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Addressing Health Security Gaps in the United States following the Joint External Evaluation

Christopher L. Perdue, MD, MPH (Moderator)
Commander, US Public Health Service
HHS Office of the Assistant Secretary for Preparedness and Response

Learning Session Overview

- Part 1 Introduction and overview of the World Health Organization (WHO) Joint External Evaluation (JEE) and a brief description of our JEE National Action Plan
- Part 2 Improving our national approach to One Health and preparedness for zoonotic disease outbreaks
- Part 3 Improving the scope and implementation of guidelines for public health emergency preparedness at international airports
- Part 4 Enhancing public health event assessment and reporting among the U.S. Pacific Island Territories



Part 1.

THE U.S. JOINT EXTERNAL EVALUATION



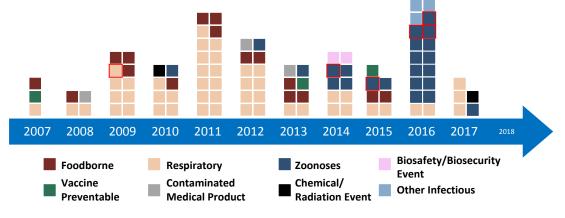
Audience Poll (IHR) – Choose the best answer

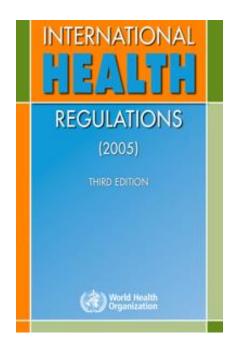
What are the International Health Regulations? When poll is active, respond at PollEv.com/prepsummit2 🔲 Text PREPSUMMIT2 to 22333 once to join Answers to this poll are anonymous Rules and standards for healthcare 22% records and prescriptions. Allowable charges at international airports for traveler health services. A global agreement to develop essential public health capacities and report 78% high-threat public health events. Rules that govern development of vaccines and other countermeasures for public health emergencies. 0% 20% 40% 60%

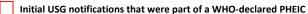


IHR in the United States

- Global mechanism to collaborate on public health security
- "National Focal Point" for the IHR maintained in HHS/ASPR
- 40+ federal agencies included in multisectoral coordination









JEE Overview

- Tool/process to strengthen and validate "self-assessment" under the International Health Regulations (IHR)
- Focuses on essential public health emergency prevention, preparedness, detection, and response capacities
- Voluntary activity not an audit or inspection involving international experts and advisors

JEE of the United States





Outcomes from the 2016 JEE

- 15 international experts received the U.S. self-assessment and interviewed federal experts on May 23-27, 2016
- Scored the U.S. and provided detailed recommendations in all 19 technical areas of the JEE
- Recognized many strong capacities, but also many areas for improvement



Text a <u>single</u> word or <u>hyphenated-words</u>

In the United States, with respect to prevention, detection, and response to public health emergencies, where or what are the most significant gaps?

When poll is active, respond at **PollEv.com/prepsummit2** ☐ Text **PREPSUMMIT2** to **22333** once to join Answers to this poll are anonymous

