Management SOPs: Resource Support Section SOP, Emergency Acquisitions and Assistance Playbook, and Budget Execution Playbook for Emergency Response (BEPER)

Mr. Rouse concluded his presentation with an update on the polio response. The poliovirus eradication effort has been an anomaly for CDC. Due to the duration of the response, he characterized it as being likened to a marathon, whereas the agency usually participates in sprint-like activities. Wild poliovirus cases in Afghanistan and Pakistan are down from over 500 cases a year in 2011 to cases in the low 20s in 2018. CDC is currently working to decrease circulating vaccine-derived poliovirus incidence in Africa.

Recommendations/Comments from the BSC to the Directors:

For DSAT

- DSAT should use the data from its new systems to perform data analytics like predictions of events that may occur.
- APHL, who represents some regulated entities, congratulated DSAT on its improvements. DSAT has really gone to great efforts to increase transparency, and the regulated community has noticed the change. Recently, DSAT invited APHL and the Laboratory Response Network (LRN)

to assist with training of inspectors. APHL would like to encourage the Division to continue to increase that type of communication. In addition, the electronic portal has been a wonderful development for the laboratories. The hassle of tracking and collecting forms has been eliminated because everything is completed on the portal. This has helped to improve the laboratories' processes for recordkeeping.

- In a future meeting or a phone call, present the BSC with some of the data captured from the new portal and a year-to-year trend analysis on changes and progress from the new system.
- The collaborative approach is applauded and should lead to more opportunities for DSAT and entities to seek solutions together.

For DSLR

- There needs to be a transition from the current “parental” model to tribes being eligible to handle their own affairs and apply for PHEP funds on their own.
- DSLR is asked to follow up with Dr. Vish Viswanath regarding the communication plans and key message given to the community for their use. Dr. Smith was not sure if they were tested for their effectiveness or if there are plans to test them for effectiveness. Recent studies have shown that the construction of a message directly relates to its impact. The Division will research this and provide feedback.
- Congratulations on the Crisis NOFO mechanism. Dr. Slemp was able to work with a jurisdiction that utilized the funding. It was a major game changer because funding is already pre-identified; it has the ability to be distributed quickly through preparedness offices; and the partner companion piece helps mobilize hiring and contracting abilities.
- With any situation, there will be lessons learned on all sides as the NOFO is being implemented. Be sure those lessons are being captured—both the beneficial and areas that need to be improved.
- The BSC would like, when able, to see year-to-year trends, de-identified if necessary, of how states are progressing in terms capabilities.
- There's a concern with Capability 12 in the ORR. APHL has been working with DSLR to revise this capability. Some of the functions have been reduced, but significant repetition still remains. Also, some of the language is unclear; the language is very different from that used by laboratories. The changes may have been made with individuals who did not completely understand how the laboratory operates. Hopefully in the future, more weight will be given to comments made from those who are actually in the laboratory and are providing the data. Dr. Egan has written over 17-years' worth of progress and final reports, and as a part of those reports, information must be incorporate within the functions and activities. She will provide further comments offline to be considered.
- Laws are very different on opioids. Some states are very forward leaning, and some are lagging. Some academics have begun to describe model public health law provisions, but the endorsement of an organization, like CDC, could be helpful in making advances in that area. James Hodge in Arizona is one of the individuals looking at the provisions. It might be useful to display, for example, ten things that could be done by the state to bring improvements.

Recommendations/Comments – Continued

For DEO

- It would be advantageous to include state and locals in trainings similar to those utilized for the PHEM fellows and IMTDP. There are a number of seasoned public health preparedness

directors and other senior individuals that may be retiring in the state and local jurisdictions. It would be beneficial to train the individuals who will move into those new roles. This would also be a perfect time to collaborate and use the expertise of all of those experts to examine the vast amount of information that pertains to responses and extract the parts that are the most valuable. This collaborative group could deliberate on how to effectively move forward in a response given the different moving pieces involved.

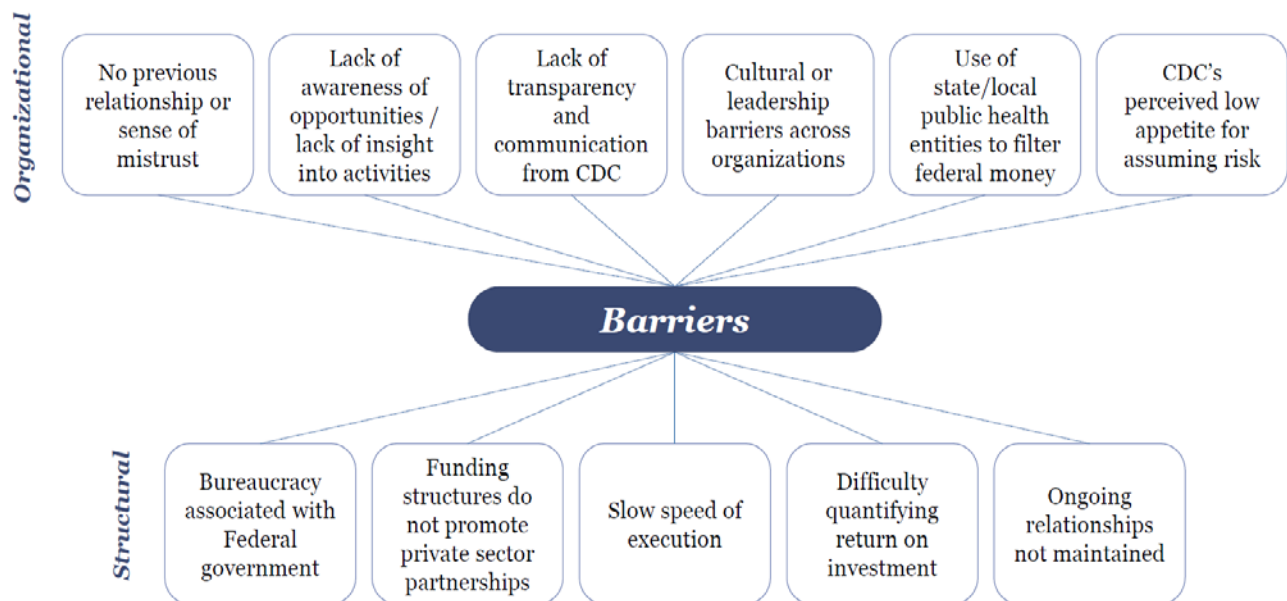
Private Sector and PH Emergency Preparedness & Response Collaboration

The BSC was given a collaborative presentation regarding public health emergency preparedness in the private sector.

Eric Carbone, PhD, MBA; Director, Office of Applied Research (OAR)

Dr. Carbone opened the session by presenting results from a study conducted by CPR and PricewaterhouseCoopers Public Sector, LLC. The project was started roughly two years ago and finished approximately 8 months ago. The overall goal of the project was to glean insights for improving public-private partnerships within the public health preparedness and response space. This was a qualitative study based on 30 in-depth telephonic interviews with industry leaders across nine sectors covering partnership opportunities, barriers, and incentives. This sample was not representative of private-to-private sectors as a whole, but there were some common themes that emerged and are worth sharing. Prior to the interview portion, a detailed literature review was conducted of partnerships and behavioral science efforts that included incentives. This information was incorporated into a playbook, a product of the study which describes the strategies and tactics that might be used to initiate and sustain public:private sector PHPR partnerships.

Barriers to forming partnerships identified by private sector stakeholders across all sectors



The illustration above shows the barriers identified by the private sector stakeholders across various areas. These barriers were fairly consistent among all interviewees. The organizational barriers are subjective perceptions regarding CDC that are probably also true for other federal agencies. The structural barriers pertain to federal bureaucracy, which is not limited to CDC.

When a thematic analysis was done, there were five key takeaways.

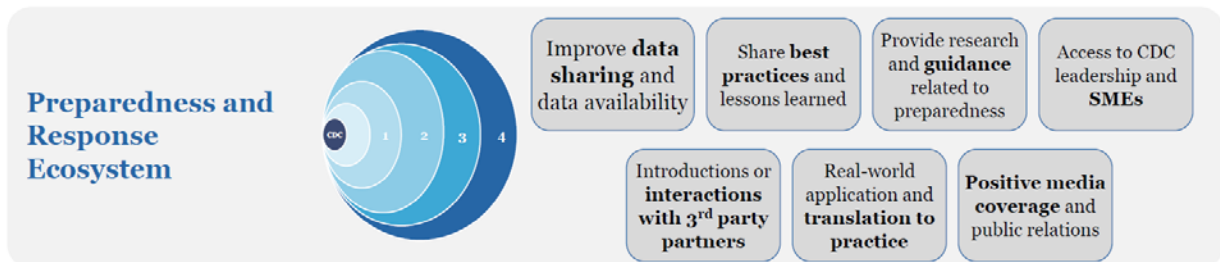
1. **Non-Monetary Motivations:** *Private-sector partners consistently cited the value of non-monetary incentives that make CDC an attractive partner.*
2. **Lack of Bidirectional Awareness:** *Lack of bidirectional awareness between CDC and potential partners about resources and opportunities. Ongoing interaction is needed to bridge the awareness gap and build trust.*
3. **Sustain Partnerships Beyond Response:** *The majority of current partnerships are formed during response but often neglected and allowed to erode after the response.*
4. **Evidence-to-Practice Translation:** *CDC can maximize its impact on the translation of evidence-to-practice by leveraging research of other organizations by providing opportunities to develop and test solutions in real-world situations.*
5. **Third-Party Convener:** *Leveraging its standing, CDC can facilitate interactions between third parties to enable the formation of new partnerships that CDC does not necessarily need to own or maintain.*

Dr. Carbone shared detailed slides that outlined opportunities that would address the key takeaways in ways that are beneficial to both the private sector and CDC.

Eric Carbone - Continued

I. Non-monetary motivations

There is a desire for non-monetary partnerships based on shared benefits and interests, even with organizations that do not currently (or rarely) directly engage with CDC

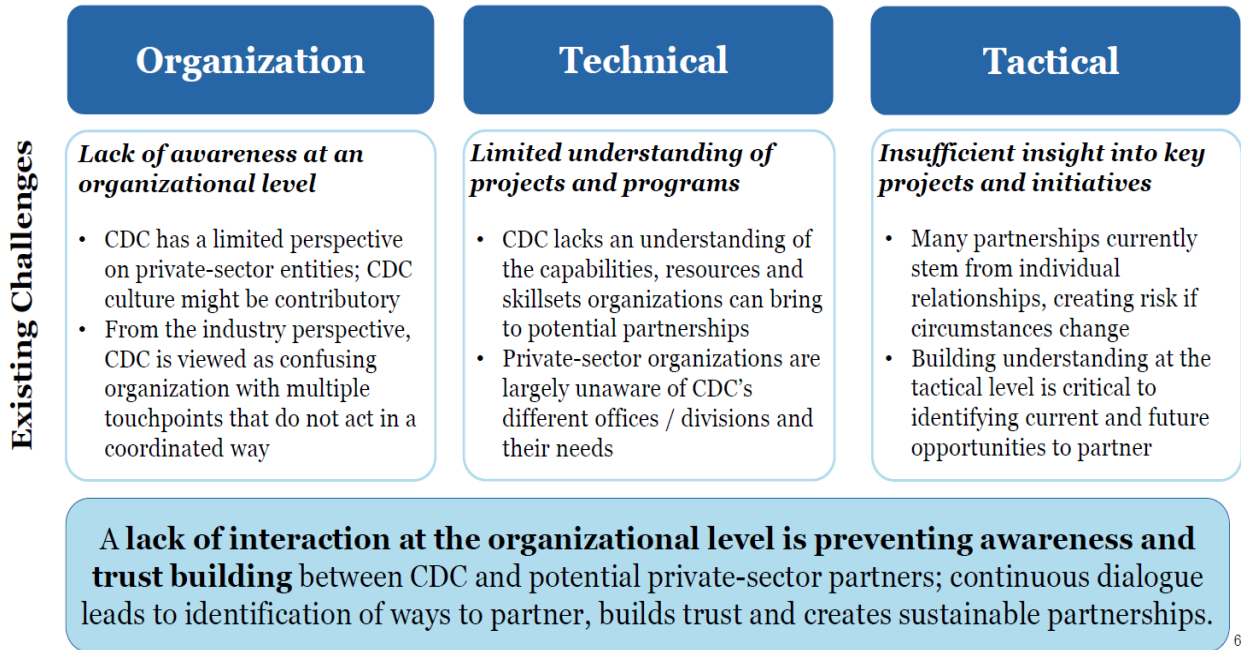


Examples of highlighted non-monetary motivations by tier:

Tier 1: Federal, Academia, NGOs	Tier 2: Pharma Life Sciences, Health IT / Mobile	Tier 3: Healthcare Providers, Health Insurance	Tier 4: Logistics / Transportation, Distribution / Retail
<ul style="list-style-type: none"> • Engage other federal agencies to improve data sharing 	<ul style="list-style-type: none"> • Enable access to niche markets for product development and beta/field testing of products 	<ul style="list-style-type: none"> • Build relationships across community provider networks 	<ul style="list-style-type: none"> • Assist in overcoming administrative and regulatory barriers to distribution (e.g., Rx distribution licenses)

II. Lack of bidirectional awareness

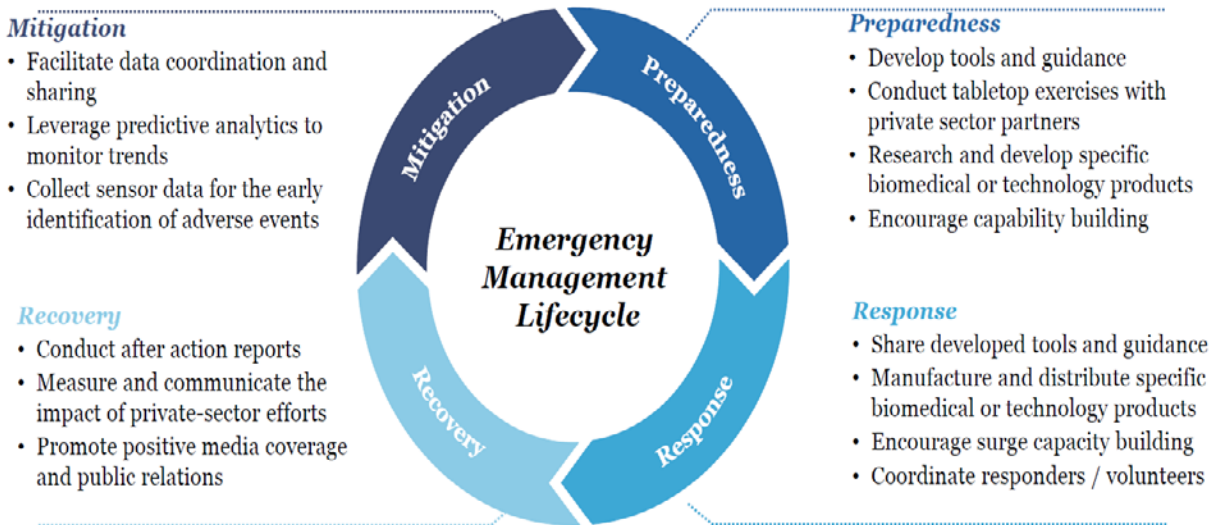
There is a lack of bidirectional awareness between CDC and potential partners related to organizational missions, purpose, resources, capabilities, and opportunities to partner



III. Sustain partnerships beyond response

The most successful partnerships should span the entire emergency management lifecycle

Examples of opportunities to engage partners on an ongoing basis across industry sectors



IV. Evidence-to-practice translation

CDC can provide significant value to partnerships by targeted investment in dissemination and implementation science

CDC can maximize their research dollars by leveraging outside research to bolster practical science

Academic Research

CDC can give academic researchers opportunities to examine the real-world applications of their work

Systems & Technology

CDC can co-develop new systems, networks and technologies with small businesses and institutes by:

- Lending scientific expertise (i.e., CDC SMEs)
- Providing access to niche markets for product development and beta/field testing
- Hosting competitions among small business and institutes for grant dollars beyond existing mechanisms such as SBIR

Medical Countermeasures (MCMs)

CDC can provide PLS companies access to niche markets for efficacy testing of MCMs

V. Third-party convener

CDC's reputation and authority provides a unique ability to convene a wide array of partners to facilitate the formation of new partnerships between third parties – partnerships which do not necessarily need to be owned or maintained by CDC

*CDC can act as an **intermediary between third parties**, facilitating introductions which could lead to new relationships and the formation of additional partnerships*



Private Sector and PH Emergency Preparedness & Response Collaboration – Part 2

Brent Pawlecki, MD; Chief Health Officer, the Goodyear Tire & Rubber Company and CPR BSC

Brian Payne, MBCP, MBCI, ARM, CBCLA; Director, Global Business Continuity, the Goodyear Tire & Rubber Company

Nancy Celesnik, BSN; Health Operations Manager, the Goodyear Tire & Rubber Company

The Goodyear Tire & Rubber Company is a global manufacturer of tires used for several purposes. Several brands are under the Goodyear umbrella.

