

Leveraging One Health Collaborations to Enhance Investigation Capacity

December 12, 2019

The webinar will begin at
2:00 PM ET.

Speaker Introductions

- Heather Venkat, DVM, MPH, DACVPM, Arizona State Public Health Veterinarian, Arizona Department of Health Services
- Matt Maurer, MPH, REHS, Epidemiologist, Coconino County Health and Human Services

- This webinar is being recorded and the recording will be shared along with slides
- Submit questions through the Q&A Box at any time. We will discuss questions at the end of all presentations
- If you need technical assistance, please use the Q&A box

Leveraging One Health Collaborations to Enhance Investigation Capacity



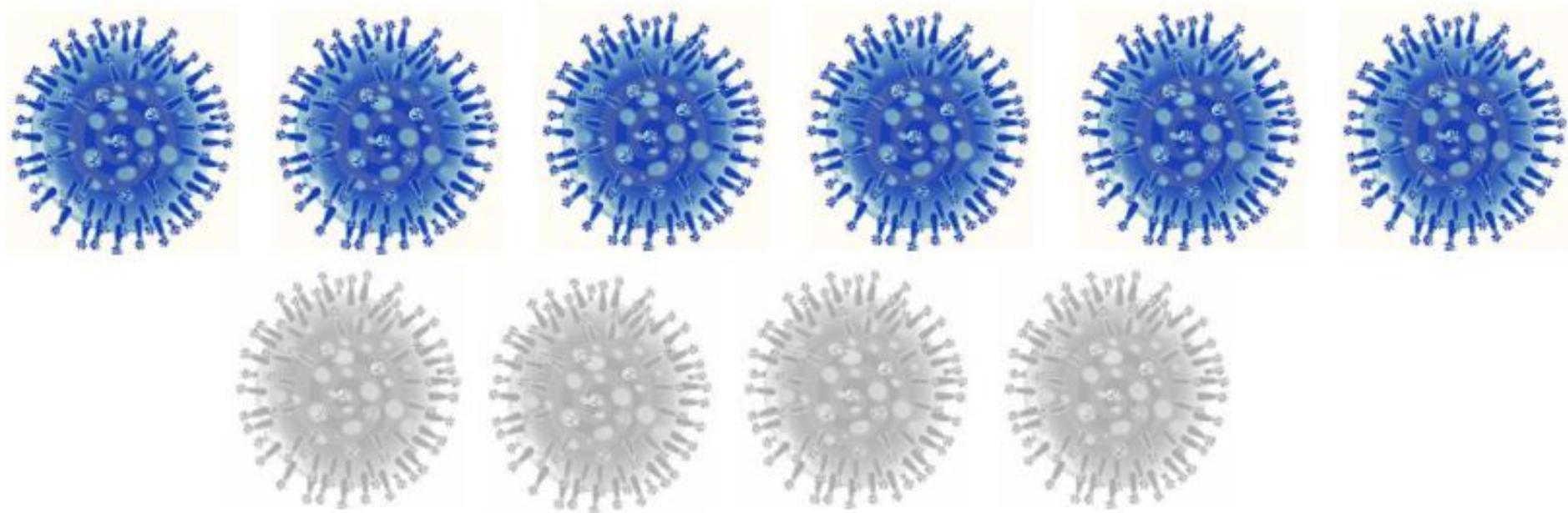
Dec 12, 2019

Heather Venkat, DVM, MPH, DACVPM
CDC Career Epidemiology Field Officer
Acting Arizona State Public Health Veterinarian