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multiple-partners/stakeholders
information-sharing early-detection
health local funding policy
sharing surveillance leaving
communication money
coordination-among-partners
pandering-to-public-perception
```



U.S. Lowest Scores on the 2016 JEE

Capacity	Indicator	Score
Antimicrobial Resistance	P3.4 Antimicrobial stewardship activities	
Radiation Emergencies	RE.1 Mechanisms are established and functioning for detecting and responding to radiological and nuclear emergencies.	
Radiation Emergencies	RE.2 Enabling environment is in place for management of Radiation Emergencies	3
Risk Communication	R5.4 Communication Engagement with Affected Communities	3
Emergency Response Operations	R2.4 Case management procedures are implemented for IHR relevant hazards.	
Zoonotic Disease	P4.1 Surveillance systems in place for priority zoonotic diseases/pathogens	3
Real-Time Surveillance	D2.2 Inter-operable, interconnected, electronic real-time reporting system	3

Full report: http://www.who.int/ihr/publications/who-whe-gpi-2017.13/en/



JEE National Action Plan

- 632 individual action items for 2018-2020
- Developed with all agencies to address all recommendations, but focusing on several priorities
 - Antimicrobial Resistance
 - Zoonotic Disease
 - Food Safety
 - Biosafety and Biosecurity
 - Real-Time Surveillance
 - Preparedness
 - Emergency Response Operations
 - Risk Communication
 - Chemical Events
 - Radiation Emergencies









Part 2.

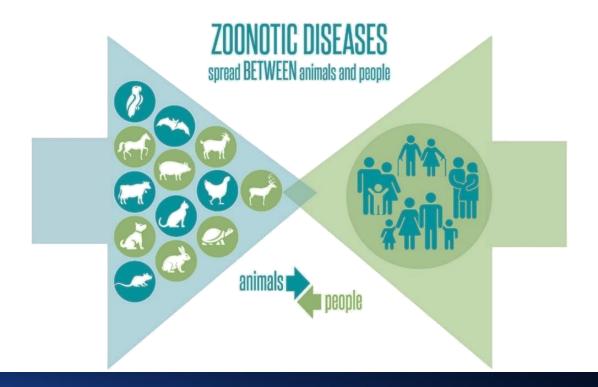
USING A ONE HEALTH APPROACH TO PRIORITIZE ZOONOSES IN THE UNITED **STATES**

Kate Varela, DVM MPH

Veterinary Medical Officer, ORISE Fellow One Health Officer CDC National Center for Emerging and Zoonotic Infectious Diseases

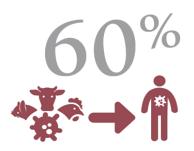


Endemic and Emerging Zoonotic Diseases shared between animals and people





Zoonotic Diseases are a Threat to Global Health Security



of existing human infectious diseases



of emerging infectious diseases of humans (including Ebola, HIV, and influenza) have an animal origin



new human diseases appear every year.
Three are of animal origin



of agents with potential bioterrorist use are zoonotic pathogens

OIE webpage: www.oie.int/onehealth



Which vectors / reservoirs worry you the most?





One Health: The Way Forward

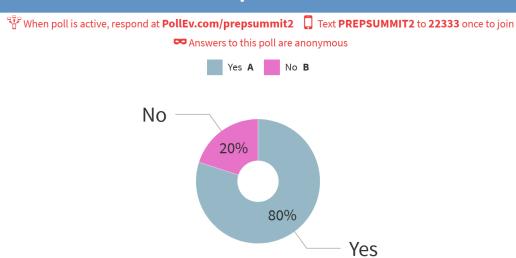
- Collaborative effort of multiple disciplines and sectors
 - Working locally, nationally, regionally, and globally
 - With the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and our shared environment





One Health in Action – Question 1A

As a state or local public health agency, do you currently partner with your state wildlife agency on zoonotic disease surveillance or response?





One Health in Action – Question 1B

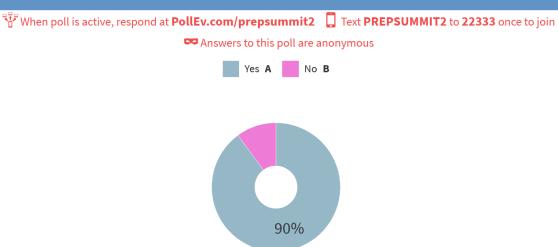
If YES, give an example of a zoonotic disease that you work on together (free text).

When poll is active, respond at Pollev.com/prepsummit2 📮 Text PREPSUMMIT2 to 22333 once to join Answers to this poll are anonymous "One Health Committee" "Influenza" "Rabies - Maryland" "Zika, flu, Ebola, rabies, west nile" "Avian influenza" 8 days ago "Influenza Rabies West-Nile-Virus" "Just started, but recently a state One Health task force was formed" "West Nile" 8 days ago 8 days ago 8 days ago "Partnership for One Health Delaware" "Rabies-vaccine-with-DNR-WV" 8 days ago



