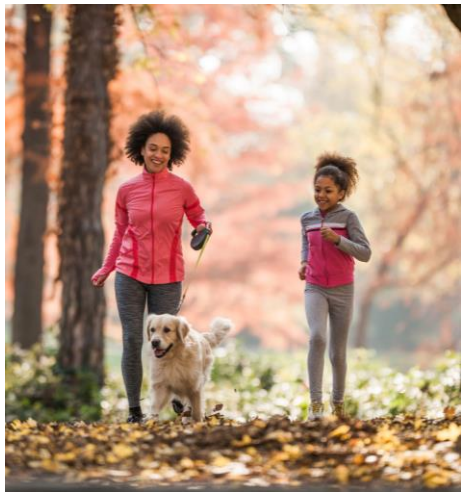
ONE HEALTH

Implementing a One Health response to emerging zoonotic diseases

Colin Basler, DVM, MPH, DACVPM
Deputy Director, One Health Office
National Center for Emerging and Zoonotic Infectious Diseases
Centers for Disease Control and Prevention
www.cdc.gov/onehealth
OneHealth@cdc.gov

The health of humans is connected to the health of animals, plants, and our shared environment

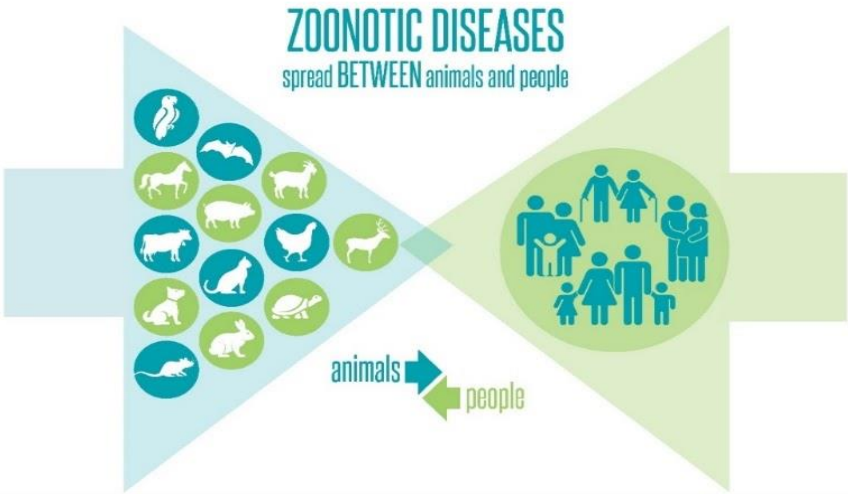




Zoonotic Diseases are Threat to Health Security

- **6 in 10** existing human infectious diseases are zoonotic
- **3 in 4** emerging infectious diseases of humans have animal origin
- **8 in 10** agents with potential bioterrorist use are zoonotic pathogens
- **One Health** approach essential



One Health

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

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

www.cdc.gov/onehealth/

Why ONE HEALTH is Important

As Earth's population grows, our connection with animals and the environment changes:

People live closer together

Changes in climate and land use

More global travel and trade

Animals are more than just food

These factors make it easier for diseases to spread between animals and people.

A One Health approach tackles shared health threats by looking at all angles—human, animal, plant, and environmental

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CDC

CS327066-A

Global Spotlight on One Health

G7 United Kingdom 2021

G20

Joint Call for Experts - One Health High-Level Expert Panel (OHHLEP)

Deadline for submission: 16 April 2021

29 March 2021 | Call for experts

Food and Agriculture Organization of the United Nations

WORLD ORGANISATION FOR ANIMAL HEALTH

UN environment programme

World Health Organization

ONE HEALTH

Zoonotic Disease Integrated Action (ZODIAC)

Taking a Multisectoral, One Health Approach:
A Tripartite Guide to Addressing Zoonotic Diseases in Countries

Global Health Summit

Rome, 21 May 2021

The Rome Declaration

AVMA and congressional allies call for passage of One Health bill

Published on March 22, 2021

Discovery & Exploration of Emerging Pathogens - Viral Zoonoses (DEEP VZN)

A&A Plan ID: AA-311665
NAICS Code: TBD
Fiscal Year of Action: 2021
Last updated: 3/04/2021

Strengthen 'One Health approach' to prevent future pandemics – WHO chief

Home page

PREZODE (Preventing ZOonotic Disease Emergence) is an innovative international initiative with the ambition to understand the risks of emergence of zoonotic infectious diseases, to develop and implement innovative methods to improve prevention, early detection, and resilience in order to ensure rapid response to the risks of emerging infectious diseases of animal origin.

One Health: Common Language

U.S. Government Definition

- **One Health** is the collaborative effort of multiple disciplines and sectors – working locally, nationally, regionally, and globally – with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and our shared environment.

One Health is a Team Sport – Partners are Key

No single person, agency, or sector alone can address shared health threats.

State, local, tribal, and territorial officials

Federal officials

Non-governmental organizations

International organizations (WHO, FAO, OIE)

Industry

Academia

Healthcare providers

Practicing veterinarians

Ecologists

Many others...

Environmental Health Specialists

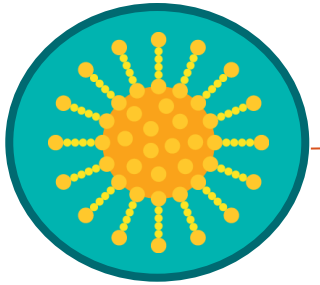
WHO= Word Health Organization
FAO= Food and Agriculture Organization
OIE= World Organisation for Animal Health

Many Benefits of One Health Collaboration

- Ensure health and welfare for all people, animals and plants living in shared environments
- Improve ability to address shared priorities across sectors
  - Priority zoonotic diseases
- Flag opportunities for greater efficiencies and outcomes
- Advance global health security
- Develop appropriate and sustainable strategies, action plans, and investments
- Improve international standards compliance
- Better ensure and coordinate safe travel and trade

CDC's One Health Office – Focus Areas

Established in 2009



Zoonotic and Emerging Infectious Diseases

Global Health Security and capacity building

Pandemic Preparedness

Strengthening One Health coordination & collaboration in United States

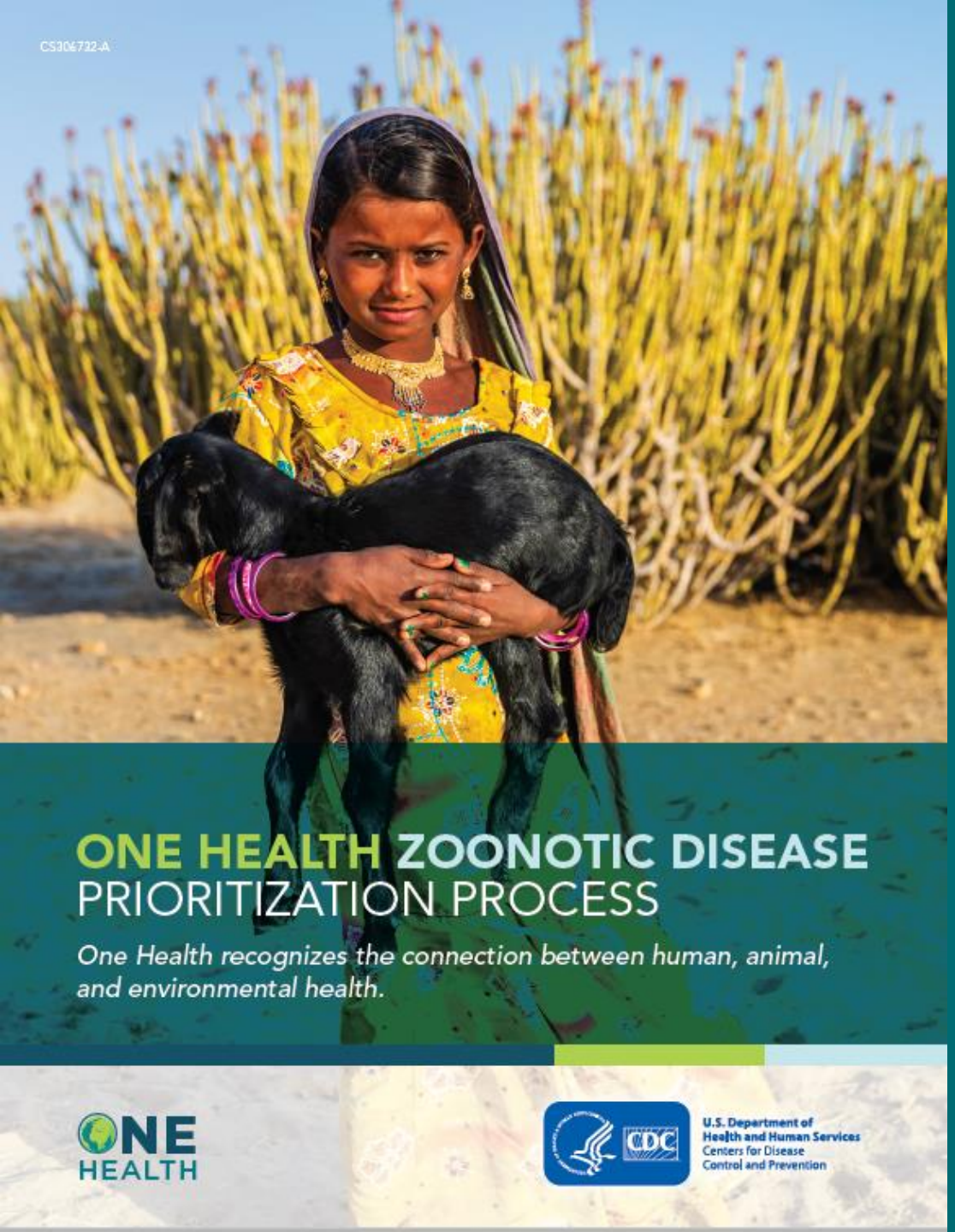
One Health Issues and Emergencies at the Human Animal Environment Interface

Preventing Zoonoses Shared Between People and Pets

US Government Leader in Global One Health Activities

- **Provide** technical assistance to >25 countries
- **Partner** with key international organizations
  - Host CDC Loaned Experts
    - Food and Agriculture Organization of the United Nations (FAO)
    - World Organization for Animal Health (OIE)
- **Serve** as head of OIE Collaborating Center for Emerging and Reemerging Zoonotic Diseases
- **Support** activities that advance global health security
- **Lead** CDC's One Health Zoonotic Disease Prioritization process

>25 Countries



One Health Zoonotic Disease Prioritization Process

A collaborative process for prioritizing zoonotic diseases of greatest concern

For information and the latest resources, contact

OneHealth@cdc.gov

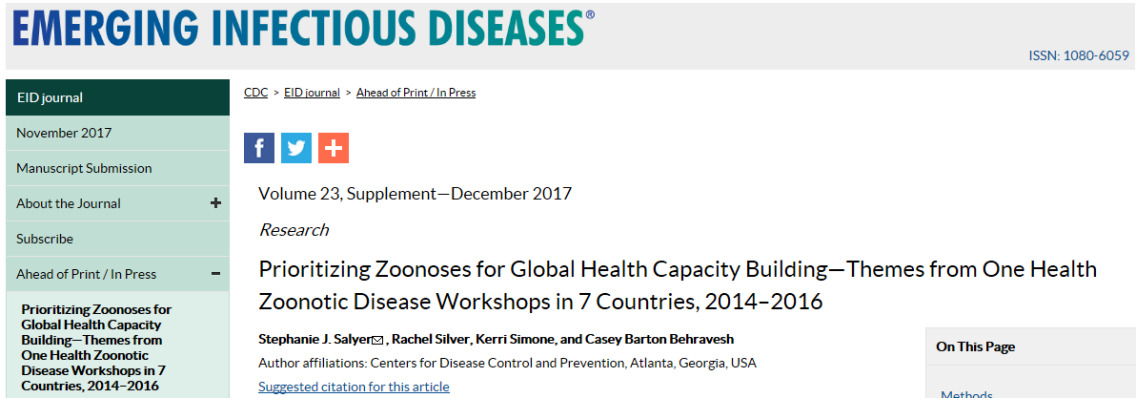
www.cdc.gov/onehealth/global-activities/prioritization.html