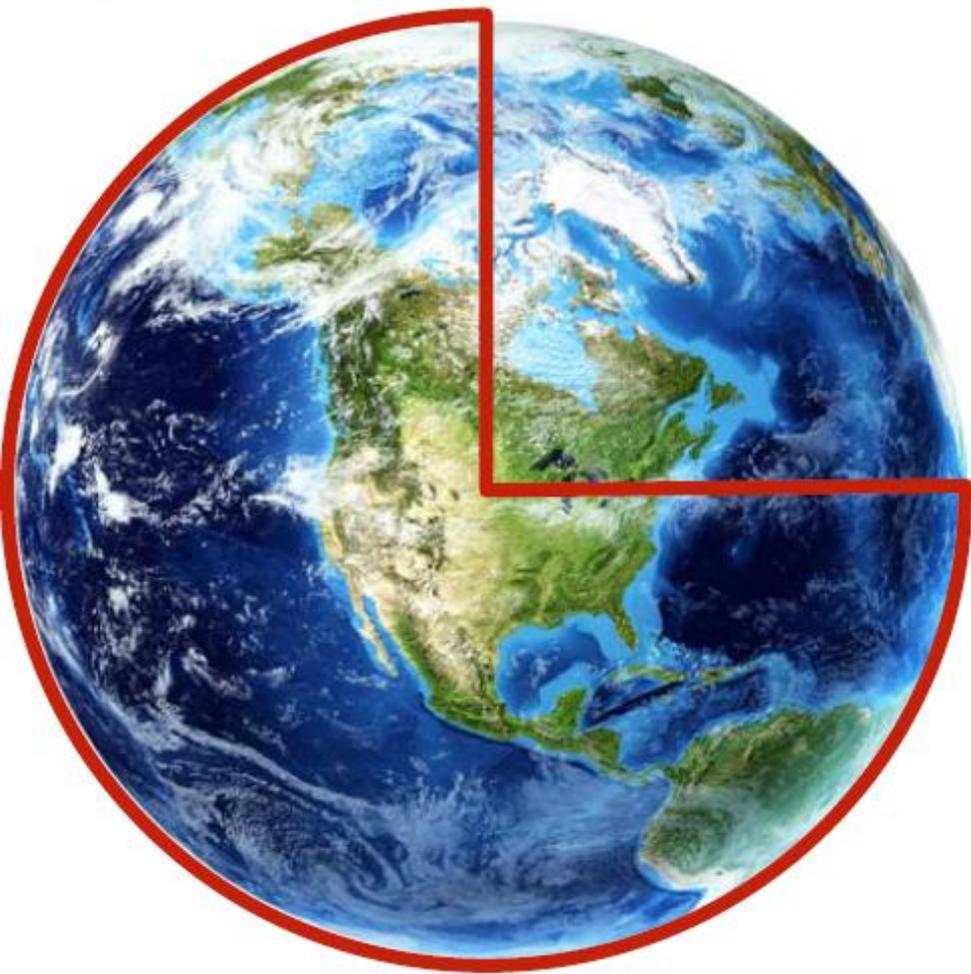


ARIZONA DEPARTMENT
OF HEALTH SERVICES

Health and Wellness for all Arizonans

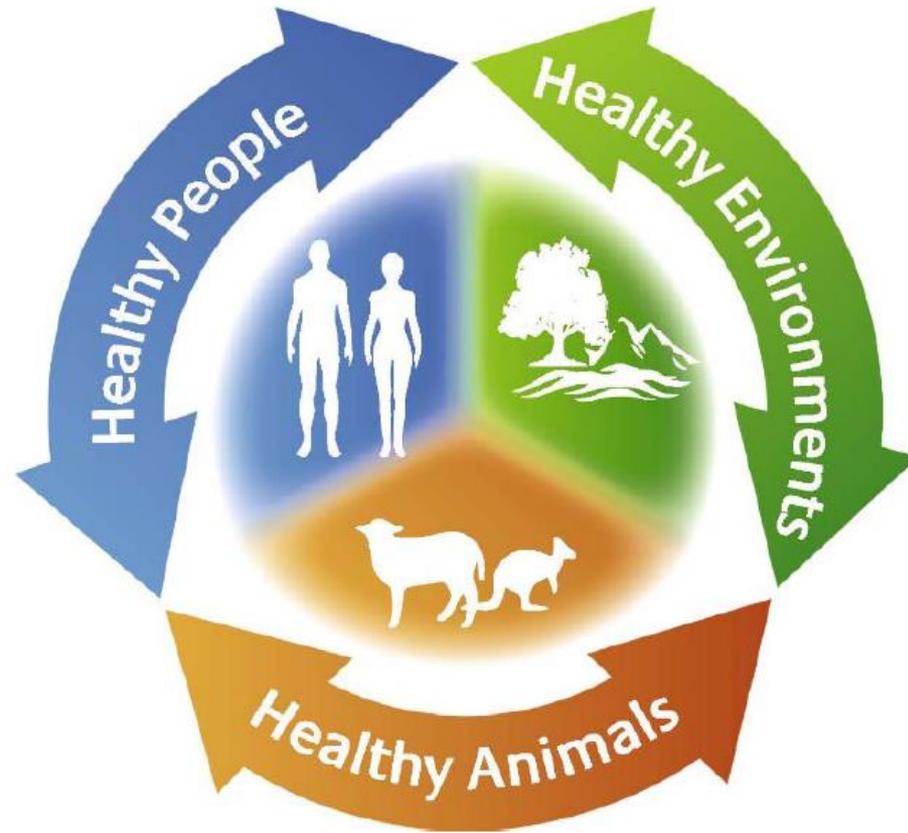


6 out of 10 infectious diseases in humans are spread from animals



Globally,
75% of emerging
diseases are of
zoonotic origin

The One Health Concept



One Health



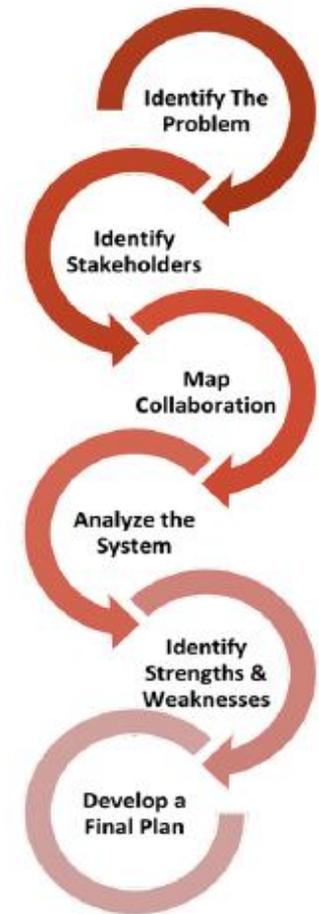
People who protect human, animal, and environmental health, and other partners

Develop Relationships
Outline Partner Roles
Consistent & Open Communication

To achieve the best health outcomes for people, animals, plants, and our environment

One Health Systems Mapping and Analysis Resource Toolkit (OH-SMART)

- Interactive process that fosters working **across organizational and disciplinary lines** when preparing or responding to disease outbreaks.
- Our One Health Toolkit is an example of OH-SMART process.



Six-step OH-SMART™ Process

Used with permission from OH-SMART administrators

Why Make a Toolkit?



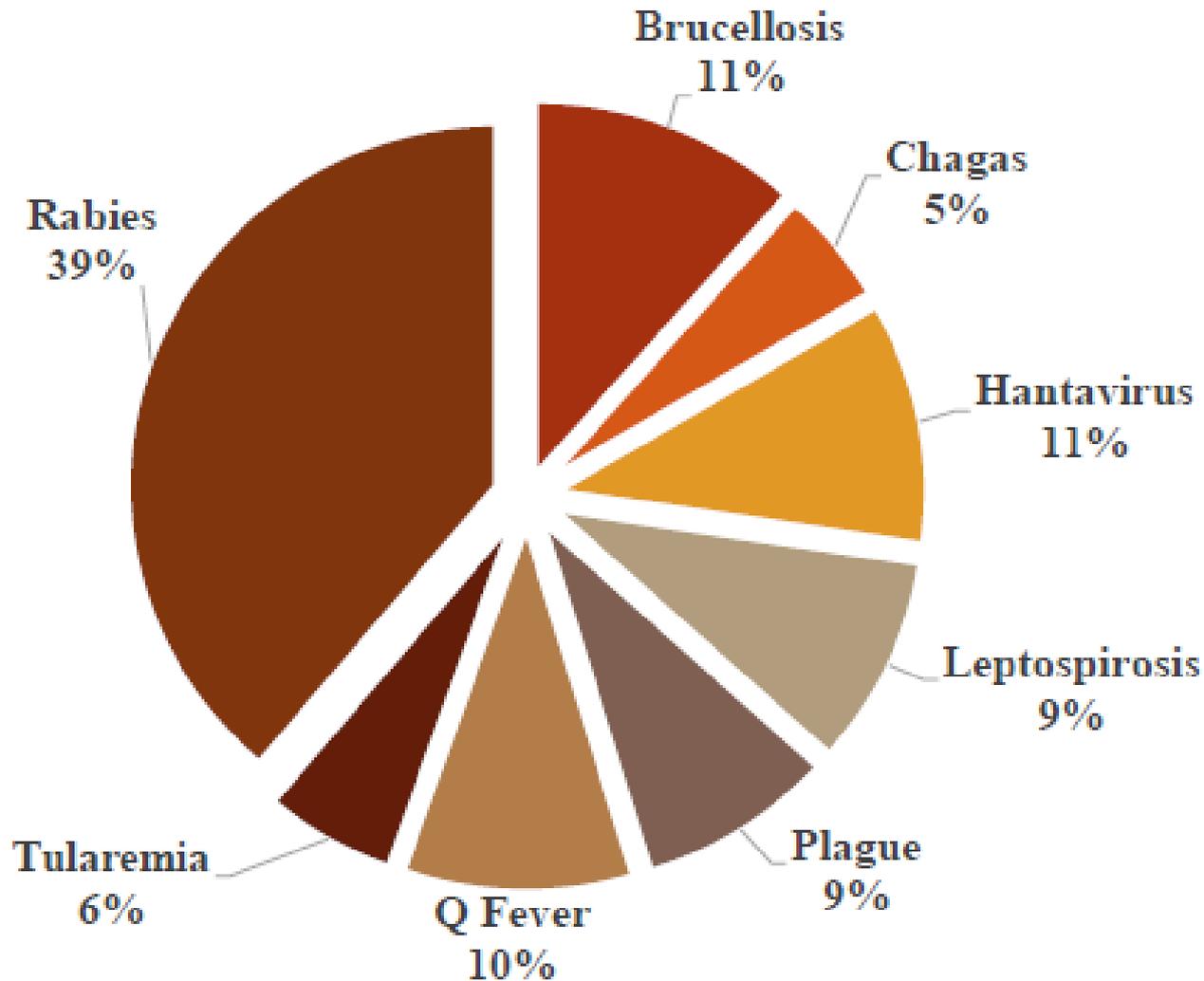
- Create a concrete resource for local partners.
- Provide communication and collaboration strategies.
- Strengthen partnerships and enhance capacity.

Arizona One Health Toolkit Survey

Survey Methods

- Survey A was an online mixed-methods survey to local health jurisdictions to assess communication and collaborative efforts with OH partners.
- Survey B contained five open-ended questions for state and federal partners to ascertain their role in OH activities.
- We developed the OH toolkit based on both survey results, literature reviews, and adapting OH-SMART processes.

