Introduction to One Health

IISPR Policy Panel

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So What is One Health?
Definitions of One Health

(World Health Organization)

• 'One Health' is an approach to designing and implementing programs, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes.

Source: http://www.who.int/features/qa/one-health/en/
One Health recognizes that the health of people is connected to the health of animals and the environment. It is a collaborative, multisectoral, and trans-disciplinary approach—working at the local, regional, national, and global levels—with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.
More Definitions of One Health

- The One Health Initiative is a movement to forge co-equal, all inclusive collaborations between physicians, osteopathic physicians, veterinarians, dentists, nurses and other scientific-health and environmentally related disciplines, including the American Medical Association, American Veterinary Medical Association, American Academy of Pediatrics, American Nurses Association, American Association of Public Health Physicians, the American Society of Tropical Medicine and Hygiene, the Centers for Disease Control and Prevention (CDC), the United States Department of Agriculture (USDA), and the U.S. National Environmental Health Association (NEHA).

Source: http://www.onehealthinitiative.com/
Why do we need a One Health approach?

- Many of the same microbes infect animals and humans, as they share the eco-systems they live in.
- Approximately 75% of new emerging human infections have their origin in zoonotic agents, meaning that they are naturally transmitted from animals to humans. Ebola, HIV, dengue and MERS are but some of the most recent infectious agents that have moved from animals to humans, with a devastating impact on public health.
- Therefore health science professionals, key opinion leaders and public health officials need to work together to attain optimal health for people, domestic animals, wildlife, and our environment.

Zoonotic Diseases

Zoonotic Diseases
spread BETWEEN animals and people

animals
people
Factors that Affect Human and Animal Health

Factor (Cause)

Human populations are growing and expanding into new geographic areas.

The earth has experienced changes in climate and land use, such as deforestation and intensive farming practices.

International travel and trade have increased.

Change (Effect)

As a result, more people live in close contact with wild and domestic animals. Close contact provides more opportunities for diseases to pass between animals and people.

Disruptions in environmental conditions and habitats provide new opportunities for diseases to pass to humans and animals.

As a result, diseases can spread quickly across the globe.

www.cdc.gov/onehealthbasics/index.html
The Intersection: Human Health, Animal Health and the Environment

Source: UC Davis
One Health One Welfare: managing shared risks, maximizing well-being at the human-animal-environment interface

Comparative medicine (biomedical and veterinary research) (infectious and non-infectious diseases)

Food security (agriculture and trade)

Human-animal interaction
  - Dog bite
  - Cultural competency

Human-wildlife conflict
  - Bat relocation

Zoonoses/sapronoses
  - Botulism

Antimicrobial resistance

Climate change

Health and well-being

HUMANS

Emergency animal disease (equine influenza)

DOMESTIC ANIMALS

Animal diseases (spillover/spillback)

Environment

PEST ANIMALS

Biodiversity loss

Food security (wild meat)

WILDLIFE

1 Includes livestock, companion animals, working animals, laboratory animals and aquatic animals

2 Includes natural (plants, water, air, soil) and social (e.g. political, cultural) environments

“One Health” is not a new concept but it has risen in prominence since the early 2000’s
- Driven by the Avian then Swine flu epidemics
- As a concept, it is common sense
- Difficult to argue the logic

Can be difficult to realize the potential for a number of reasons
Make it Real: Rabies

- Humans
- Domestic animals
- Wildlife - reservoirs
- Environment
OH Rabies Example - MI

- Wildlife
- Domestic Animals
- Environment

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OH Rabies - Who is involved?

- MDHHS, Local Health Departments, Health-Care providers, Hospitals, State Public Health Lab, Etc.
- Animal Owners, LHDs, Licensing agencies, Veterinarians, Etc.

Diagram showing the overlap of humans, wildlife, domestic animals, and the environment.
• The Michigan Rabies Working Group (RWG) is an interagency group that was formed in the late 1990’s and whose members represent the Michigan Departments of Health and Human Services, Agriculture and Rural Development, and Natural Resources, the United States Department of Agriculture (USDA), Michigan State University, local public health agencies, animal control officers, wildlife enthusiasts, and animal welfare organizations. This group meets regularly to discuss rabies issues in Michigan.

• [Michigan Emerging Diseases Issues website](https://www.michigan.gov/emergingdiseases)
One Health Resources

• Michigan Emerging Disease Issues
  – www.michigan.gov/emergingdiseases/

• Michigan Emerging and Zoonotic Disease Surveillance Summary 2018 (MDHHS)

• One Health Commission – nonprofit, networking, student org
  – www.onehealthcommission.org

• One Health Initiative – partnership building and events
  – www.onehealthinitiative.com

• One Health Platform - research
  – www.onehealthplatform.com/
    – Host One Health Congress

• CDC – One Health
  – www.cdc.gov/onehealth/index.html
Thank You

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