One Health in Action – Question 2A

As a state or local public health agency, do you currently partner with your state animal health agency (agriculture sector) on zoonotic disease surveillance or response?





Yes

One Health in Action – Question 2B

If YES, give an example of a zoonotic disease that you work on together (free text).

When poll is active, respond at **PollEv.com/prepsummit2** Text **PREPSUMMIT2** to **22333** once to join

► Answers to this poll are anonymous

"Avian Influenza, EEE" 8 days ago

"Extensive planning for avian influenza" 8 days ago

"Variant flu - swine flu" 8 days ago "Alyssaboyea883" 8 days ago

"Salmonella, E.coli" 8 days ago



Current U.S. Government One Health Collaborations

- Influenza surveillance
 - USDA and DOI monitor influenza in domestic and wildlife populations while CDC conducts influenza surveillance in humans
 - CDC and USDA work closely on avian influenza surveillance and response activities- including HPAI and LPAI responder monitoring
- National Antimicrobial Resistance Monitoring System (NARMS)
 - USDA, CDC and the Food and Drug Administration (FDA) collaborate to monitor antibiotic resistance of Salmonella and other foodborne pathogens



Results from the Zoonotic Disease Technical Area

Indicator	Score	
P.4.1 Surveillance systems in place for priority zoonotic diseases/pathogens		
P.4.2 Veterinary or Animal Health Workforce		
P.4.3 Mechanisms for responding to zoonoses and potential zoonoses are established and functional		

- Recommendations for Priority Actions
 - Establish a national One Health approach which can formally delineate sectors taking into account the steady state and emergency response
 - Formalize interagency networks to address One Health issues through joint investigation, data sharing, communications, and funding of high priority projects and diseases using existing or new multidisciplinary tools
 - Increase dedicated public health veterinarians to work on zoonotic diseases at the national, state and local levels



One Health Partnership for Prioritization

- Three federal leads for zoonotic diseases collaborated to use a One Health approach to prioritize zoonotic diseases of greatest national concern that should be jointly addressed by human, animal, and environmental health agencies
- December 5-7, 2017: Washington, DC









U.S. One Health Zoonotic Disease Prioritization Workshop



Goals

- Use a One Health approach to prioritize the zoonotic diseases of greatest national concern that should be jointly addressed by human, animal, and environmental health agencies
- Develop plans for implementing and strengthening multisectoral approaches to address these diseases in the United States

Participating Agencies

- Department of Health and Human Services (HHS)
 - Centers for Disease Control and Prevention
 - Food and Drug Administration
 - Assistant Secretary for Preparedness and Response
- Department of Agriculture (USDA)
 - Animal and Plant Health Inspection Service
 - Agricultural Research Service