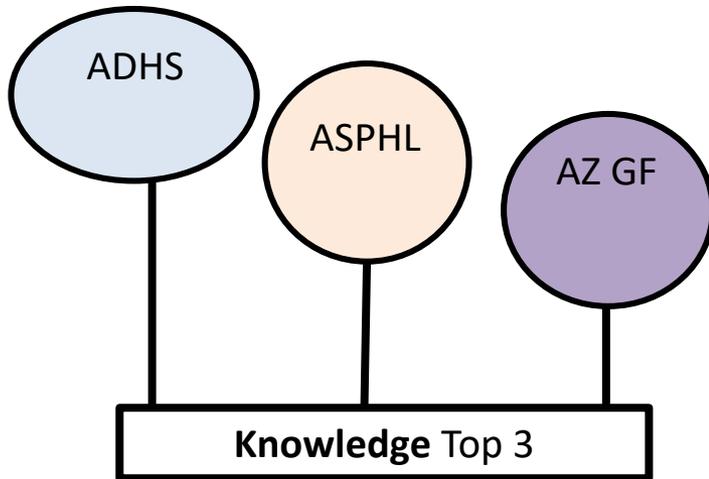
Zoonotic Diseases Investigated Among Local/Tribal Health Departments



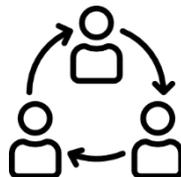
Assessing Communication & Collaboration

Knowledge is Power

Evaluated knowledge level of general mission & roles in zoonotic disease investigations for One Health Partners.



Greater awareness of agency roles resulted in **more communication & collaboration** between health departments & partner agencies.



VARIETY of existing One Health collaborations in place:

ZOHU Call

Arizona Animal Disease Round Table

RMSF Round Up FBI/AG/Game & Fish/Health Collaborative

Office of Border Health One Health Community Clean-Up Coalition

CDC

University of Arizona

All respondents felt **MORE communication & collaboration** from all agencies would be **beneficial**.

Who do health departments work with?

Health Departments work with
Arizona Game & Fish,
Arizona Department of Agriculture, Animal
Control Agencies,
Indian Health Service & veterinary clinics to
investigate zoonotic diseases



Other organizations health departments collaborate with include
neighboring county & state health departments,
housing authorities,
tribal organizations,
animal rescues,
wildlife biologists, research facilities,
universities, & vector control agencies.

Available Resources

55% indicated their jurisdiction had **protocols** outlining when to contact partner agencies during zoonotic disease investigations & situations.

39% said partner **contact information was available** to employees, including new employees.



Using ADHS Investigation Manuals?

65% knew the manuals were available & **30%** of respondents have previously used ADHS manuals.



Most referenced manuals:
Rabies, RMSF, & Arbovirus.

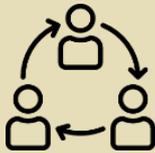
At least 75% of respondents are **comfortable investigating zoonotic diseases**, know available resources, & know who to contact during zoonotic disease investigations or situations.

Recommendations For Success



Develop Relationships

Seek Opportunities to Connect with One Health Partners at Local, State, & Federal Levels.



Form & Outline Collaborations

Outlining Partner Roles in Responses Increases Better Outcomes.



Foster Communication

Consistent, Reciprocal, & Open Communication is Needed for Successful Collaborations.

ARIZONA ONE HEALTH TOOLKIT



- Background
- Arizona One Health Partners
- Examples of Collaborations (Plague, Q Fever, Rabies)
- One Health Partners Contact Info
- Survey Summary

Vector-Borne & Zoonotic Diseases

ADHS Home / Public Health Preparedness / Epidemiology & Disease Control / Infectious Disease Services / Highlighted Infectious Diseases for Arizona / Vector-Borne & Zoonotic Diseases - Home

Home

Mosquito-Borne Diseases >

Rabies >

Rocky Mountain Spotted Fever >

Vector Control Workshops >

Vector-Borne & Zoonotic Diseases A-Z

Training and Exercises

Infectious Diseases A-Z

Communicable Disease Reporting>

Disease Data, Statistics & Reports >

Disease Investigation Resources >

Legal Requirements

Home



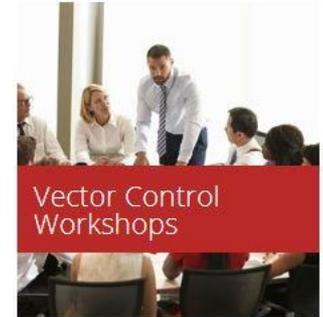
Information about how to protect from mosquitoes.



Information on how to avoid exposure to rabies.



Information about how to protect from ticks and RMSF.



Workshops and conferences.

The Vector-Borne & Zoonotic Diseases program is responsible for monitoring, controlling and preventing diseases transmitted from animals or arthropod vectors to humans. Please visit the [Vector-Borne and Zoonotic Diseases A-Z Index](#) for information about additional diseases.

- [Arizona One Health Toolkit: Resource for Local Public Health Partners](#)

The Toolkit has been posted online in the Vector Home Page

<https://www.azdhs.gov/documents/preparedness/epidemiology-disease-control/vector-borne-zoonotic-diseases/arizona-one-health-toolkit-2019.pdf>

Arizona One Health Partners

Arizona Department of Agriculture

Arizona Game and Fish Department (AzGFD)

Arizona Veterinary Medical Association (AzVMA)

Arizona Veterinary Diagnostic Laboratory (AzVDL)

ADHS

Counties, tribes, animal control, universities, non-profits, hospitals

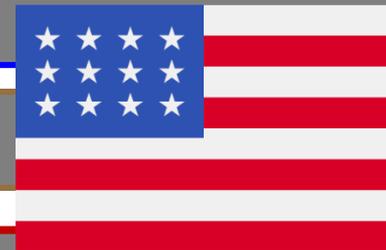
US Department of Agr., **A**nimal and **P**lant **H**ealth **I**nspection **S**ervice (USDA APHIS)

Wildlife Services and National Veterinary Services Laboratories

United States Fish and Wildlife Service (USFWS)

National Park Service (NPS)

CDC



Arizona Department of Agriculture

<https://agriculture.az.gov>

Mission Statement:

“To support and promote Arizona agriculture in a way that encourages **farming, ranching and agribusiness**, protects the well-being of people, **plants, animals** and the **environment** while safeguarding commerce, consumers and natural resources.”



Office of the State Veterinarian



We protect the public from contagious and infectious disease in:

- Livestock (cattle, goats, horses, pigs, sheep),
- Poultry,
- Commercially raised fish,
- Meat, milk and eggs.



Office of the State Veterinarian



- Sampling of livestock
- Tracking animal movements
- Identifying farms
- Testing food products
- Can contact animal producers and farmers



Dr. Peter Mundschenk (DVM, State Vet)

Ex: Peter reports to us
WNV positive horses.

Arizona Game and Fish Dept.

<https://www.azgfd.com/>



Mission Statement:

“To conserve Arizona’s diverse **wildlife** resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.”

Game Species

<https://www.azgfd.com/hunting/species/>

Small Game Species

Band-tailed Pigeon

Blue Grouse

Chukar

Cottontail Rabbit

Dove Hunt Information

Dove Hunting for Beginners

Dove Season

Dove Species

More >>

Band-tailed Pigeon



Cottontail Rabbit



Quail



Big Game Species

Antelope

Bighorn Sheep

Bison

Black Bear

Black Bear Hunting

Elk

Javelina

Mountain Lion

More >>

Mountain Lion Hunting

Mule Deer

Turkey

White-tailed Deer

Pronghorn



Nongame species:

Wildlife that is neither hunted nor fished in a traditional sense.

Nongame and Endangered Wildlife Program



Arizona Game and Fish Dept.

- Investigates wildlife mortality events and wildlife attacks on people.
- Collects data on zoonotic diseases within wildlife populations.
- Education and outreach to hunters and the public on wildlife conservation and disease prevention.



Dr. Anne Justice-Allen (DVM,
Department Veterinarian)

Ex: Anne reports to
us WNV positive wild
birds.

Arizona Veterinary Medical Association (AzVMA) <https://azvma.org/>



Professional association for veterinary professional in Arizona.

- Education and resources for vets/student.
- Help to find a vet for pet owners.
- Provides animal disease alerts.
- Community outreach.

We post on the AzVMA newsletter info about current situations of interest for vets (ex. Rabies, plague, etc.).