The company is also well known for its Goodyear Blimp. Since 1925, Goodyear blimps have served as visible corporate icons. Today, Goodyear operates three airships in the United States: Wingfoot 2, based in the City of Carson, CA; Wingfoot 3, under construction and to be based in Akron, OH; and Wingfoot 1, based in Pompano Beach, FL.

Goodyear's plants are in 22 countries but there are many more locations who do service or sales. Any crisis that occurs around the globe has the potential to impact Goodyear. During the time of the outbreak of Ebola in West Africa, Firestone/Bridgestone, for example, were extremely engaged in work with the rubber plantations because several of the plantations were located in the outbreak areas.

Goodyear's aim is to have a healthy, engaged, and high-performing workforce. It achieves this by promoting a healthy culture. Unwell associates are not productive associates, so it is to Goodyear's advantage to focus on a healthy workforce. This goal is so paramount to Goodyear that wellness and safety are built into the strategy roadmap.

The company also has a Goodyear Global Health Strategy. Part of the strategy is to prevent illness, whenever possible, but when sickness does occur, associates are able to gain the right care, at the right time, and are equipped with the right tools. Surveillance of associates begins when they are healthy and continues all the way to a catastrophic illness.

Goodyear also works to keep its safety culture strong. This can only be achieved by keeping associates healthy not only at work but also at home. Unhealthy behaviors in the workplace are often carried to the home and vice versa. Inspiring a safety culture is a way of getting associates to think about safety and health at all times. Workers' Compensation is often the biggest concern for companies, but Goodyear's Workers' Compensation is only about a third of its entire healthcare expenditure. Having a healthier workforce controls some of that cost.

In the times of emergencies, buildings, systems or people can be impacted. Emergency preparedness plans have to address all three elements. The success of a plan is measured using three components: health status, worksite, and culture of health. Health claims data are used to examine health status and the factors that are driving health behaviors and cost. To measure worksite wellness, Goodyear uses CDC's Worksite Health Scorecard. Lastly, to gauge the culture of health, the company brings in an outside organization, who calculates across 1,000 points to determine how the company is progressing in building its culture of health.

The CDC Worksite Health Scorecard is a tool designed to help employers assess whether they have implemented evidence-based health promotion interventions and strategies in their workplace to prevent chronic health conditions. At Goodyear, it's assessed across 16 components. As a result of using the scorecard, the company was able to quantify improvements over time. Wherever there are 30 or more people across the globe, the scorecard is used as a heat map to ascertain the health of the worksite.

The scorecard is also being used in Akron, Ohio, for a collaborative project with other employers and medical directors. The goal of the project is to make the city healthier. Employers are asking their associates to fill out the CDC Worksite Health Scorecard. Thirty-seven employers to date have filled out the scorecard. This practice will hopefully be adopted by other employers around the country.

To set the stage for the presentation addressing business continuity, an example was given of a recent event that occurred as a result of Hurricane Florence in September 2018. This hurricane greatly affected the Carolina coast, where Goodyear has four major manufacturing facilities and multiple retail facilities. The company utilizes a checklist method of activities to ensure the health and safety of its people. This checklist process started back in 2003 with several iterations made along the way.

The first item on the checklist is the associates. The associates are common links in global health services, environmental health and safety services, global security services, and business continuity. Associates at risk are contacted and the company offers resources and assets to those persons. A 1-800 number is provided for any dispersed associates who need nonmedical emergency advice or assistance. This helps the company know the location of their personnel and that they're being aided. The company's Emergency Notification System is used to broadcast emergency contact information should personnel need it, and allows personnel to check in with Goodyear and provide updates on their status.

Pawlecki, Payne, and Celesnik - Continued

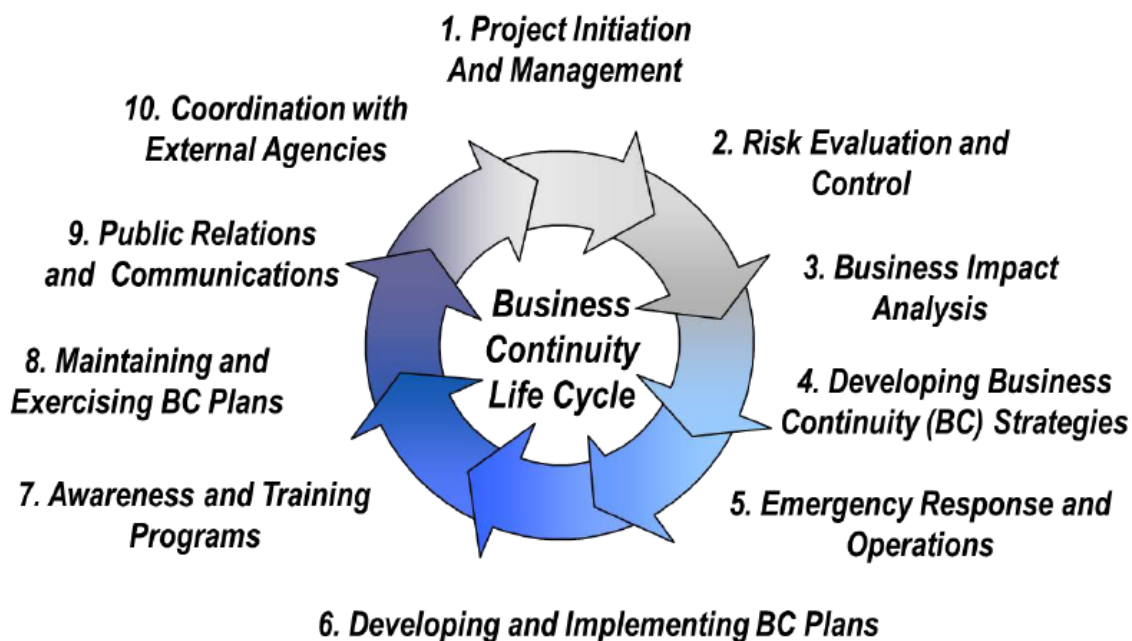
Next on the checklist are the facilities. They are checked structurally to ensure they are prepared. In the case of the hurricane this can include activities such as tying down and securing equipment; checking auxiliary power; and examining communications capabilities.

The third element is business continuity. The focus is on sustaining operations. And the final step is to brace for the storm and prepare for recovery operations thereafter.

A hot wash occurs after every incident, and after-action reports are created. The company reviews all of the activities that occurred during their response efforts and captures the lessons learned. The lessons learned are added to the checklist to close gaps for future events.

The business continuity plan was patterned after Disaster Recovery International's processes for business continuity. It includes 10 steps and is similar to CDC's emergency management lifecycle. Below is an illustration of the Business Continuity Lifecycle.

Goodyear Business Continuity (Basis of our "Charter" and "Excellence")



Issues around business continuity are reported to the Vice President of Global Manufacturing. Reporting to one of the highest levels of the organization opens avenues to outside resources and key stakeholders who can be assets to the business continuity process.

The Goodyear Business Continuity Excellence Program is used to gauge continuity in the company. It is an internal benchmarking process based on [Disaster Recovery Institute \(DRI\) International 10](#)

Professional Practice. This scorecard determine where global best practices stand. Components of the scorecard include the following tracked activities:

- Cross functional exchange between facilities and the region
- Team training
- Identification of risks, critical processes and BC plan development
- Testing and validation of BC Plans
- Annual presentations, tabletops, updates and objectives met

As a result of 9/11, globally, businesses recognized that there are events that have the potential to be catastrophic to their businesses and processes. After 9/11, business continuity became a major focus for all global businesses. This was also the time that Goodyear launched its business continuity improvement plans. The table below outlines business continuity before 9/11 and the changes made thereafter.

Before 911	Today
<ul style="list-style-type: none"> • Local Emergency Response reliance • Siloed processes • Not sharing best practices • Compliance perception • Greater business impact from incidents • Pockets of expertise • Unaware of the multiple BC benefits 	<ul style="list-style-type: none"> • Team focus on Business Continuity Excellence • ISO 9001 IATF 16949 • Risk, Business Impact Analysis, Plans, Playbooks • Table Top Exercises • Sharing lessons learned • External parties engaged • Globally recognized • Demonstrated business value

Goodyear has been tracking its strides in business continuity during incidents since 2005. It has put in place policies, procedures, and letters of agreement that ensure resources are in place. Many lessons have been garnered from prior incidents. Some of those lessons include:

- Need for effective crisis communications
- Planning with external partners is critical
- Use of “all hazards approach” works best
- Expect the unexpected
- Preparedness results in effective response/recovery
- Effective response improves morale
- Regional incidents have global impact
- Any job or role may be a critical path to our success
- Ability to actively communicate throughout the incident

The company is also exploring other opportunities to strengthen its continuity process, such as mobile applications used for planning and communication; social media integration; and cyber security integration. It is also examining future global risks like water crises, financial crises, extreme weather impact, food crises, political and social instability and how to integrate those elements into future continuity plans.

Goodyear's Global Health and Wellness Department tackles the health-related areas of business continuity. The department's Business Continuity Team is tasked with completing business interruption analyses and plans, as well as bringing awareness and conducting trainings. To complete these activities, Goodyear employs outside vendors and partners to assist the company with its business continuity process.

Pawlecki, Payne, and Celesnik - Continued

As previously stated, protecting the health and safety of Goodyear's associates is paramount. Goodyear's Global Health and Wellness Department offers travel services to personnel that aid in protection of health. These services includes counseling on security in destination countries as well as food and water practices. They advise personnel of any required or recommended vaccines for their destination and provide referrals when needed. In addition, they provide documentation of those vaccinations if needed for entry into a country. Travel packs are also provide and include commonly needed over-the-counter medications and first aid supplies. Most of the guidance regarding vaccines was garnered from the CDC website.

Another part of the Global Health and Wellness Department is the Hurricane Response Team. They are tasked with ensuring the physical safety of associates, contractors, and families. They work on issues such as safe and clean environments, and provision of tetanus and other vaccines and first aid. They also help the associates with mental health issues using the services of the Employee Assistance Program or partners like the local Red Cross and similar organizations.

The Global Health and Wellness department also offers vaccinations, physicals, and basic screenings, like blood pressure, cholesterol, and blood sugar monitoring, as well as health appropriate screenings such as colorectal screenings and thyroid tests. The department encourages associates to take part in these free services and is strategizing on new ways to bring more awareness, particularly to the vaccination services. The Global Health and Wellness Department also provides infectious disease planning and health guidance to its associates, much of which it obtains from from the CDC website.

Lastly, there's the Closed Point of Dispensing (POD) Project. Goodyear has signed an agreement with the local health department to be a closed point of dispensing. This has been a complicated process due to the logistics. Mock scenario exercises are conducted as part of the project. The exercises have been successful, in spite of Goodyear's strict facility security standards. Some sites have integrated a flu vaccine event with their mock event to immunize mass numbers of associates. After every exercise, lessons learned are gathered for a gap analysis to improve processes.

Public-private partnerships require understanding that different sectors have different motivations. Corporations are in business to build their widgets and the safety of their associates is paramount to being successful in their growth. CDC's charge is to protect health and wellness. What is yet to be determined are ways to merge those motivations.

The BSC then posed questions to the panel for their recommendations and comments. Below is a summary of the discussion points.

The presentation spoke of the great efforts to keep employees healthy and business operating continuously, while making tires. How can that be an adjunct to what public health is trying to accomplish?

- It is important to realize that companies do want their people be healthy, and they are concerned about their workers. What needs to be determined are ways to utilize the good that a corporation is able to do for their personnel and then build on that to determine who can then be impacted within the employees' families.

Pawlecki, Payne, and Celesnik - Continued

Communities can also be reached in a somewhat similar concept to that of the closed point of dispensing mechanism. In this case instead of the company being used for distributing medication, it disseminates educational information to communities. This can best be accomplished through partnering with business groups. There are groups of businesses, hundreds of employers of Fortune-500 companies, global companies, and smaller companies all at the different state, local, and regional levels. Those private-sector partnerships would be served well to have interactions with members from the CDC and local organizations.

What % participation of a company's workforce in a wellness program is required to have an impact on healthcare costs and the overall wellness of the workforce?

- Health promotion programs not only assist in producing a healthier worksite but are also great for morale and recruitment. There are a lot of people, particularly in the millennial population, who are looking for those employers who are doing those types of activities; they're not willing to work in environments and companies that aren't forward thinking. There is research that supports building a culture of health.

Some people describe business continuity program similar to having to buy insurance. Nobody wants to pay for it, but when you need it, you're glad that you have it. At Goodyear, how vulnerable are business continuity plans to the economic conditions, either in the macro environment or in the company? Do you feel like resources are constrained in what Goodyear is trying to do in this regard when there's a downturn? Is leadership fully supportive of the business continuity goal during those times?

- Goodyear wouldn't have the business continuity division that it has right now if it wasn't for the support of leadership. What's being asked of the associates cannot be mandated; therefore, it has to be driven by the leadership from the top down. If the corporate leadership is not interested, then the regional leadership is absolutely not going to be interested, and that will trickle down all the way to the floor.

Business continuity should not be based upon how the economy swings. It may feel some of the effects, but not a reduction in personnel that are committed or assigned business continuity duties or any other aspect of the business continuity process. This does not mean Goodyear is not touched during fiscal constraints. It has to do more with less sometimes when that happens. But the commitment is there. It's built into the strategic roadmap.

Pawlecki, Payne, and Celesnik - Continued

When it comes to the workforce in Arizona, does your employee assistance program perform outreach to the surrounding communities in Arizona, as a whole? The governor has declared a state of emergency related to the Opioid Crisis. As a result, supplemental funding has been awarded through the CDC to build infrastructure. The Tribal Epidemiology Centers (TEC) will work with tribal communities to develop

strategic plans for opioid misuse. Has this been incorporated in the employee assistance plans for Arizona? If it has not, could it be considered?

- The Goodyear wellness programs are branded internally as Good Life. There are consistent communication vehicles and channels that reach people at all the different levels of the organization, including people in the service centers. This does include those in the Kingman Service Center. The services or resources that are available are communicated through Goodyear's vendor. When additional resources are recognized, the communities are made aware. The services that are available are not always the same in each store. Feel free to reach out to Ms. Nancy Celesnik, who can provide more contact information.

In New York, for example, roughly 80% of businesses in the private sector are considered small businesses. How can small business or maybe a microenterprise size business develop a healthier workforce?

- There are four areas that can be focused on: health of the workplace, environmental health and safety, business continuity, and wellness programs. Even for small organizations, wellness consists of six target numbers: 0, 1, 5, 25, 30, and 100. Zero is no tobacco use. One is flossing every day due to the connection between dental health and heart health. Eat five fruits and vegetables a day. A body mass index of 25 or less is ideal. Get 30 minutes of activity a day. And there should be 100% usage of seatbelts and helmets. Concentrating on those areas can be used for any size business to start a culture of health.
- Consider contracting with an umbrella health and wellness organization, who can provide services that help forge a culture of health.

In the presentation, it was reported that Goodyear does exercises and tabletops. Are the local health departments involved in the exercises?

- Local health departments are involved, and the exercises are conducted as if they were real. The health department and Goodyear plan a date and the health department selects the event to be exercised. Goodyear then works internally to try to figure out the logistics and return to the health departments with a proposed plan. They critique the work and make recommendations. They are then invited to mock exercises to observe and provide feedback. It's an ongoing relationship.