 - Food Safety Inspection Service
 - Office of the Chief Scientist
- National Oceanic and Atmospheric Association (NOAA)
 - National Marine Fisheries Service

- Department of the Interior (DOI)
 - U.S. Geological Survey
 - Fish and Wildlife Service
 - National Park Service
- Environmental Protection Agency (EPA)
 - National Homeland Security Research Center
- State Partners
 - Delaware Agriculture Veterinarian
 - Virginia Public Health Veterinarian
 - Maryland Wildlife Veterinarian



METHODS: One Health Zoonotic Disease Prioritization Tool

- One Health approach
 - Transparent process with equal input from human, animal, and environmental health, and other relevant sectors
- Allows for local adaptation
- Can prioritize even in the absence of reliable prevalence data
- Outcomes focus limited financial and personnel resources to
 - Create or strengthen One Health coordination mechanisms
 - Strengthen laboratory capacity
 - Conduct efficient and effective surveillance
 - Develop joint outbreak response and preparedness plans
 - Create joint prevention and control strategies

<u>Learn more about the method</u>: https://www.cdc.gov/onehealth/global-activities/prioritization.html

One Health Zoonotic Disease Prioritization Workshop

One Health recognizes the connection between human, animal, and environmental health.

What is the purpose of the One Health Zoonotic Disease Prioritization Workshop?

Effective mitigation of the impact of endemic and emerging zoonotic diseases of public health importance requires multisectoral collaboration and interdisciplinary partnerships.

- . Conducting this workshop allows a country to
- Bring together multisectoral, One Health representatives to connect human, animal (both livestock and wildlife), and environmental health sectors
- Prioritize endemic and emerging zoonoses of greatest national concernusing equal input from all represented sectors
- Support the creation of One Health coordination mechanisms to improve health outcomes for humans and animals
- Focus the use of limited resources to build capacity and reduce the
- Focus the use of limited resources to build capacity and reduce the impact of prioritized zoonoses

Why conduct a One Health Zoonotic Disease Prioritization Workshop?

Workshop participation can help to strengthen multisectoral collaborations

- Prioritized zoonoses can focus limited financial and personnel resources to
- Build laboratory capacity
- Conduct efficient and effective surveillance in humans and animals
- Develop joint outbreak response plans
- Create prevention and control strategies for both human and animal health
- Zoonotic diseases can be prioritized even in the absence of reliable prevalence data
- Provide outcomes in a timely manner so that participants may give immediate feedback and capitalize on collaborations built during the prioritization process

Who are the recommended workshop participants?

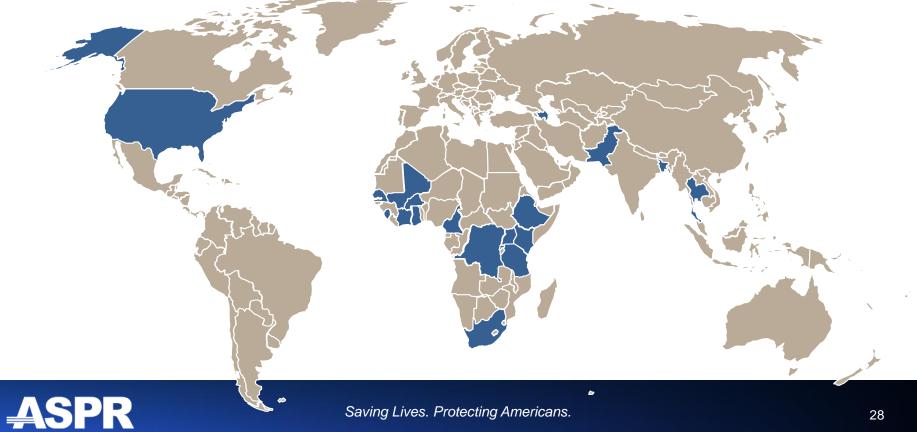
Creating an interdisciplinary response requires contributions from all sectors and identification of common priorities.

- Two core voting members representing each of the following sectors (typically 8 to 12 stakeholders)
- Ministry of Health
