




**One Health: Concept to Application**

 Peter Rabinowitz MD, MPH  
Professor  
University of Washington

 Heather Hill, RN, BSN  
Deputy to the Health Officer  
Benton-Franklin Health District

 **Northwest Center**  
FOR PUBLIC HEALTH PRACTICE

1

---

---

---

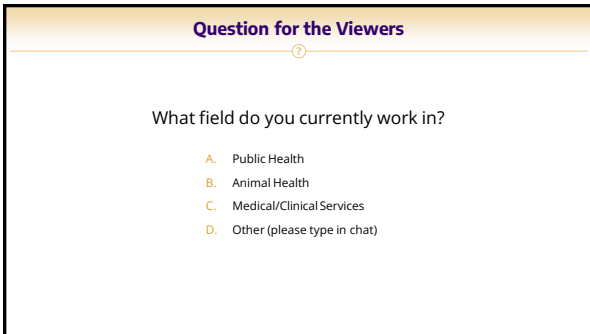
---

---

---

---

---



**Question for the Viewers**

What field do you currently work in?

- A. Public Health
- B. Animal Health
- C. Medical/Clinical Services
- D. Other (please type in chat)

2

---

---

---

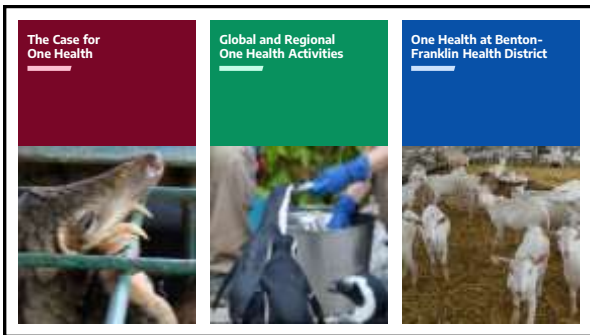
---

---

---

---

---



**The Case for One Health**

**Global and Regional One Health Activities**

**One Health at Benton-Franklin Health District**

3

---

---

---

---

---

---

---

---



4

---

---

---

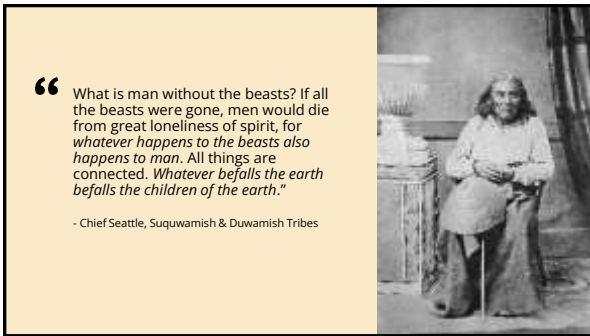
---

---

---

---

---



5

---

---

---

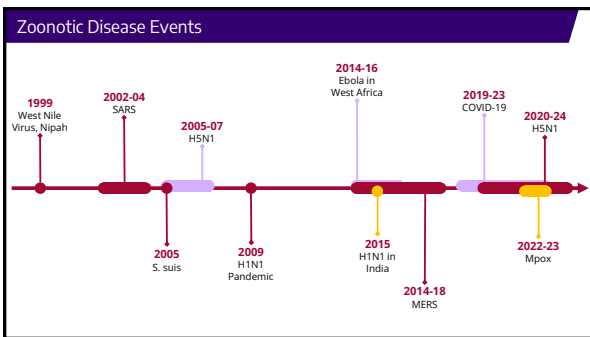
---

---

---

---

---



6

---

---

---

---

---

---

---

---

SARS CoV2-Zoonotic



- Many early cases associated with animal markets
- Thought to have jumped to humans from a mammalian source; true origins remain unknown
- Transmission from humans to dogs and cats, others
- Bidirectional transmission on mink farms

