



MCMs, One Health and Animal Welfare



RADM Estella Jones, DVM

FDA's Support in Developing MCMS



- FDA works with [partners](#) at all levels of government—[local](#), [state](#), national and international—to support MCM-related public health preparedness and response efforts
- FDA also works with non-government organizations, universities and research centers, and industry to further the development of MCMs for public health emergency preparedness.

Office of Counterterrorism and Emerging Threats



MEDICAL COUNTERMEASURES (MCMS)

FDA-REGULATED MEDICAL PRODUCTS

Medical countermeasures, or MCMS, are FDA-regulated products that may be used in a **PUBLIC HEALTH EMERGENCY** stemming from a terrorist attack with or accidental release of a biological, chemical, or radiological/nuclear agent, or a naturally occurring emerging infectious disease.

WHAT ARE MCMS?

PREVENT, PROTECT AGAINST, TREAT OR DIAGNOSE
DISEASES OR HEALTH EFFECTS CAUSED BY **CBRN**
THREAT AGENTS



C | **CHEMICAL**
B | **BIOLOGICAL**
R | **RADIOLOGICAL**
N | **NUCLEAR**

& EMERGING INFECTIOUS DISEASES

EXAMPLES OF MCMS



BIOLOGIC PRODUCTS

- Vaccines
- Blood products



DRUGS

- Antimicrobials
- Chemical threat antidotes



DEVICES

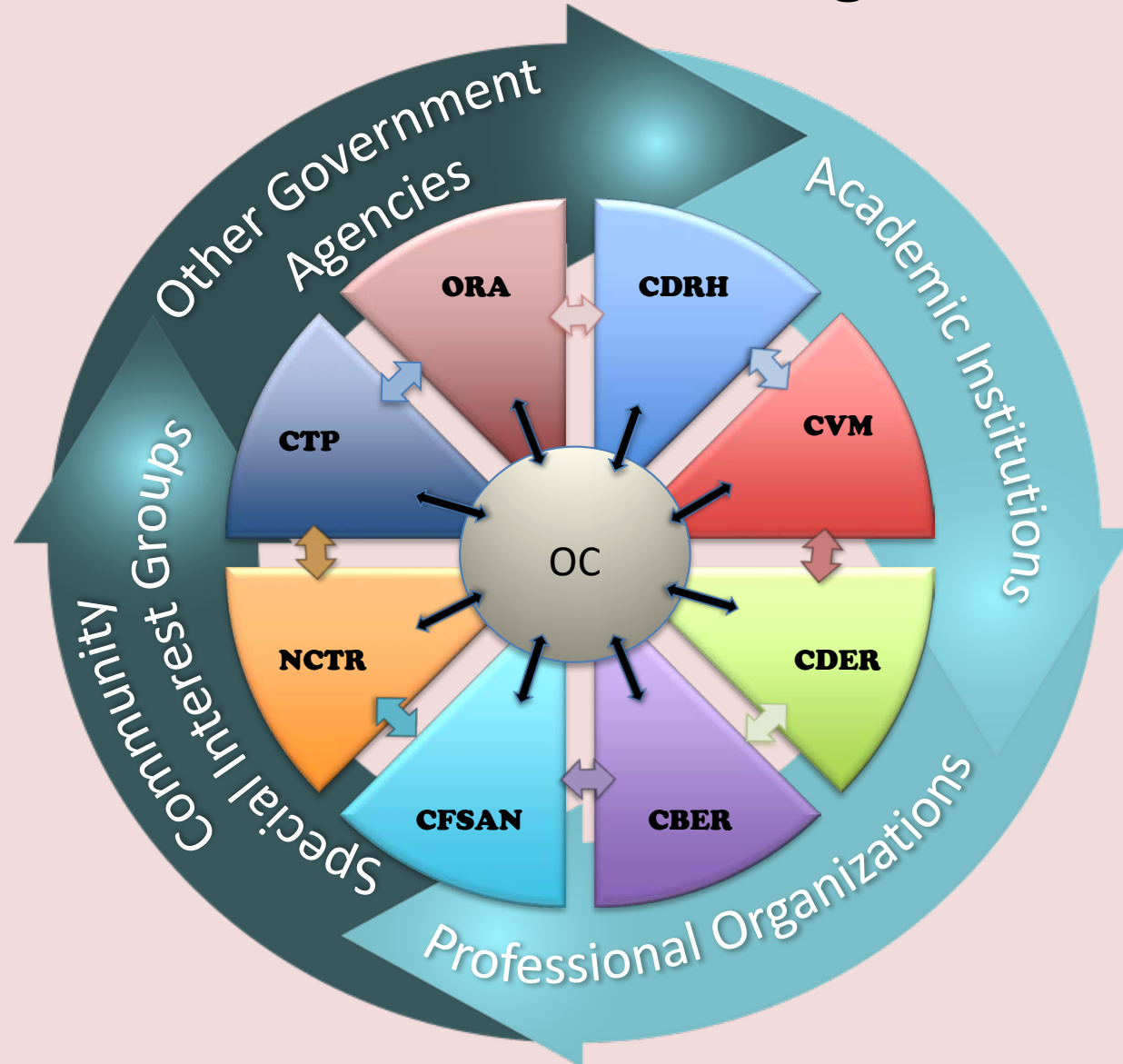
- Diagnostic tests
- Personal protective equipment (PPE)
 - Gloves

PREVENT EMERGING INFECTIOUS DISEASES



One Health is a collaborative, multisectoral, and trans-disciplinary approach - working at local, national, and global levels – to achieve optimal health and well-being outcomes recognizing the interconnections between people, animals, plants, and their shared environment.

