



Using a One Health Approach to Prioritize Zoonoses in the United States

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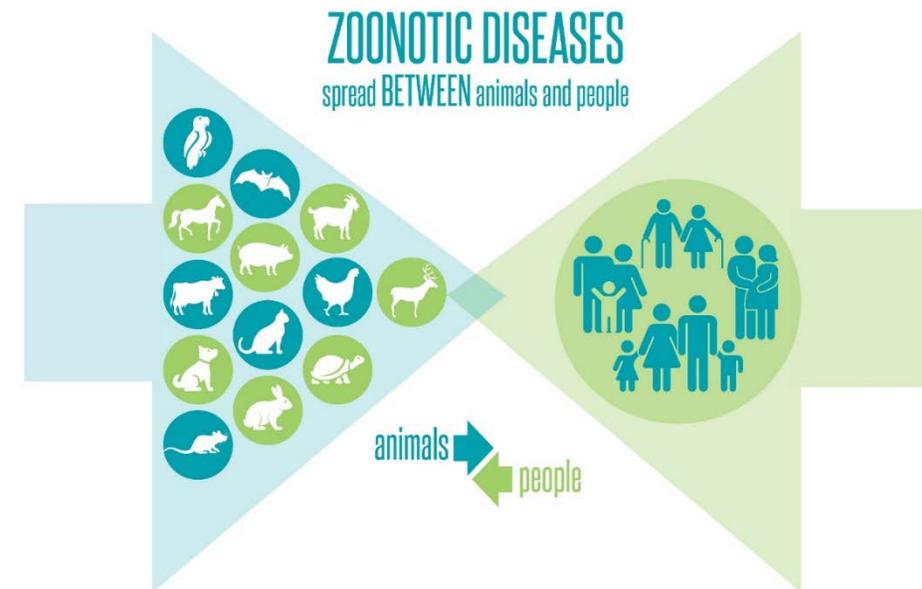
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Overview

- **One Health Overview**
 - Importance of strengthening a One Health approach to zoonotic disease prevention, control and response in the United States
- **One Health Zoonotic Disease Prioritization (OHZDP) Process**
 - Prioritizing Zoonoses in the United States
- **Analyzing Existing Multisectoral Collaborations for Prioritized Zoonoses using OH-SMART™**
- **Results and Next Steps**



The health of humans is connected to the health of animals and the environment.



Increasing Global Attention on One Health

- **One Health issues include zoonoses, AMR, food safety/security, others**
- **Core health sectors**
 - Human
 - Animal
 - Environment
 - Other relevant sectors
- **Foundation**
 - Communication
 - Coordination
 - Collaboration
 - Cooperation
 - Maximizing resources to best address health threats
- **Ultimate goal**
 - Achieve optimal health outcomes for people and animals