7

---

---

---

---

---

---

---

---



**“Drivers” of the Need for the One Health Concept**

8

---

---

---

---

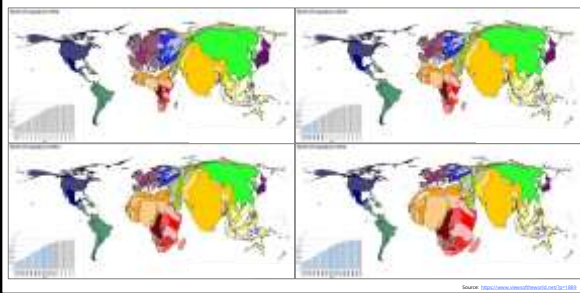
---

---

---

---

Population Growth



9

---

---

---

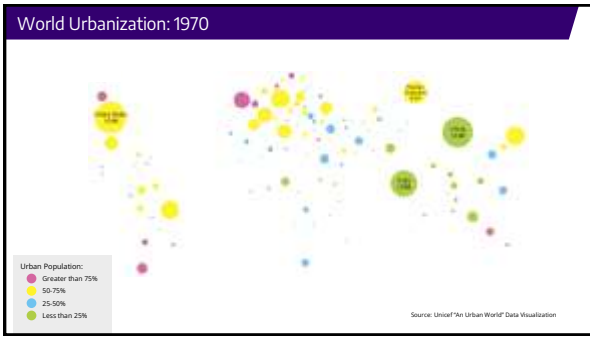
---

---

---

---

---



10

---

---

---

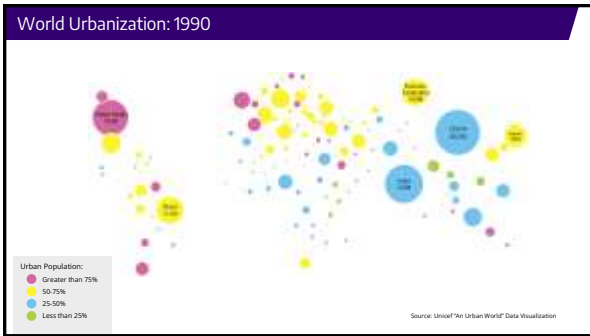
---

---

---

---

---



11

---

---

---

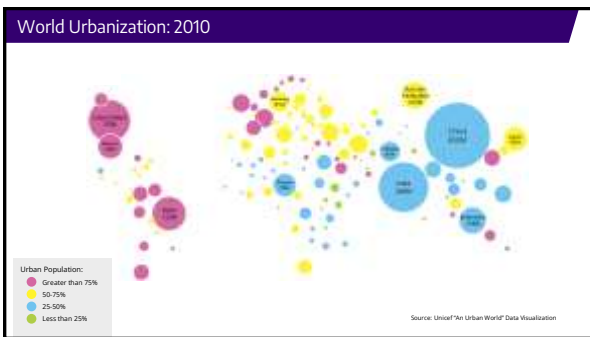
---

---

---

---

---



12

---

---

---

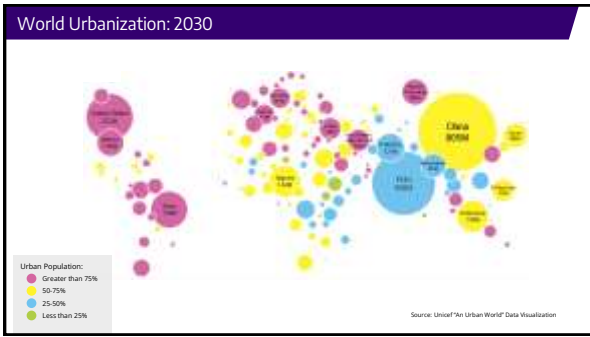
---

---

---

---

---



13

---

---

---

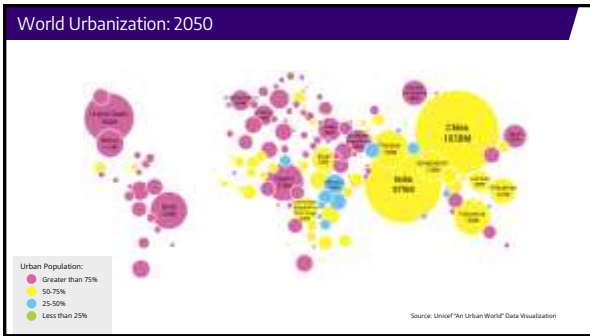
---

---

---

---

---



14

---

---

---

---

---

---

---

---



15

---

---

---

---

---

---

---

---



16

---

---

---

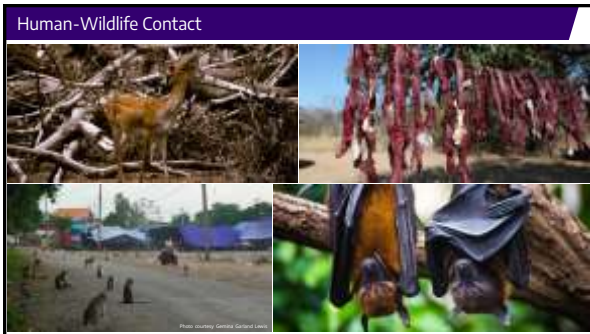
---

---

---

---

---



17

---

---

---

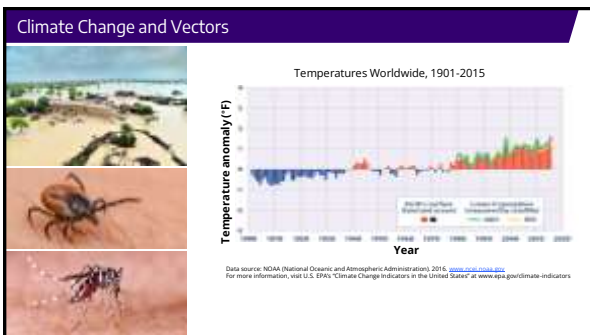
---

---

---

---

---



18

---

---

---

---

---

---

---

---

Quadripartite Agreement



19

---

---

---

---

---

---

---

---

One Health Joint Plan of Action (2022-2026)

WHO  
WOAH  
FAO  
UNEP

Action Track 6. Integrating the Environment into One Health

Action Track 5. Curbing the silent pandemic of Antimicrobial Resistance (AMR)



Action Track 4. Strengthening the assessment and management of food safety risks

Action Track 1. Enhancing One Health capacities to strengthen health systems

Action Track 2. Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics

Action Track 3. Controlling and eliminating endemic zoonotic, neglected tropical and vector-borne diseases

20

---

---

---

---

---

---

---

---

One Health is the idea that the health of people is connected to the health of animals and our shared environment. CDC and One Health



21

---

---

---

---

---

---

---

---



22

---

---

---

---

---

---

---

---

**Washington State One Health Efforts**

- One of 5 Statewide Health priorities: "Global and One Health"