What are the barriers to engaging with federal agencies, as well as state or local health departments?

- One of the challenges when dealing with the public health sector is their lack of understanding of Goodyear's motivation. In one location, for example, when it comes to closed point of dispensing, it took a while to convey the message that Goodyear can relieve burden by taking 10,000 people off their logs. There are also some local politic issues that may be encountered. The reason for hesitancy is unknown, possibly fear that Goodyear will try to take over but that is not the intent. It's to try to help them in that process.

What opportunities are there for CDC to support Goodyear more effectively in emergency planning and responding?

- Bring businesses together to find a common ground. Businesses like the New York Business Group on Health, Pacific Business Group on Health, and Global Business Group on Health, for example, come together because they have common problems they want to solve. Extend CDC's reach into different organizations and start relationships in that same fashion.
- There are a lot of organizations and companies who have had great successes. Levi Strauss was doing a lot in their local communities around HIV and AIDS. IBM goes into community to determine what infrastructures are in place and then determine ways that it can make the health system in the community better. ExxonMobil is building hospitals in Papua New Guinea.
- There is an attempt for CDC to reach out to the business community, and the impression is that businesses are always being asked for money. Companies just don't have pockets of money that they can hand out for programs, etc. Somehow, separate the philanthropy from operational or medical piece. All are great functions but when they become jumbled and mixed, the corporations will shut down from the conversation.
- It might be helpful if the federal government would include the benefits of private partnerships into the PHEP guidance and give examples of solutions that businesses could help solve. It may assist in building trusted relationships.

Would it be useful for CDC to construct priority list of maybe five areas of concern that they could then share with regional and national organizations for their input?

- The Worksite Health Scorecard has 16 different components that can assist in building a health program. Perhaps if there were a business continuity type of structure or focus to it like a business continuity scorecard that CDC could sponsor. It could prescribe components of the program that would garner different levels of protection.

Office of Policy, Planning, and Evaluation: Update

Kathy Gallagher; Associate Director, Policy, Planning, and Evaluation, CPR

Ms. Gallagher provided a budget update to the BSC. The update covered budget appropriations, PAHPA reauthorization, and the new partnership with the National Governors Association (NGA).

Regarding appropriations, PHEP Program funding is \$675 million total. It also maintained the \$8.2 million for preparedness research. The CDC Preparedness and Response line had an increase of \$10 million. The Biosense Program maintained level funding at \$23 million. And lastly, the SNS program still appeared in CDC's appropriation for \$660 million, but those funds will be transferred to ASPR.

There was a \$50 million appropriation for the Infectious Disease Rapid Response Fund. This is something that has been a priority for CPR and has been advocated for by many partners and members of Congress. It seems like a significant amount of money, but it can be depleted quickly during a response. However, it is an invaluable mechanism because it allows the Center to respond at an appropriate speed, scale, and scope in an emergency.

Since it affords a good deal of flexibility, the Appropriations Committee wisely attached some prerequisites. There are guidelines on the circumstances that should trigger the use of the fund. The Secretary of HHS has to declare that an emergency has significant potential to occur and affect national security or the health of U.S. citizens here and abroad. This will permit the CDC director to transfer resources from the fund account to the CDC offices that will be tasked with responding to the emergency.

The fund also makes it possible for CDC to work with its partners across the federal sphere. The Appropriations Committee must be notified prior to transferring or obligating any resources. CDC must also submit a report to the committee within 15 days detailing the usage and spend plans for the fund. Quarterly expense reports are submitted to the committee as long as the funds are in use. Finally, it is mandated for any products purchased to be placed into the Strategic National Stockpile, if it would be best distributed through their channels.

The FY'20 President's Budget is still being formulated, therefore, there are no updates at this time. However, it is expected to be published in early February. The CDC is waiting for the Office of Management and Budget (OMB) to provide feedback on the budget proposal that was submitted. More information will be provided at the spring BSC meeting in 2019.

As pertains to PAHPA reauthorization, the U.S. House and Senate have reexamined their versions of bills a few times, and there have been several hearings in which CDC participated. The House has passed its version of the bill and the Senate is due to take up its version after the elections. The draft House and Senate versions of the bill are very similar; therefore, there does not appear to be significant details to work through in order to create a final bill. Some aspects of the bill that are important to CDC are the reauthorization of the PHEP Program through 2023 and specific language indicating that PHEP funds are administered through CDC. The bill requires an evaluation of evidence-based benchmarks and objective standards every two years and adds a requirement that applications address individuals with behavioral needs.

The bill also codifies some new programs, like the Children's Preparedness Unit at CDC. This is a unit that CDC has had for some time, and it has now been added to the proposed legislation. The bill also establishes the National Advisory Committee on Seniors and Disasters, as well as a National Advisory Committee on Individuals with Disabilities.

Moreover, the bill reauthorizes the SNS through 2023 and specifies ASPR's role and collaborative control with CDC. Additionally, it requires annual reports from the DSAT Program on implementation of recommendations from the Federal Experts Security Advisory Panel. Lastly, it codifies the Public Health Emergency Medical Countermeasures Enterprise (PHEMCE) including membership.

The final update is on a project being conducted with the National Governor's Association (NGA). This collaboration resulted in a Policy Academy. The first Policy Academy included six states: Arizona, Hawaii, Illinois, New Jersey, Oregon and West Virginia. This venue allows the states to submit particular policies or operational issues that need to be resolved and have them discussed in a group setting to determine solutions. It is required that representation from the governor's office, legislature, and the public health department be a part of the team. Depending on the subject, other leads, such as emergency managers or program and grant specialists, may also be asked to participate. This is funded by CDC.

Kathy Gallagher – Continued

The result of these think-tank type discussions is for states to discover best or promising practices, which are made available on the NGA's website so that other state or local health departments might be able to use the tools created.

Some success stories have already been realized. New Jersey created a subcommittee on the Governor's Domestic Security Preparedness Taskforce, which mirrors the National Security Council at the state level. West Virginia is considering creating specific public health emergency declaration authorities for the governor. Arizona created a playbook for any incoming governor to use as a checklist to facilitate quicker execution of a declaration. Hawaii reorganized their preparedness structure in the health department following recommendations from an assessment of their emergency preparedness and response system. Their preparedness program is now reporting to the state health official.

CDC garnered a lot of information through this collaboration. They will continue to monitor the impact of the information disseminated through the NGA's website. Another cohort of states will participate in the program this year. This year NGA is adding the National Conference of State Legislatures into the collaborative.

No recommendations or comments were given to the Office of Policy, Planning, and Evaluation.

Biological Agent Containment Working Group (BACWG): Update

Dawn Wooley, PhD; BACWG Co-Chair, CPR BSC

Catherine Slemp, PhD; BACWG Co-Chair, CPR BSC

Drs. Wooley and Slemp gave the BSC a brief presentation on the activities of the Biologic Containment Working Group regarding standards of practices for polio containment. Drs. Slemp and Wooley presented the U.S. NAC Policy Process which includes the BACWG expertise being utilized to review and research policies, which are then reviewed and endorsed by the BSC. NAC recommended policies regarding record of access, inventory, physical security, and storage outside of containment currently are going through CDC clearance. The presenters also reviewed the future plans for the workgroup.

The presentation began with a brief review of the polio effort. Significant work has occurred to eradicate poliovirus infection. There are three subtypes of the virus: poliovirus 1, 2, and 3 (PV1, PV2, and PV3). PV2 was declared eradicated in 2015. The only remaining wild type PV2 polioviruses exist in the labs and are used for research purposes. There are no near term plans to eliminate polio vaccination; pockets remain susceptible and vaccination is changing. Inactivated polio vaccine and oral polio vaccine (IPV and OPV) protects from disease but not from infection, re-infection, or enteric transmission. In April 2016, over 120 countries switched from trivalent to bivalent OPV. The IPV supply is temporarily insufficient. This means that some populations are still susceptible to PV2, so the goal is to restrict poliovirus to labs only.

This is a global effort. The World Health Organization (WHO) has enacted its Global Action Plan or GAP III. In this plan, each country designates a National Authority of Containment (NAC). CDC is the NAC for the United States. The NAC is tasked with providing country-specific guidance and overseeing interim certification and certification of Polio Essential Facilities (PEFs). The desire is to minimize the number of labs that use PV2. The BACWG provides advisory support to the CDC NAC. The U.S. NAC has no true regulatory authority. Compliance is based on willingness of PEFs to follow standards of practice established by NAC/GAP III.

The presenters reviewed the steps to policy adoption. U.S. NAC staff at CDC develop and draft policies. The BACWG reviews policies and makes recommendations. After iterations, the policies are brought to the BSC for endorsement. At that point, they are disseminated to the PEFs, who review the policies and make their recommendations. The NAC updates the policies based on the recommendations and shares

that information with the BACWG. Once the policies are finalized, they go through CDC clearance, and are then published.

Today, the BACWG is updating the BSC on the NAC's policies: Transfer, Personal Protective Equipment and Handwashing, and Personnel Reliability. The BACWG will convene next to discuss risk assessment.

The Transfer Policy requires facilities to submit a completed U.S. NAC transfer form to the U.S. NAC following receipt of PV2 material. Only PEFs can receive PV2 material. The U.S. NAC must be notified of any packages compromised during shipment within 72 hours of expected delivery. This policy allows the U.S. NAC to maintain a current national inventory of the locations of all PV2 material. All PV2 material must be packaged and shipped in accordance with local, state, federal, and international dangerous goods shipping requirements.

The Personal Protective Equipment (PPE) and Handwashing Policy outlines PPE and handwashing practices for each PV2 material type. The policy includes, but is not limited to:

- PPE including protective clothing, gloves, shoe covers, masks, and eye/face protection
- Doffing procedures
- Handwashing and hygiene
- Use of emergency showers

Finally, the Personnel Reliability Policy requires a personal reliability program (PRP) to ensure that individuals with access to PV2 areas perform work safely and securely. The focus of the policy is on adherence to biosafety and security procedures, good microbiological techniques and laboratory competency, rules of behavior, and codes of conduct. It includes procedures for:

- Pre-access screening and ongoing reliability assessments, including adherence to biosafety procedures, good microbiological techniques, rules of behavior, and codes of conduct
- Processing and protecting negative information and individuals involved in reports of behaviors of concern

All individuals enrolled in a PRP are trained on all aspects of the program.

The BACWG is exploring taking on one or more of the following for future topics:

- Oversight and governance of research with potential pandemic pathogens and other Dual Use Research of Concern (DURC)
- Measuring the impact of BSAT regulations
- Reducing exposures to select agents in exempt labs
- Building a culture of incident reporting

All of the policies presented are only for PEFs but not Potentially Infectious Material (PIM) facilities. PIM facilities include biological sample repositories and laboratories with PIM samples.

Recommendations/Comments from the BSC to BACWG:

- Many of the select agent registered laboratories conduct Department of Justice (DoJ)

background checks on employees. They also have instituted their own employee review programs. This can only be done because it is in the regulations. Dr. Egan acknowledged that she is not a voting BSC member, but she would like to see what is written in the full policy. In addition, creating a separate employee security system, whether there is a safety or security risk involved or not, could be an additional burden for the laboratories because it is a different system. The risk of working with and maintaining poliovirus versus poliovirus-infected material is a much different risk. You need to have additional safeguards for the PEFs.

- Dr. Sosin suggested that in a future meeting a more thorough discussion could occur about why the BACWG believes the steps it has prescribed are appropriate.
- Dr. Egan will work with the NAC to share her perspectives.

All but one of the BSC Members and Ex Officio Members voted to endorse that the three policies continue along the U.S. NAC policy development process, with one caveat: to learn more about risk assessment and how the NAC is deciding security risks. One member chose to abstain.

Public Comment Period

There was one comment made by an attendee, John Anderton, Associate Director for Communication Science for CPR. In light of the recent name change, for the next two weeks, CDC will maintain parallel websites at www.cdc.gov/OPHPR and Center for Preparedness and Response. After two weeks, OPHPR will turn into a redirect web queries to the CPR site and that function will stay active for the next two years. In addition, affiliate organizations will receive a formal letter requesting that any web links on their sites to OPHPR also be changed to the new website address.

The CDC Director will use the entire name of the Center so that it is not confused with the acronym used for cardiopulmonary resuscitation. At the Center level, in short correspondence, the Center will use the title Center for Preparedness and Response at first use, followed by the initials at further use unless the terms Center or CDC are allowed. Internally, the acronym CPR will be used without worry about the dual meaning. Lastly, in long form documents, like annual reports or budget narratives, a note will be placed on the inside cover that defines the acronym.

It will take some time to change all other items, such as PowerPoint templates, fax sheets, or signature lines. As of the today, 92% of the former OPHPR web properties have been mapped over to the new URL.

Recommendation/Comments from the BSC to the Communications and Science Office:

- Dr. Inglesby reminded Mr. Anderton to also be sure to change any social media handles and links on social media sites to CPR.

BSC Discussion

No additional discussion points were made.

Day's Recap/Adjourn (Day 1)

Thomas Inglesby, MD; Chair, OPHPR BSC

Dr. Redd thanked everyone for their participation. With no further comments, Dr. Inglesby adjourned the meeting at 4:44 PM.

Day 2, Tuesday, October 30, 2018

BSC: Welcome & Call to Order/Roll Call

Thomas Inglesby, MD; Chair, CPR BSC

Kimberly Lochner, ScD; Deputy Associate Director for Science, CPR and Designated Federal Official, CPR BSC

Day Two of the BSC meeting was called to order at 8:34 AM. Dr. Lochner conducted the roll call. Quorum was established. Dr. Inglesby reminded all BSC members to please sign their photo release forms, which were provided at the end of Day One.

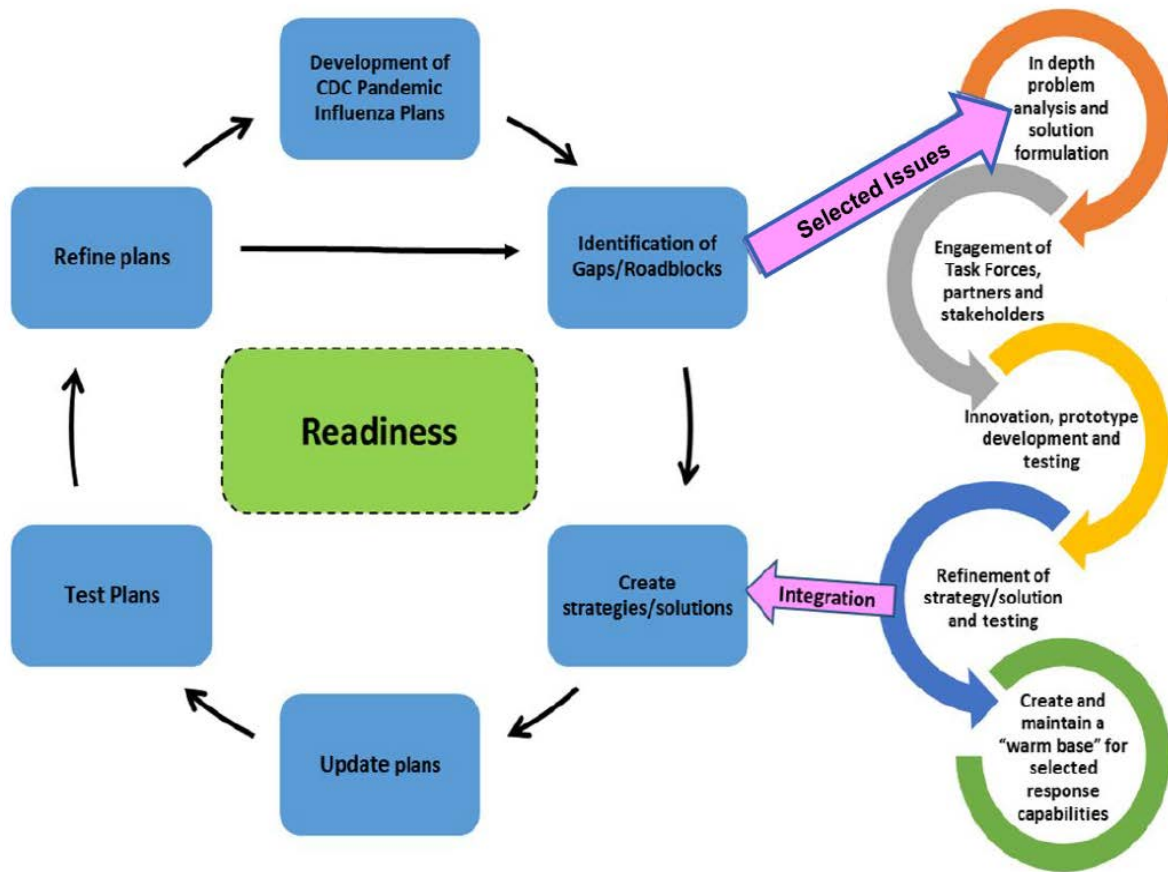
Staying Prepared: Key Findings from Recent CDC Pandemic Influenza and MERS Exercises

Lisa M. Koonin, DrPH, MN, MPH, Deputy Director, Influenza Coordination Unit, National Center for Immunization and Respiratory Diseases (NCIRD)

NCIRD has an ongoing, annual seasonal flu response protocol, which prepares NCIRD for emergencies. NCIRD has task forces that supply planning and seasonal response support. The taskforces are mobilized during seasonal flu on an ad hoc basis. One of their recent functions was to manage antiviral spot shortages that occurred in 2018. They also work to improve the accessibility of influenza vaccine, as well as locate where vaccine and antivirals are available through the Vaccine Finder and Med Finder programs.