Outcomes of the OHZDP Process

- List of priority zoonotic diseases of greatest concern agreed upon by all represented One Health sectors
- Recommendations for next steps and action plans for multisectoral, One Health engagement to address priority zoonotic diseases
- Understanding of roles and responsibilities of all represented One Health sectors
- Creation or strengthening of multisectoral, One Health coordination mechanisms and networks

Commonly Prioritized Zoonotic Diseases Globally

- Rabies
- Zoonotic Influenzas
  - Avian influenza, swine influenza
- Viral Hemorrhagic Fever
  - Ebola, Marburg, Lassa Fever, Rift Valley Fever, Crimean Congo Hemorrhagic Fever
- Anthrax
- Brucellosis
- Zoonotic Tuberculosis


EMERGING INFECTIOUS DISEASES®

ISSN: 1080-6059

EID journal

November 2017

Manuscript Submission

About the Journal +

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Ahead of Print / In Press −

Prioritizing Zoonoses for Global Health Capacity Building—Themes from One Health Zoonotic Disease Workshops in 7 Countries, 2014–2016

CDC > EID journal > Ahead of Print / In Press

Volume 23, Supplement—December 2017

Research

Prioritizing Zoonoses for Global Health Capacity Building—Themes from One Health Zoonotic Disease Workshops in 7 Countries, 2014–2016

Stephanie J. Salyer, Rachel Silver, Kerri Simone, and Casey Barton Behravesh

Author affiliations: Centers for Disease Control and Prevention, Atlanta, Georgia, USA

Suggested citation for this article

On This Page

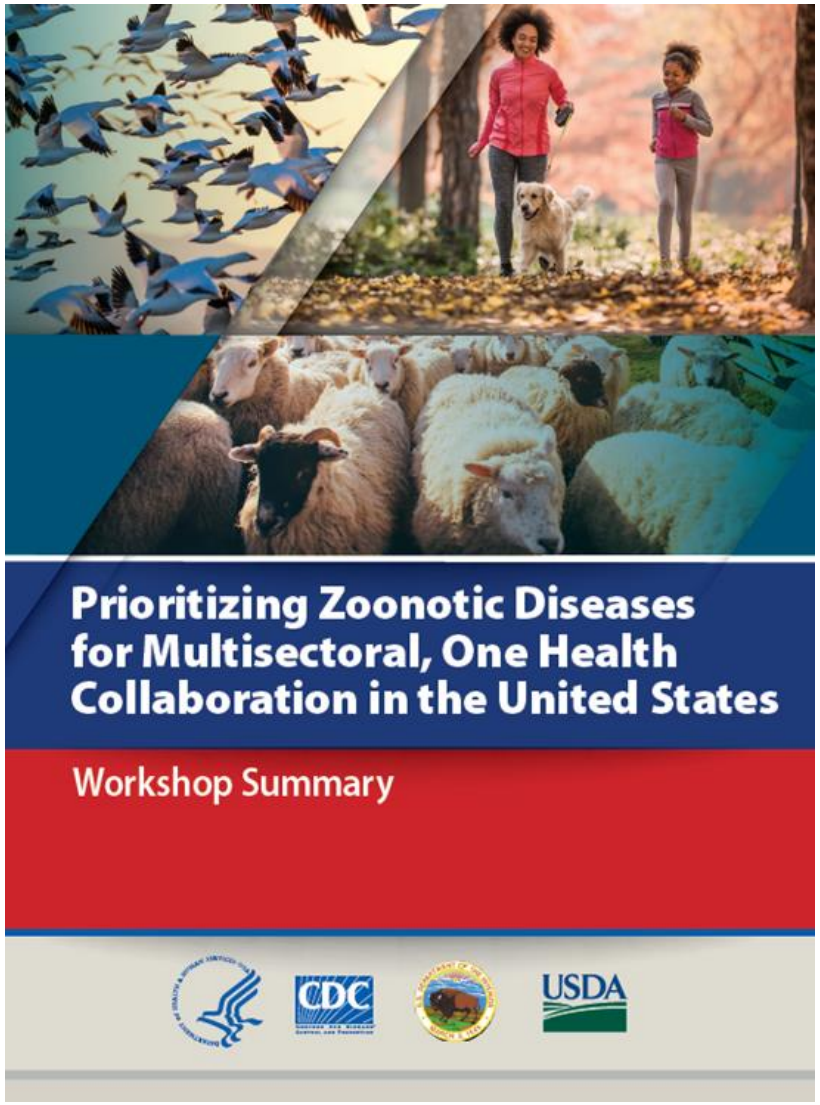
Methods

www.cdc.gov/onehealth/global-activities/prioritization.html

wwwnc.cdc.gov/eid/article/23/13/17-0418_article

United States One Health Zoonotic Disease Prioritization Workshop

- **3 federal partners used a One Health approach to:**
  - Prioritize zoonotic diseases of greatest national concern that should be jointly addressed by human, animal, and environmental health sectors
  - Develop plans for implementing and strengthening multisectoral, One Health approaches to address these diseases in the United States
- **Workshop Summary with additional details at:**
  - www.cdc.gov/onehealth/domestic-activities/us-ohzdp.html



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)

Top 8 Zoonotic Diseases of National Concern in the U.S. *for One Health Collaboration*

1. Zoonotic influenza
2. Salmonellosis
3. West Nile virus
4. Plague
5. Emerging coronaviruses (SARS, MERS)
6. Rabies
7. Brucellosis
8. Lyme disease








www.cdc.gov/onehealth

CS300493-A

COVID-19 Pandemic: One Health Collaboration

One Health and COVID-19 in the News

U.S. reports world's first deer with COVID-19

Wisconsin Farms Working To Vaccinate Mink Against Coronavirus

Animal Welfare Activists Say Continued Potential For Virus Spread At Mink Farms Is A Public Health Threat

The coronavirus is rife in common US deer

ANIMALS |
CORONAVIRUS COVERAGE

Bears, baboons, tigers are getting COVID vaccines at zoos across the U.S.

Here's what you should know about the experimental COVID-19 vaccine rolling out to zoo animals—and why your pets aren't getting it.

sky news

COVID-19: Rescue dogs shot dead in Australia over coronavirus restrictions

India closes all tiger reserves after Covid outbreaks in zoos

By Jessie Yeung and Swati Gupta, CNN

Updated 3:58 AM ET, Wed June 9, 2021

Gorillas at Zoo Atlanta test positive for COVID-19

Dog, cat owners with COVID-19 often pass it to pets

Filed Under: COVID-19

From deer and dogs to rats and mink, COVID-19 spread to the animal world

As SARS-CoV-2 spreads through some animal populations, animals may create a feedback loop as they re-infect humans

Oh, Deer: Whitetails In Ohio Have Covid-19

One Health Federal Interagency COVID-19 Coordination Group (OH-FICC)

>20 federal agencies representing multiple departments

Chaired by CDC

Coordination with >130 U.S. government partners

Purpose: Bring together representatives from key federal agencies representing multiple departments to collaborate to address One Health technical aspects of COVID-19

OH-FICC Agency Representation

National Institutes of Health

Agricultural Research Service

FEMA

Five OH-FICC Subgroups and Agency Chairs

Companion Animals
(Working Animals)

CDC

Animal Diagnostics and Testing

FDA-CVM, USDA-NVSL

Wildlife and Zoo Animals

DOI USGS

Production Animals
(previously Livestock)

USDA-APHIS

Environmental Health

ATSDR, CDC

Highlighted Materials Created by OH-FICC Subgroups

Interim Guidance for SARS-CoV-2 Testing in North American Wildlife

One Health Toolkit for Health Officials Managing Companion Animals with SARS-CoV-2

Interim Guidance for Animal Health and Public Health Officials Managing Farmed Mink and other Farmed Mustelids

Recommendations for Disaster Sheltering of Household Pets, Service Animals, and Support Animals

FAQs on COVID-19 and Bats, Wild Animals, and Game Meat

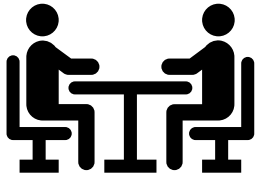
SARS-CoV-2 Case Definition for Animals

One Health COVID-19 Coordination in the United States

One Health Federal Interagency COVID-19 Coordination group (OH-FICC)

One Health State-Federal COVID-19 Coordination Calls

State, Tribal, Local, & Territorial public health, animal health, wildlife



One Health Partners COVID-19 Update Webinar

NGOs, academic, industry, & other partners

Why Do We Care About Animals with SARS-CoV-2?

- Better understand host range
- Identify potential establishment of new animal hosts and reservoirs
- Assess if and how transmission occurs between people and animals
- Understand how and why spillover events occur and how they can be prevented
- Track mutations and variants in animals with potential to affect severity, transmissibility, diagnostics, therapeutics, or vaccine efficacy
- Provide evidence-based, up-to-date guidance to protect human and animal health and animal welfare

www.cdc.gov/coronavirus/2019-ncov/science/science-agenda-covid19.html

One Health Toolkit for Health Officials Managing Companion Animals with SARS-CoV-2

Purpose: Provide recommendations for public health and animal health officials involved in managing companion animals diagnosed with SARS-CoV-2, including those that require hospitalization and those that may be isolated and monitored at home.

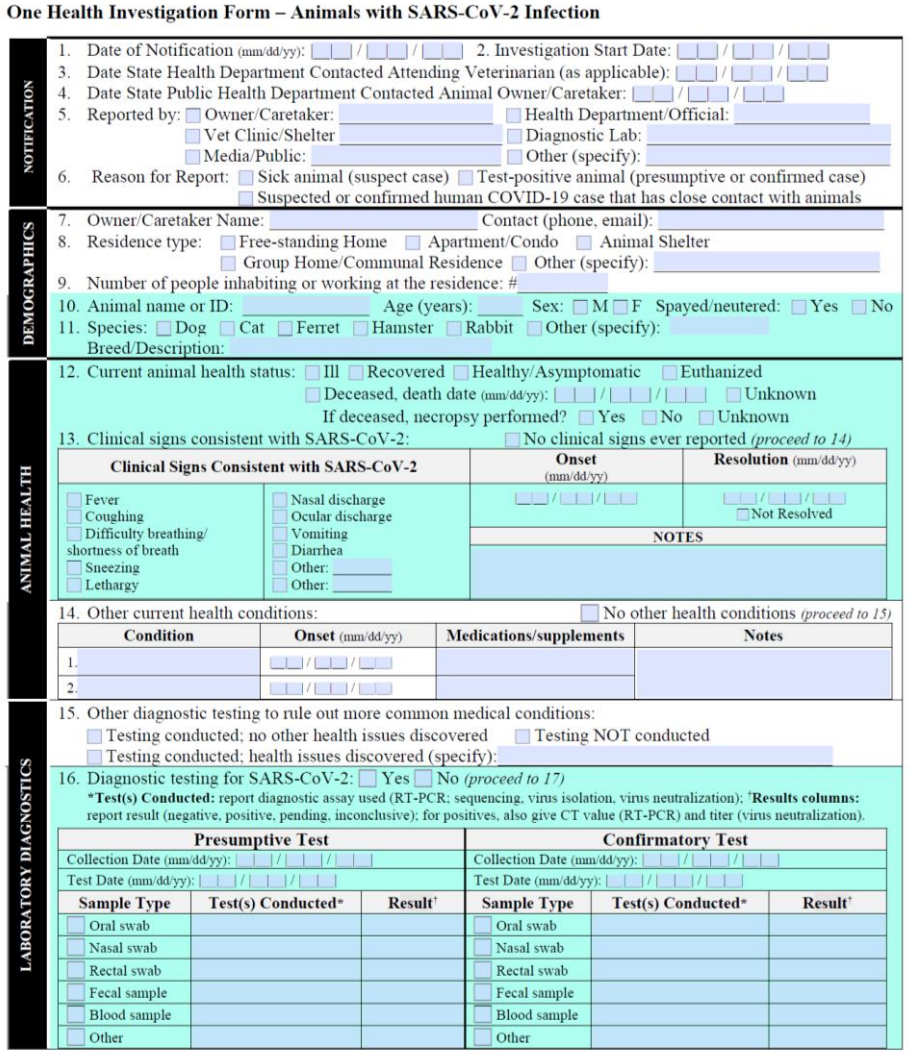
One Health Toolkit for Health Officials Managing Companion Animals with SARS-CoV-2 | CDC