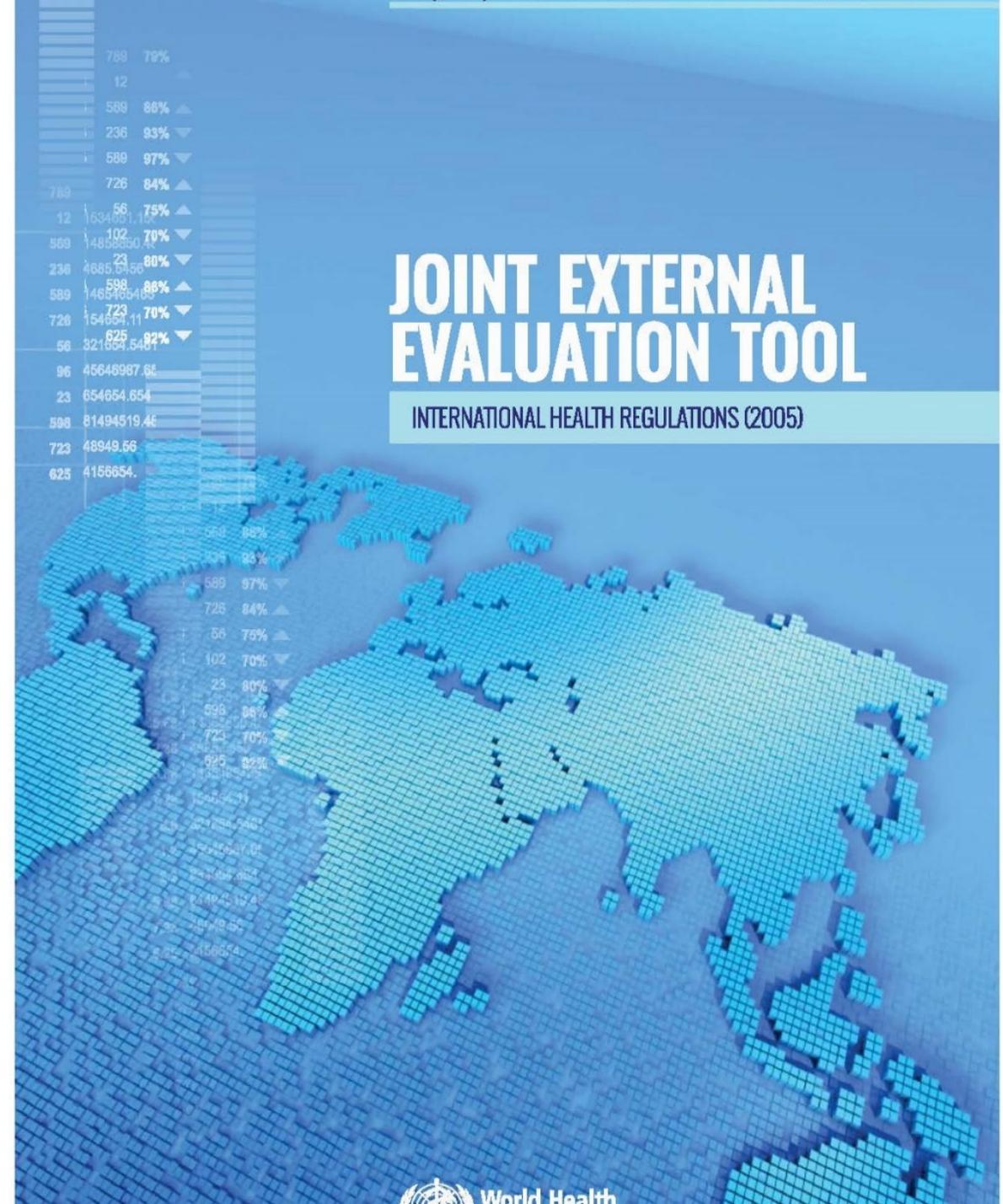
One Health: The Way Forward

- **Is a collaborative, multisectoral, and transdisciplinary approach**
- **Local, regional, national, and global levels**
- **Ultimate goal: achieving optimal health outcomes for people and animals and a safer environment**



The Joint External Evaluation (JEE)

- ...a voluntary, collaborative, multisectoral process to assess a country's capacity under the International Health Regulations (2005) (IHR) to prevent, detect, and rapidly respond to public health threats whether occurring naturally or due to deliberate or accidental events.



U.S. Joint External Evaluation (JEE) Assessment

Zoonotic diseases	P.4.1 Surveillance systems are in place for priority zoonotic diseases/pathogens	3
	P.4.2 Veterinary or animal health workforce	4
	P.4.3 Mechanisms for responding to infectious zoonoses and potential zoonoses are established and functional	4

Recommendations for priority actions

- Establish a national One Health approach which can formally delineate common goals, roles and responsibilities for the various health and multidisciplinary 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.