- Antimicrobial resistance
- Zoonotic disease surveillance
- One Health data sharing- animal and human health
  - Digitization of animal disease surveillance reports
  - Efforts leading to a Washington Administrative Code for sharing data between human and animal health
- Can we create a One Health surveillance system?

23

---

---

---

---

---

---

---

---

**Global and One Health**

<p><b>Vision</b></p> <p>All Washingtonians live in ever-connected environments that recognize and leverage the intersection of both global and domestic health as well as the connections of humans, animals, and the environment.</p>	<p><b>Commitment</b></p> <p>We will lead the development and implementation of creative solutions to improve the health and well-being of Washingtonians emphasizing the connectedness of a strong bidirectional global domestic health ecosystem. It will simultaneously underscore the importance of One Health recognizing the relationships of human health as they intertwine with that of animals and the environment.</p>
--	--

Washington State Department of Health

24

---

---

---

---

---

---

---

---



### One Health Surveillance?

- We know **the environment is changing**, affecting both human and animal health
- **International calls for One Health approach** to disease surveillance and control: WHO, Lancet Commission, UNEP, FAO, WOA, CDC, USDA, etc.
- But: **complexity in integrating data** and getting a timely picture of critical interactions
- Lack of such integrated information **getting to the "front lines"**: clinicians, etc.
- WA One Health Initiative working on **Integrated Surveillance**

---

---

---

---

---

---

---

---

25

### Examples of Health Threats



- Avian influenza
- Heat
- Wildfire smoke
- Vector borne disease
- Fungal disease—coccidioidomycosis
- Other zoonotic diseases
- Harmful algae blooms
- Ecoanxiety