Act as a liaison with the American Veterinary Medical Association who plays a role in alerting individuals about zoonotic disease outbreaks, pet product recalls, and human-animal policy issues.

Arizona Veterinary Diagnostic Lab (AzVDL) <https://azvdl.arizona.edu/>



- It is part of the College of Agriculture and Life Sciences at **The University of Arizona**.
- Provide **diagnostic support** to veterinarians and private individuals for all species of animals.
- Covers wild animals, exotic zoo animals, pet animals, horses, and food producing animals.
- Information is shared with
 - the State Veterinarian,
 - ADHS, and
 - United States Department of Agriculture Veterinary Services.

US Dept of Agriculture

Animal and Plant Health Inspection Service

(USDA APHIS) <https://www.aphis.usda.gov>



Animal and Plant Health Inspection Service

WHO WE ARE

8,379
EMPLOYEES TOTAL*

\$1.4B
BUDGET

6 OPERATIONAL
PROGRAMS

7 LABS AND
RESEARCH
HUBS

1 MISSION

To protect the health and value of America's agricultural and natural resources

OUR FOCUS



PLANT
HEALTH



ANIMAL
HEALTH



WILDLIFE
DAMAGE
MANAGEMENT



ANIMAL
WELFARE



GLOBAL
TRADE



BIOTECHNOLOGY

US Dept of Agriculture

Animal and Plant Health Inspection Service

(USDA APHIS) <https://www.aphis.usda.gov>



- Tracks **wildlife** and feral animal disease that can affect human health (avian Influenza, plague, tularemia, feral swine diseases, tick borne diseases, and rabies).
- In Arizona contribute to **rabies surveillance** data in Arizona by testing deceased wildlife throughout the state.
- This service is used when the deceased wild animal has had **no potential exposure/human contact or contact with domestic pets or livestock**.

Note:

AZ Dept of Agriculture does not cover wildlife

US Dept of Agriculture does.

David L. Bergman
State Director

Lolita Van Pelt
Rabies Biologist

Ex: Lola reports to us
rabies positive wildlife.

US Dept of Agriculture

Animal and Plant Health Inspection Service

(USDA APHIS) <https://www.aphis.usda.gov>



National Veterinary Services Laboratories (NVSL)

in Ames, Iowa and Orient Point (Plum Island), New York.

www.aphis.usda.gov/NVSL .

They work closely with both the Arizona State Veterinarian and Arizona Dept. of Agriculture for animal and food product testing.

US Fish and Wildlife Service (FWS)

<https://www.fws.gov/>



- It is dedicated to conserve, protect and enhance **fish, wildlife, plants and their habitats.**
- Works with wildlife partners such as USDA and National Park Services.
- The **equivalent of AZ Game and Fish** at the national level.

National Park Services



- Work to conserve **natural and historic** monuments, **landscapes**, and areas.
- This includes the wildlife and scenery within **NPS jurisdiction**.
- Able to distribute information regarding potential wildlife disease concerns, provide assistance in trapping, sampling animals, and mapping on sites under their jurisdiction.

Ex: We are working with Danielle on a suspect zoonotic case who was hunting at the Grand Canyon.

22 National Parks in AZ

Grand Canyon National Park



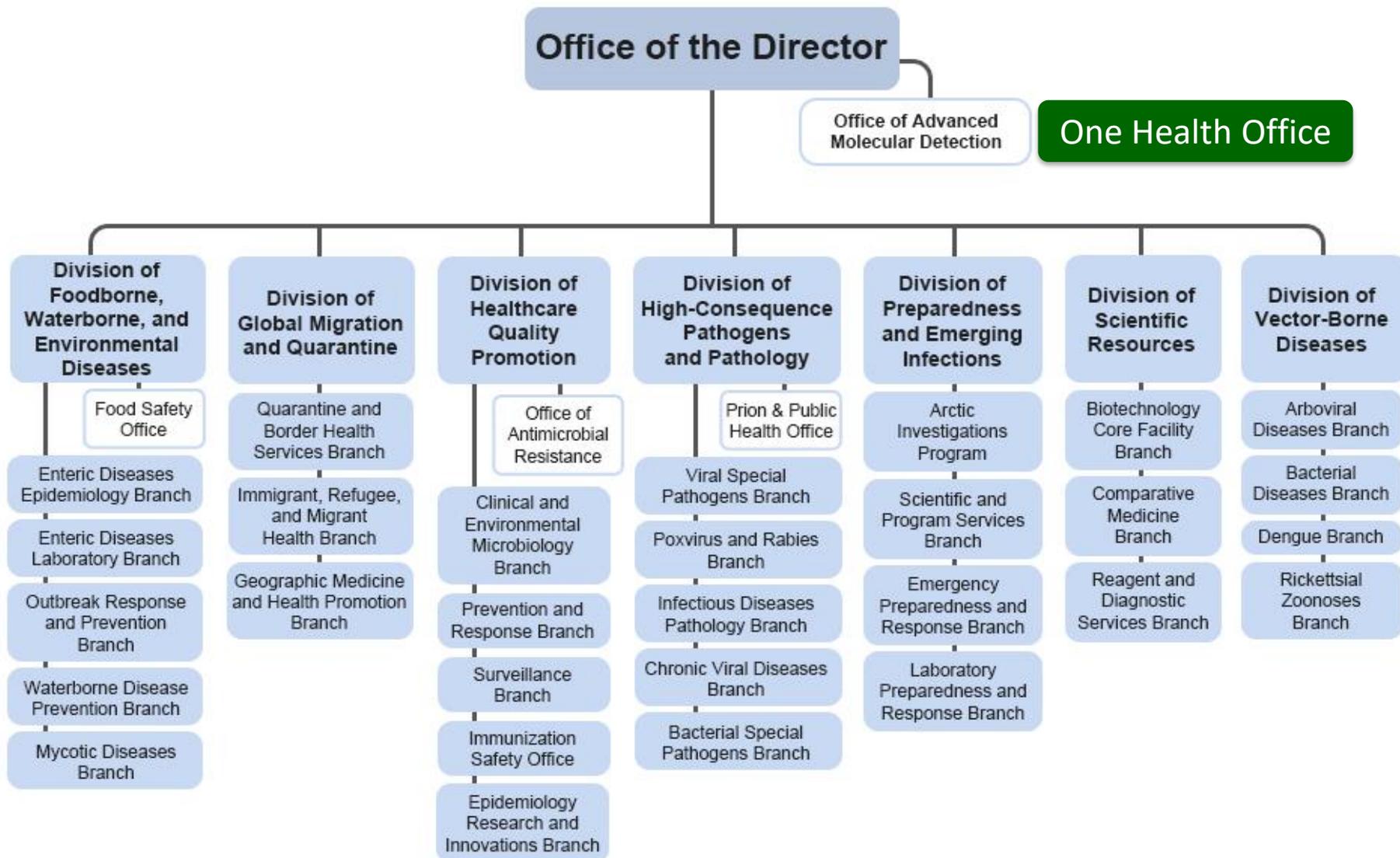
CDC -One Health Office (OHO)

<https://www.cdc.gov/onehealth>

SAVING LIVES
BY TAKING A
ONE HEALTH APPROACH



- **Part of the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID).**
- Cross-cutting through the entire agency.



CDC -One Health Office (OHO)

<https://www.cdc.gov/onehealth>

SAVING LIVES
BY TAKING A
ONE HEALTH APPROACH



Examples of domestic activities:

- Zoonoses Education Coalition (ZEC) to promote messages on **pets** and zoonoses.
- Works closely with the **National Association of State Public Health Veterinarians**.
- CDC has worked with the CSTE and USDA to promote a One Health collaboration through the **Influenza and Zoonoses Education Among Youth in Agriculture**.
- ZOHU Calls/Webinars.