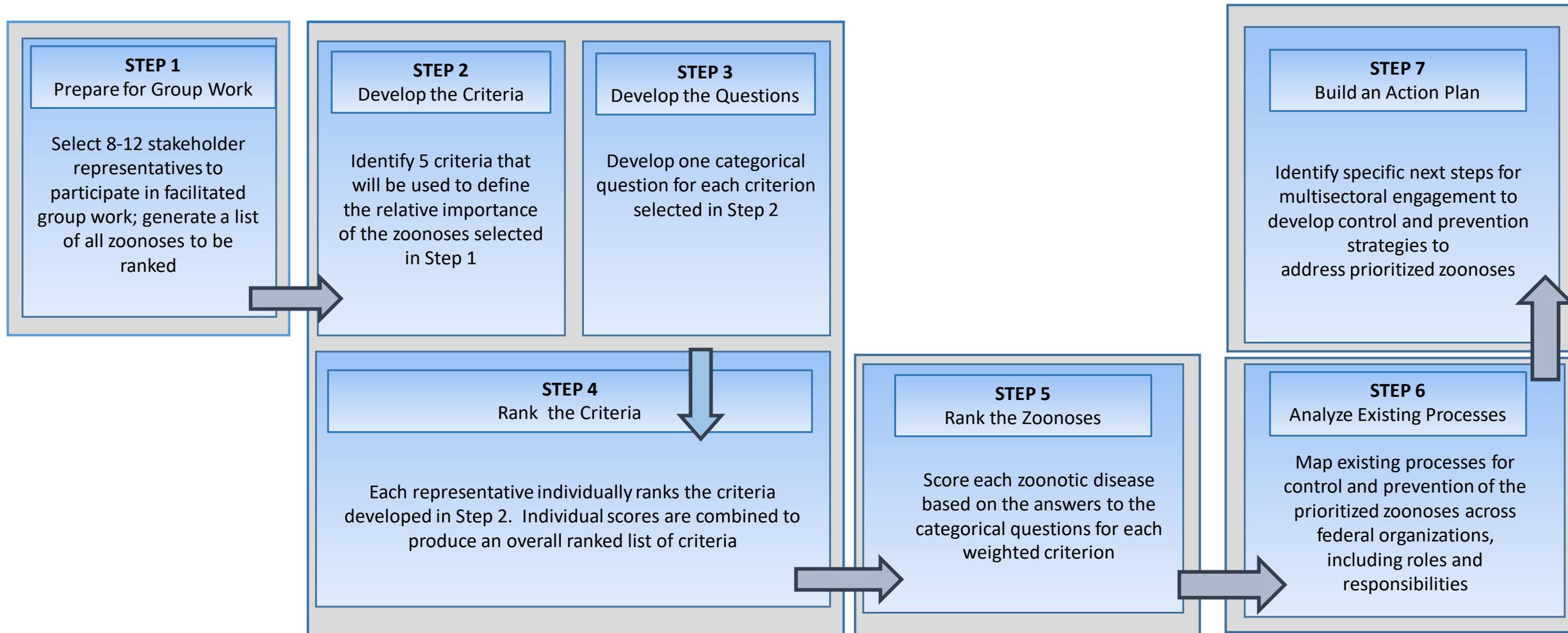
United States One Health Zoonotic Disease Prioritization Workshop (December 5 – 7, 2017)

GOALS

1. 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
2. Develop plans for implementing and strengthening multisectoral approaches to address these diseases in the United States



Overview of the 7-Step One Health Workshop Process



Recruiting One Health Workshop Participants

- **Facilitators from CDC, DOI and USDA (1 from each)**
- **Voting Members from CDC, DOI and USDA (3 from each)**
 - Agencies active in zoonoses work
 - Have technical knowledge and familiarity with operational activities
 - Provide key input to develop and rank criteria
 - Develop associated questions used to prioritize zoonotic diseases
 - Guide agency list approval
- **Subject Matter Experts (Advisors) from relevant Federal and State agencies (27 advisors)**
 - Did not vote – but informed the discussion
 - Important part of the collaborative process