FDA's One Health Sharing Model

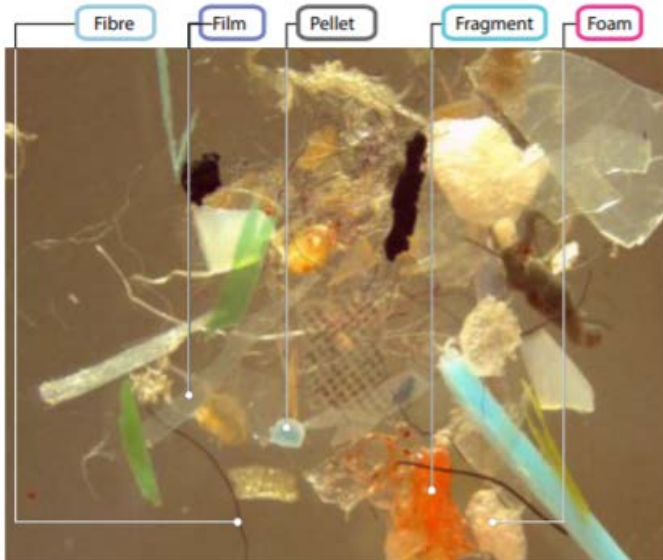


<http://inside.fda.gov:9003/ProgramsInitiatives/OneHealth/AboutOneHealth/ucm648383.htm>

ONE HEALTH INITIATIVE



Different types of microplastics found in the Francisco Bay



**The Health of People,
Animals, and the Environment
are Closely Intertwined**

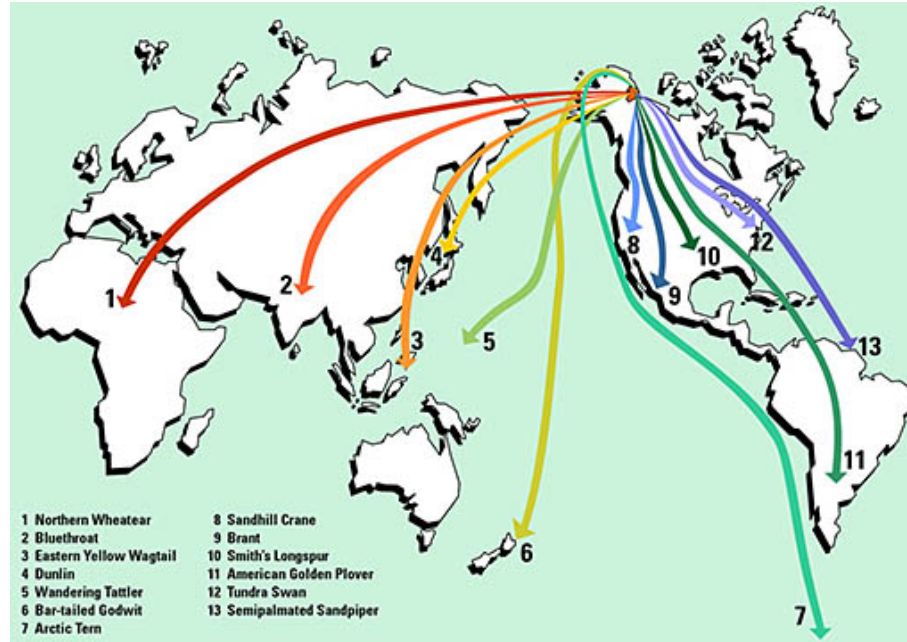
Our behaviors contribute to the control and spread of disease, as well as the survivability of the planet

Hiding in Plain Sight

- Viruses typically move from wildlife to livestock in to people
- To control a deadly viruses, the science community must move from reactive to proactive
- Broaden our horizons to look upstream
- Clinical picture is seen in animals *before* humans become infected
- MPS cell bank could be beneficial for upstream

Surveillance

Wild birds are movers of viruses- especially respiratory viruses



- Study migratory pattern
- Sampling in wild birds/flying mammals (bats) to test for subtypes of transmissible diseases

Predictors of Viral Outbreaks



- CoVID19 represents one wave of zoonotic diseases that have jumped to humans from animals
- Wait and react = **recipe for global disaster**
- Identification of trend in wildlife or livestock can trigger precautionary measures
- PREDICT initiative collected over 140,000 biological samples from animals and found over 1,000 new viruses, including a new strain of Ebola
- **Could MPS cell banks be predictive?**

MPS Regulatory Questions on Prevention

- Selection of cell line for animal model appropriate?
- Early zoonotic prediction through MPS with appropriate cell line?
- Do chip banks exist for appropriate species?
- Is data reproducible and standardized?
- Is the cell origin consistent?
- Antimicrobial resistance testing?





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