Arizona Department of Agriculture

Livestock, poultry

Arizona Game and Fish Department (AzGFD)

Game animals and other wildlife

Arizona Veterinary Medical Association (AzVMA)

Outreach to vets

Arizona Veterinary Diagnostic Laboratory (AzVDL)

Diagnostic-all species

ADHS

Human exposures to zoonotic diseases

Counties, tribes, animal control, universities, non-profits, hospitals

US Department of Agr., **Animal and Plant Health Inspection Service (USDA APHIS)**

Wildlife Services and National Veterinary Services Laboratories

Wildlife rabies

United States Fish and Wildlife Service (USFWS)

Wildlife & conservation

National Park Service (NPS)

Animals and landscapes within NPS areas

CDC

One health issues across the agency

COUNTY HEALTH DEPARTMENT CONTACT INFORMATION- MAIN OFFICE

Apache County – 928-337-4364	Cochise County – 520-432-9400	Coconino County – 928-679-7272
Gila County – 928-402-8811	Graham County – 928-428-1962	Greenlee County – 928-865-2601
La Paz County – 928-669-1100	Maricopa County – 602-506-6767	Mohave County – 928-753-0714
Navajo County – 928-524-4750	Pima County – 520-724-7770	Pinal County – 520-866-7325
Santa Cruz County – 520-375-7900	Yavapai County – 928-771-3134	Yuma County – 928-317-4550

RESOURCES FOR ZOOBOTIC DISEASE INVESTIGATIONS

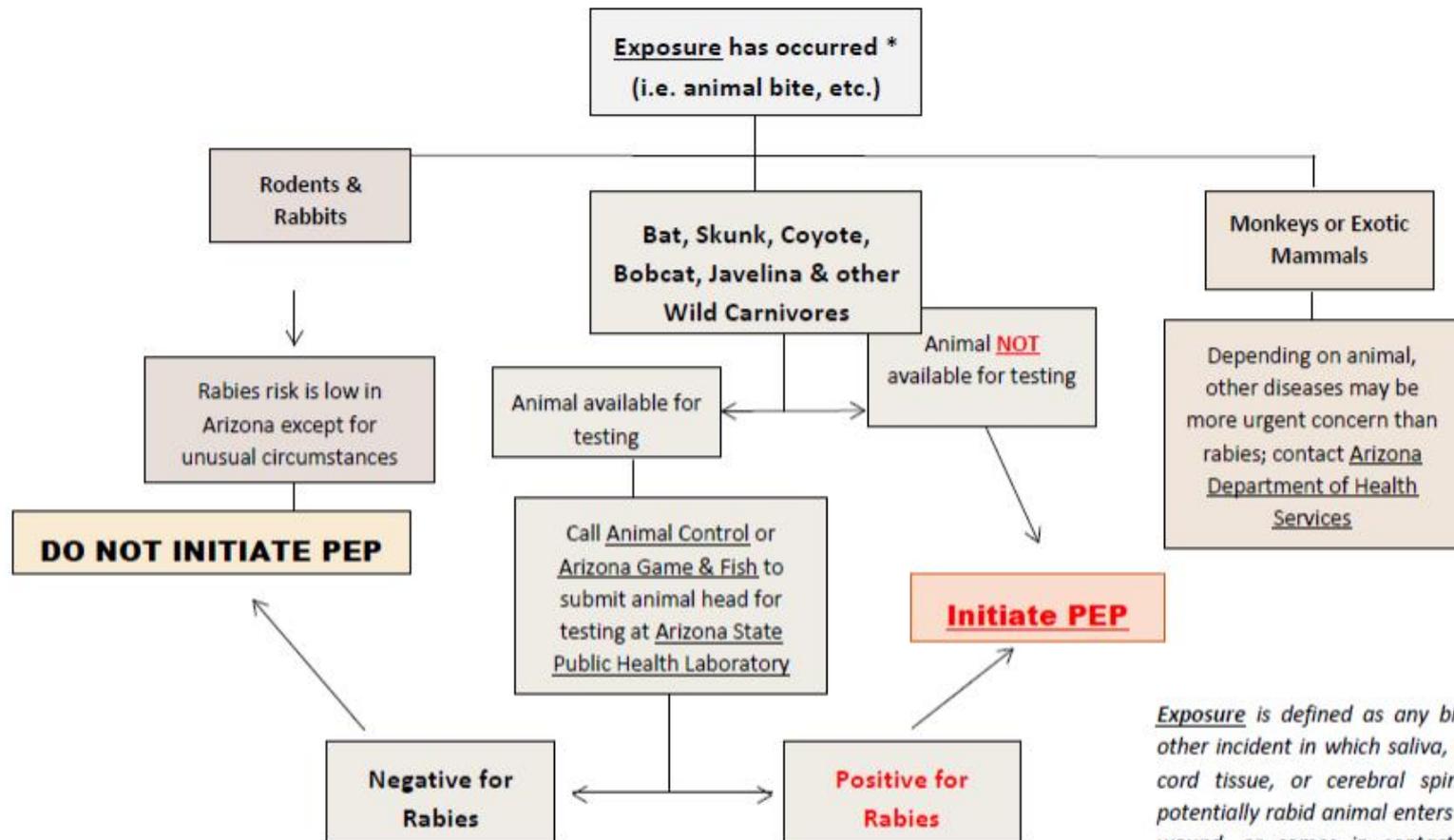
The Arizona Department of Health Services offers a variety of zoonotic investigation manuals to aid county and tribal health departments in investigating disease cases. See [here](#) for a listing of investigation manuals and resources. Reporting rules for healthcare providers, laboratories, local health agencies, facilities, and veterinarians are listed [here](#).

Anthrax	Brucellosis	Chagas
Hantavirus & Quick Tips	Leptospirosis	Plague
Rabies & Quick Tips	Tularemia & Quick Tips	Lyme
Q Fever	Rocky Mountain Spotted Fever	Yellow Fever
Zika	Relapsing Fever	Scabies
West Nile Virus & St Louis	Malaria	Ehrlichiosis

Existing One Health Collaborations

Collaboration	Frequency of Communication	Contact Person (if available)
Arizona Animal Disease Round Table Teleconference	Monthly	Lolita Van Pelt
Arizona Arboviral Workgroup	Monthly	Irene Ruberto
Zoonotic Diseases & One Health (call/webinar)	Monthly	CDC One Health Office ZOHUCall@cdc.gov
ESC (call/in person meetings)	Monthly	Xandy Peterson
FBI/AG/Game & Fish/ Public Health Collaborative	Quarterly	Dr. Peter Mundschenk DVM

INITIATING RABIES POST EXPOSURE PROPHYLAXIS: HUMAN EXPOSURE TO WILDLIFE OR EXOTIC ANIMAL



Exposure is defined as any bite, scratch, or other incident in which saliva, brain or spinal cord tissue, or cerebral spinal fluid of a potentially rabid animal enters an open, fresh wound, or comes in contact with mucous membranes by entering the eye, mouth or nose