NCIRD also funds the flu coordinators and laboratories in state health departments and provides annual funding to state immunization programs. In addition, NCIRD collects lessons learned from seasonal flu responses to inform pandemic planning for the future.

NCIRD is tasked with maintaining the pandemic influenza plan for the CDC. In creating the plan, gaps that need to be addressed are considered. Any problems identified are tackled through the center's innovation cycle illustrated below:



NCIRD employs escalating exercise designs to practice and perfect its response plans. Workshops and Tabletops are used to create the plans. Drills and functional exercises are used to test and refine plans.

Most of the pandemic flu planning was started by Dr. Redd in 2007. The first official plan was completed in 2008. Shortly thereafter in 2009, the H1N1 epidemic occurred. Many lessons were learned as a result of the outbreak, and as a result the plan was revised. There was a functional exercise in 2011. Workshops were also held in the interim to discuss subjects such as budgets and visibility on countermeasures. Since the 2008 plan, CDC has been in a constant state of learning and refining its plan through exercises, real events, workshops, and tabletops.

In September 2018, NCIRD performed an exercise using the CDC *Pandemic Influenza Appendix to the Biological Incident Annex* plan that was released in December of 2017. More than 400 staff participated in the exercise. Part of the overall exercise concept included the following:

- 18 participants from ASPR/HHS and 6 federal agencies
- 8 state public health officials
- 5 local public health partners
- 12 non-governmental associations
- 4 private sector organizations + CDC Foundation
- 10 observers from 4 countries

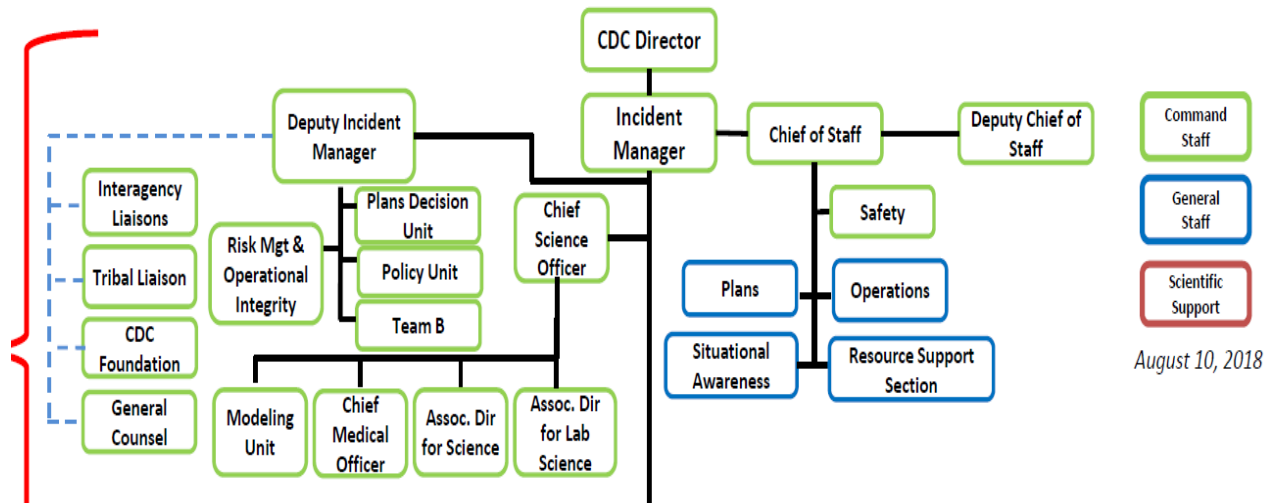
There were several objectives in the exercise. The first was to test the formation of the CDC Pandemic Influenza Incident Management Structure to respond to a severe pandemic. The second aim was to assess the plans of the *2017 CDC Pandemic Influenza Appendix to the Biological Incident Annex*. The exercise also provided an opportunity to address key CDC Pandemic Influenza preparedness and response issues. The fourth objective was to coordinate with partners on pandemic preparedness and response.

Staying Prepared - Continued

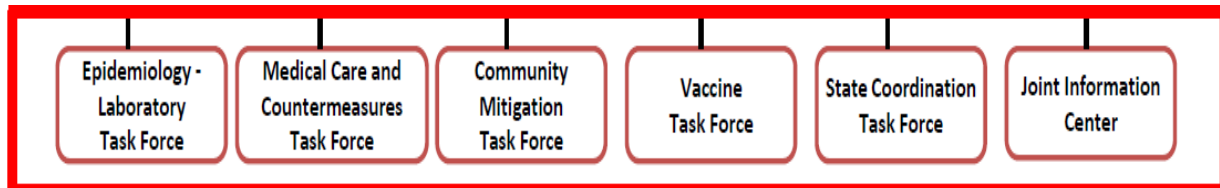
Dr. Koonin shared a flow chart of the functional exercise design. It illustrates how CDC would be structured in a real pandemic event. The HICON or higher headquarters are role players from higher levels of CDC, HHS, and other federal interagency partners. They make up the top level of the flow chart, as seen below.



The CDC PanFlu incident management structure organization chart, which is displayed below. The individuals in these roles allow NCIRD to have a response. They are a part of the training audience.



Next on the chart are the taskforces. They are also part of the training audience.



And at the bottom of the flow chart are the LOCON or lower headquarter. These are individuals are state, local, and private partners.

Lower Headquarters (LOCON)
with role players from state, local, and private partners
(10 State, 5 City/County, 12 Association and 9 Private Partners Participating)

The control group for the exercise included representatives from the HICON and LOCON, who were separate from the staff supporting the exercise, to observe and replicate roles, responsibilities, and interactions that the participants would have during a real response. The exercises are very realistic, which is important for the training audience.

The scenario for the exercise is framed by the CDC Pan Flu intervals or phases which CDC uses to characterize a pandemic curve. The intervals include investigation, recognition, initiation, acceleration, deceleration, and preparation. As a flu virus is detected, it is confirmed, cases begin to increase, peak, and then decrease. In a pandemic scenario, CDC then prepares for another wave. These are also the phases used by WHO and FEMA. The exercise that occurred September 12-14, 2018 tested the acceleration phase. Previous exercises have already been conducted on the first phase. The scenario of the exercise included the following:

- Pre-exercise scenario built from the investigation interval to the acceleration interval
- CDC's PAN FLU Incident Management Structure (IMS) activated for 35 days at STARTEX
- Pandemic virus is a novel H7N9 virus (new clade)
- Early indications: H7N9 virus is highly transmissible, infections are associated with very high severity
- H7N9 virus is susceptible to neuraminidase inhibitor drugs
- Stockpiled H7N9 vaccines not well-matched to new virus, but can be used as a priming dose

Every morning started with an IM update. A state health officer call occurred to keep in touch with state and local public health officials, share information, as well as gather information from on the ground. Press briefings are also conducted; therefore, mock press briefings were conducted in the exercise to train staff. Fusion meetings also occur. These meetings are with scientists on very specific topics in an effort to create solutions or discuss a thorny issue. Decision briefs are another part of the exercise process. These briefs are structured and patterned ways of handling a difficult topic. There are normally multiple courses of action that are examined, and the pros and cons of each are determined. At the completion of deliberation, a recommendation is made to the incident manager as a way to move forward. This decision brief process was repeated twice in this exercise. This is a very effective way of logically and strategically tackling a problem.

There were also discussions with HHS in a Disaster Leadership Meeting and with response partners on the Partner Synch Meeting. Since multiple taskforces are collaborating with the same partners, it's important to be coordinated in actions and messages.

After the exercise, each taskforce is asked to do an internal hot wash. This is followed by a senior-leader hot wash. The hot washes are important because they capture the lessons learned, problems faced, insight gained, successes, and strengths of the operation.

Several key issues emerged from the exercise:

- Best way to communicate pandemic severity
- Implementing non-pharmaceutical interventions
- Planning for pandemic vaccine campaign
 - Limited supply of vaccine: need to use targeting strategy
- Seasonal flu vaccine campaign in light of pandemic
- Possible need to use altered standards of medical care

NCIRD is in the process of writing the after-action report. Any key gaps or issues will be addressed by the task forces over next year in collaboration with Federal partners. The cycle then begins again with more meetings, workshops and tabletop, which will ultimately lead to updates to the *CDC Pandemic Influenza Appendix to the Biological Incident Annex*. HHS is also planning a series of pandemic flu exercises in 2019. NCIRD and CPR will be among those taking part in the series.

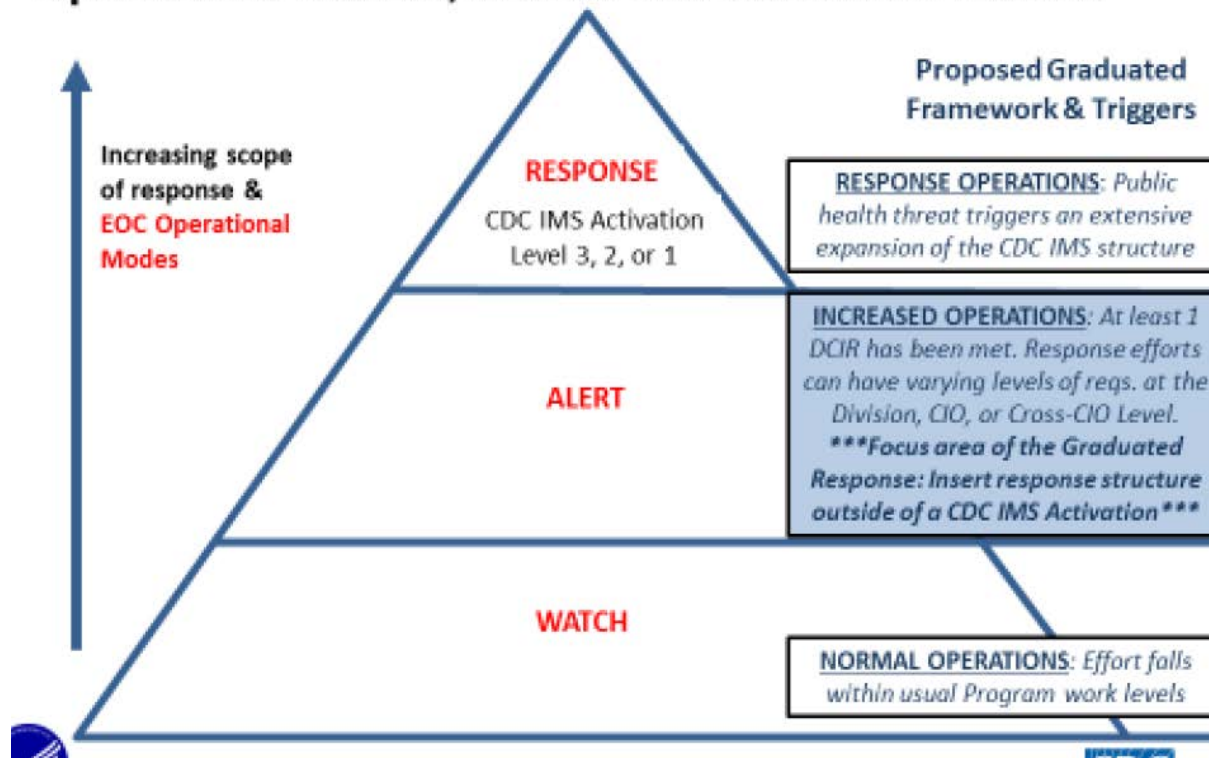
Staying Prepared – Continued

Pan flu lessons learned are leveraged for other events. Over the past year, those lessons have been applied to the MERS Co-V response. The organizational design of MERS IMS was modeled after the pan flu IMS. A similar method was also applied to the MERS plans, training and exercise model. The configuration of the MERS Appendix is parallel to the 2017 *CDC Pandemic Influenza Appendix to the Biological Incident Annex*. The ongoing MERS Working Group was fashioned from the Pan Flu Strategy Working Group, and much of the MERS Task Force leadership acquired knowledge through pan flu exercises and responses.

NCIRD recently convened a MERS tabletop exercise. The tabletops are discussion-based sessions where team members converse about their roles during an emergency and their responses to a particular scenario. There were approximately 60 participants representing all MERS task forces and senior leadership. The aim is to take the draft plan from MERS, which is currently in clearance, and test portions of the plan and then perform a comprehensive test. The tabletop also afforded NCIRD the opportunity to test a concept it recently created called the Graduated Response Capability.

The Graduated Public Health Emergency Response is a tiered, internal process for programs to transition from normal division, center, and/or program operations to a CDC IMS activation due to a public health emergency. It is a mechanism to solicit or receive DEO support or program augmentation in early stages of a public health emergency and prior to a CDC IMS activation. The graduated approach outlines essential elements, protocols, templates, and tools to leverage early in a response and outside of a CDC IMS activation. It also provides a standardized framework to obtain additional response augmentation, support, and resources from a program, division, CIO, or across the CIO level. The figure below illustrates the processes for a graduated response.

Alignment of the Graduated Framework, EOC Operational Modes, & CDC IMS Activation Levels



On January 22, 2018, NCIRD conducted a MERS tabletop exercise to achieve several objectives. They were as follows:

- Validate the draft MERS Appendix to the Biological Annex/All Hazards Plan prior to submission to CDC clearance.
- Rehearse the draft CDC Graduated Framework for Public Health Emergencies
 - Familiarize the participants with the Key Transition Points.
 - Transition from an established Division of Viral Diseases/NCIRD program to a response effort under NCIRD leadership
 - Transition from a NCIRD lead effort to a formal CDC activation utilizing the EOC facility.

The organizational chart for the MERS response closely resembles that of the pan flu chart and includes task forces, incident manager, command staff, and all the support staff needed for the response.

The tabletop exercise did validate the assumptions, organization, and key tasks outlined in the MERS Appendix. It provided participants an opportunity to understand the graduated response and to rehearse some of their roles.

The MERS Appendix is in the clearance process. In the spring of 2019, NCIRD will conduct a more robust MERS tabletop exercise, which will rehearse roles and responsibilities as outlined in the Appendix using the most likely “worst case” scenario. It is anticipated that this will then lead to an exercise like pan flu in the future.

Going forward, NCIRD will continue refining and testing plans through exercises as an ongoing activity. The lessons learned from exercises and responses can inform other incidents and provide an opportunity to create tools and procedures that solve problems. The Center will also continue to leverage capabilities used in every day programs to improve responses, like seasonal influenza, as well as training a cadre of staff to respond to an emergency.