---

---

---

---

---

---

---

---

26

### Global One Health Group at the University of Washington



- Since 2014
- Local and global health projects
- Zoonotic diseases
- AMR
- Surveillance
- Health of animal workers

Photo courtesy University of Washington

---

---

---

---

---

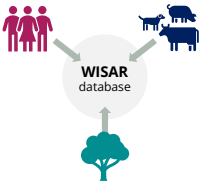
---

---

---

27

### The Washington Integrated Surveillance for AMR (WISAR) Approach



- Assemble existing clinical isolate data from:
  - State NARMS surveillance
  - Hospitals
  - Human and veterinary clinical labs
  - Washington Animal Disease Diagnostic Lab (WADDL)
- Voluntary participation
- De-identification of patient and facility information
- Oversight by statewide One Health Combating AMR Workgroup

28

---

---

---

---

---

---

---

---

### The COVID and Pets Study (CAPS)



29

---

---

---

---

---

---

---

---

### One Health Clinics: Integrated Human and Veterinary Care



30

---

---

---

---

---

---

---

---

### Occupational Health at the Human Animal Interface (OHAI) Program

- Graduate research training program for the occupational health of workers
- Farms, veterinary care, shelters, zoos, aquaria, laboratories, meat processing, fisheries, etc.
- Working on dairy worker infection control



31

---

---

---

---

---

---

---

---

### Highly Pathogenic Avian Influenza (HPAI) H5N1: Challenge



- Can we approach in a One Health way?
- Surveillance in animals
- Surveillance in humans
- Environmental surveillance
- Use of genomic data to trace spread
- Challenges for farms to institute infection prevention and biosecurity
- Build trust across sectors

32

---

---

---

---

---

---

---

---

### Question for the Viewers



Based on what you know about the One Health approach, how applicable do you think it could be to your work?

- A. Very applicable
- B. Somewhat applicable
- C. Not applicable
- D. Other (please type in chat)

33

---

---

---

---

---

---

---

---



34

---

---

---

---

---

---

---

---



35

---

---

---

---

---

---

---

---



36

---

---

---

---

---

---

---

---

In 2010 Some Factors Changed the Map of Valley Fever

- 2+ adolescents in Benton/Franklin County
- Adult excavator in Walla Walla
- Adult vineyard worker in Benton County
- H.O. requested soil testing
- Historical animal (dog & horse)
- Picture worth 1000 words
- Soil collected
- PCR developed
- Soil tested & found & culture
- 2 more collection events confirmed—it's in other locations

37

---

---

---

---

---

---

---

---

A Picture is Worth a Thousand Words



38

---

---

---

---

---

---

---

---

Testing Events

- More digs resulted in more positives
- Coordinated efforts with local veterinarians to conduct blind seroprevalence testing in dogs
- Currently, there is more interest in how climate change and wildfires affect exposure and transmission

39

---

---

---

---

---

---

---

---

Q-FEVER...It Isn't Just About the Goats!

Goat cases/testing



Potential human exposure/testing



Environmental education



40

---

---

---

---


---

---

---

---

Testing Events



- Joined the CDC team to assist with collecting samples on goats and humans.
- BFHD staff collected the human samples.
- CDC veterinarian staff collected goat samples with our assistance.
- No positives in our jurisdiction.
- Educated on Environmental risks.

Notes from the Field: Q Fever Outbreak Associated with Goat Farms — Washington and Montana, 2011 Weekly October 14, 2011 / 604(45):1393

41

---

---

---

---

---

---

---

---

Highly Pathogenic Avian Influenza (HPAI) in an Egg Production Facility 2022




42

---

---

---

---

---

---

---

---

**HPAI in an Egg Production Facility: BFHD's Role**

**DOH, WSDA, USDA, DOE, BFHD**  
Coordination between Federal, State, & local entities

**BFHD assisted with:**

- Disposal of the dead birds
- PPE and messaging for the workers
- Provided Tamiflu to all the workers
- More than 1 mil birds lost

Disposal of dead birds

Birds and other factors

Potential human exposure

43

---

---

---

---

---

---

---

---

**Snow Geese Die-off 2022**

44

---

---

---

---

---

---

---

---

**Toxic Algae**

Algae testing in Columbia river

Dogs exposed to algae

Human exposed to water

45

---

---

---

---

---

---

---

---

One Health Multidisciplinary Team

1  
Variety of Disciplines

2  
Early Adapters

3  
Monthly Meetings

---

---

---

---

---

---

---

---

46

One Health Blueprint

The One Health workgroup addresses complex health challenges by recognizing the interconnectedness of people, animals, plants, and the environment. It is a collaborative effort that brings together SME's representing a cross section of programs within BFHD.