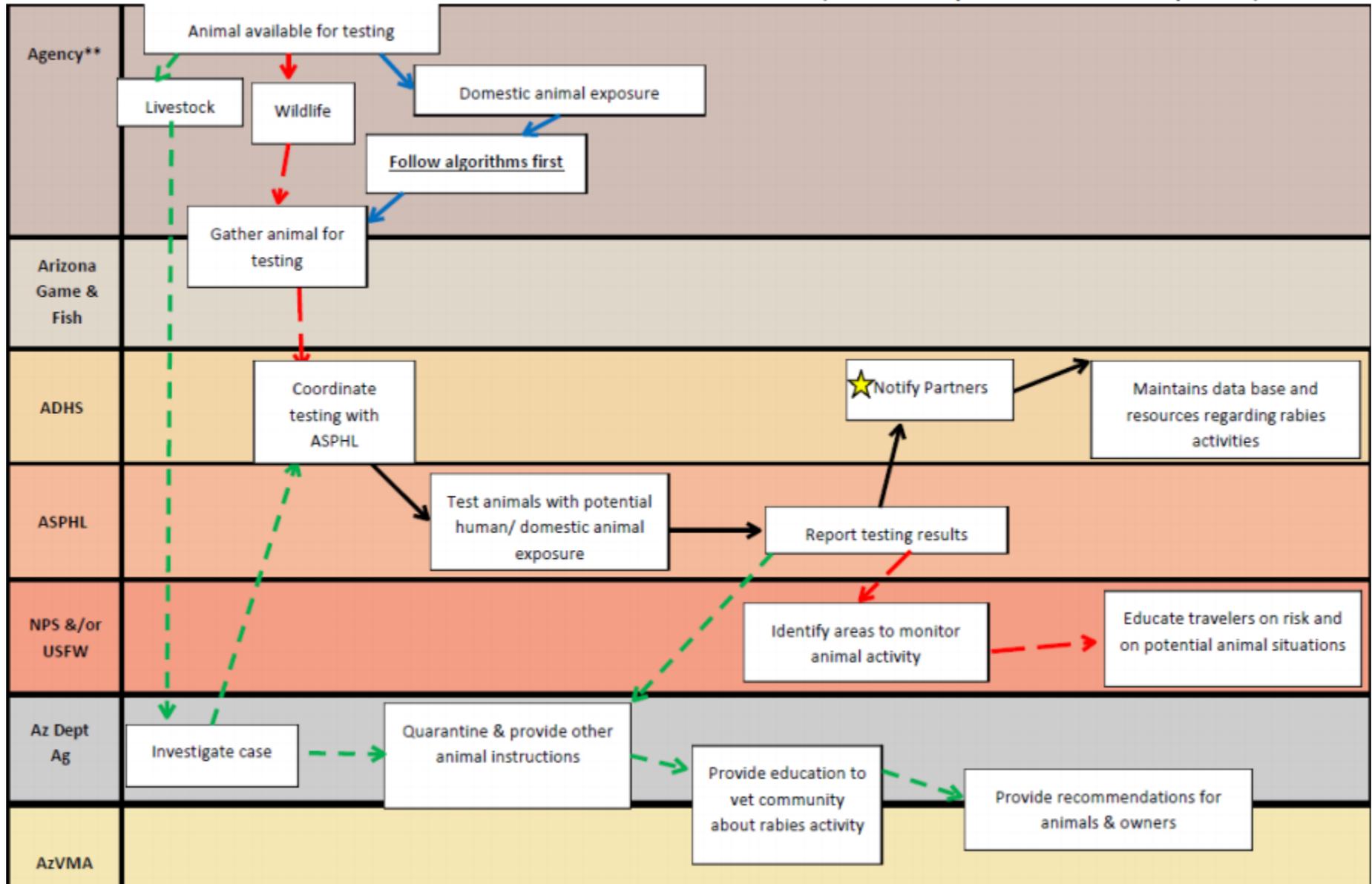
*Note: Presence of bats within closed spaces where people are is considered an exposure; most people who are bitten by bats are not aware or the bite is so small that there are no marks visible (example: the 'bat in the bedroom scenario': if someone wakes up to find a bat in their bedroom, that is considered an exposure until proven otherwise)

Reptiles, amphibians, birds, & fish are NOT susceptible to natural rabies infection



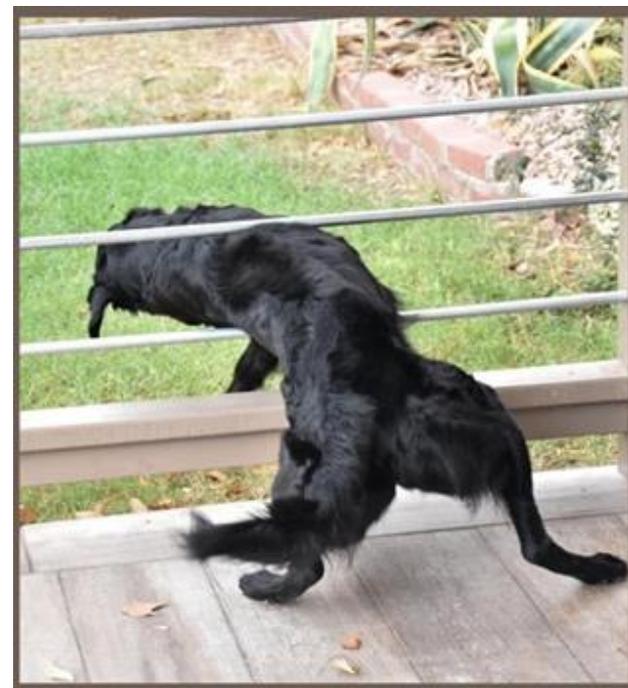
Please refer to the [ADHS Manual For Rabies Control and Bite Management](#) for more information regarding rabies and rabies situations

Swimlane chart example- Rabies

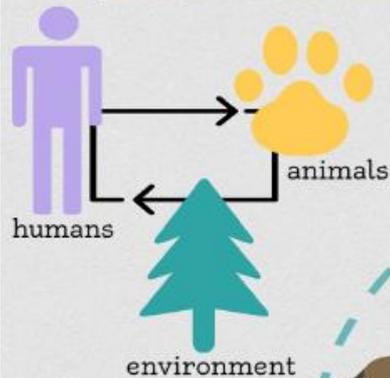


AZ One Health Gaps

- Time and manpower issues
- Companion animal diseases can sometimes fall through the cracks
- Sharing resources and educational materials
- Others?



One Health & You!



One Health is the idea that the health of humans, animals and the environment are all connected.

Why One Health Matters

People depend on animals for food, companionship, recreation, and work.

Animals depend on people for care, protection, medical needs, healthy diets, and safe homes and habitats.

People and animals depend on clean air, water, and a healthy and balanced environment.

Working Together

One Health involves communication and collaboration between many different people working in the areas of human, animal, and environmental health.

Careers in One Health

Human Medicine	Environmental Science
Animal Medicine	Ecology
Food Safety	Public Health
Wildlife Biology	Conservation
Government	Epidemiology
	Research

You Can Help!

-Wash your hands to keep people, animals, and the environment free from germs.

-Promote a healthy lifestyle for people and animals. Eat well and exercise.

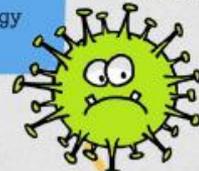
-Keep wildlife safe. Do not try to touch them or destroy their habitats.

-Keep your animals healthy. Take them to a veterinarian when they are sick.

-Keep the environment clean. Keep trash off the ground and out of the water.

-Stay educated. Learn how diseases can spread between people and animals.

-Become a One Health Champion!



"Stu Flu"

Available here:

azhealth.gov/ideducationalmaterials

We Can Lead the Way in One Health

One Health In Action: A Success Story



In the southwestern U.S. and Mexico, brown dog ticks can carry a germ that causes Rocky Mountain spotted fever in people and dogs.



In Arizona, free-roaming dogs were spreading infected ticks. Many people got sick and some died from Rocky Mountain spotted fever.



Public health and animal health officials used long-lasting tick collars on dogs, regular pesticide applications around homes, community education, and provided free spay and neuter clinics for dogs.



After only 4 months, 99% of dogs were tick-free in the community. The number of people who had Rocky Mountain spotted fever went down in the community.

Questions?