- Ministry of Agriculture, Livestock, and Fisheries (or similar agency)
- Ministry of Wildlife (or similar agency)
- Ministry of Environment (or similar agency)
- Other government agencies active in zoonotic disease work
- Observers representing CDC, WHO, FAO, USAID, key academic partners, and non-governmental institutions working in the area of zoonotic diseases (typically 10 to 15 observers)





One Health Zoonotic Disease Prioritization Workshops 2014 - 2018 (n=19)



METHODS: Analyze Existing Processes for One Health Coordination

Components of the One Health Systems
 Mapping and Analysis Resource Toolkit ™ (OH SMART™) used to map existing processes for
 control and prevention of priority zoonotic
 diseases in case of outbreak



- Identify where interactions work & how they might be strengthened
- Identify areas where steps are unclear or undefined
- Identify gaps and solutions to address gaps







<u>Learn more about OHSMART</u>: http://www.vetmed.umn.edu/centers-programs/global-one-health-initiative/one-health-systems-mapping-and-analysis-resource-toolkit



Initial List of Zoonotic Dispasas

Diseases		
Parasitic Diseases		
Babesiosis		
Bovine Cysticercosis		
Cryptosporidiosis		
Giardiasis		
New World Screwworm		
Porcine Cysticercosis		
Toxoplasmosis		
Trichinellosis/Trichinosis		
Trumponosomiosis (Charges)		

Trypanosomiasis (Chagas) **Fungal Diseases**

Blastomycosis

Coccidioidomycosis

Cryptococcosis

Histoplasmosis

Prion Diseases

Bovine Spongiform Encephalopathy

Chronic Wasting Disease*

Bacterial Diseases		
Anaplasmosis		
Anthrax		
Brucellosis		
Campylobacteriosis		
Ehrlichiosis		
Glanders		
Leptospirosis		
Listeriosis		
Lyme Disease		
Melioidosis		
Murine Typhus		
Plague		
Psittacosis		
Q-fever		
Rat Bite Fever		
Salmonellosis		
Shiga toxin-producing Escherichia coli		
Spotted fever rickettsiosis		
Tularemia		
Vibriosis		
Zoonotic Tuberculosis		

erial Diseases	Viral Diseases	
plasmosis	Eastern Equine Encephalitis	
rax	Hantavirus infection	
ellosis	Hendravirus infection	
pylobacteriosis	Japanese Encephalitis	
chiosis	Lymphocytic choriomeningitis	
ders	Middle Eastern resp. syndrome (MERS)	
ospirosis	Monkeypox	
riosis	Nipah	
e Disease	Rabies	
pidosis	Rift Valley fever	
ne Typhus	Severe acute resp. syndrome (SARS)	
ue	Venezuelan Equine Encephalitis	
acosis		
ver	Viral Hemorrhagic fevers	
Bite Fever	Crimean-Congo hemorrhagic fever	
nonellosis	Ebola	
a toxin-producing Escherichia coli	Lassa fever	
ted fever rickettsiosis	Marburg virus disease	
remia	West Nile	
osis	Western Equine Encephalitis	
notic Tuberculosis	Yellow Fever	
	Zoonotic Influenza Viruses	

Viral Diagona



Five Priority Criteria

- Economic impact
- Pandemic or epidemic potential
- Potential for introduction or increased transmission in United States
- National security
- Severity of disease in humans and animals

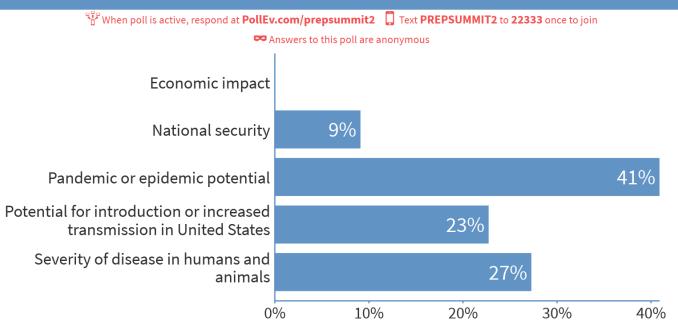






Audience Poll (Ranking Criteria) – Choose one

Which of these criteria would be the most important from the perspective of your organization?





Ranking Order for U.S. Criteria

- 1. Pandemic or epidemic potential
- 2. Severity of disease in humans and animals
- 3. Economic impact
- 4. Potential for introduction or increased transmission in United States
- 5. National security