Participating Agencies

- **Department of Health and Human Services (HHS)**
 - Centers for Disease Control and Prevention (CDC)
 - Food and Drug Administration (FDA)
 - Assistant Secretary for Preparedness and Response (ASPR)
- **United States Department of the Interior (DOI)**
 - U.S. Geological Survey (USGS)
 - Fish and Wildlife Service (FWS)
 - National Park Service (NPS)
- **United States Department of Agriculture (USDA)**
 - Animal and Plant Health Inspection Service (APHIS)
 - Agricultural Research Service (ARS)
 - Food Safety Inspection Service (FSIS)
 - Office of the Chief Scientist
- **Environmental Protection Agency (EPA)**
 - National Homeland Security Research Center
- **National Oceanic and Atmospheric Association (NOAA)**
 - National Marine Fisheries Service
- **State Partners:**
 - State Agriculture Veterinarian (Delaware)
 - State Public Health Veterinarian (Virginia)
 - State Wildlife Veterinarian (Maryland)

United States One Health Zoonotic Disease Prioritization Workshop- Participants

Participant	Department	Position
Ms. Anne Kingsinger	DOI, United States Geological Service (USGS) Ecosystems, US Department of the Interior	Associate Director
Noah Matson	DOI, Fish and Wildlife Service (FWS)	Policy Advisor, Migratory Birds
Dr. Geoff Plumlee	DOI, USGS Environmental Health	Associate Director
CDR Elaine Bond	DOI, Office of Emergency Management	Public Health Emergency Planner & DOI One Health Group Lead
Dr. Patricia (Patti) Bright	DOI, USGS, Environmental Health Mission Area	Senior Advisor
Dr. M. Camille Hopkins	DOI, USGS, Ecosystems Mission Area (DOI)	Fish & Wildlife Disease Coordinator
Ms. Diane Mann-Klager	DOI, Bureau of Indian Affairs (BIA), Great Plains Regional Office, Division of Natural Resources	Natural Resources Officer
Dr. Jill Rolland	DOI, USGS, Western Fisheries Research Center	Director
Dr. Jonathan Sleeman	DOI, USGS, National Wildlife Health Center	Director
Dr. Margaret Wild	DOI, National Park Service (NPS), Biological Resources Division, Wildlife Health Branch	Chief Wildlife Veterinarian
Dr. Casey Barton Behravesh	CDC, NCEZID, One Health Office	Director
Dr. Chris Braden	CDC, NCEZID, Office of the Director	Deputy Director
Dr. Allen Craig	CDC, NCIRD	Deputy Director
Captain John Gibbins	CDC, NIOSH, Division of Surveillance, Hazard Evaluations and Field Studies	Veterinary Epidemiologist
Dr. Adam Langer	CDC, NCHHSTP, Division of TB Elimination, Surveillance, epidemiology and outbreak investigations branch	Surveillance Team Lead
Dr. Jennifer McQuiston	CDC, NCEZID, Division of High Consequence Pathogens and Pathology	Deputy Director
Dr. Megin Nichols	CDC, NCEZID, Division of Foodborne, Waterborne and Environmental Diseases	Enteric Zoonoses Activity Lead
Dr. Sonja Olsen	CDC, NCIRD, Influenza Division, Epidemiology and Prevention Branch	Epidemiologist
Dr. Ronald Rosenberg	CDC, NCEZID, Division of High Consequence Pathogens and Pathology	Associate Director For Science
Dr. Kendra Stauffer	CDC, NCEZID, Division of Global Migration and Quarantine, Quarantine and Border Health Services Branch	Veterinary Medical Officer
Dr. Anne Straily	CDC, Center for Global Health, Division of Parasitic Diseases and Malaria, Parasitic Diseases Branch	Veterinary Medical Officer