Testing Guidance and Case Investigation Resources

Table 1: Criteria to Guide Evaluation and Laboratory Testing for SARS-CoV-2 in Animals

Criteria	Epidemiological Risk		Clinical Features
A	Animal with history of exposure[3] to a person or animal suspected or confirmed to be infected with SARS-CoV-2.	AND	Animal is asymptomatic; OR Animal has clinical signs suspicious of SARS-CoV-2 infection.[3]
B	Animal with exposure to a known high-risk environment (i.e., where human cases or animal cases have occurred), such as a residence, facility, or vessel (e.g. nursing home, prison, cruise ship).		
C	Threatened, endangered or otherwise imperiled/rare animal[4] in a rehabilitation, sanctuary or zoological facility with possible exposure to SARS-CoV-2 through an infected person or animal.	AND	Animal is asymptomatic; OR Animal has clinical signs suspicious of SARS-CoV-2 infection[3].
D	Animals in a mass care or group setting (e.g., farm, animal feeding operation, animal shelter, boarding facility, zoo, or other animal holding) including companion animals, livestock, and other species, where their exposure history to people with COVID-19 is unknown.	AND	A cluster of animals show clinical signs suspicious of SARS-CoV-2 infection.[3]
E	Farmed mink (*Neovison vison*). Farmed mink refers to mink bred or raised in captivity for their fur and other by-products.	AND	Animals are asymptomatic; OR One or more animals have clinical signs suspicious of SARS-CoV-2 infection[3].

NOTES: Veterinarians are encouraged to consider other, more common causes of illness in animals and use their clinical judgement when deciding whether or not to test animals for SARS-CoV-2. **All decisions to test an animal should be made in coordination with relevant public health and animal health[2] officials.**



One Health Investigation Form – Animals with SARS-CoV-2 Infection

NOTIFICATION

1. Date of Notification (mm/dd/yy): __/__/__ 2. Investigation Start Date: __/__/__
3. Date State Health Department Contacted Attending Veterinarian (as applicable): __/__/__
4. Date State Public Health Department Contacted Animal Owner/Caretaker: __/__/__
5. Reported by: ☐ Owner/Caretaker: ☐ Health Department/Official: ☐ Vet Clinic/Shelter ☐ Diagnostic Lab: ☐ Media/Public: ☐ Other (specify):
6. Reason for Report: ☐ Sick animal (suspect case) ☐ Test-positive animal (presumptive or confirmed case) ☐ Suspected or confirmed human COVID-19 case that has close contact with animals

DEMOGRAPHICS

7. Owner/Caretaker Name: Contact (phone, email):
8. Residence type: ☐ Free-standing Home ☐ Apartment/Condo ☐ Animal Shelter ☐ Group Home/Communal Residence ☐ Other (specify):
9. Number of people inhabiting or working at the residence: #
10. Animal name or ID: Age (years): Sex: ☐ M ☐ F Spayed/neutered: ☐ Yes ☐ No
11. Species: ☐ Dog ☐ Cat ☐ Ferret ☐ Hamster ☐ Rabbit ☐ Other (specify): Breed/Description:

ANIMAL HEALTH

12. Current animal health status: ☐ Ill ☐ Recovered ☐ Healthy/Asymptomatic ☐ Euthanized ☐ Deceased, death date (mm/dd/yy): __/__/__ ☐ Unknown
If deceased, necropsy performed? ☐ Yes ☐ No ☐ Unknown
13. Clinical signs consistent with SARS-CoV-2: ☐ No clinical signs ever reported *(proceed to 14)*

Clinical Signs Consistent with SARS-CoV-2		Onset (mm/dd/yy)	Resolution (mm/dd/yy)
☐ Fever ☐ Coughing ☐ Difficulty breathing/ shortness of breath ☐ Sneezing ☐ Lethargy	☐ Nasal discharge ☐ Ocular discharge ☐ Vomiting ☐ Diarrhea ☐ Other: ☐ Other:	__/__/__	__/__/__ ☐ Not Resolved
		NOTES	

14. Other current health conditions: ☐ No other health conditions *(proceed to 15)*

Condition	Onset (mm/dd/yy)	Medications/supplements	Notes
1.	__/__/__		
2.	__/__/__		

LABORATORY DIAGNOSTICS

15. Other diagnostic testing to rule out more common medical conditions:
☐ Testing conducted; no other health issues discovered ☐ Testing NOT conducted
☐ Testing conducted; health issues discovered (specify):
16. Diagnostic testing for SARS-CoV-2: ☐ Yes ☐ No *(proceed to 17)*
*Test(s) Conducted: report diagnostic assay used (RT-PCR; sequencing, virus isolation, virus neutralization); †Results columns: report result (negative, positive, pending, inconclusive); for positives, also give CT value (RT-PCR) and titer (virus neutralization).

Presumptive Test			Confirmatory Test		
Collection Date (mm/dd/yy): __/__/__			Collection Date (mm/dd/yy): __/__/__		
Test Date (mm/dd/yy): __/__/__			Test Date (mm/dd/yy): __/__/__		
Sample Type	Test(s) Conducted*	Result†	Sample Type	Test(s) Conducted*	Result†
☐ Oral swab			☐ Oral swab		
☐ Nasal swab			☐ Nasal swab		
☐ Rectal swab			☐ Rectal swab		
☐ Fecal sample			☐ Fecal sample		
☐ Blood sample			☐ Blood sample		
☐ Other			☐ Other		

[One Health Toolkit for Health Officials Managing Companion Animals with SARS-CoV-2 | CDC]; [Evaluation for SARS-CoV-2 Testing in Animals | CDC]

Coordination Around SARS-CoV-2 Animal Case Investigations

Common Collaborators:

- State Public Health Veterinarian
- State Animal Health Official
- CDC — Centers for Disease Control and Prevention
- USDA

Sample Collection

- Passive Surveillance
  - Veterinary Clinics/ Hospitals
- Active Surveillance
  - Research/ Epidemiology Studies

Presumptive Testing

- State Agriculture Labs (NAHLN)
- Commercial Labs
- University Labs (Research/Dx)
- CDC

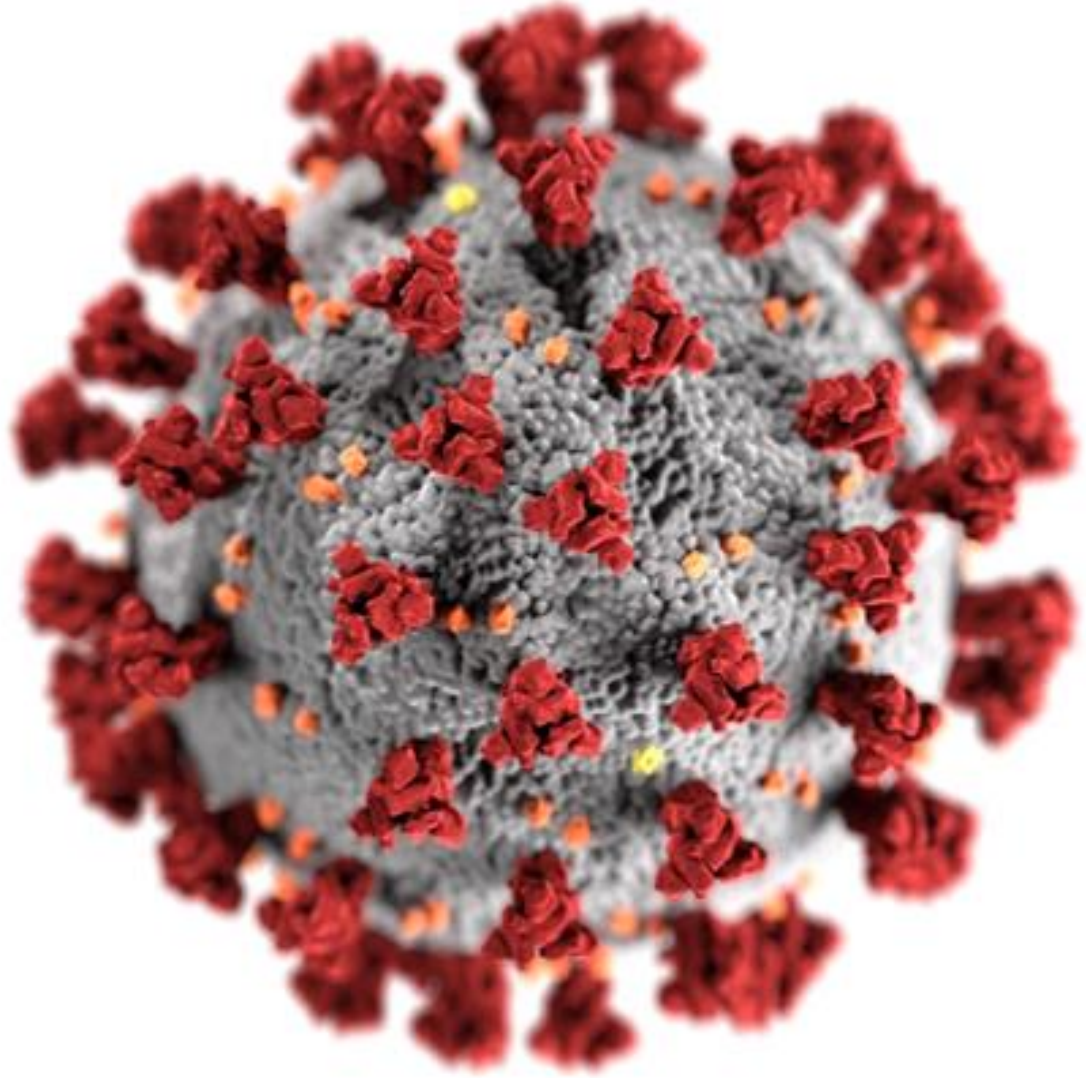
Confirmatory Testing

- USDA

International Reporting

- OIE — World Organisation for Animal Health

COVID-19 Pandemic:
What We Have Learned about Animals and SARS-CoV-2



Animal Species Experimentally Infected with SARS-CoV-2

- Cats*
- Dogs
- Ferrets*
- Mink*
- Hamsters*†
- Deer mice*
- Non-human primates‡
- Rabbits
- Tree shrews
- Raccoon dogs*
- Cattle
- Egyptian fruit bats*
- White-tailed deer*
- Striped skunks
- Raccoons
- Bushy-tailed woodrats
- Bank voles

* Transmission to other animals of the same species reported.

† Hamster species include Chinese hamsters and golden Syrian hamsters.

‡ Non-human primate species include African green monkeys, baboons, common marmosets, cynomolgus macaques, pigtail macaques, rhesus macaques, and savanna monkeys.