Recommendations/Comments from the BSC to NCIRD:

- It's important to remember that sometimes these events won't always happen the way that we anticipate. In the case of the recent MERS cases, it wasn't caught through normal channels. It wasn't detected until the person presented to the hospital. Lessons from that incident should be incorporated into the MERS exercise.
- Technology is getting better but be careful not to be overly confident that solutions can be determined quickly. Not all agents have a distinctive structure. Science has become very reliant on sequence identification, and that may fail. You need a scenario that would account for that challenge. The HIV epidemic is an example, where there was a very poor and slow response.
- During H1N1, retail pharmacies and physicians did not have the capacity to take in a large number of people. Retain the model of medical countermeasures and dispensing in mass prophylaxis as part of plans to address surge. Locally, organizations are working on plans that include accessing services in alternate care facilities. They are working within their health and medical system to create a separate, free-standing location, which will take in low-risk patients, while hospitals provide the robust care.
- The work completed thus far is very impressive. But in addition, take the learnings not only to shape the future of the CDC plan but also to identify areas that will require more political and budget support. Instead of keeping this as an internal process, these are stories that political leaders need to understand, and it could persuade those who control the budget to release additional funding. Think of including OMB, congressional staff, and others in an event as observers to highlight how serious these events are.
- The flu vaccine targeting strategy is really important. The more that it can be talked about, the more likely there will be some understanding and appreciation for it when you actually need these kinds of allocation strategies, like in resource-constrained settings. And it is less of a surprise to the public and political leaders. It raises awareness that the systems are not strong enough, and it is necessary to give this issue attention.

A brief update was provided on acute flaccid myelitis (AFM). It is a great example of how a graduated response is implemented. When AFM began to escalate, the graduated response was employed. As of Friday, there's a total of 191 reports of patients under investigation. Assessment of whether cases meet the case definition is based on clinical symptoms and radiological findings on MRI. It requires two independent neurologists to review those cases under investigation to determine if they meet the case definition.

Of the 191 patients under investigation, 60 are waiting for data abstraction to be completed so the neurologist can have the information needed for review and case classification. A total of 93 cases have been classified: 72 confirmed cases from 24 states, 4 probable cases, and 17 cases that don't meet the case definition. Since last week, there are 36 additional patients under investigation and 10 additional confirmed cases. So far, there have been no deaths in 2018. There was one death in 2017. The epidemiology data shows a large increase in AFM in 2014, 2016, and 2018.

In terms of laboratory diagnostics, most but not all of these cases have a preceding illness that may be viral in etiology and is characterized by fever, and mostly respiratory symptoms and, in some cases, GI symptoms. The epi curve for this year looks very similar to last year and the year before. If it plays out the same way, then the nation is past the peak but cases will likely be identified for at least a month longer.

While the preceding viral infection is contagious, AFM itself shows no sign of clustering within families, so it does not seem to be contagious. No single common infectious cause has been found among all the cases, making it difficult to piece together a cohesive story of how the disease occurred.

CDC is working closely with its state and local health department partners on ways to communicate messages. It funded vaccine preventable disease coordinators in 52 of 64 jurisdictions to assist in this effort as well as other pathogens that are under NCIRD's purview. The coordinators have been equipped with packages of information to use for communication with clinicians. NCIRD is hoping that the media blitz will aid in educating parents and clinicians so that cases are promptly seen in medical care. This will be discussed with NCIRD's Board of Scientific Counselors in the December 2018 meeting. A separate group is assisting with clinical care as well because this is a nonspecific clinical finding. They will convene this week and again in the near future to look at clinical care guidelines.

Preparedness Updates and CPR Discussion: Liaison Representatives

National Association of County & City Health Officials (NACCHO)

Reported by Ms. Michele Askenazi

Ms. Askenazi began with updates regarding pandemic influenza and recent activities. NACCHO was involved CDC's pan-flu functional exercise. It was rewarding to hear from a diverse group of local level individuals, which included representation from Houston, Southwest Utah, Los Angeles, Cincinnati, and a local fire and EMS entity in New Mexico.

During the most recent flu season, local health departments were actively engaged in surveillance, outreach and response. NACCHO provided support by sharing information, tools and resources. They also organized calls between CDC and local health departments, when additional guidance and information was needed. One of the primary challenges was the spot geographic shortage of antivirals. That was coupled with other competing issues related to the hurricanes and saline shortages.

Currently, NACCHO is working on CDC's Community Mitigation Guidelines to Prevent Pandemic Influenza assessment. The findings will be woven into pan-flu preparedness efforts. The document should be released later this year. The last decade has been spent recovering from H1N1. Those lessons learned can now be used to create best practices.

The Pandemic Influenza-Specific Annexes have been revised to incorporate state-specific crisis standards of care guidance. In the future NACCHO is looking to add non-pharmaceutical interventions and crisis and emergency risk communication plans to the document.

Entities around the country are conducting vaccination campaigns and back-to-school immunization clinics. For these immunization activities, NACCHO utilizes the POD model to acclimate the public to the new mechanism. They are also enhancing closed-POD relationships to enable collaboration between

public and private partners. The desire is to have a multi-pronged approach to deploy vaccine, whether it is in a pandemic or other type of incident.

Assessment and refinement of response plans will include data from traditional surveillance systems, as well as syndromic surveillance. This provides a real-time picture of influenza-like illness. For the first year in Colorado, NACCHO is participating in Flu Net using syndromic surveillance along with other information.

NACCHO supports bidirectional communication with its partners. The states provide data to NACCHO but NACCHO also supplies useful information back to the states. They created one-page notification reports that can be provided to hospitals and providers. This will increase healthcare providers' understanding of the value of providing useful information to the agency. These interactions help the agency continue to discover best methods of communicating with providers, the media, and the communities it serves.

Preparedness Updates and CPR Discussion: NACCHO - Continued

Public-private partnerships for preparedness and response assist for not only pan-flu planning but also for overall preparedness. NACCHO conducts local health department profiles, where they assess a variety of items. In the most recent profile, local health departments talked about how they informally collaborate with private sector partners including businesses, universities and colleges, and healthcare organizations. While they do partner in some way or another with private-sector partners for regular preparedness efforts, the strongest partnerships are with hospitals. About 85% of local health departments partner with healthcare partners. They share information, have written agreements, and hold regular meetings. This is a mix of private sector, public sector, emergency responders, hospitals and community health centers. On average approximately 87% of local health departments partner with community-based partners as well, but it is limited to more of a mix of private and public institutions like schools, community-based nonprofits, universities, and libraries. On average, 68% of local health departments partner with government agencies, like parks and recreation, criminal justice system, and transportation.

Based on the 2016 preparedness profile, approximately 63% of local health departments reported excellent partnerships with local agencies, including emergency management, emergency planning committees, and hospitals. In contrast to that, local health departments reported being least-likely to report excellent partnerships with nontraditional partners like pharmacies and local businesses. At the local level in particular, it has been a challenge to establish formal and informal partnerships with chain pharmacies because they prefer to work at the corporate level with national partners. NACCHO is releasing the 2018 preparedness profile assessment in the next month or two, which will have additional data on the local preparedness infrastructure, staffing partnerships and other programmatic activities.

There have been a few successes in local health department public-private partnerships. One is around working with MOUs and pharmacy chains as part of the MCM and flu planning. During previous pandemics, like H1N1, local health departments had various successes by partnering with the airports in their jurisdictions to vaccinate against influenza. They've partnered with traveling nurse providers for extra capacity, and are also partnering with first responders, like paramedics, for dispensing and providing vaccinations.

There's also a public-private partnership between one of the local health departments and a minor league baseball team to perform vaccinations at the stadium. The stadium will also be used as a community gathering point. Another local health department partnered with a major league baseball team to promote influenza awareness and to hold a vaccination clinic. In addition, local health departments have worked with tourism and hotel groups to provide opioid and naloxone awareness information and resources. Local health departments partnered with the Salvation Army, local bus stations and medical students to educate and vaccinate their communities. During a three-day period, they activated all of the health units in the state, set up flu clinics, and were able to vaccinate 140,000 people.

There are also partnerships around hepatitis A efforts. Health departments have partnered with community agencies serving at-risk populations, especially those individuals experiencing homelessness. They are visiting halfway houses, feeding locations, bathhouses, etc., to provide vaccinations. Prevention messages regarding hand washing are posted in several locations. Some local areas have set up mobile hand-washing stations for basic infection prevention.

Another partnering example is with hospitality associations to help distribute DEET wipes and provide mosquito-borne virus education. This was done mostly with hotels, tourism facilities, and visitor centers.

Preparedness Updates and CPR Discussion: APHL

Association of Public Health Laboratories (APHL)

Reported by Dr. Christina Egan

Seasonal activities provide a solid foundation for APHL's response work. Public health laboratories have to be prepared for many types of events. The 2017-18 Flu Season was a high severity season that affected all age groups. Cases of influenza-like illness were above baseline for 19 weeks. There were 183 pediatric deaths and a huge rate of hospitalizations. In New York, for example, there were 2800 positive influenza tests. This was the greatest test of APHL's flu virus surveillance system since 2009.

APHL and the public health labs, however, are in a much better place for a number of reasons. The public health laboratories have real-time PCR capability for seasonal influenza. They've increased their capabilities to include electronic data exchange between the public health laboratories and CDC. Since 2009, APHL has been involved in many other infectious disease outbreaks, which has bolstered its readiness for pandemic influenza.

Efforts are occurring to strengthen domestic flu surveillance. APHL and CDC partners had been in close collaboration with CDC's flu experts and the LRN group. LRN provides some support with reagent distribution, but it is the influenza laboratory at CDC that works very closely with APHL to assist in providing trainings, updating assays, and distributing assays to the LRN labs. The agencies conduct refresher trainings, which are really important for the public health labs. These refresher trainings also help to alleviate some of the challenges with turnover. Laboratorians are taught how to recognize unusual data and unusual influenza results. There are also annual webinars to talk about novel influenza and regional right-size workshops to discuss the different public laboratory capabilities and needs. In addition, there's an antiviral resistance detection workshop.

It's important for APHL to always try to anticipate what lies ahead. It has automated extraction platforms that are helpful when there is a reduced amount of laboratorians in the public health labs. It is

searching for fully-automated systems that will improve functions such as influenza assays, detection of current strains and novel influenza strains, and the collection of specimens for study use.

Corporate partner relationships have also helped with domestic surveillance efforts. Equipment purchasing is challenging and maintenance is hard to finance. Corporate partners aid APHL by helping to negotiate pricing, purchasing equipment, and covering maintenance costs. The partnerships also afford opportunities to utilize new instruments and technologies for evaluation of new assays, as well as for training workshops.

The National Influenza Reference Centers (NIRCs) were formed in 2009. There are three regional reference centers, which are located in California, Wisconsin, and New York. They provide additional redundancy to CDC, as well as provide additional capabilities that the state and local public health labs don't possess. The creation of these regional reference testing centers has caused a reduction in turnaround time in flu test results being returned to state and local agencies.

NIRCs also perform next-generation sequencing. They isolate the viruses, which are then sent to CDC. It is important to be able to have these strains in a repository for historical monitoring and for assay development. The NIRCs had been conducting phenotypic drug resistance tests, which are very time-consuming. This year, it will complete next-generation sequencing, which will also aid in reducing the turnaround time for result reporting.

Preparedness Updates and CPR Discussion: APHL

Another benefit of having NIRCs is their ability to become a backup entity when other labs have been affected by floods, government shutdowns, and snow storms. They also provide surveillance testing, which helps inform vaccine strain selection, and antiviral resistance testing.

Another important project for APHL is its Public Health Laboratory Interoperability Project (PHLIP). This project aids APHL with electronic laboratory surveillance messaging. At the end of 2009, only five laboratories were in production to perform electronic messaging. Today, 52 public labs can send electronic messaging through a platform set up by CDC called AIMS, with the data being delivered to CDC's Flu Division.

APHL has stood up the Influenza and Respiratory Pathogen Subcommittee. They help with developing curriculum for the workshops and the trainings. They also provide expert input and monitor regulatory issues on topics such as FDA Reclassification of Rapid Influenza Diagnostic Test (RIDT) devices, reimbursement issues for respiratory disease diagnostic panels, and the WHO Pandemic Influenza Preparedness Framework.

APHL participated in the exercises in 2012 and 2018. The 2018 exercise was incredibly beneficial given the experiences and changes since 2009 pandemic and 2012 exercise. There are now additional lessons learned incorporated into the exercise from the Ebola and Zika responses. NIRCs could be incorporated since they are now well established. The exercise also incorporated the expanded capability of next generation sequencing in flu surveillance and response. There were some areas identified that needed further dialogue and development:

- Regulatory issues (e.g., downgrading from BSL3 to BSL2)

- Need for coordinated evaluation, information dissemination and guidance surrounding use of commercial assays in detecting novel viruses
- Recognizing potential bottlenecks at NIRCs if isolation has to occur under BSL3 conditions
- Some PHLs let service agreements lapse on thermocyclers due to decreased funding and lower throughput requirements for seasonal flu surveillance so throughput capacity that was built around 2009 may have decreased in some jurisdictions.

APHL also contributed to international preparedness through its Influenza Laboratory Capacity Assessments. The assessments test for ability to detect and surveil seasonal and novel influenza viruses, and provide guidance on how laboratories can achieve WHO National Influenza Center status. APHL also provided international training and workforce development. Trainings centered around laboratory management, biosafety for influenza laboratories, qRT-PCR advanced troubleshooting training, virus isolation, and quality management systems trainings and mentorships. In addition, the agency provided a Detection of and Response to Novel Influenza Viruses Workshop. This workshop evaluated and refined broad rapid response curriculum for deployment in intra-country rapid response trainings. This was a One Health approach with experts from laboratory, epidemiology, veterinary and clinical sectors.

Preparedness Updates and CPR Discussion - ASPPH

Association of Schools and Programs of Public Health (ASPPH)

Reported by Dr. Laura Magana

ASPPH represents 115 accredited schools and programs of public health. There are several activities that are occurring within its schools and programs that can help strengthen public health.

Several of the schools and programs have centers or offices especially focused on public health preparedness or infectious diseases. Many of these were funded by CDC. Some of the schools that have worked on these efforts are Drexel Center for Public Health Readiness and Communication, Emory Center for Public Health Preparedness, Florida International Academy of International Disaster Preparedness, and UC Berkeley's California Emerging Infections Program.

ASPPH engages with other programs and schools in inter-professional collaborations to plan for response, recovery and continuity of operations in the event of a pandemic. For example, Johns Hopkins partnered with the medical school, health system and the university to develop a plan for the university.

Some of schools and programs have also developed courses, tools, or events that focus on pandemic flu and public health preparedness. Drexel has a tool for public health risk assessment that analyzes the impacts of 20 hazards including pandemic influenza. They completed risk assessments for Southeastern Regional Pennsylvania in June 2018. They also partner with the community, city, state and tribal agencies and organizations to plan for public health emergencies. The Indiana School of Public Health partnered with the Indiana State Department of Health to plan a vaccine distribution exercise on campus. UC Berkeley, California Emerging Infections Program, and five local county health departments conducted active surveillance for influenza.

Texas A&M, the Office of Special Programs, and Global Health in Texas A&M has been working with a local South Dakota tribe for the last three years. This year the tribe requested assistance with developing a continuity of operations plan using pandemic influenza as a scenario. The staff provided awareness training on pandemic influenza and facilitated a round table discussion with key stakeholders

to identify and discuss the elements of an effective response team. They also prepared for appropriate communication in the event of a pandemic flu.

At Drexel, they maintain a library of pre-developed, hazard-specific social media messages to be used in public health and healthcare agencies during a health emergency.

Some schools and programs have ongoing research covering several topics. Emory is conducting research to assess vaccine distribution efforts in correctional facilities. Drexel is currently conducting a population vulnerability analysis with the city of Philadelphia to anticipate the impact of pandemic influenza and guide responses and mitigation planning in the city. They are also conducting a study on disaster communication for influenza to be used with families who have children with special healthcare needs.

Preparedness Updates and CPR Discussion: ASTHO

Association of State & Territorial Health Officials (ASTHO)

Reported by Dr. John Dreyzehner

Dr. Dreyzehner is the Commissioner of Health in Tennessee and was recently named ASTHO's BSC liaison member. ASTHO is passionate about its role in preparing state health officials for the wide range of issues they may have to address. The agency utilizes a variety of curricula to groom health officials for their roles in fast-paced state and local health departments. In addition to demanding normal operations, public health departments are constantly stepping up to respond to a variety of challenges, like fungal meningitis, Ebola, Zika, and seasonal influenza. One of the areas that ASTHO would like to strengthen is showcasing its successes and strengths.