United States One Health Zoonotic Disease Prioritization Workshop- Participants

Participant	Department	Position
Dr. Neena Anandaraman	USDA, Office of the Chief Scientist	Veterinary Science Policy Advisor
Dr. Pat Basu	USDA, FSIS, Office of Public Health Science	Chief Public Health Veterinarian
Dr. Brian McCluskey	USDA, APHIS, VS, SPRS	Associate Deputy Administrator
Dr. Karen Becker	USDA, FSIS, Office of Public Health Science	Director of Applied Epidemiology
Dr. Sarah Bevins	USDA, APHIS, Wildlife Services	Research Scientist
Dr. Michael Carter	USDA, APHIS, VS, SPRS, Cattle Health Commodity (representing VS Commodity Staffs)	Assistant Director
Dr. Cyril Gay	USDA, REE ARS APP, Office of National Programs	National Program Leader
Dr. Jane Rooney	USDA, APHIS, VS, SPRS, One Health Coordination Center	Assistant Director
Dr. Darrel Styles	USDA, APHIS, VS, Technology, and Analysis Services, Risk Identification/Risk Assessment Unit	Senior Staff Veterinarian
Mr. Jack Herrmann	ASPR, Office of Policy and Planning	Deputy Director
Dr. Deborah Fauquier	NOAA/National Marine Fisheries Service, Marine Mammal Health and Stranding Response Program, Office of Protected Resources	Veterinary Medical Officer
Dr. Tonya Nichols	EPA, National Homeland Security Research Center, Office of Research and Development	Associate Director for Strategic Operations
Dr. Donald Prater	FDA, Office of Foods and Veterinary Medicine	Assistant Commissioner for Food Safety Integration
Dr. Cindy Driscoll	Maryland Department of Natural Resources	State Fish and Wildlife Veterinarian
Dr. Karen Lopez	Delaware Department of Agriculture	Assistant State Veterinarian
Dr. Julia Murphy	Virginia Department of Public Health	State Public Health Veterinarian

Creating the Initial US Zoonoses List

- **Developed initial list endemic and emerging zoonotic diseases to discuss and prioritize during workshop**
 - Developed from CDC and USDA Reportable Disease Lists
 - Shared with subject matter experts from participating agencies for input
 - **Voting members approved initial disease list of 56 zoonotic diseases**
- **Conducted review of available data and literature**
 - Extensive process collecting both country and global information
 - Information provided by agencies and subject matter experts
 - Compiled from primary sources as well as grey literature
 - **Over 650 articles reviewed**

Initial List of Zoonotic Diseases

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

Viral Diseases

Eastern Equine Encephalitis
Hantavirus infection
Hendravirus infection
Japanese Encephalitis
Lymphocytic choriomeningitis
Middle Eastern Respiratory Syndrome (MERS)
Monkeypox
Nipah
Rabies
Rift Valley fever
Severe acute respiratory syndrome (SARS)
Venezuelan Equine Encephalitis
Viral Hemorrhagic fevers
 Crimean-Congo hemorrhagic fever
 Ebola
 Lassa fever
 Marburg virus disease
West Nile
Western Equine Encephalitis
Yellow Fever
Zoonotic Influenza Viruses

Parasitic Diseases

Babesiosis
Bovine Cysticercosis
Cryptosporidiosis
Giardiasis
New World Screwworm
Porcine Cysticercosis
Toxoplasmosis
Trichinellosis/Trichinosis
Trypanosomiasis (Chagas)