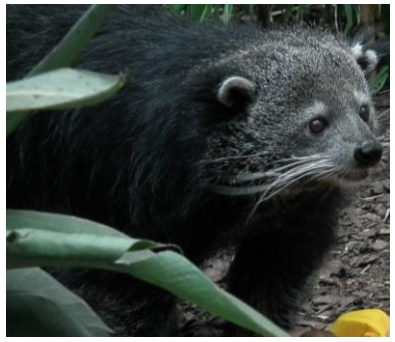
Data as of January 18, 2022: References included in CDC's One Health Scientific Publication Tracker- One Health and Animal Studies

Animal Species Naturally Infected with SARS-CoV-2 Globally

- Cats
- Dogs
- Farmed mink
- Wild caught mink
- Pet ferrets
- Tigers
- Lions
- Puma
- Snow leopards
- Gorillas
- Otters
- White-tailed deer
- Binturong
- Fishing cat
- Coatimundi
- Canada Lynx
- Spotted Hyena
- Hippopotamus
- Hamsters











Data as of January 25, 2022: OIE: World Organization for Animal Health; USDA APHIS: Cases of SARS-CoV-2 in Animals in the United States

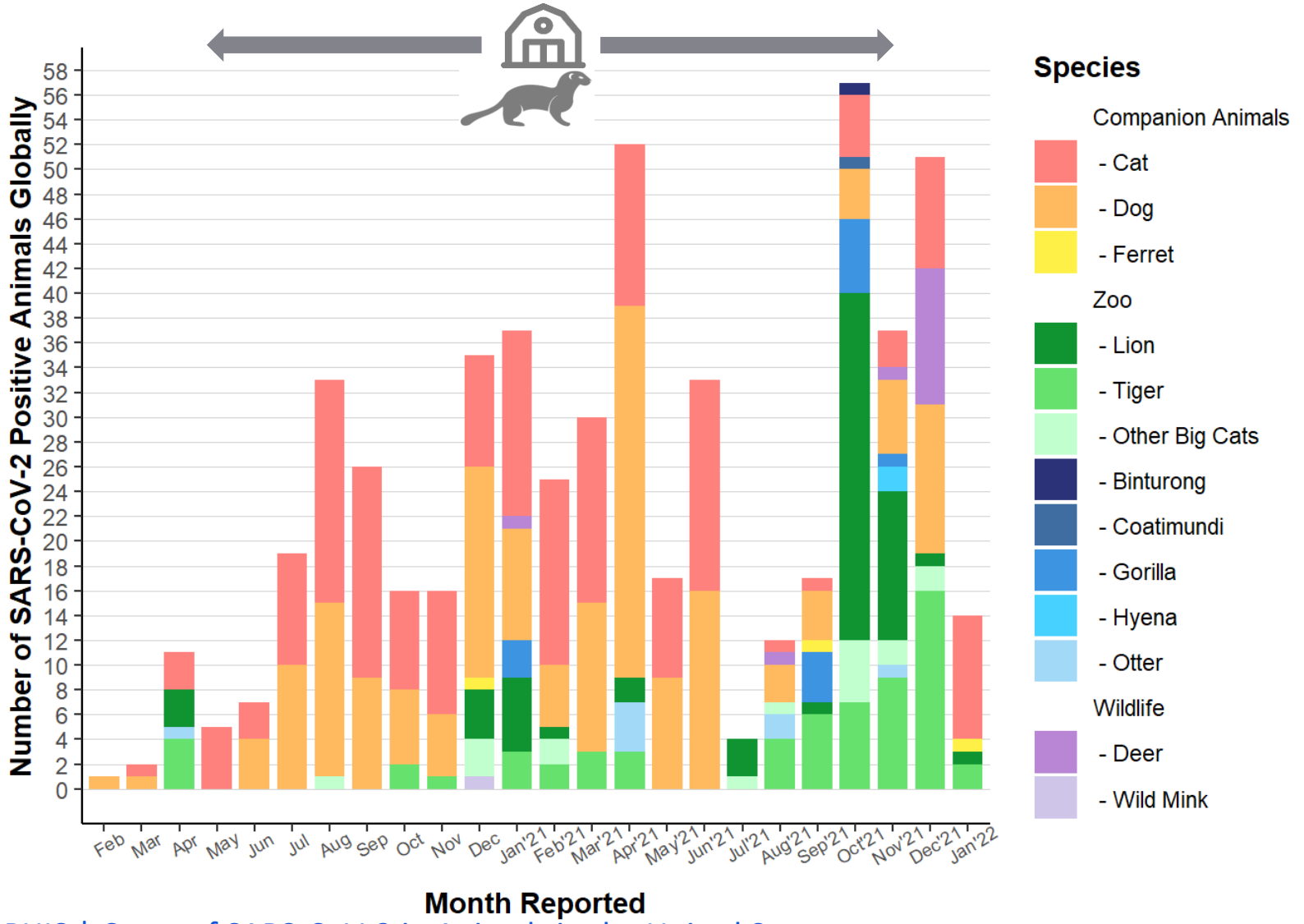
Animals Positive for SARS-CoV-2: Globally by Species

as of January 17, 2022

559 positive animals in 32 countries

- Cats: 196
- Dogs: 177
- Lions: 63
- Tigers: 62
- Gorillas: 14
- White-Tailed Deer: 14
- Snow leopards: 11
- Asian small-clawed otters: 8
- Cougar: 3
- Pet ferrets: 3
- Hyenas: 2
- Lynx: 2
- Binturong: 1
- Coatimundi: 1
- Fishing Cat: 1
- Wild caught mink: 1

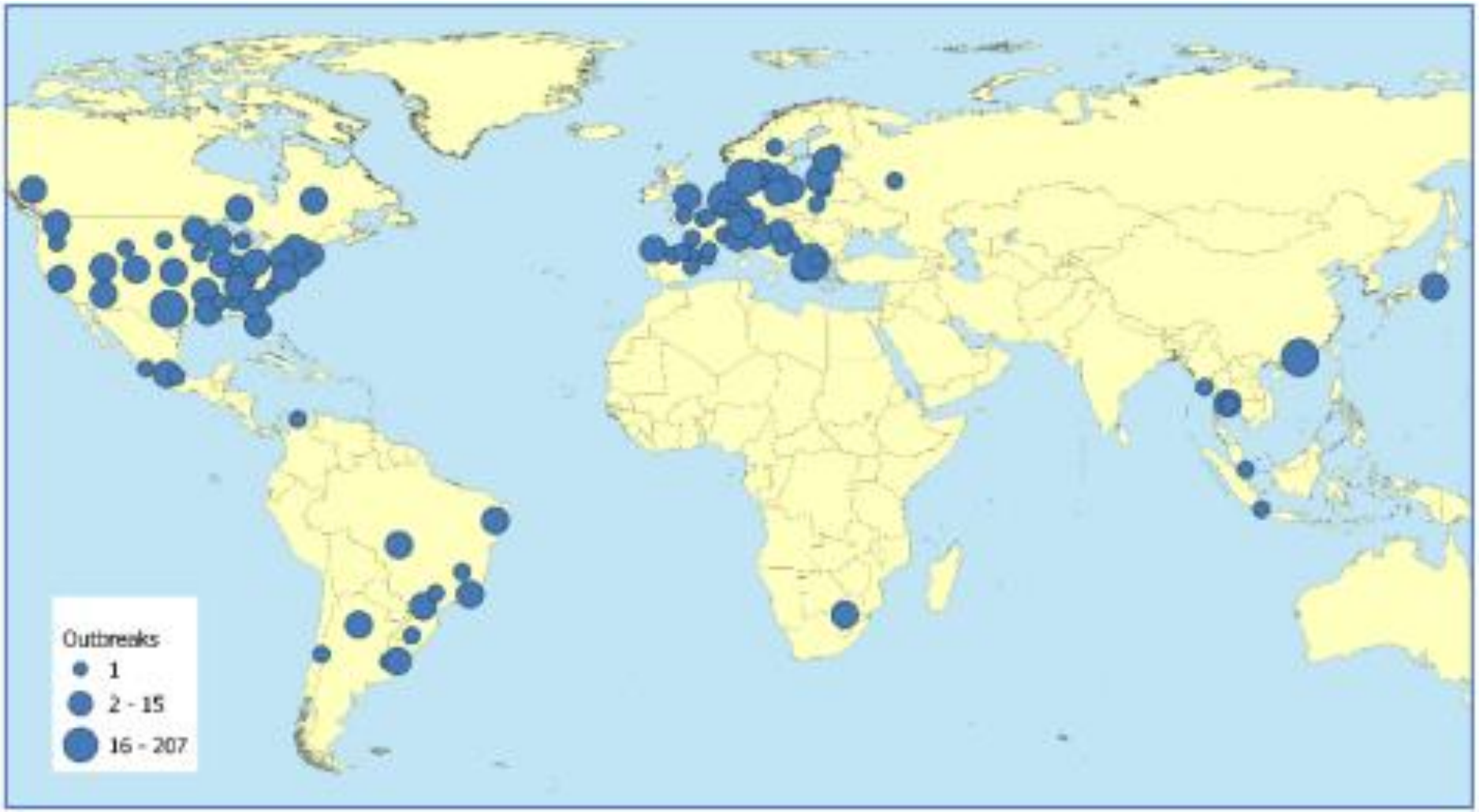
**Does not include individual numbers of positive farmed mink*



OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

SARS-CoV-2 Outbreaks in Animals Reported to OIE

as of December 31, 2021



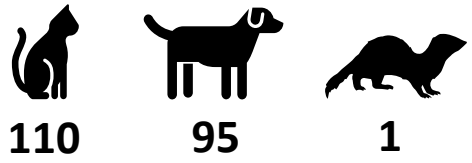
OIE-World Animal Health Information System (WAHIS)