- E-mail: vbzd@azdhs.gov
- Phone: 602-364-3676

Coconino County and the ADHS One Health Toolkit

Matthew Maurer, MPH

Epidemiologist

Coconino County Health and Human Services

12/12/19



Location of Coconino County



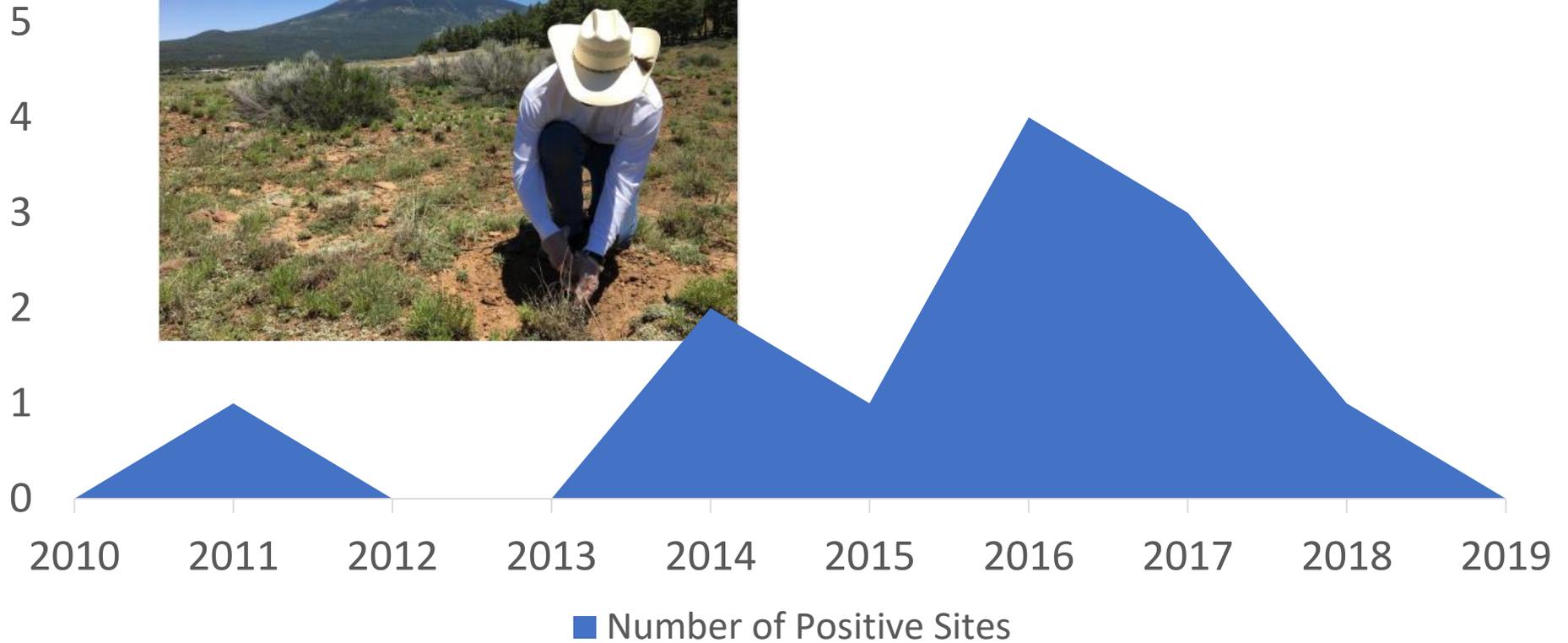
Location of Coconino County





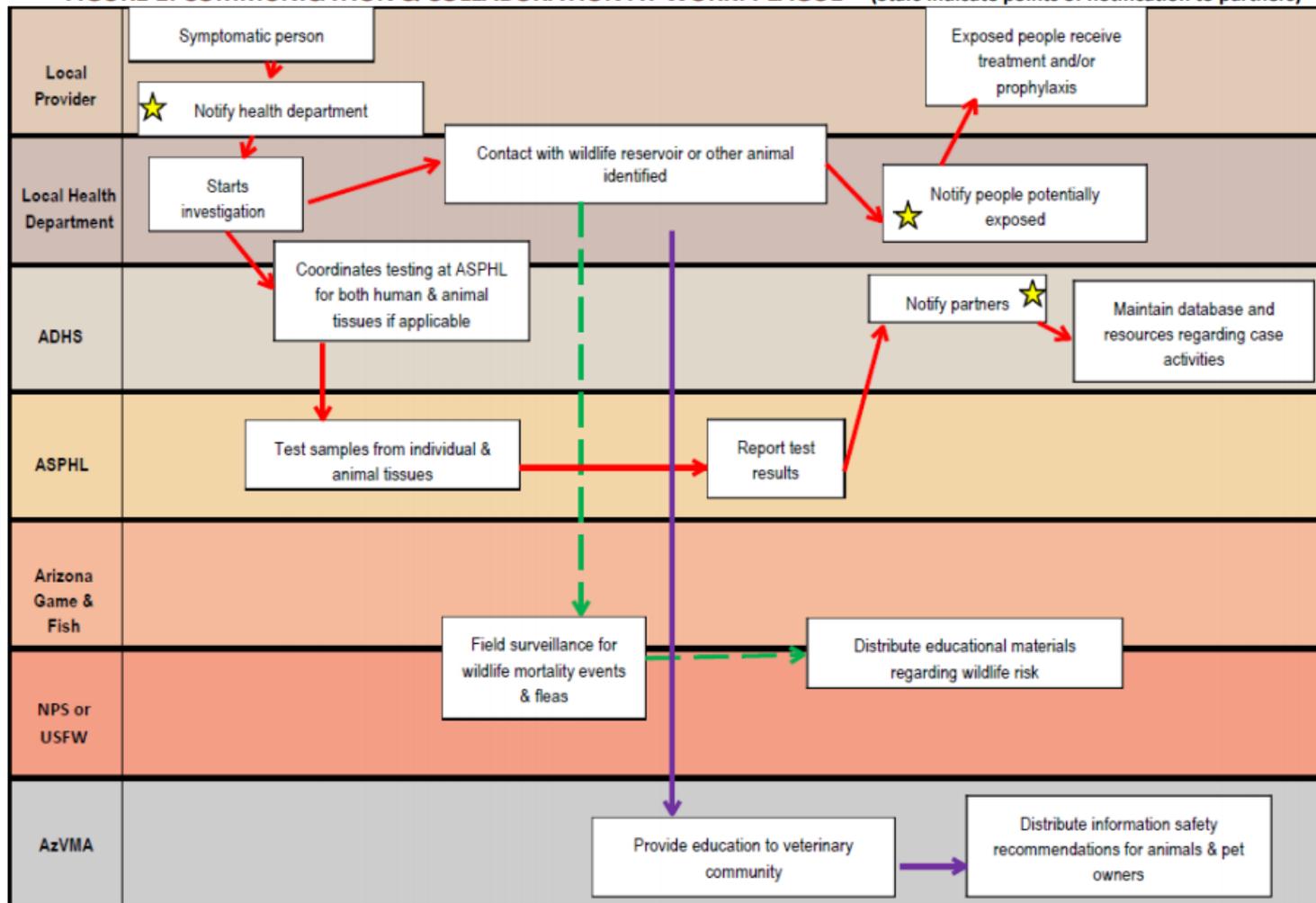
Zoonotic Diseases in
Coconino County

Coconino County Plague Positive Environmental Sites



Flow Chart
From ADHS
One Health
Toolkit

FIGURE 1. COMMUNICATION & COLLABORATION AT WORK: PLAGUE¹⁻³ (Stars indicate points of notification to partners)