Fungal Diseases

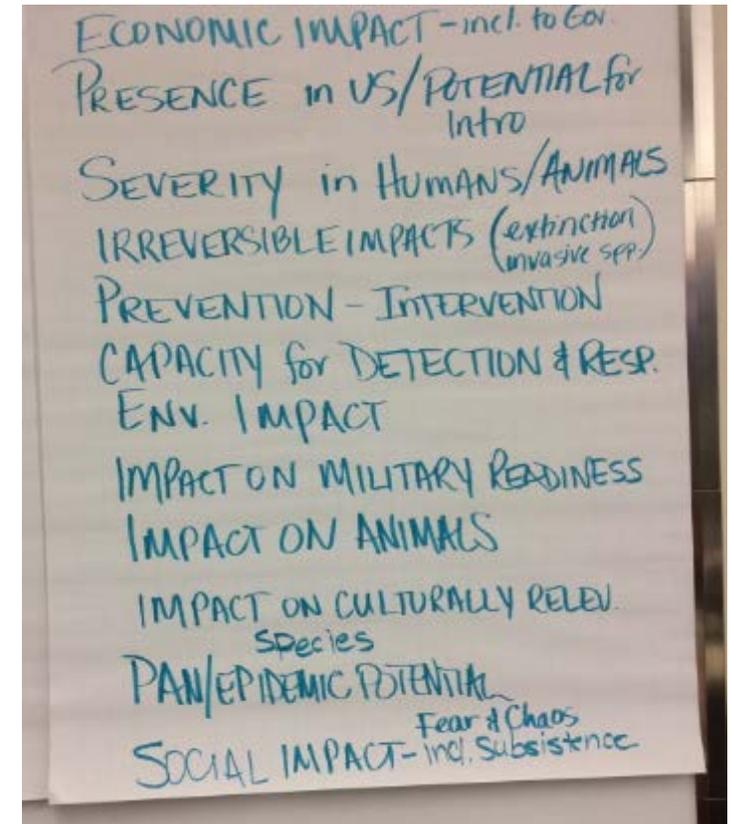
Blastomycosis
Coccidioidomycosis
Cryptococcosis
Histoplasmosis

Prion Diseases

Bovine Spongiform Encephalopathy
Chronic Wasting Disease*

Develop Criteria: Zoonoses of Greatest National Concern

- Criteria defines what makes the disease important to address
- Limited to 5 criteria
- Examples: pandemic potential, disease severity, presence in country



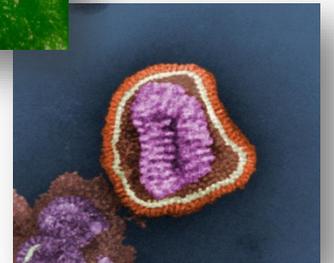
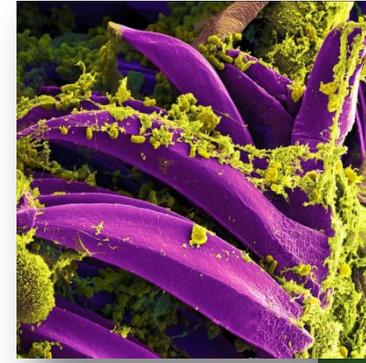
The 5 Criteria of Concern for the United States

1. Pandemic and epidemic potential
2. Severity of disease
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
2. Salmonellosis
3. West Nile
4. Plague
5. Emerging Coronaviruses (e.g. MERS, SARS)
6. Rabies
7. Brucellosis
8. Lyme Disease



Analyze Existing Processes

- **One Health Systems Mapping and Analysis Resource Toolkit™ (OH-SMART™)**
- **Interagency Systems Mapping:**
 - Build Map based on a scenario
 - Focused on Federal partners and indicated where other partners are involved

Analyzing the Map

- **Groups reviewed**
 - Notification and ongoing communications
 - Knowledge and research gaps
 - Data sharing
 - Prevention and preparedness activities
 - Joint communications
- **Summarized best practices and identified gaps**
- **Discussed potential improvements and opportunities**
- **Captured list of potential actions or resolutions for strengthening One Health**



Key Themes

- **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 the United States
 - Importance of ***leadership engagement***
 - Opportunities for ***improved collaboration and communication*** for surveillance and data sharing
 - ***Coordinated education and outreach efforts*** around prioritized zoonoses to stakeholders
 - Strengthen ***joint outbreak investigations*** for priority zoonoses
 - Identify key ***research*** needs