Animals with SARS-CoV-2 by State, United States*

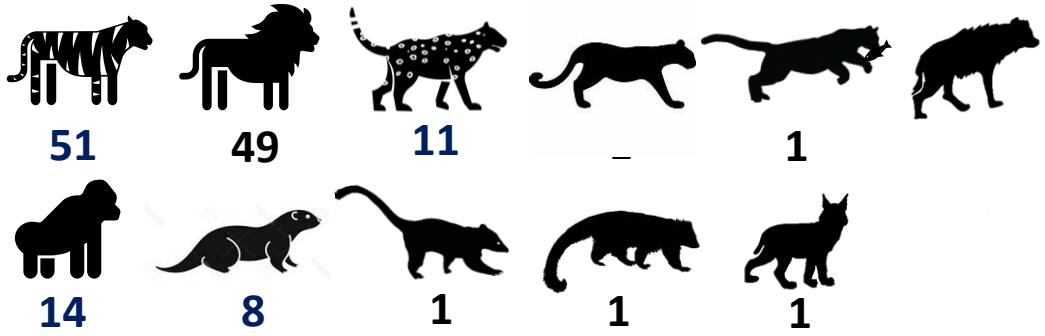
as of January 25, 2022

- **362 animals† in 28 states**
- **65% of global total**

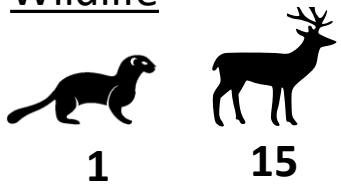
Companion Animals

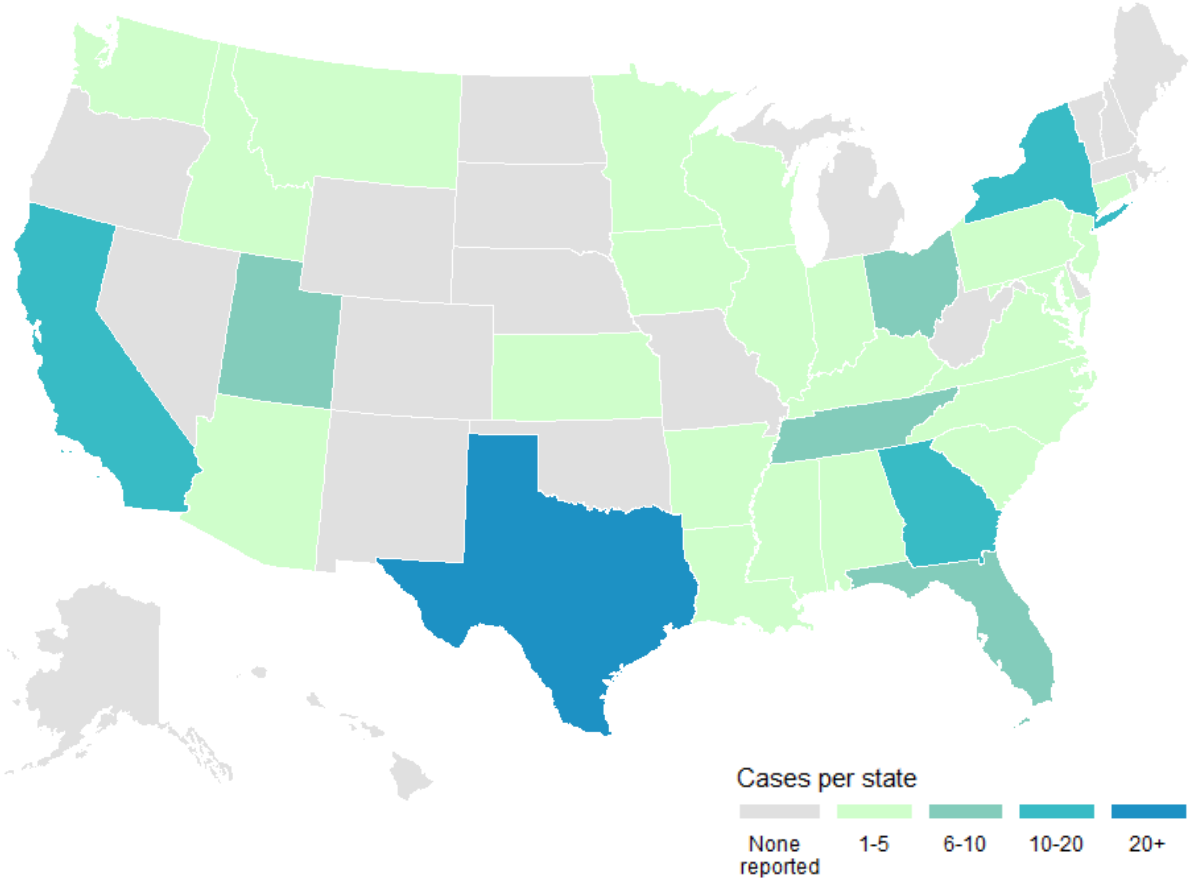


Captive Animals in Zoos and Aquaria



Wildlife



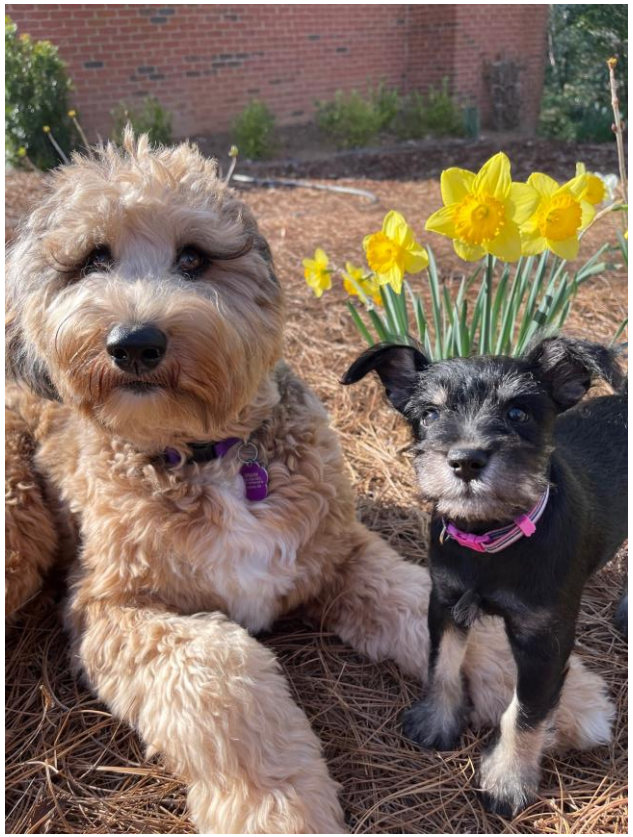


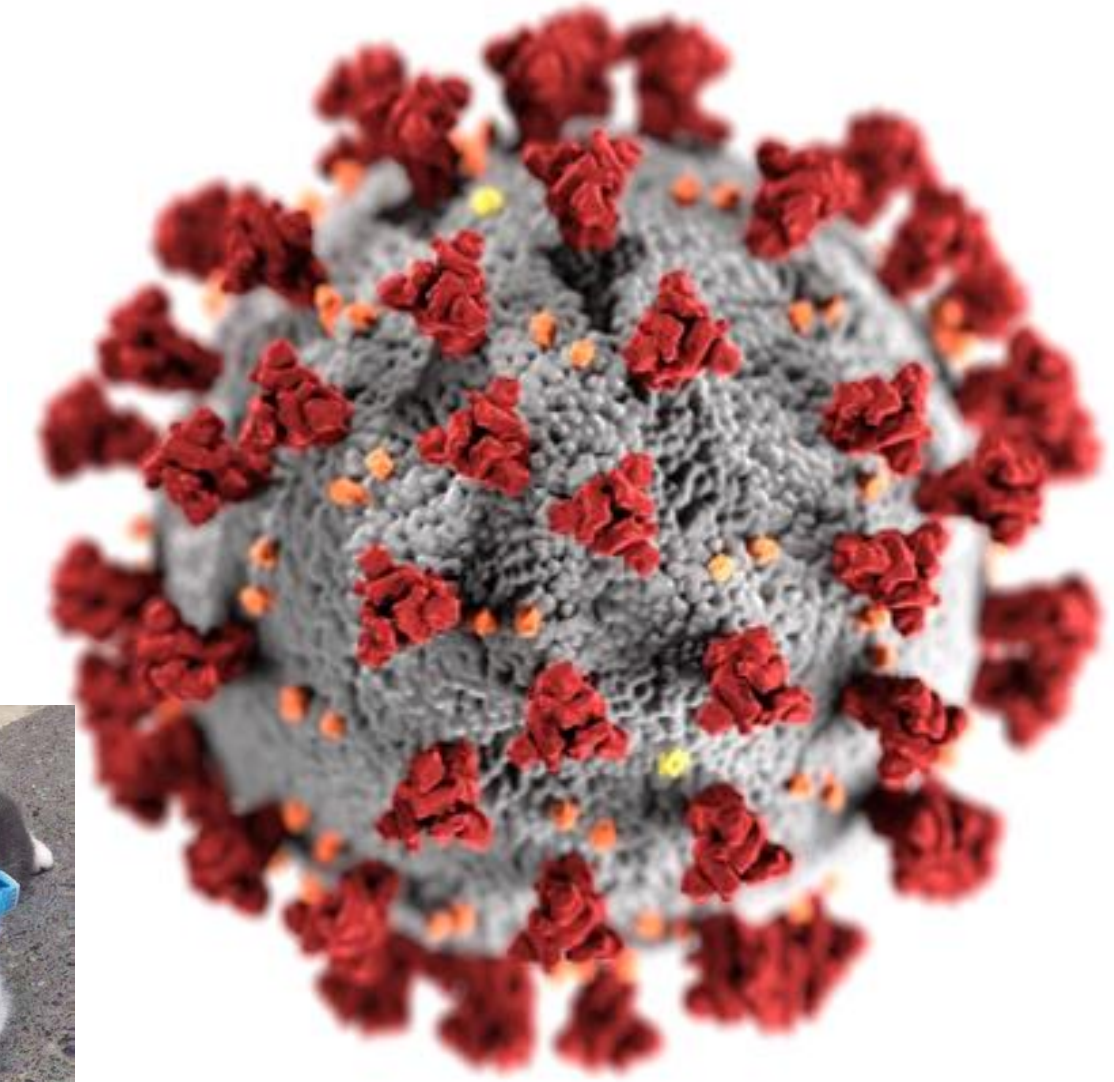
* Some animal cases detected through planned and targeted active surveillance investigations where animals had known or suspected exposures to SARS-CoV-2 through infected people or animals.

† Does not include mink farms or individual number of positive farmed mink.

APHIS | Cases of SARS-CoV-2 in Animals in the United States

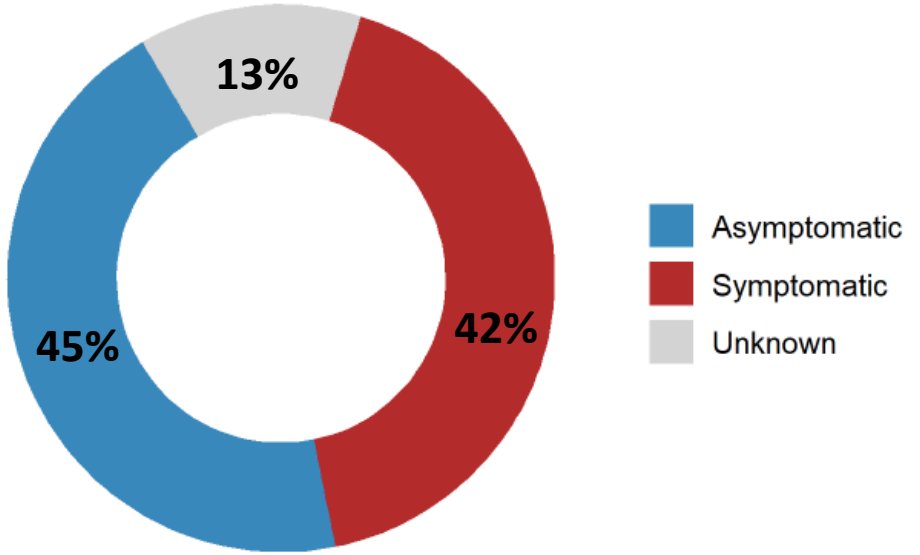
SARS-CoV-2 and Companion Animals

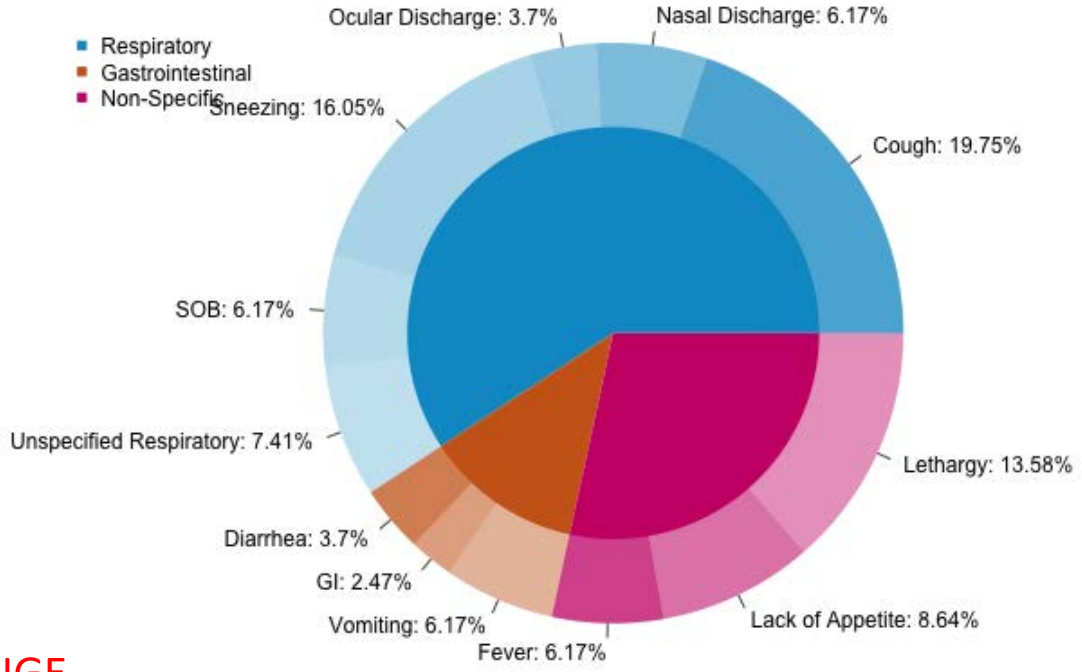




Clinical Signs of Companion Animals with Confirmed SARS-CoV-2 Infection in United States

- 195 cases of SARS-CoV-2 infection in companion animals the US
  - 104 cats, 90 dogs
- 45% of pets did not show clinical signs
  - Pets with signs, illness is typically mild
- Common clinical signs reported in pets
  - Respiratory: coughing, sneezing, nasal or ocular discharge
  - Non-specific: fever, lethargy, inappetence
  - Gastrointestinal: vomiting, diarrhea