U.S. Priority Zoonotic Diseases for One Health Collaboration

- 1. Zoonotic influenza viruses
- 2. Salmonellosis
- 3. West Nile Virus
- 4. Plague
- 5. Emerging coronaviruses (MERS, SARS)
- 6. Rabies
- 7. Brucellosis
- 8. Lyme Disease





Key Themes from Systems Mapping

- Plenary discussion revealed common themes and needs for the United States:
 - Formal One Health coordination mechanism including for agency/Department leadership and technical levels
- National One Health Framework for United States
- Importance of leadership engagement
- Opportunities for improved collaboration and communication for surveillance and data sharing
- Strengthen joint outbreak investigations for priority zoonoses
- Coordinated education and outreach efforts around prioritized zoonoses to stakeholders
- Joint discussion on research needs

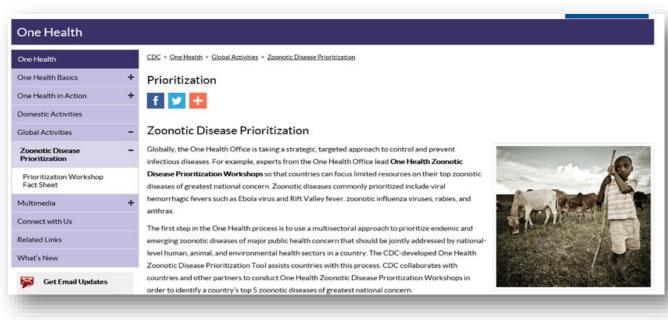


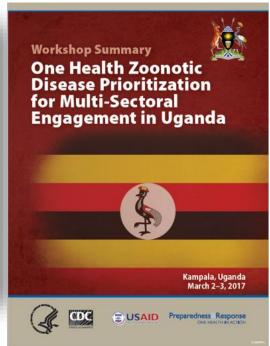
Workshop Outcomes & Next Steps

- Agreed upon prioritized zoonotic disease list for the United States
- Robust multisectoral discussion on how to address prioritized diseases, improve collaboration and communication
- Next Steps
 - Final workshop report
 - Continued outreach activities
 - Actively working to address identified gaps



U.S. Workshop Report finalized by mid-2018





<u>CDC One Health Page</u>: https://www.cdc.gov/onehealth/global-activities/prioritization.html



Acknowledgements

Workshop Participants

- Dr. Neena Anandaraman, USDA
- Dr. Casey Barton Behravesh, CDC
- Dr. Pat Basu, USDA
- Dr. Chris Braden, CDC
- Dr. Allen Craig, CDC
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- Dr. Brian McCluskey, USDA
- Dr. Geoff Plumlee, DOI
- Noah Matson, DOI
- Dr. Karen Becker USDA
- Dr. Sarah Bevins, USDA
- CDR Elaine Bond, DOI
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- Dr. Margaret Wild, DOI

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Contact Information

- Contact: onehealth@cdc.gov
- Subscribe to updates at www.cdc.gov/onehealth

For more information, contact CDC 1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348 www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Part 3.

PUBLIC HEALTH PREPAREDNESS AT INTERNATIONAL POINTS OF ENTRY (POE)

Christopher L. Perdue, MD, MPH

IHR Branch Chief HHS Office of Assistant Secretary for Preparedness and Response (ASPR)



Results from the Points of Entry (PoE) Technical Area

Indicator	Score
PoE.1 Routine capacities are established at PoE	4
PoE.2 Effective Public Health Response at Points of Entry	5

- Recommendation from the external experts
 - Development of comprehensive national aviation-preparedness plan aimed at preventing and containing the spread of diseases which would include PoE not already covered by CDC
 - Expansion of capacity to detect, assess, report and response capacity at the non-designated ports supported by exercise programs
 - Provisioning of on-site access to specialized public health officers at other non-designated ports (land, air and ports)



Challenges to Coordination Public Health Preparedness at PoE

- Standard airport emergency operations plans designed for (and very effective at) industrial safety and accident prevention