The purpose is to educate BFHD staff on One Health concepts and how it relates to their work within the agency as well as with community partners.

---

---

---

---

---

---

---

---

47

One Health Blueprint

**Responsibilities:**

- ✓ Collaborate with supervisors and management staff to explore opportunities to integrate One Health concepts into agency work
- ✓ Provide educational opportunities to staff
- ✓ Assist supervisors, managers, and staff in implementing One Health concepts into their daily program work
- ✓ Provide a framework for incorporating One Health concepts into individual program and division work
- ✓ Prepare for One Health emergencies
- ✓ Ensure equity is an overarching theme for all One Health work
- ✓ Identify data sources to support our One Health work

---

---

---

---

---

---

---

---

48



One Health Members

TEAM LEAD <b>Heather Hill</b>	CLINIC SERVICES <b>Juan Gutierrez</b>
COMMUNITY HEALTH <b>Kelly Harnish</b>	CLIMATE CHANGE <b>Jim Coleman</b>
EQUITY <b>Daisy Para-Padilla</b>	COMMUNICATIONS <b>Amanda Mason</b>
COMMUNICABLE DISEASE <b>Angeles Ize</b>	DATA <b>Amy Person</b>
ENVIRONMENTAL HEALTH <b>Tressa Johnson</b> <b>Erin Hockaday</b>	HEALTH OFFICER <b>Steven Krager, MD</b>

---

---

---

---

---

---

---

---

49

One Health Duties/Roles

- Members:**
- Attend and participate in regularly scheduled meetings
  - Act as a One Health champion by bringing content from, and pushing content to, your area of work
  - Develop and Manage the BFHD One Health webpage
- Team Leads:**
- Maintain and update the group work plan
  - Schedule meetings, develop meeting agendas
  - Maintains a Teams site

---

---

---

---

---

---

---

---

50

BFHD One Health Team: Benefits/Purpose



- Training**
- Team Training
  - All Staff Meeting
- Guidance**
- Internal and External
- Implementation**
- Internal
    - Incident Response Team (IRT)
  - External
    - Identify Stakeholders
    - Create a Conduit for Communication
- Create a One Health Coalition**

---

---

---

---

---

---

---

---

51

One Health in the Community: Ducks Unlimited



52

---

---

---

---

---

---

---

---

Future Plans

- Continue in-house education
- Create email and contact lists
- Create more educational materials
  - One Health & Hunters
  - One Health & AG workers
  - etc.
- One Health Coalition—Multi Stakeholders



53

---

---

---

---

---

---

---

---

Key Takeaways

- ✓ Creating a One Health Team or approach is reframing the work we already do.
- ✓ Creating a One Health Team and Blueprint formalizes the agency commitment to approaching all our work through a One Health lens.
- ✓ Applying One Health approaches will involve overcoming barriers to sharing data and working across sectors.
- ✓ One Health provides a platform to anticipate and prevent health problems related to a changing environment, including climate change.

54

---

---

---

---

---

---

---

---

A Chat with Heather and Peter



Sue Grinnell



Heather Hill



Peter Rabinowitz

55

---

---

---

---

---

---

---

---

QUESTIONS?



To ask a question, please click the  icon in the Zoom toolbar to open your Q&A Pod.

56

---

---

---

---

---

---

---

---

Resources

**UW Center for One Health Research**  
<https://deohs.washington.edu/cohr/>

**Washington One Health**  
<https://doh.wa.gov/community-and-environment/one-health>

**CDC One Health Office**  
<https://www.cdc.gov/one-health/index.html>

**WHO One Health**  
[https://www.who.int/health-topics/one-health#tab=tab\\_1](https://www.who.int/health-topics/one-health#tab=tab_1)

57

---

---

---

---

---

---

---

---