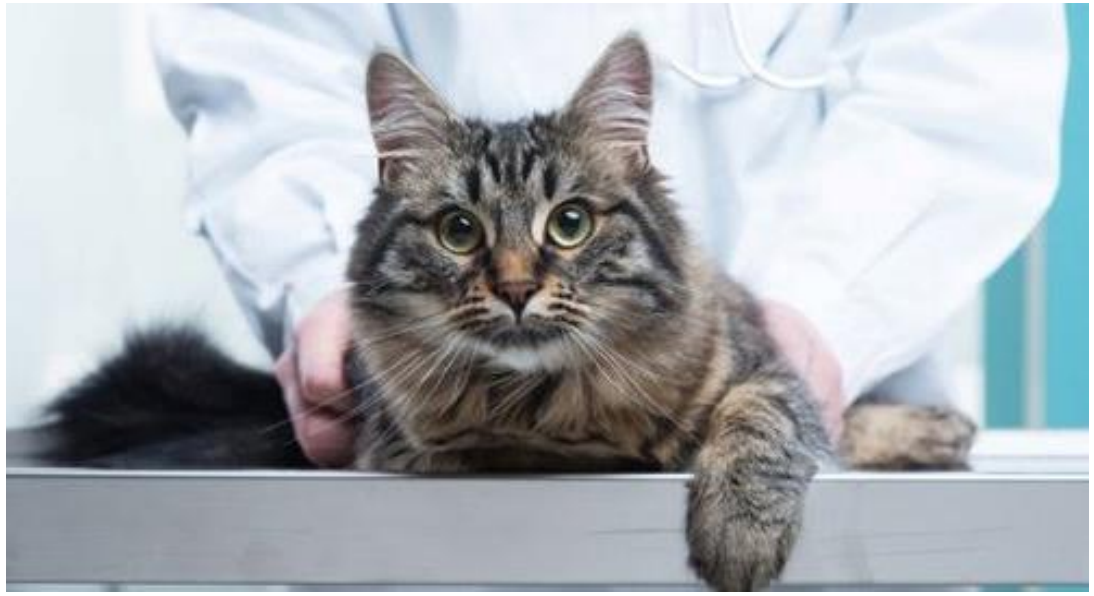




PRELIMINARY DATA: SUBJECT TO CHANGE

Severe Outcomes of SARS-CoV-2 in Companion Animals

- Evaluation of companion animal cases with severe outcomes, March 2020-January 2021
  - 94 total companion animal cases; 10 with severe outcomes (5 dogs, 5 cats)
  - Described algorithm to evaluate cases
    - Clinical signs, comorbidities, diagnostic results
- Severe disease as a result of SARS-CoV-2 infection is **rare**
  - 2 [2%] cases had severe outcomes
  - Contributing factor: 1 dog with severe, chronic underlying respiratory disease
  - Primary cause: 1 cat euthanized due to SARS-CoV-2 clinical signs

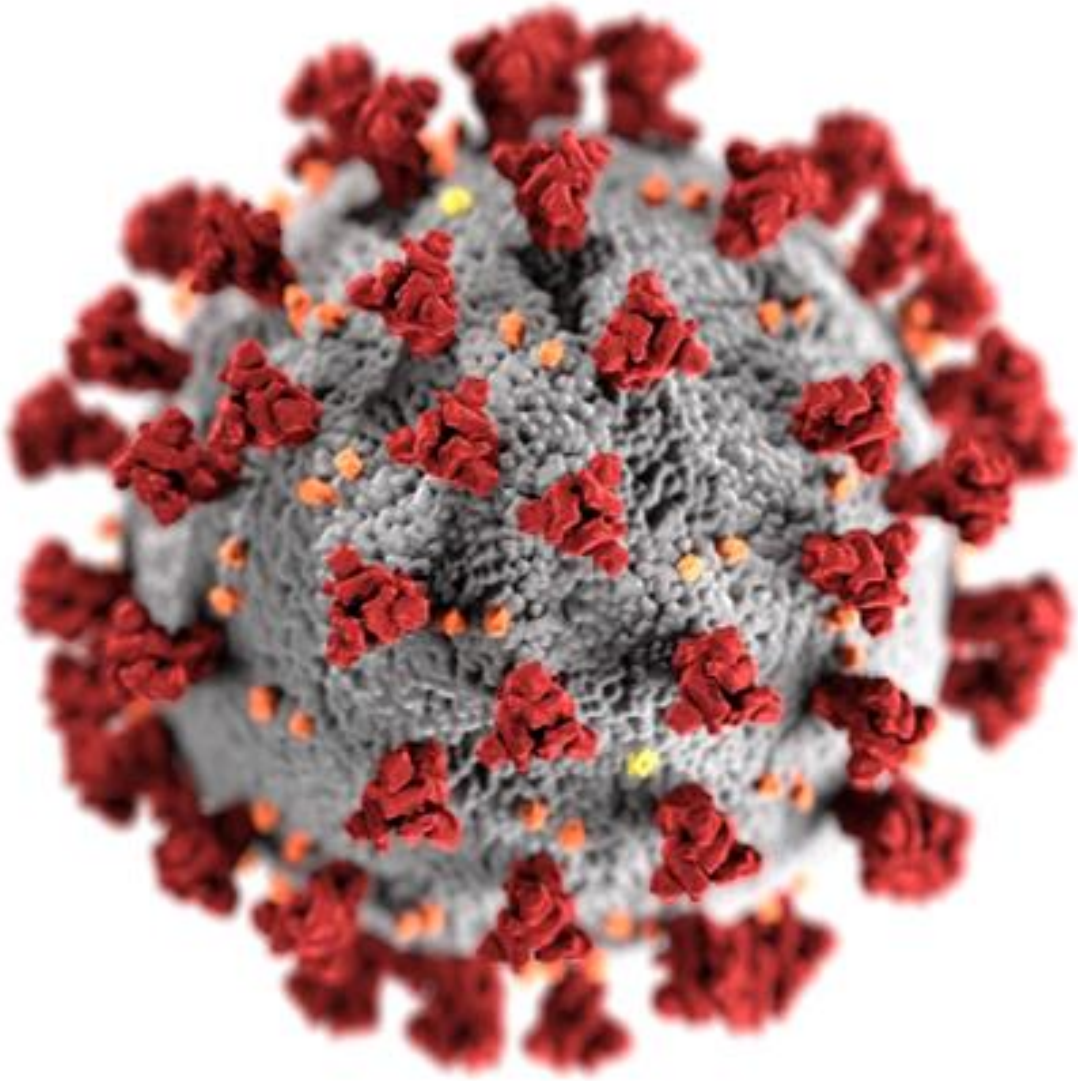


ZOHU Call Presentation Recording:

Severe Outcomes of SARS-CoV-2 in Companion Animals

Preprint: Determining the Role of Natural SARS-CoV-2 Infection in the Death of Ten Domestic Pets | Research Square

SARS-CoV-2 and Mink

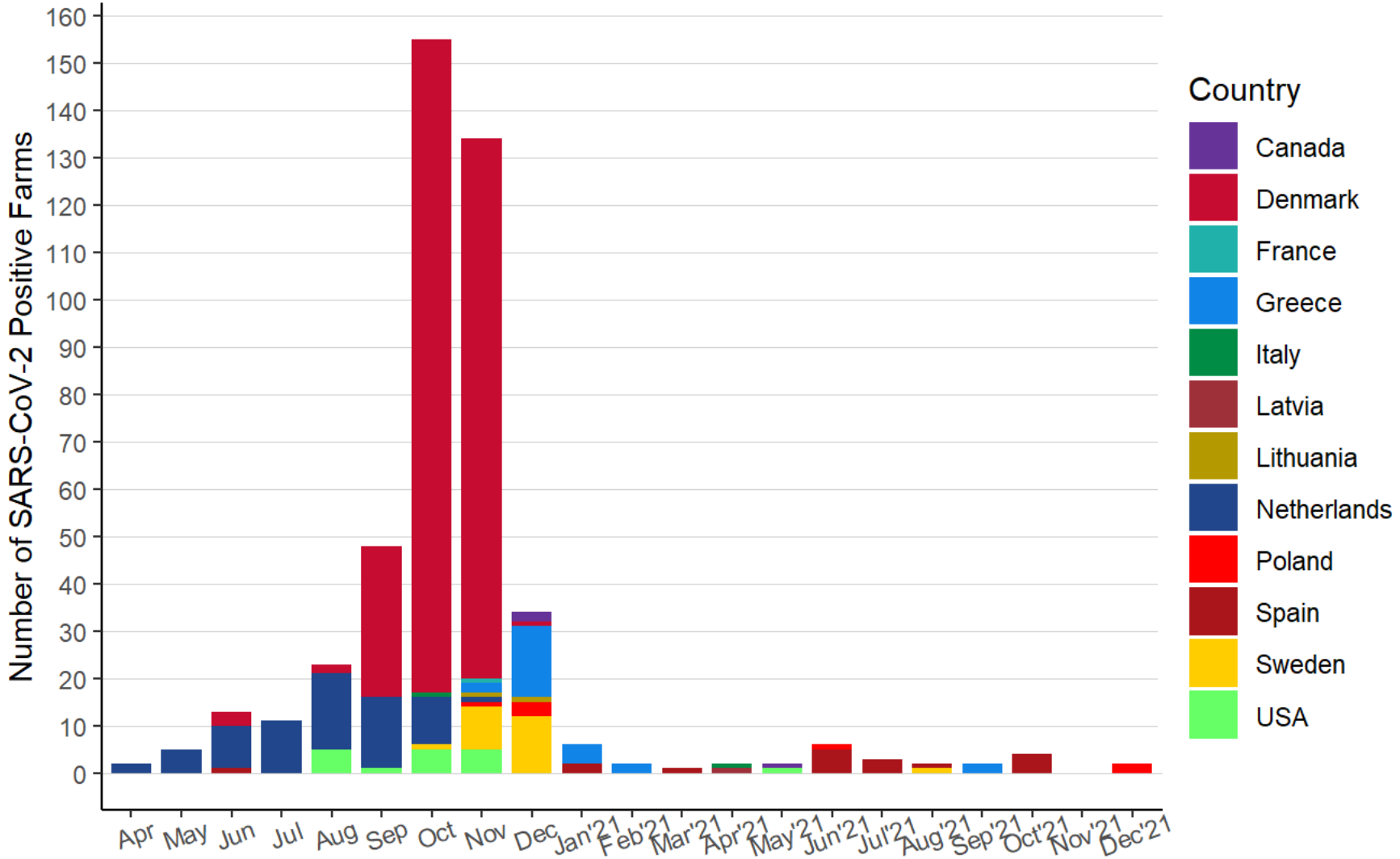


Mink Farms Confirmed with SARS-CoV-2 Globally

as of January 18, 2022

457 mink farms in 12 countries

- Denmark: 290
- Netherlands: 69
- Greece: 25
- Sweden: 23
- Spain: 17
- United States: 17
- Poland: 7
- Canada: 3
- Italy: 2
- Lithuania: 2
- France: 1
- Latvia: 1



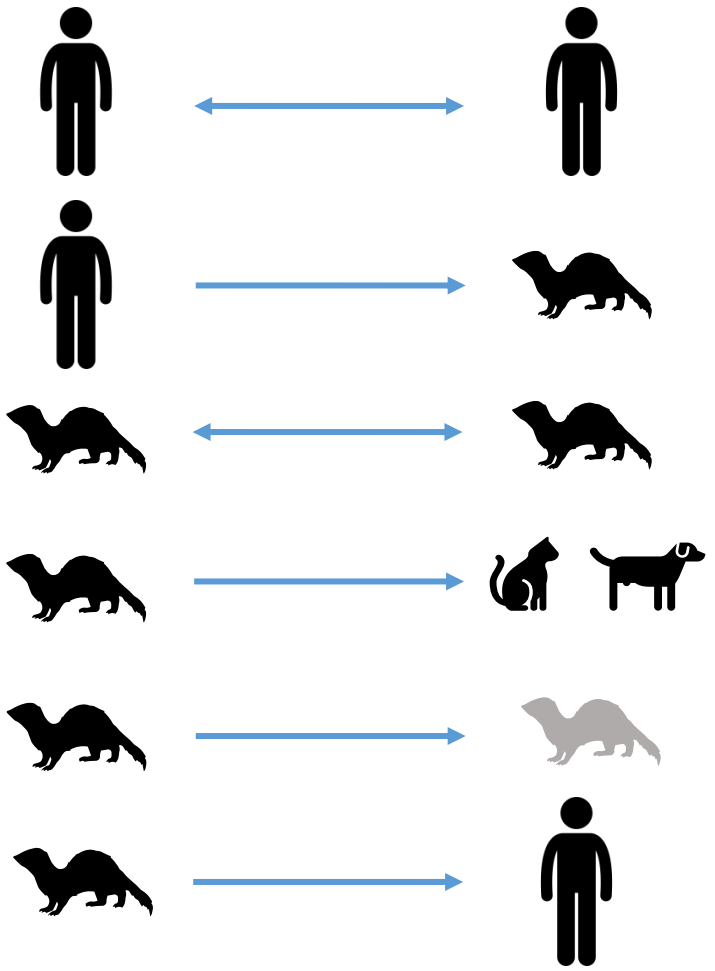
OIE: World Organization for Animal Health; USDA APHIS | Cases of SARS-CoV-2 in Animals in the United States

What are One Health Partners Doing?