- No simple solutions to balancing public health needs with efficient movement of (unaffected) travelers and material
- Need customizable options for airports with unique configurations, variable resources, different access to public health







Choose the best answer

According to DoT international passenger data, how many international PoE are there in the United States?



15%

20%

25%

30%

10%

5%

0%

Increasingly interconnected world

- 357 international PoE in the United States
- 17,741,175 international passengers to/from United States between Sept. 2016 and Sept 2017
 - Top destination regions
 - ✓ Europe
 - ✓ Central America
 - √ Far East Asia
 - Top destination countries
 - ✓ Mexico
 - ✓ Canada
 - ✓ United Kingdom
 - ✓ Germany
 - ✓ Japan

<u>Source for transportation data</u>: https://www.transportation.gov/policy/aviation-policy/us-international-air-passenger-and-freight-statistics-report



GAO December 2015: AIR TRAVEL AND COMMUNICABLE DISEASES

- "Comprehensive Federal Plan Needed for U.S. Aviation System's Preparedness"
- Current public health plans are useful for small-scale incidents
- Private companies, federal and local agencies share responsibility for planning and exercises
- U.S. needs a framework for minimal expectations for PoE preparedness



International Public Health Standards for International PoE

- IHR requires <u>designated</u> PoE to meet public health requirements
- 1944 Convention on International Civil Aviation
 "...take effective measures to prevent the spread by means of air navigation of cholera, typhus (epidemic), smallpox, yellow fever, plague, and such other communicable diseases..."
- Appropriate public health screening of passengers and baggage upon arrival
- Holding passengers only for legitimate public health reasons



Collaborative Arrangement for Prevention and Management of Public Health Events in Civil Aviation (CAPSCA)

- Voluntary program to enhance preparedness at international PoE
- Involves interviews and inspections of individual airports

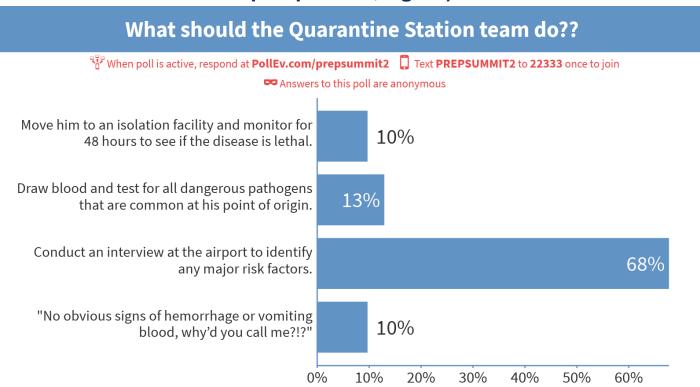


YouTube Video Clip of an Airport Public Health Emergency Exercise





Passenger arriving from XYZ country appears to be feverish (weakness, perspiration, rigors)







Significant challenge to develop consistent capacities at all PoE



Take-Away Points from the CAPSCA Visit to Hartsfield-Jackson

- Need to expand the current national strategy to support aviation preparedness
- Strengthen coordination between airport authorities and medical services
- Finalizing the template for Communicable Disease Response Plans
- Develop guidelines for smaller PoE and secondary airports
- Develop guidelines for exercises at the appropriate operational level



Guiding Public Health Preparedness at International PoE in the U.S.

- Collect available guidelines and best practices
- Develop a national guideline for public health preparedness
- Consider mechanisms to support local planning and exercises
 - Planning tools / checklists
 - Coordination with regional Q Stations
 - Enhanced communication network
 - Joint staff assistance visits (CAPSCA model)



Part 4.

PUBLIC HEALTH EVENT ASSESSMENT AND REPORTING IN THE PACIFIC

Jerusha Murugen, MPH