Every year, there is a seasonal epidemic of influenza. In the last decade, approximately 1,485 children died of influenza. This indicates that society has an efficacy problem. Half of the children had a preexisting condition and one-fifth of them had been vaccinated, so it is not entirely an issue of not getting vaccinated. The issue is the nation has not achieved nor has it made plans to achieve herd immunity for seasonal flu in the United States. A lot of attention has been given to acute flaccid myelitis, which is appropriate, but inadequate attention is being given to seasonal flu. More thought needs to be given to how to generate some outrage regarding this problem. It is unacceptable that it happens and it is unacceptable that the supply of vaccine made available every year will only cover half of the U.S. population.

Tennessee has performed school-located influenza vaccinations over the last several years. The effort has required little funding. Approximately 75 of its 95 counties have some type of school-located influenza vaccination program. Roughly 600 schools provide thousands of vaccinations for children. The health department advertises the benefits of vaccination being offered to children in school as a convenience for parents and school administrators. Other benefits are decreases in student absence and an increase in learning because the children are present for school. However, Dr. Dreyzehner says the real reason is to create the relationships that will be needed in an emergency event. The program is now viewed as a trusted entity for this population.

From a pan-flu preparedness standpoint, ASTHO has three significant activities. It participated in NCIRD's recent pan flu exercise. It also conducted an exercise that involved the private sector, healthcare sector, and governmental sector in Nashville. One of the scenarios discussed was injecting a

ransomware attack on the public health enterprise to examine how it will impact communications. Cyber security is probably number one or two on the list of priorities for emergency managers and Homeland Security. The collective public health enterprise needs to strengthen that area.

Three other efforts are also occurring at ASTHO related to pan-flu preparedness. One is Health Pulse, which is a dashboard to gain real data on healthcare facilities. Flu on Call provides just-in-time information on a national scale. Lastly, the public health pharmacy MOU is a pilot initiative, in which MOUs between public health and pharmacies are established to provide vaccination during a pandemic.

Dr. Dreyzehner participated in the NASEM Med-Prep forum on nuclear preparedness. After attending, he felt there needs to be a basic call-to-action. The nation is not well-prepared. There is a need to think about how to respond from a public health enterprise standpoint, obviously, but also importantly from a healthcare and a private sector standpoint because of the logistic issues, both real and feared in an event. ASTHO's president is working on building resiliency in communities and establishing a culture of health.

Preparedness Updates and CPR Discussion: TEC

Tribal Epidemiology Centers (TEC)

Reported by Dr. Jamie Ritchey

Dr. Ritchey is the Director of the Intertribal Council of Arizona's Tribal Epidemiology Center (TEC). There are several tribal epidemiology centers across the country. The Intertribal Council of Arizona services 42 tribes that may have multiple communities and land bases geographically. The Center provides services to communities in Arizona, Utah, and Nevada, with the exception of the Navajo Nation, which has its own tribal epidemiology center.

The top five causes of death for American Indians in Arizona, Utah, and Nevada are heart disease, cancer, injury, diabetes, and liver disease and cirrhosis. In 2016, respiratory disease also became a major health concern, particularly in Nevada, where it's the third leading cause of death for American Indians.

The tribal communities have their own health departments, which are a little dissimilar to city, county or state health departments. Arizona's TEC conducted a survey with the tribal health directors in an effort to assess the technical assistance needs. The survey, which was conducted in 2016 and 2017, found that 16% of tribal health directors wanted more focus on public health emergency preparedness and 21% requested aid with disease outbreaks and infectious disease. Results also showed that 63% needed assistance with substance abuse and 53% with behavioral health. Currently, Arizona is one of the states greatly impacted by the opioid epidemic.

The survey also queried tribes regarding their training needs. It showed that 15% of tribal health directors need training for disease outbreaks and 35% for epidemiology. Arizona's TEC is continuing to work with communities to ensure they have basic training in Excel-based visual data presentations. Strategic planning is also an area gaining significant interest. The TEC has created a handbook that was piloted along with the Blue Stone Strategy Group.

Most of the communities in the agency's region have plans that are in various stages of completion around infectious diseases. Last year, TEC received funding for Zika preparedness and prevention. This fiscal year some additional monies have been added to work on Rocky Mountain Spotted Fever.

Multiple communities have also requested training exercises using NCEH's CASPER methodology for rapid community assessments. Different sampling strategies are being developed to work with communities under the 800 household threshold typically used for CASPER surveys.

Last year, Arizona TEC published a report titled [Allergy, Asthma and Respiratory Disease Among American Indians in Arizona, Utah, and Nevada](#). It is available on their website. The data are aggregated and not tribe-specific. It includes hospital discharge data from the three different states, prescription data and Indian Health Service information. The mortality rate for influenza and pneumonia, comparing American Indians to non-Hispanic whites in Arizona, show a disparity on the order of 2.5 to 3.2 from 2011 to 2016. Nevada and Utah show similar numbers.

The TEC has created some additional reports. One report is on the [opioid epidemic in Indian country](#). It is predominately a policy analysis looking at the different policies and different potential pieces of legislation that the agency is moving forward to impact American Indian communities. A report for behavioral health and substance abuse among American Indians in Arizona, Utah, and Nevada was made available, as well as a related report for traumatic brain injury. Also available is the Maternal and Child Health Assessment Report, which includes infant mortality rates for the different states. All of the reports are available via the TEC website.

In 2017 and 2018, the agency received a request for technical assistance from a tribe regarding a probable cause of avian flu. General information regarding influenza was made available to the tribe, as well as hand sanitizer to be disseminated to any older people that take the shuttle buses.

CDC's Public Health Capacity Grant has been put to use. One tribe is building Rocky Mountain Spotted Fever prevention and control capacity. The TEC is working with eight communities to provide strategic plans for their specific areas. The agency is also working with the Grantsmanship Center to provide grant-writing workshops for all eight communities. It offered strategic planning sessions with Blue Stone Strategy Group to all the tribal communities in Arizona, Utah, and Nevada. More specialized grant-writing training will occur later this fiscal year. The eight tribes serve as a pilot group to provide feedback.

Preparedness Updates and CPR Discussion: TEC - Continued

Moving into fiscal year '19, TEC will work with three tribes to plan and execute an emergency response tabletop exercise. It is providing five tribes, who were impacted by Rock Mountain Spotted Fever, approximately \$40,000 in funding. The funding is provided by the Indian Health Service, CDC supplemental funds, and contracted funds. The memorandum of agreement is in process.

The TEC met with one tribe regarding tire removal on their reservation. Thousands of tires have been collected and now have to be removed for vector control. The agency is exploring ways of getting the heavy equipment needed for removal to the rural area. Dr. Ritchey will talk more with the representatives from Goodyear to see if there's potential for partnership on this endeavor. The community has also identified a contractor and is looking for ways to remove the tires in the most cost effective manner.

TEC has met with the National Institute of Environmental Health Science regarding disaster research on tribal lands. It participated in planning committee meetings and a listening session was held with tribal

leadership in Phoenix. Tribal leadership was present from several of Arizona's member tribes, as well as Navajo Nations tribal leadership.

For the CDC Tribal Public Health Preparedness Building Grant, TEC will focus on surveillance system evaluation. Eight communities will evaluate their internal data systems using the CDC field guide. The purpose is to determine how well the CDC field guide functions for those eight tribal communities around evaluation. In addition, the Opioid Supplemental Funding will be used for strategic planning sessions with two tribes to develop a strategic plan around opioids for the different tribal health departments that deem it an issue. There was also a technical assistance request to purchase medication lock boxes for some of the elders. TEC is looking for outlets that sell lock boxes.

The tribal population has access to vaccination through Indian Health Service. Vaccination rates are still under about 50% for American Indians, which means there have been some increases in vaccine uptake. The issues with vaccination are primarily around utilization and availability. In the urban population in Downtown Phoenix, pharmacies will typically vaccinate for free if the person has private insurance. Many of the communities have private insurance through their jobs and/or Indian Health Service insurance.

Preparedness Updates and CPR Discussion: CSTE

Council of State & Territorial Epidemiologists (CSTE)

Reported by Dr. Benjamin Chan

Dr. Benjamin Chan is the new CSTE BSC Liaison representative. One his desires is to see better collaboration between public health, clinical partners, and community partners. Another interest is to evaluate public health and healthcare delivery. This is particularly relevant when talking about flu preparedness. As we've heard and discussed, pandemic flu preparedness needs to begin at the state and local level with conducting routine, annual influenza immunizations. State and local health departments are in the position of trying to figure out how to improve flu vaccination rates and then expand other preparedness activities.

There is no one, overarching strategy for how to achieve this objective. The context in every state is different. Many states, for example, have local or county health departments but there are still a number who do not. Responsibility for responding to an emergency, for states without a health department, falls to the state, which does not have the same capacity to carry out, for example, flu clinics. For this reason, private-public health partnerships and relationships are critically important because through partnerships, those states can perform public health functions, like immunizations. School-based flu clinics are looking at ways to increase baseline influenza immunizations through their structure. What can pose as a barrier to success in this case is the lack of staff to provide immunizations. Most public schools, if fortunate, only have one school nurse. Ways to overcome that barrier need to be examined.

There have been examples of local health departments partnering with pharmacies or local agencies to set up vaccination clinics in a community. Typically, local health departments will vaccinate those that are uninsured, and the local pharmacy will vaccinate those that are insured. That is a potential example to build upon of how local health agencies can partner with pharmacies and other companies. As suggested in yesterday's presentation with the private sector, large national or multinational companies having the capacity to offload some of the work of the health departments by providing vaccinations,

like influenza, to the business communities and their families. A variety of health systems also have the capacity to stand-up community-based influenza clinics.

Dr. Chan believes there should be a consistent national strategy or a national approach for building relationships with the private sector to assist with vaccinations. This is also applicable to hepatitis A and other vaccine-preventable diseases.

He also stressed the importance of coordination, ongoing exercises, and communication. CSTE was also a part of the pandemic flu exercise. New players can be introduced into exercises and newly learned lessons can also be incorporated. It's important to have good communication to answer the questions that may arise from state and locals.

Another important element is having a health data strategy. CSTE sees this issue of data preparedness as a critical issue. When there is a new outbreak or event, states are left, oftentimes, scrambling to use existing systems or to create their own system of surveillance. Having a consistent national strategy is important, not only to inform the local work that is being done, but also to inform the national discussion and the national response. Any data systems that are created need to be scalable and expandable, both at a local and national level, as well as during routine business.

Dr. Chan's final remark was regarding evaluation. When discussing efficacy and improving the preparedness efforts at the local and state level, the area of evaluation needs to be a part of the conversation. CSTE released its 2017 Epidemiology Capacity Assessment, which examines state and local epidemiology capacity. One of the key findings of the epidemiology capacity assessment was the acknowledgement and realization that there's a real gap in evaluation capacity. This comes back to the point of there being an efficacy problem. Data needs to be able to monitor health outcomes and improve the preparedness work at the state and local level. Part of the solution for this is evaluation capacity. Having people involved in preparedness activities, having people involved in daily, routine operations of programs, like immunization programs, to evaluate the work for effectiveness is one of ways to make improvements and have successes.

Preparedness Updates and CPR Discussion

After the presentations, BSC members asked some additional questions. Below is a summary of the dialogue.

What do you need from CDC that you're not getting already in the course of your regular business?

TEC: I'm looking to see if we could potentially work with CDC to provide technical assistance in the field for some of the work that we need, in particular for maternal and child health, for the opioid epidemic, and for some of our infectious disease work. I think that could really benefit our center. I wouldn't necessarily be interested in having a student. I really need somebody that could hit the ground running and work with me and my team really closely and be a resource. I do have a community as well that would very much like to have a CDC assignee in their community full-time.

ASTHO: I do think that we need to make a more conscious effort to de-silo. I think we have to figure out a space where we can be intentional about how the public health

enterprise really thinks about both infectious and chronic diseases and effective tools that can be utilized. The expertise in each of the silos are transferable. I think we have to be intentional about that. We don't know everything about how to deal with chronic disease, but we can use some of the lessons we've learned from infectious disease. I think the Center for Preparedness and Response might be an entity that could help push CDC to think more broadly about how prepared we are for a variety of challenges that face us.

APHL: We have several new lab networks and they all have different reporting strategies and mechanisms, but to be able to reduce all of this redundancy and separate reporting mechanisms to various places within CDC would be a plus and that should be coupled with common HL7 messages.

CSTE: Silos are a problem but not just between different programs or topic areas. There's silos between different states; the approach to one problem in one state might be very different from the approach in another state. To some extent, that's within CSTE's purview to help look at that also. Having national CDC leadership around breaking down some of these silos is important.

What could CDC do to help break down a silo?

CSTE: I think it goes back to having a national strategy and national coordination. Building up some of these national partnerships with national companies or organizations can help support strategy development and implementation at the local level.

For example, when we're talking about working with Walgreens or a CVS or a Goodyear, if the local level individuals go to the local Walgreens or the local CVS, they don't know what kind of response to anticipate. If there's national relationships built in already, those discussions become much easier. One of the examples I'm thinking of is not related necessarily to pandemic preparedness. It's around the issue of antibiotic resistance, and antibiotic stewardship. There's a co-lead CDC, CSTE, APHL, and AR task force and one of the goals of that taskforce is to collect antibiotic resistant surveillance data.

Many states at a local level have gone to local offices of national reference labs, like Quest, for example, for assistance with lab reporting. We typically get nowhere going to the local or the regional lab to establish a partnership. We had to go to the national level, and, at a national level, the company is interested in working with health departments around the country to provide some of this data.

NACCHO: We need unified messaging. Sometimes we hear two different messages coming from ASPR and CDC in regards to what's happening with the SNS transition. Obviously, everyone's on the edge of their seat wondering what the final information will be and what it's going to look like. There's a lot of different communication pathways that are occurring. Sometimes we talk to a CDC project officer who hasn't heard the same information that we've already heard from other

partners. It would be incredibly helpful to just make sure there's consistency in the messages.

ASPPH: I think that's also important to have better coordination. I think that it's important for all of us to have this kind of discussions in order to see where are the gaps and how can we collaborate. For example, if I can see and talk a little bit about research in some of our schools and programs. If we can have more discussion in terms of what is needed in the whole field maybe we can just have some more guidance in terms of what are the gaps, in terms of research. We can be thinking and planning for the future and to develop the courses, tools, or the research that is needed for the field all together.

Preparedness Updates and CPR Discussion - Continued

Is there is a mechanism to identify innovation in your local communities that can then be celebrated, shared, and expanded upon for other locations?

NACCHO: NACCHO has a competitive model practice process, where other state and local entities can look at different STLT data-driven evaluation efforts and initiatives.

ASTHO: We've developed an entire rubric around how we drive innovation. I can really only speak for my state on this. I will say that ASTHO annually puts forward something called the Vision Award similar to NACCHO model practices. We look at two categories. Category one is a project over a quarter of a million dollars. Category two is for projects under a quarter of a million dollars. The products are tools that can be replicated in other states.

Driving innovation at a state level really has to be done intentionally. You do have to celebrate it. We do that in a number of ways. Tomorrow I'll actually be going out to recognize several counties with what we call Bright Spot awards for some of our primary prevention initiatives. We actually build that into our state health plan. We have three questions: Are we learning from or teaching others? Are we presenting this information? Are we publishing this information?

Using hepatitis A as an example, are the silos that need breaking in the state, CDC, or are the states themselves their own silos?

ASTHO: Both. You are not going to convene and solve every challenging public health issue, but you can find some universality. And, I think begin to say, "Hey, we confronted that head-on, and we identified what our gaps were, and we started to take the steps to solve for those gaps. Now what can we do to apply what we did to address those gaps?" Like, not enough vaccine, not enough resources to get those marginalized populations vaccinated and extend that to other things, including diabetes.