- On-farm investigations led by CDC in collaboration with state officials (Agriculture & Health)
- Laboratory confirmation at U.S. Department of Agriculture National Veterinary Services Laboratories
- Wildlife trapping on (CDC) and off farm (USDA-APHIS-WS)
- Comparative analysis of SARS-CoV-2 sequences
- Generating guidance, recommendations, and toolkits
- Hosting worker safety webinars for mink farm workers and processors
- Addressing gaps in active surveillance for mink farms

Link to ZOHU Call recording:
Utah Mink Farm Investigations

US Farm Investigations: Initial Findings



We know that SARS-CoV-2 infection spreads most commonly from **person to person**

Infected **people** introduce SARS-CoV-2 **to mink farms**

Infected **mink** spread SARS-CoV-2 **to other mink on mink farms**

Infected **mink** spread SARS-CoV-2 **to cats and dogs**

Infected **mink** spread SARS-CoV-2 **to wild mink**

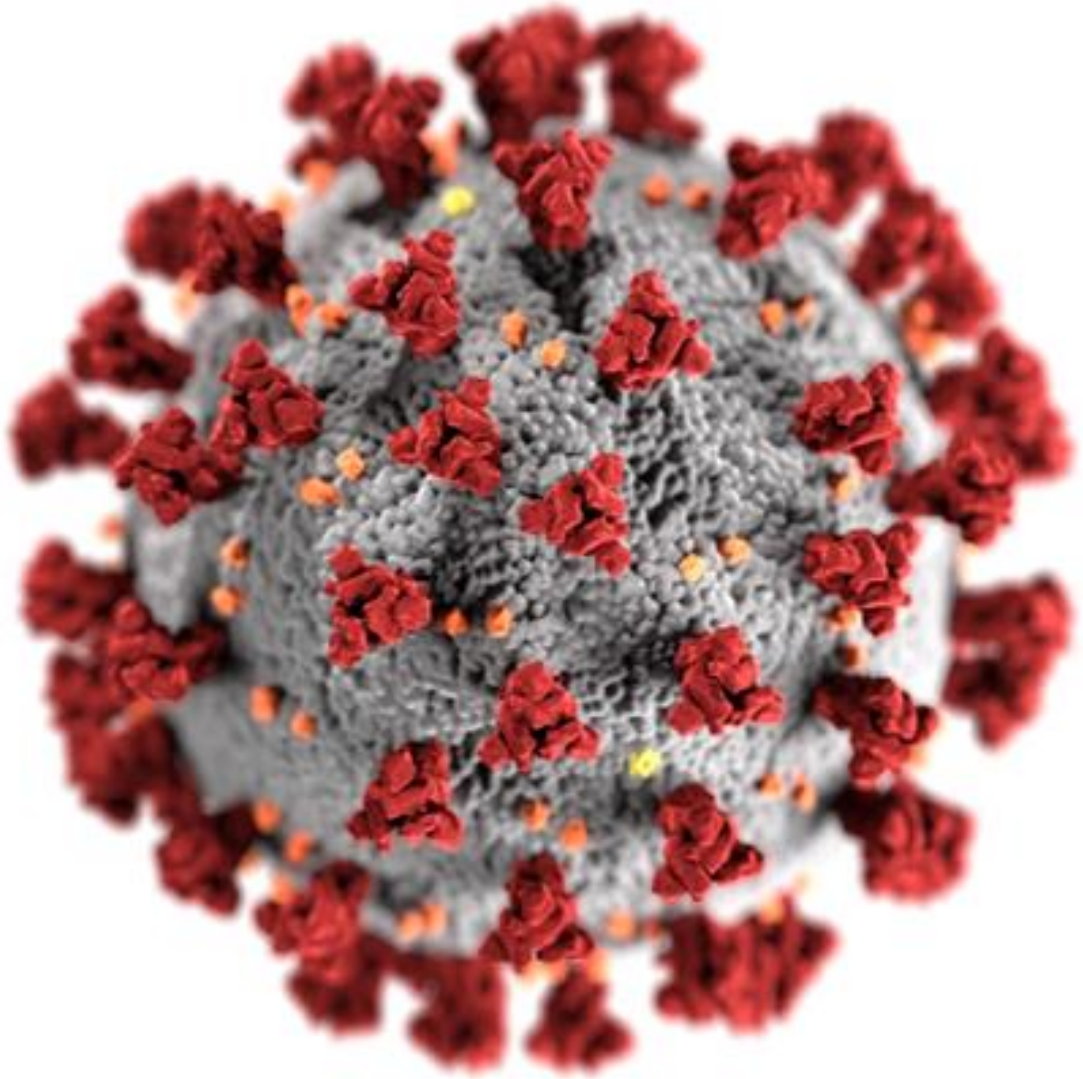
Mink to human spread suspected in United States, and was confirmed in Europe

PRELIMINARY DATA

Key Messages on Mink

- No evidence that mink are playing a significant role in the spread of SARS-CoV-2 to people
- For most people in the United States, the risk of SARS-CoV-2 infection from animals is low
  - However, there is a higher risk for people working on mink farms
- Mink farms should follow available guidance for farmed mink and other mustelids to prevent introducing SARS-CoV-2 to mink on farms
- Worker safety is critical to protect people and animals on mink farms
- Mink farm workers should get fully vaccinated
- Mink farm workers with COVID-19 should avoid contact with animals, especially mink

SARS-CoV-2 in Zoo and Aquaria Animals



Large Cats in Zoos and SARS-CoV-2

Great Cats Tested Presumptive Positive For COVID-19 at the Smithsonian's National Zoo

Sep. 17, 2021

[Great Cats Tested Presumptive Positive For COVID-19 at the Smithsonian's National Zoo | Smithsonian's National Zoo]

Confirmation of COVID-19 in a Cougar at a Wild Animal Exhibitor in Texas

Published: Feb 10, 2021

Print

[Confirmation of COVID-19 in a Cougar at a Wild Animal Exhibitor in Texas]

Gorillas in Zoos and SARS-CoV-2

Confirmation of COVID-19 in Gorillas at a California Zoo

Published: Jan 11, 2021

Print

Washington, D.C., January 11, 2021 -- The United States Department of Agriculture's (USDA) National Veterinary Services Laboratories (NVSL) today announced confirmation of SARS-CoV-2 (the virus that causes COVID-19) in three gorillas at the San Diego Zoo Safari Park in California. These are the first gorillas in the United States to be confirmed positive for SARS-CoV-2.

Zoo Atlanta

September 10, 2021

Zoo Atlanta has received presumptive positive test results indicating that members of its western lowland gorilla troops are positive for SARS-CoV-2, the virus that causes COVID-19.

USDA APHIS | Confirmation of COVID-19 in Gorillas at a California Zoo

Update on Zoo Atlanta gorilla population - Zoo Atlanta

Asian Small-Clawed Otters at Georgia Aquarium Test Positive for COVID-19, April 2021

Georgia Aquarium ✓
@GeorgiaAquarium

Our Asian small-clawed otters have tested positive for SARS-CoV-2, the virus that causes COVID-19. They showed mild symptoms: sneezing, runny noses, lethargy, & coughing. We're happy to report they're doing well & expected to recover. They're off exhibit & being cared for.

APRIL 18, 2021

Asian Small-Clawed Otters at Georgia Aquarium Test Positive for COVID-19

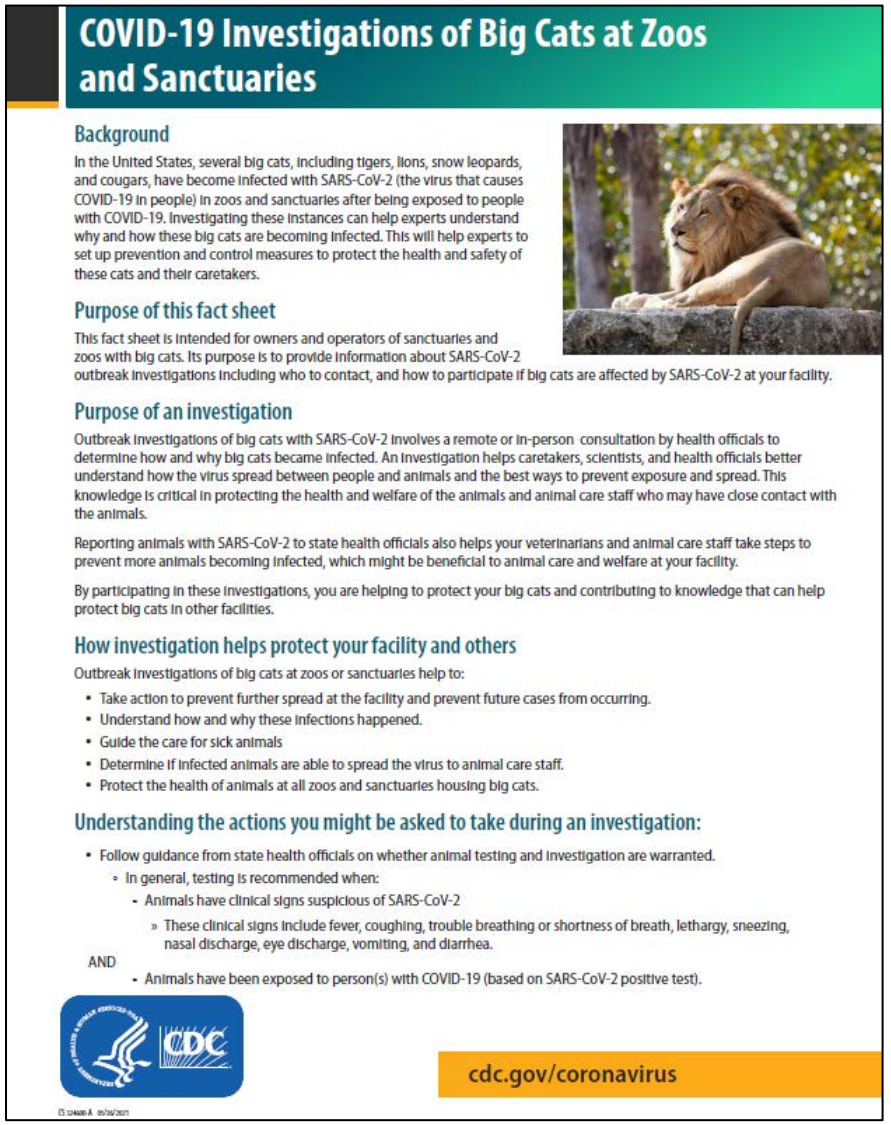
[Asian Small-Clawed Otters at Georgia Aquarium Test Positive for COVID-19 | Georgia Aquarium]

Zoo Animals:
Main findings and public health measures

- Outbreaks in zoos have given us the best understanding of the natural host range and zoonotic potential of SARS-CoV-2
- Zoo cases document the first instances of vaccine breakthrough infections in animals
- Known exposures through an infected caretaker; evidence of animal-animal transmission among zoological collections
- No evidence of transmission from infected animals to people

Big Cat Investigation Fact Sheet

- **Audience:** Owners/operators of zoos & sanctuaries with big cats
- **Objective:** Explain purpose & benefits of epidemiologic investigations conducted by health officials
- **Goal**: Improve likelihood of partnering on epidemiologic investigations



COVID-19 Investigations of Big Cats at Zoos and Sanctuaries

Background

In the United States, several big cats, including tigers, lions, snow leopards, and cougars, have become infected with SARS-CoV-2 (the virus that causes COVID-19 in people) in zoos and sanctuaries after being exposed to people with COVID-19. Investigating these instances can help experts understand why and how these big cats are becoming infected. This will help experts to set up prevention and control measures to protect the health and safety of these cats and their caretakers.