IHR Program Manager HHS Office of the Assistant Secretary for Preparedness and Response



Results from Reporting Technical Area

Indicator	Score
D.3.1 System for efficient reporting to WHO, FAO and OIE	5
D.3.2 Reporting network and protocols in country	4

Recommendations for Action

- Improve understanding of FAO, OIE and WHO requirements among federal, state and local stakeholders through multisectoral discussions.
- Work towards developing consistency in reporting on IHR requirements across all agencies and subnational health departments.
- Improve overall coordination among all reporting entities by developing a policy on international event reporting.



USAPI Event Detection, Assessment, and Reporting

- World Health Organization (WHO) regional IHR communication and coordination exercise (Crystal 2016/2017)
- Public health officials from the U.S. Pacific territories (Guam, CNMI, American Samoa), U.S. government territory public health officials, and the ASPR IHR Program participated identified
- Identified several areas of opportunity regarding IHR event communication, notification, and response coordination between U.S. Pacific territories, the USG, and WHO/WPRO



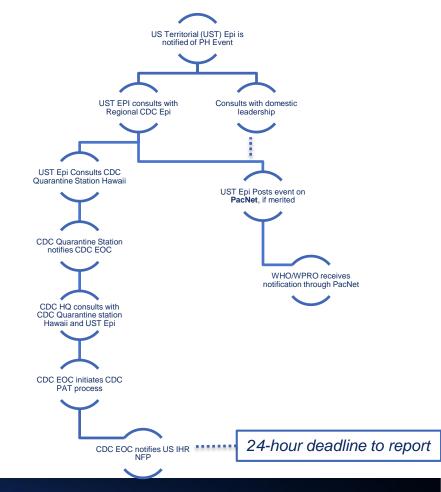
Findings

- Significant barriers in meeting IHR notification timelines due to distance and time zone difference
- No awareness of existing IHR event notification procedures between territorial governments and USG
- Disparate IHR notification procedures for U.S. Pacific territories, U.S. states, and other PICTs
- Inconsistent USG support for U.S. territories in understanding that IHR reporting obligations are met (e.g. use of Annex 2)
- Need to strengthen, maintain, and expand IHR event reporting and coordination procedures for U.S. Pacific territories



Challenges with current Current Protocol

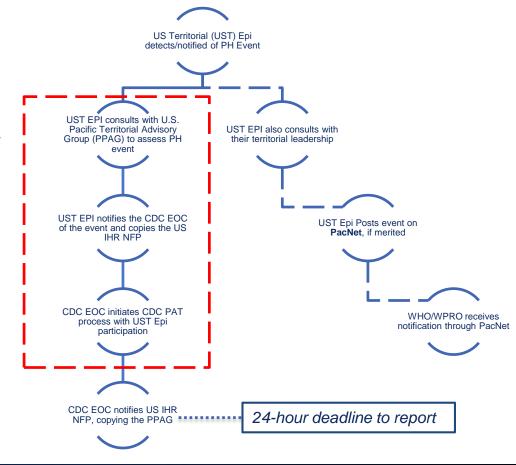
- WHO Western Pacific Regional Office (WPRO) and Pacific Island Public Health Surveillance Network maintain reporting systems parallel to U.S. system (PacNet)
- Island territories must coordinate more closely with other countries in the region (similar to U.S. border states)
- 15-hours time zone difference results in difficulty coordinating with HHS and CDC
- No awareness of existing IHR event notification procedures among territorial governments





Revised Protocol

- Increased understanding and local authority for event assessments under the IHR through Pacific Territorial Advisory Group (PPAG)
- Strengthens and streamlines connection between local/regional epidemiologists and HHS processes
- Reduces impact of time zone differences
- Aligns reporting for the Pacific Islands with other countries in the region





Conclusion

- Strengthening IHR event reporting capability of U.S. territorial health officials and streamlining the existing U.S. territorial IHR reporting process will:
 - Leverage expertise of territorial public health officials to effectively and more efficiently initiate official USG IHR notifications
 - Reduce dependence on USG technical agencies to identify, assess, and initiate IHR event notifications to the USG IHR NFP
 - Enhance territorial public health autonomy and capability, and advance domestic implementation of the IHR







Questions?

Thank you!