Workshop Outcomes & Next Steps

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

Outreach Activities

- **Presenting to stakeholders on workshop outcomes**
 - **Submitting abstracts to human, animal and environmental health partners through briefings and conferences**
 - **Continued follow up with workshop participants and other experts to move forward on recommendations and next steps**
- 

Workshop Reports available in 2018

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Zoonotic Disease Prioritization -

Prioritization Workshop Fact Sheet

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Zoonotic Disease Prioritization

Globally, the One Health Office is taking a strategic, targeted approach to control and prevent infectious diseases. For example, experts from the One Health Office lead **One Health Zoonotic Disease Prioritization Workshops** so that countries can focus limited resources on their top zoonotic diseases of greatest national concern. Zoonotic diseases commonly prioritized include viral hemorrhagic fevers such as Ebola virus and Rift Valley fever, zoonotic influenza viruses, rabies, and anthrax.

The first step in the One Health process is to use a multisectoral approach to prioritize endemic and emerging zoonotic diseases of major public health concern that should be jointly addressed by national-level human, animal, and environmental health sectors in a country. The CDC-developed One Health Zoonotic Disease Prioritization Tool assists countries with this process. CDC collaborates with countries and other partners to conduct One Health Zoonotic Disease Prioritization Workshops in order to identify a country's top 5 zoonotic diseases of greatest national concern.

The One Health Zoonotic Disease Prioritization workshop is a voluntary and collaborative process that allows countries to do the following:

- Identify their most urgent zoonotic disease threats
- More efficiently build lab capacity, conduct disease surveillance, plan outbreak response and preparedness activities, and create disease prevention strategies to reduce illness and death in people and animals
- Prioritize prevent, detect, and respond to the newly prioritized diseases, and
- Engage with current and prospective partners to target resources effectively to address the priority zoonotic diseases.

Workshop participation can help strengthen multisectoral collaborations in a country, as participants include a wide-ranging group of partners who work to protect the health of people, animals, or the



One Health Zoonotic Disease Prioritization Workshop
One Health recognizes the connect between human, animal, and environmental health.

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

Preparedness Response
ONE HEALTH IN ACTION



Zoonotic Disease Prioritization for Inter-sectoral Engagement in Cameroon

Priorisation des maladies zoonotiques



Workshop Summary



One Health Zoonotic Disease Prioritization for Multi-Sectoral Engagement in Uganda



Kampala, Uganda
March 2-3, 2017



Final report hosted at: www.cdc.gov/onehealth/global-activities/prioritization.html

Summary

- **CDC, DOI, and USDA collaborated to host the *first ever* One Health Zoonotic Disease Prioritization Workshop for the United States**
- **8 priority zoonoses: zoonotic Influenza viruses, salmonellosis, West Nile fever, plague, emerging coronaviruses (e.g. MERS, SARS), rabies, brucellosis, and Lyme disease**
- **Participants identified need for a formal One Health coordination mechanism and National One Health Framework for United States**
- **Detailed workshop report will be available in mid-2018**

Questions?



Acknowledgements

▪ Workshop Participants

- Dr. Neena Anandaraman, USDA
- Dr. Casey Barton Behravesh, CDC
- Dr. Pat Basu, USDA
- Dr. Chris Braden, CDC
- Dr. Allen Craig, CDC
- Ms. Anne Kingsinger, DOI
- Dr. Brian McCluskey, USDA
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- Dr. Karen Lopez, DE Department of Agriculture
- Ms. Diane Mann-Klager, DOI
- Dr. Jennifer McQuiston, CDC
- Dr. Julia Murphy, VA Department of Public Health
- Dr. Megin Nichols, CDC
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- Dr. Kendra Stauffer, CDC
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▪ Observers

- Colleen Brouillette
- Dr. Emily Lankau, DOI

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