I think there's just great opportunity to integrate data now. The National Public Health Dashboard was mentioned and it is a great idea. There are great

opportunities for data analytics. This is something where the different agencies can work with the CDC, I think.

CSTE: The time is right to revisit how we use the data at a local and national level to evaluate what we're doing and then feed it back to change what we're doing. We get into these processes where we just keep doing the same thing that we're doing because that's what we're funded to do and maybe it showed efficacy in one situation, but the specific context in which we try to implement program change can affect how efficacious any intervention is. Each program and local and state jurisdiction needs to be able to generate program performance data and use it to evaluate their programs and how effective they are so that changes can be made if needed. There's some flexibility that needs to be built into that as well.

The solution is to ensure jurisdictions have the capability or the capacity to use the data. What kind of skills will be needed to use data at different levels? How is it useful? How can I use it and change my practice or policy? That, I think, is a major challenge, and that's one place where CDC can certainly contribute. However, it's just not CDC. It has to be both a push and a pull approach otherwise it won't be very effective.

CDC's Public Health Data Strategy and Data Preparedness: Update

CDC's Public Health Data Strategy and Data Preparedness: Update

Samuel Groseclose, DVM, MPH; Associate Director for Science, CPR

Dr. Groseclose updated the BSC regarding the CDC surveillance strategy and the CPR's Data Preparedness Initiative. The plan for the data preparedness initiative began roughly 18 months ago with the Center for Surveillance, Epidemiology and Lab Services. The aim of the initiative is to address ongoing problems with data collection, analysis, management, and dissemination, when the EOC is activated.

Data preparedness is defined as the planning, exercising, and implementation of capacities and capabilities to enable CDC to do useful work with available data in a coordinated and timely way during an emergency response. Dr. Macarena Garcia in CSELS and others (all contributors to the initiative) reviewed roughly 15 years of after-action reports and preparedness plans and met with numerous centers, institutes and offices at CDC to try and identify data management issues in an activated emergency operation center. Those findings were summarized and then disseminated to the centers, institutes and offices for vetting. It was determined that data management was not a single-center's problem but an agency-wide problem.

Data management issues were then concentrated into four areas:

- Data access and interoperability
- Data science workforce is not sufficient or well-equipped and surge capacity is needed
- Data science policy and leadership roles are unclear
- Coordination on data activities is limited internally and externally

The problems with data access and interoperability are attributed to two factors: lack of interoperable systems limiting integration of data; and inconsistent selection and use of methods, practices, and tools

to conduct data activities. To counteract these difficulties, suitable tools and methods to link clinical, laboratory, and epidemiologic data are required, data elements must be harmonized, and common data element value sets employed. Furthermore, tools will have to adapt to the existing data and surveillance systems. The agency must also identify the most suitable tools to collect, organize, and integrate dissimilar data sources.

Subject matter expertise in data science is limited to a few individuals across the agency. Rotation of response personnel causes a lack of comprehensive working knowledge of data systems and sources. The personnel also often lack contextual awareness relevant to data activities. Two solutions that have been implemented are to increase data-related expertise and establish a Chief Data Scientist role in the incident management structure and to increase data science expertise using an agency-wide Data Preparedness Work Group (DPWG).

Sam Groseclose - Continued

Coordination of data activities internally and externally is limited due to leadership and authority for data science activities being absent in the IMS structure. Also, there are insufficient data harmonization and assistance to external partners. To resolve this problem, there should be senior level engagement through the newly established Chief Data Scientist role within the IMS. In CDC's last two hurricane-related EOC activations, the Chief Data Scientist served as a voice for communication on data-related needs and requests to partners. This individual, along with the DPWG, will provide data-relevant support to internal and external partners, as well as serve in the IMS task forces to improve coordination of data activities. The chief data scientist role has been exercised in the hurricane responses of 2017 and most recently the hurricane response in 2018.

The problem of EOC-based data science guidelines and protocols being unclear is caused by the lack of enterprise-level standard operating procedures and common protocols relevant to data activities. This problem can be overcome by having institutionalized data preparedness prior to and during an emergency activation. Steps to achieving this goal would be to:

1. Develop materials and training opportunities on data-associated regulations and requirements.
2. Exercise CDC Program's data management transition from routine program environment to the surged data management activity required in the EOC.
3. Finalize enterprise-level standard operating procedures and common data management protocols.

The structure of the DPWG contains four subcommittees: Tools and Methods, Data Standards, Work Force, and Data Sharing. The Tool and Methods Subcommittee will identify a set of tools and methods that can be useful at the enterprise level. The Data Standards Subcommittee reviews previous responses to seek out information utilized in the past for selected emergency responses. They then match that information with either existing data standards or sources, or they develop data sources as needed. The Workforce Subcommittee seeks out individuals with knowledge and skills to serve as data scientists during a response. They also look for individuals who can support data management analysis and dissemination needs during an emergency response. Finally, the Data Sharing Committee helps to combat the issue of personnel not being aware of data that may be available for use and procedures to access those data. The DPWG will function across all hazards. Tools created must be multipurpose and available to multiple users.

During the 2018 Hurricane Florence response, Dr. Garcia served as the Chief Data Scientist. Her duties for the response included coordination, technical assistance, and leadership.

CDC's Public Health Data Strategy and Data Preparedness: Chesley Richards

Chesley Richards M.D., M.P.H., F.A.C.P., Director, Office of Public Health Scientific Services

Dr. Richards gave an update on CDC's surveillance strategy and discussed the ways CDC is bridging the surveillance strategy and the Public Health Data Strategy.

As background, in 2014, Congressional comments, as well as those from partners, were that CDC had too many siloed surveillance efforts, too little coordination, and a lack of standardization. As the agency tried to improve the surveillance environment, it decided to focus on four major systems across multiple programs: mortality, syndromic surveillance, electronic lab reporting, and notifiable disease reporting.

By 2018, the agency was able to move from 7% to 63% of mortality records arriving in the National Center for Health Statistics (NCHS) within ten days of death and to state epidemiologists within one day. These data can now be used for timely monitoring of mortality in emergencies, flu, opioids, and a range of other situations thus removing siloed mortality data systems.

For notifiable diseases, the problem was different. Software standards used to report to CDC from the states were over 20 years old and were not fitting into the contemporary IT environments the states possessed. This notifiable disease surveillance system update needs to be done for 120 conditions. The agency is 80% of the way there, and the system now makes it easier for states to report.

Syndromic surveillance emerged after the anthrax attacks. Since that time, CDC has been trying to find ways to use the system and the data. One area of syndromic surveillance practice improved in 2014: the representativeness of emergency department (ED) visit-based syndromic surveillance increased to allow the data to be used for real-time situational awareness. Coverage has been improved to 65% of the country's ED-visits. Most of the states and big cities are now covered.

Electronic lab reporting is a foundational piece of public health. Digital information should flow easily between public health labs and commercial labs to state and local health departments and then on to CDC as one data stream. But, realistically, most lab reports were still in paper format; only 54% were electronic in 2014. Now, there are over 80% in digital form.

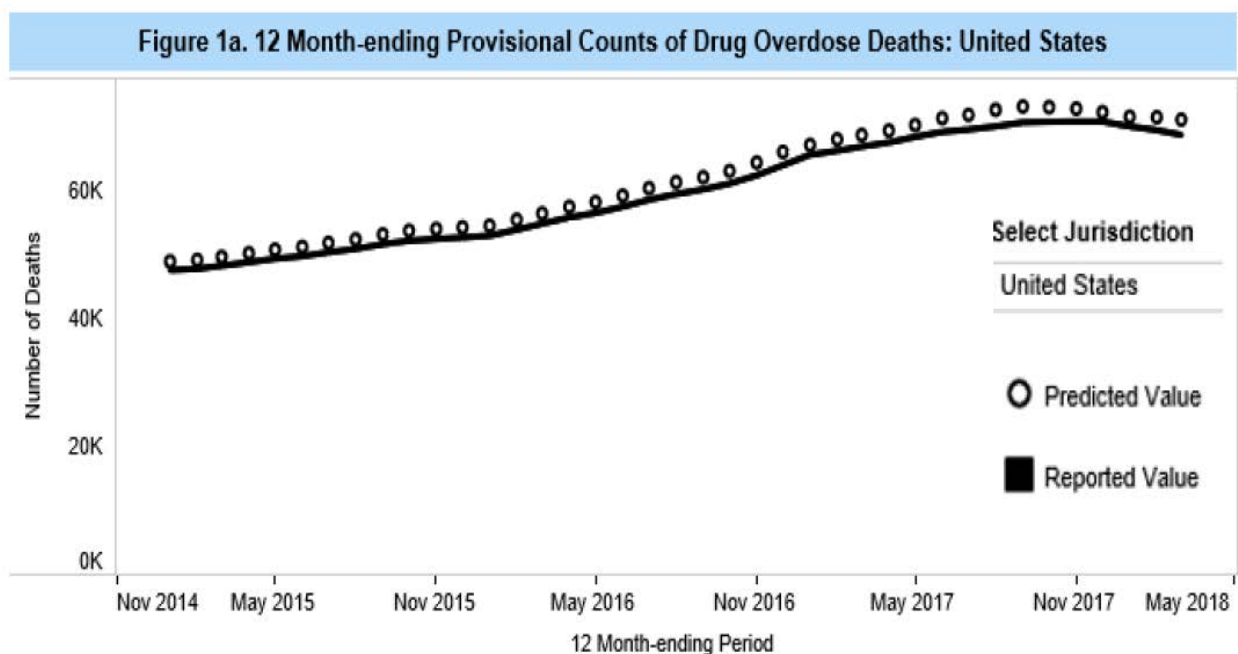
One of the key issues is interoperability. This is a problem across the digital spectrum, particularly between healthcare and public health. CDC is working with partners to address these issues with interoperability as it relates to public health issues. There are two systems where interoperability is functioning well: mortality reporting and syndromic reporting. In mortality reporting, information from clinicians who initiate a death certificate, the funeral home industry, and medical examiners and coroners are being integrated with vital records, state health departments, and CDC.

A similar example also exists in syndromic surveillance. Investments made after the anthrax attacks in syndromic surveillance created, for the first time, a data system that is based in the cloud and has electronic health record capability. Information moves without interrupting the healthcare workflow from hospitals across the country in real time. Within 24 hours, data from 60 to 70 percent of ED visits are available, which is roughly 2.5 million records a day. The barriers to being able to use the data to the

fullest extent are data sharing and use policies, relationships between data sharing partners, and data ownership. Some of the barriers can be overcome by sharing the potential benefits of the data to users and ensuring the sharing of findings from analysis and interpretation with the data providers.

Another desire is to leverage information in death records for preparedness purposes and disease mortality reporting initiatives. Mortality data can also be used as early warning detectors, as was the case in the opioid crisis. When deaths began to increase in the mid-90s, it signaled a problem.

Due to the surveillance strategy, provisional death data can be provided within a few months of deaths occurring. Below is an example of the use of that data.



Chesley Richards - Continued

The efforts in mortality data have helped with a number of local efforts around disasters. Death records are used for processing insurance claims. An electronic system allows records to be completed faster, which is helpful to the families.

CDC is beginning to capitalize on the investments made in syndromic data. In addition to being used for situational awareness and high profile event monitoring, these data can be leveraged for chronic diseases, injury reporting, mass gatherings, environmental conditions, and natural and man-made disasters. Over the last three years, participation has increased in terms of the number of visits recorded, facilities reporting, and participating state and local jurisdictions.

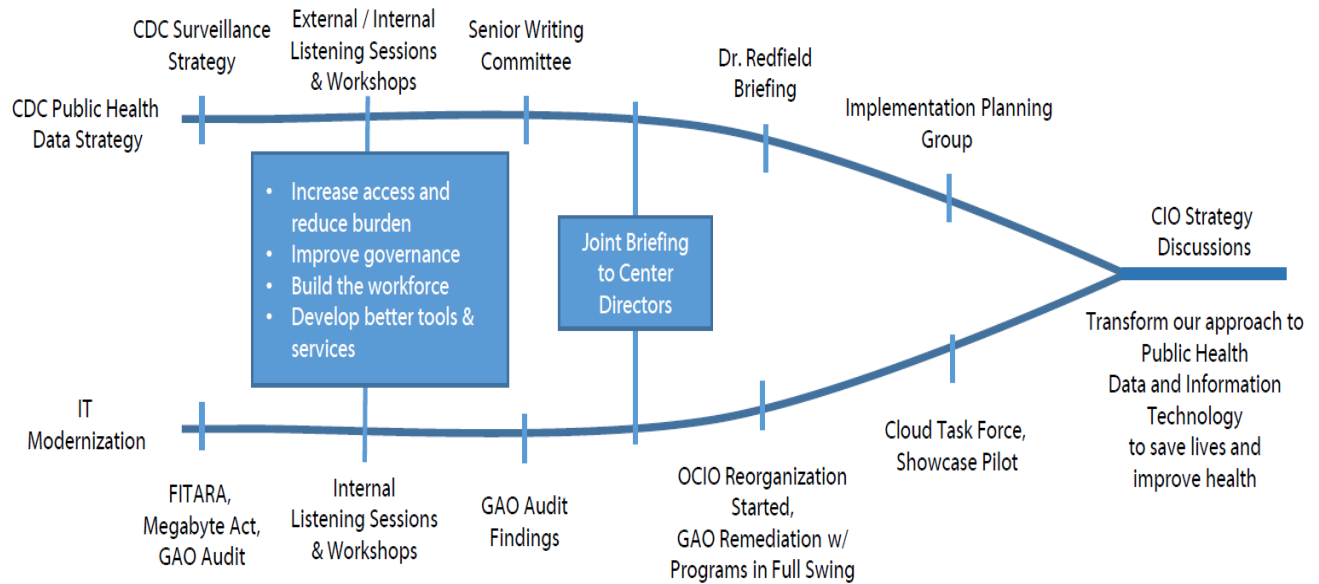
During the Hurricane Harvey response, syndromic surveillance data gave CDC an idea of the type of visits that were occurring in EDs during the hurricane. The data have also been used to compare regional data during hurricanes to determine if there is a spike in carbon monoxide poisonings. This can lead to public health interventions. In addition, syndromic surveillance data were utilized to gain real-time information regarding non-fatal opioid overdoses that are being seen in the ERs. More areas of data use are being explored.

The Surveillance Data Platform was one of the outcomes of the Surveillance Strategy. It acknowledged that there are many siloed systems within CDC's IT architecture, which are a burden to states when they are reporting. The platform will aid in bringing together shared services. Vocabulary is essential to standardization. Having a common vocabulary reduces a significant amount of the burden. This problem is being addressed in the platform. The platform contains a message routing system. When states submit information, the system will route that information to the appropriate programs. Completion of the platform will take some time.

The Digital Bridge is an effort external to CDC. It brings together the largest electronic health records vendors (EHR), several large health systems, and major state and local public health organizations to revolutionize notifiable disease reporting at the local level. In many jurisdictions, notifiable diseases are reported on paper. This ultimately interrupts the physician's workflow and as a result notifiable diseases may not be reported. With the Digital Bridge, a set of logic will be embedded in EHRs that will identify reportable diseases and sends a message that includes information regarding a possible reportable disease to the health department. The health department can then contact the physician for additional information to validate the initial case report. There are currently seven Digital Bridge pilots taking place.

Dr. Richards emphasized that it is necessary to move forward in a way that recognizes the need for change. CDC cannot continue as an agency or as public health to approach data and information technology as it has done in the past. Moreover, its capabilities must keep pace with the world. The Public Health Data Strategy was developed as a result of the input from leaders; information from key informant interviews, focus groups, and workgroups; comments from interest groups; and external partners from 12 different organizations and 44 jurisdictions. A seven-member Writing Committee synthesized the input and research and drafted the strategy components. The draft was presented to Dr. Schuchat, initially, and has now been shared with Dr. Redfield. Permission has been given to continue the work.

While the Data Strategy was being constructed, Ms. Suzi Connor, CDC Chief Information Officer, was leading a similar effort regarding IT modernization within the agency. Both projects' successes depend on one another. The diagram below illustrates the parallel paths both initiatives were adopting.