Coconino County Confirmed Rabies in Wild/Feral Animals 2015-2019

- 2018
- 28 Foxes
 - 4 Bats
 - 1 Coyote
 - 1 Raccoon
 - 1 Javelina

- 2019
- 9 Foxes
 - 9 Skunks
 - 6 Bats
 - 1 Bobcat
 - 1 Javelina

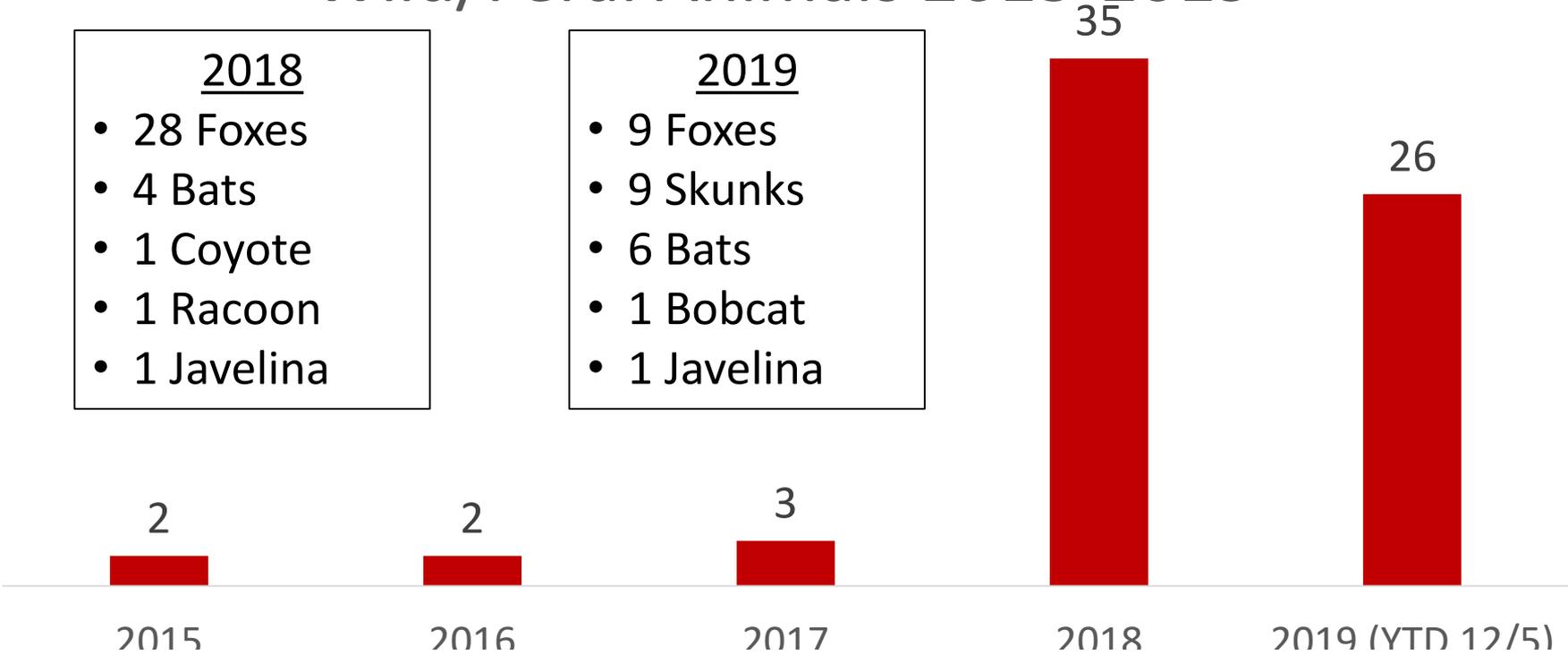
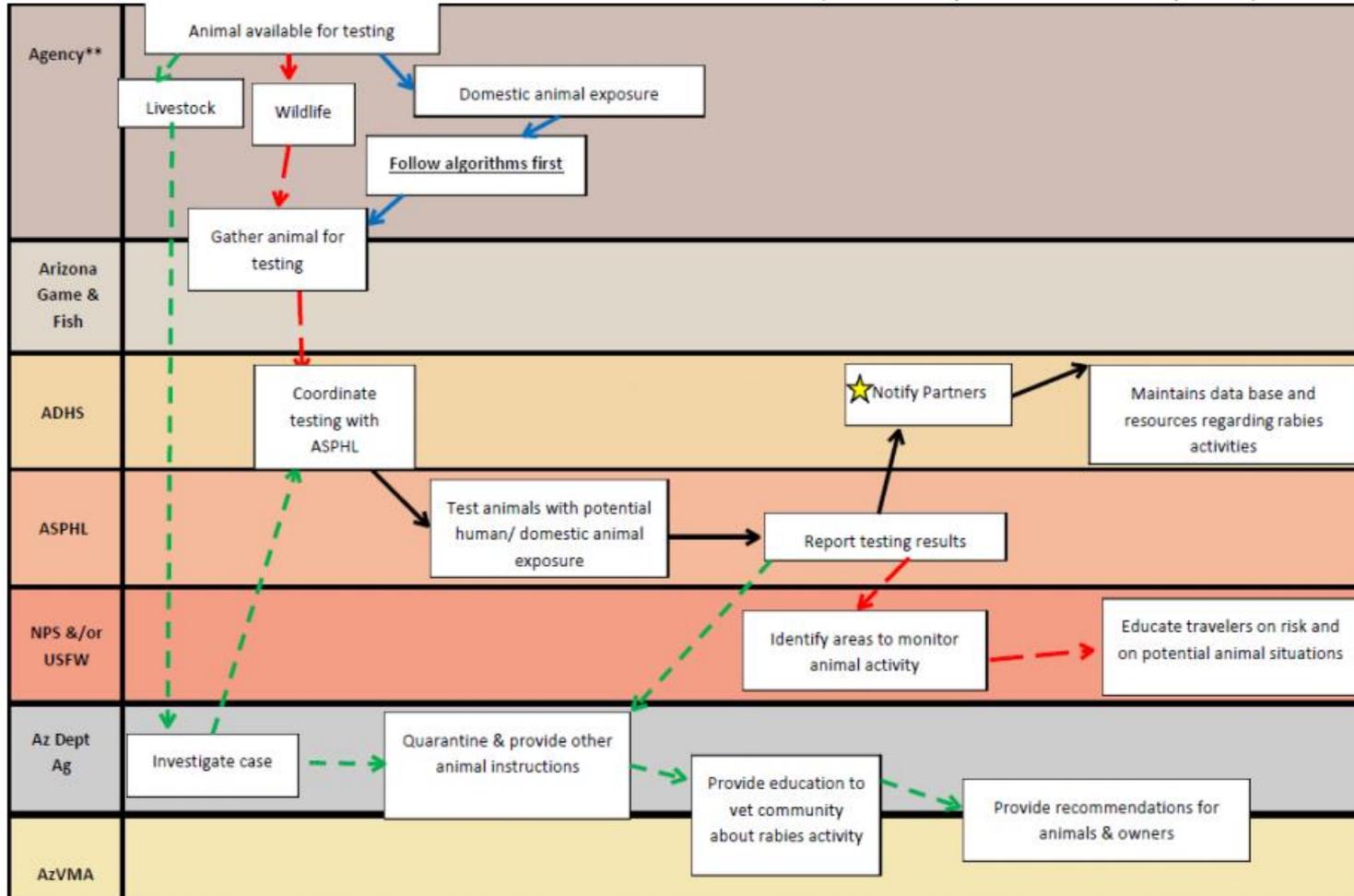


FIGURE 3. COMMUNICATION & COLLABORATION AT WORK: RABIES¹⁻³ (Stars indicate points of notification to partners)



Rabies Flow Chart from the ADHS One Health Toolkit



Flagstaff
Medical Center

Northern Arizona Healthcare



ARIZONA DEPARTMENT
OF HEALTH SERVICES



CENTERS FOR DISEASE
CONTROL AND PREVENTION

Emerging Infection – Onchocerca lupi



Its Alive!

One Health
Partnerships



Arizona Department of
Agriculture



National Park Service



Arizona Game & Fish
Department



Arizona State Public
Health Laboratory



Questions?

- Email: mmaurer@coconino.az.gov
- Phone: 928-679-7332



Please enter your
questions or comments in to the
Q&A box

Thank you for joining today's webinar!

Contact us with questions

Email: infectiousdiseases@naccho.org