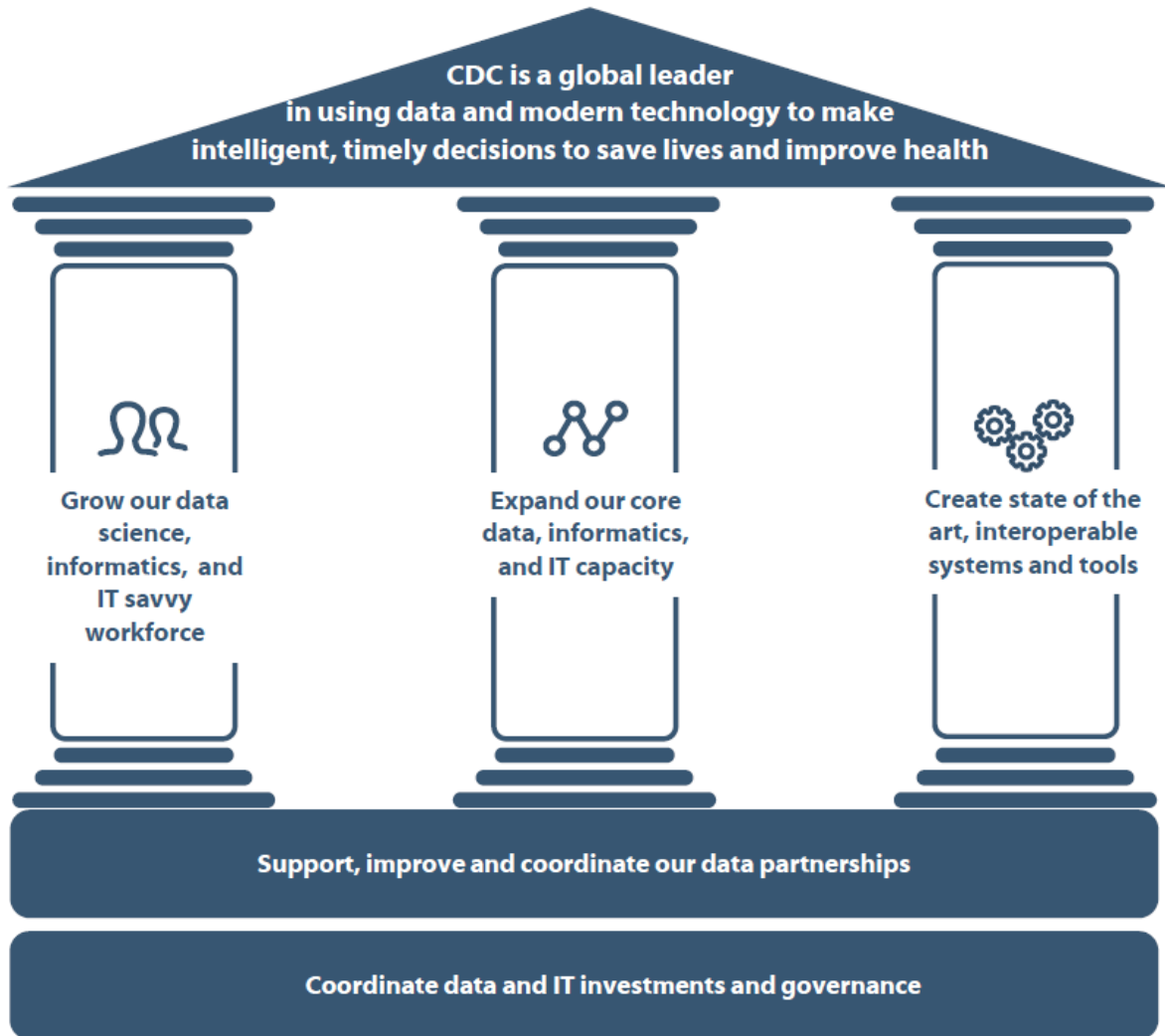
Both groups have been meeting together, along with each of CDC’s centers to talk about their unique issues. So far, eleven centers have been engaged. Collaborating will ensure that efforts are integrated.

In the Writing Committee, five common themes emerged:

1. Need for more advanced data science talent
2. Limited data access and sharing
3. Disconnected systems and tools
4. Relationships with partners can be strengthened and evolved
5. Challenges allocating funding and attention to shared data priorities

Chesley Richards - Continued

Addressing these five areas can foster growth and innovation, while relieving unnecessary burden and inefficiency. CDC can optimize the use of its data resources and expand its strategic partnerships. It can routinely and swiftly share and link datasets. The framework of the Public Health Data Strategy is illustrated below.



One of CDC’s critical roles in emergency response is the rapid mobilization and generation of authoritative knowledge and information to guide decision-making, enhance situational awareness, and support communications. Drs. Groseclose and Richards posed the following questions to the BSC for their recommendations and comments.

1. Knowing what you know about CDC’s environment and culture, how might you pursue and implement enterprise data management solutions to address emergency preparedness and response information management needs?
2. When you consider CDC’ capabilities and the information required for emergency response decision-making, where might CDC be able to add additional value?
3. Among the focus areas for the Public Health Data Strategy:
 - Grow our data science, informatics, and IT savvy workforce
 - Expand our core data, informatics, and IT capacity
 - Create state of the art, interoperable systems and tools
 - Support, improve, and coordinate our data partnerships
 - Coordinate data and IT investments and governance

Which do you consider to be especially useful to address our emergency preparedness and response data challenges? What would you focus on?

4. Based on the overview provided, how might the data strategy provide effective solutions for data preparedness? What are we missing?
5. Do you have recommendations for partnerships that would be critical to support our efforts to enhance data preparedness and achieve the Public Health Data Strategy? Any recommendations for activities that we should pursue to support this work?

Recommendations/Comments from the BSC:

- Consider using data science to monitor things such as Twitter feeds and Google searches. These can be ways of capturing real-time data about incidents. This is an opportunity for partnerships or workshops with the commercial sector. Companies are very advanced in their use of data for all kinds of topics.
- NACCHO has implemented templates used as one-page notification reports that can be used to disseminate public health information to the hospitals. Internally, NACCHO used its Chief Complaint Data triage section to identify cases that would not have been found in any other way. It receives hourly feeds of this type of data. It is also used for comparison analysis.
- There may be an opportunity for CDC to convene other entities around best practices or template models for data governance in state and local health departments.
- Some of the problems will be solved by system-wide solutions, but there are also going to be very specific problems that require different approaches. That kind of innovation still needs to be alive at CDC. The programs themselves will have good ideas for figuring out data problems that may not lend themselves to large, system-wide solutions.
- The Social Security Administration has a Data Innovation Lab. Young data scientists, most contractors, have been there for many years, and they get a pricing benefit over the regular civil service. This has been their method for attracting talent and sustaining it for a little while. There may be models, like that, that you could utilize.
- Think of creating a public data science program and make it slightly honorific. There are many young people who want to make a difference and want to serve our country. This can attract talent that you can train to collect, use, analyze, and disseminate public health data with innovative new approaches.

Public Comment Period

No public comments.

Meeting Recap, Action Items & Future Agenda Topics

The BSC is using a new format to capture action items and future agenda topics that can be shared before the meeting closes. Dr. Lochner provided a summary of those items and they are listed below.

Meeting Recap: October 29-30, 2018

General

1. As part of updates, CPR Divisions should share more aggregated, de-identified program data with the Board. For example, trend analysis, changes over time and predictive modeling on program activities including FSAP and the Import Permit Program as well as state trends on

- ORR and improvements in training, and any data from DEO that would be valuable.
2. Consider utilizing public health law as part of the response to the opioid crisis. For example, CDC endorsing or recommending sample legislation or standardization of laws.
 3. Recommend CDC reach-out to business groups to establish ongoing partnerships to promote community preparedness and response.
 - a. Learn from private sector operations and logistics
 - b. Regional level business groups can help to partner with small businesses
 - c. Consider dialogue with World Economic Forum on how they engage global business
 - d. Consider developing CDC list of needed capabilities that business could help with that CDC could share with business community
 4. Consider establishing an evidence-based business continuity scorecard (as an assessment tool) that is modeled after the [CDC worksite health scorecard](#).
 5. ASPR and CDC need to coordinate communication of their guidance to state/local public health partners with regard to strategic national stockpile.
 6. CDC data strategy – general
 - a. CDC must consider how to reduce redundant reporting mechanisms for our data providers
 - b. Leverage advances in data integration, data visualization and dissemination to create new products, such as a National Public Health Dashboard.
 - c. Consider how CDC can facilitate building capacity at state, local, community level to identify relevant data and effectively use it.
 7. Pandemic flu
 - a. Recommend exercising altered (i.e., crisis standards of care) standards for medical care
 - b. Consider, as part of an exercise, including/focusing on policy and funding implications, e.g. invite OMB, congressional representatives to increase their awareness of capacity/capabilities/challenges
 - c. Need for data-driven measures of efficacy of flu vaccine—we still don't understand how the seasonal flu virus behaves each year
 8. Breaking down silos
 - a. Determine CDC's role in how to break down silos in public health sector. A national strategy/coordination can help facilitate local strategies. What are concrete next steps that CDC/CPR can take?
 - b. Identify "what works" across infectious and chronic health issues- identify tools and skills that are broadly applicable

Meeting Recap - Continued

DSLRL

9. Encourage revisiting the type of engagement between PHEP programs and tribes, with the aim for tribes to be able to apply directly for PHEP funding.
10. Our liaison for APHL will provide input on language used in PHEP capability 12
11. More information on the evaluation of CDC's health/crisis risk communication

- materials, specifically information on what is known about their efficacy and validation.
12. Consider using PHEP to encourage state, local, and tribal partners to establish partnerships with private industry.

DEO/DSLR

13. Consider offering preparedness/incident management training/curriculum to state, local, and tribal partners – expansion of IM training and development program.

BACWG NAC

14. Present polio risk assessment to BSC at next meeting to increase understanding of the basis of NAC recommendations

Additional Action Items:

- The action items that resulted from the private sector discussion seem to be very similar if not the same as the effort that ASPR is promoting with their new Regional Disaster Health Response System. If they are not different, is there opportunity to align those efforts to ensure consistent messages to out-facing partners regarding the need to have private-public partnerships?
- In regard to #6 (above), in addition to the systems building that is occurring around data strategy, new tools, and new talent, it would be useful to line out what are the data problems that need to be resolved. This can bring about some early wins. The problems should drive the investments.
- This new meeting recap is very helpful. There are categories of issues for which concrete and tangible recommendations can be made right away. Then, there are others where further discussion is needed and still others for which we don't have the expertise or "locus of control" to be of help. So, we need to think about the kinds of approaches we could take for the recap summary and then determine next steps to move those.
- Some years ago, there were more working groups as part of the BSC, and the working groups generated recommendations and then required a response from the CDC/CPR program (concur, concur in principle, or do not concur, and why). That was helpful in closing the loop and highlights the evolution of ideas.
- Use the meeting recap to identify action items and determine who are the experts that can help on that topic and maybe that becomes your workgroup so that this is the advisory-strategic type of role and then those in the field can bring it to a resolution.

Future Agenda Topics:

- Regarding #2 (above), model legal code around opioid prevention and control: what is feasible or good ideas?
- Update on acute flaccid myelitis (AFM) and any other new epidemics or emerging infections
- Update on the status of the opioid epidemic. Dr. Brandeau has an article in the American Journal of Public Health for the month of October. The article covers policies for mitigating the opioid epidemic. She will disseminate it to the board.
- Likely ongoing increase of federalization of cannabis suggests that it is worthwhile for CDC to investigate the implications of cannabis use for long-term health outcomes and related public health issues

- Effects of cannabis on the teenage brain
- Distribution channel afforded by those on the BSC and the wider reach of getting to large populations. How might the BSC be utilized to disseminate information quickly in the event of the need to do so?
- Areas that states and locals are having greater levels of difficulties. The board can discuss strategies and what can be done to help elevate those challenges. One problem identified is implementation of non-pharmaceutical interventions
- Update on CDC's community resilience work
- Update on the hepatitis A outbreak and how CDC is working with states to implement and increase vaccination status
- Anthrax and smallpox response plans
- Nuclear preparedness work
- Ebola after-action report. May be able to learn from the new security issues that are occurring.
- Update on the transition of the SNS to ASPR in terms of STLT technical assistance. Is CDC managing that or is ASPR? What do the STLT jurisdictions feel?
- What feedback is CDC getting regarding crisis NOFO? Would it be beneficial to think through challenges?
- What issues would CDC like to have further input on from the board?
- Genetic bioterrorism and threats that should be considered

Dr. Inglesby commented that the new meeting format that allows for more discussion was a good decision and should be preserved.

Before adjourning the meeting, Dr. Groseclose thanked Dr. Lochner and Ms. Rebecca Hall, as well as CDC staff, for all of their efforts to coordinate a successful meeting. Dr. Redd thanked the BSC for all of its valuable insights and feedback. With no further business to cover, Dr. Inglesby adjourned the meeting at 2:51 PM.

CERTIFICATION

I hereby certify that to the best of my knowledge, the foregoing minutes of the October 29-30, 2018 meeting of the Center for Preparedness and Response (CPR) BSC are accurate and complete.

1/14/2019
Date

 /S/
Thomas V. Inglesby, MD
Chair, Board of Scientific Counselors, CPR

APPENDIX A: CPR BSC MEMBERSHIP ROSTER

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APPENDIX B: BSC Meeting Attendance Roster

Atlanta, GA – October 29-30, 2018

NAME	AFFILIATION	October 29, 2018	October 30, 2018
Thomas Inglesby	Chair and SGE	In person	In person
Dawn Wooley	SGE	In person	In person
Vish Viswanath	SGE	In person	In person
Erika James	SGE	In person	In person
Brent Pawlecki	SGE	In Person	In Person
Catherine Slemo	SGE	In Person	In Person
Suzet McKinney	SGE	In-Person	In-Person
Margaret Bandeau	SGE	In-Person	In-Person
Jody Wireman (DoD)	Ex Officio	In-Person	In-Person
Sally Phillips (HHS)	Ex Officio	In Person	In Person
Anthony Macintyre (DHS)	Ex Officio	In-Person	In-Person
John Dreyzehner (ASTHO)	Liaison	In person	In person
Michele Askenazi (NACCHO)	Liaison	In person	In person
Benjamin Chan (CSTE)	Liaison	In person	In person
Christina Egan (APHL)	Liaison	In-Person	In-Person
Jamie Ritchey (TEC)	Liaison	In Person	In Person
Laura Magana (ASPPH)	Liaison	Not Present	By Phone

APPENDIX C: ACRONYMS

AAR After Action Report
AMT Anthrax Management Team
APHL Association of Public Health Laboratories
ARRA/HITECH American Recovery and Reinvestment Act/Health Information Technology for Economic and Clinical Health Act
ASPPH Association of Schools and Programs of Public Health
ASPR Assistant Secretary for Preparedness and Response (HHS)
ASTHO Association of State and Territorial Health Officers
BSAT Biological Select Agents and Toxins
BSC Board of Scientific Counselors
CDC Centers for Disease Control and Prevention
CEFO Career Epidemiology Field Officer
CSTE Council of State and Territorial Epidemiologists
DEO Division of Emergency Operations (CDC)
DHS US Department of Homeland Security
DoD Department of Defense
DOT Department of Transportation
DPHP Directors of Public Health Preparedness
DRMU Deployment Risk Mitigation Unit
DSAT Division of Select Agents and Toxins (CDC)
DSLRL Division of State and Local Readiness (CDC)
DSNS Division of Strategic National Stockpile (CDC)
EHR Electronic Health Record
ERPO Extramural Research Program Office (CDC)
ExO Ex Officio
FACA Federal Advisory Committee Act
FDCH Federal Document Clearing House
FOA Funding Opportunity Announcement
GAO Government Accountability Office
FRO Financial Resources Office (CDC)
HCW Healthcare Worker
HPA Healthcare Preparedness Activity (CDC)
HPP Hospital Preparedness Program
HHS US Department of Health and Human Services
IHR International Health Regulations
IOM Institute of Medicine
IT Information Technology
LO Learning Office (CDC)
LRN Laboratory Response Network
LRN-B Laboratory Response Network Biological
LRN-C Laboratory Response Network Chemical
MASO Management Analysis and Services Office (CDC)