Purpose of this fact sheet

This fact sheet is intended for owners and operators of sanctuaries and zoos with big cats. Its purpose is to provide information about SARS-CoV-2 outbreak investigations including who to contact, and how to participate if big cats are affected by SARS-CoV-2 at your facility.

Purpose of an investigation

Outbreak investigations of big cats with SARS-CoV-2 involves a remote or in-person consultation by health officials to determine how and why big cats became infected. An investigation helps caretakers, scientists, and health officials better understand how the virus spread between people and animals and the best ways to prevent exposure and spread. This knowledge is critical in protecting the health and welfare of the animals and animal care staff who may have close contact with the animals.

Reporting animals with SARS-CoV-2 to state health officials also helps your veterinarians and animal care staff take steps to prevent more animals becoming infected, which might be beneficial to animal care and welfare at your facility.

By participating in these investigations, you are helping to protect your big cats and contributing to knowledge that can help protect big cats in other facilities.

How investigation helps protect your facility and others

Outbreak investigations of big cats at zoos or sanctuaries help to:

- Take action to prevent further spread at the facility and prevent future cases from occurring.
- Understand how and why these infections happened.
- Guide the care for sick animals
- Determine if infected animals are able to spread the virus to animal care staff.
- Protect the health of animals at all zoos and sanctuaries housing big cats.

Understanding the actions you might be asked to take during an investigation:

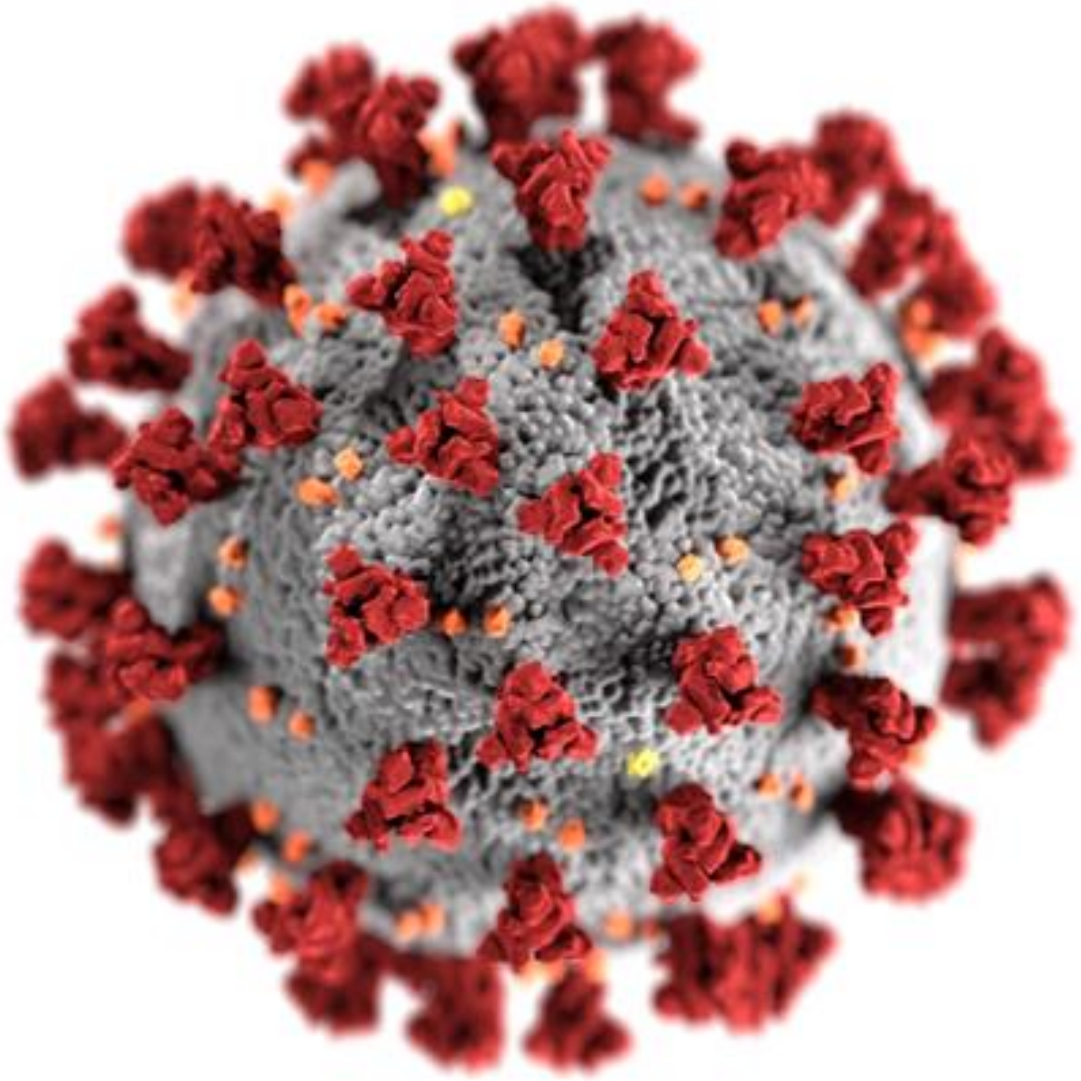
- Follow guidance from state health officials on whether animal testing and investigation are warranted.
  - In general, testing is recommended when:
    - Animals have clinical signs suspicious of SARS-CoV-2
      - » These clinical signs include fever, coughing, trouble breathing or shortness of breath, lethargy, sneezing, nasal discharge, eye discharge, vomiting, and diarrhea.

AND

- Animals have been exposed to person(s) with COVID-19 (based on SARS-CoV-2 positive test).

cdc.gov/coronavirus

SARS-CoV-2 and Wildlife



[Guidance to Reduce the Risk of SARS-CoV-2 Spreading between People and Wildlife (cdc.gov)]

SARS-CoV-2 findings and implications in white-tailed deer

- USDA Serostudy[1]:
  - Antibodies in 40% (152/380) of deer sampled in 2021
- Ohio Antigen Study[2]:
  - RT-PCR detection from nasal swabs in 36% (129/360) of deer samples
  - 3 lineages detected (B.1.2, B.1.596, B.1.582)
    - Site-specific – suggests multiple introductions
- Iowa Antigen Study[3]:
  - RT-PCR detection from retropharyngeal lymph nodes in 33% (94/283) of deer samples
    - Prevalence higher in free-ranging (44%; n=151) thank captive (20%; n=132) deer
  - 12 lineages detected (B.1.2 and B.1.311 account for 75%);

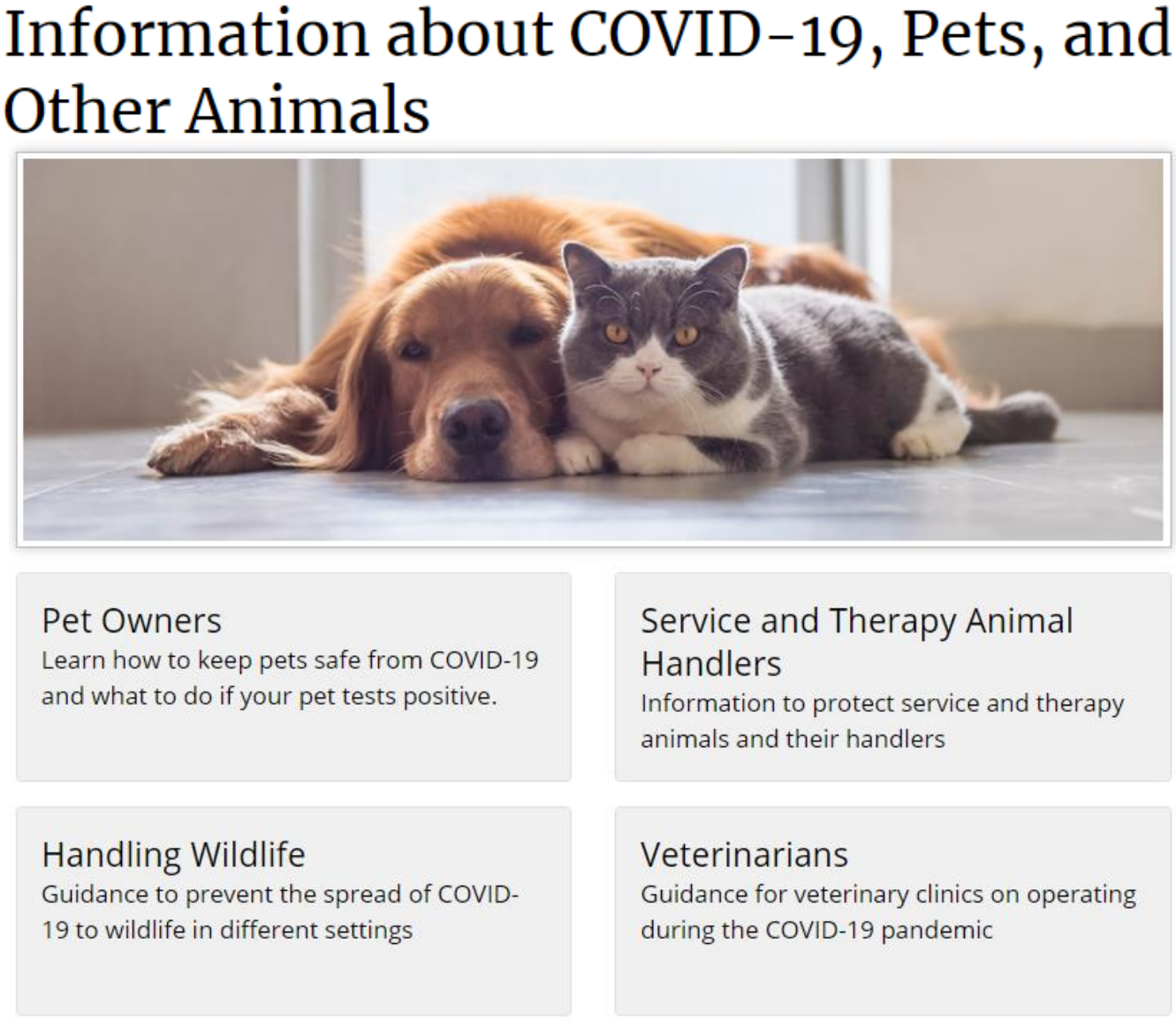
1. Chandler et al. SARS-CoV-2 exposure in wild white-tailed deer. PNAS 118(47).
2. Hale et al. SARS-CoV-2 infection in free-ranging white-tailed deer. bioRxiv.
3. Kuchipudi et al. Multiple spillovers and onward transmission of SARS-CoV-2 in free-living and captive white-tailed deer. bioRxiv.
4. Ip et al. An opportunistic survey reveals an unexpected corovirus diversity hotspot in North America. Viruses 13(10).

- **Implications and Concerns:**
  - Establishment of a North American reservoir for SARS-CoV-2
  - Emergence of new mutations or variants in people from wildlife
  - SARS-CoV-2 induced morbidity and mortality in threatened/endangered animal populations
  - Recombination with endemic CoVs[4] and emergence of new strains or species

CDC Guidance: Information about COVID-19, Pets, and Other Animals

Guidance linked:

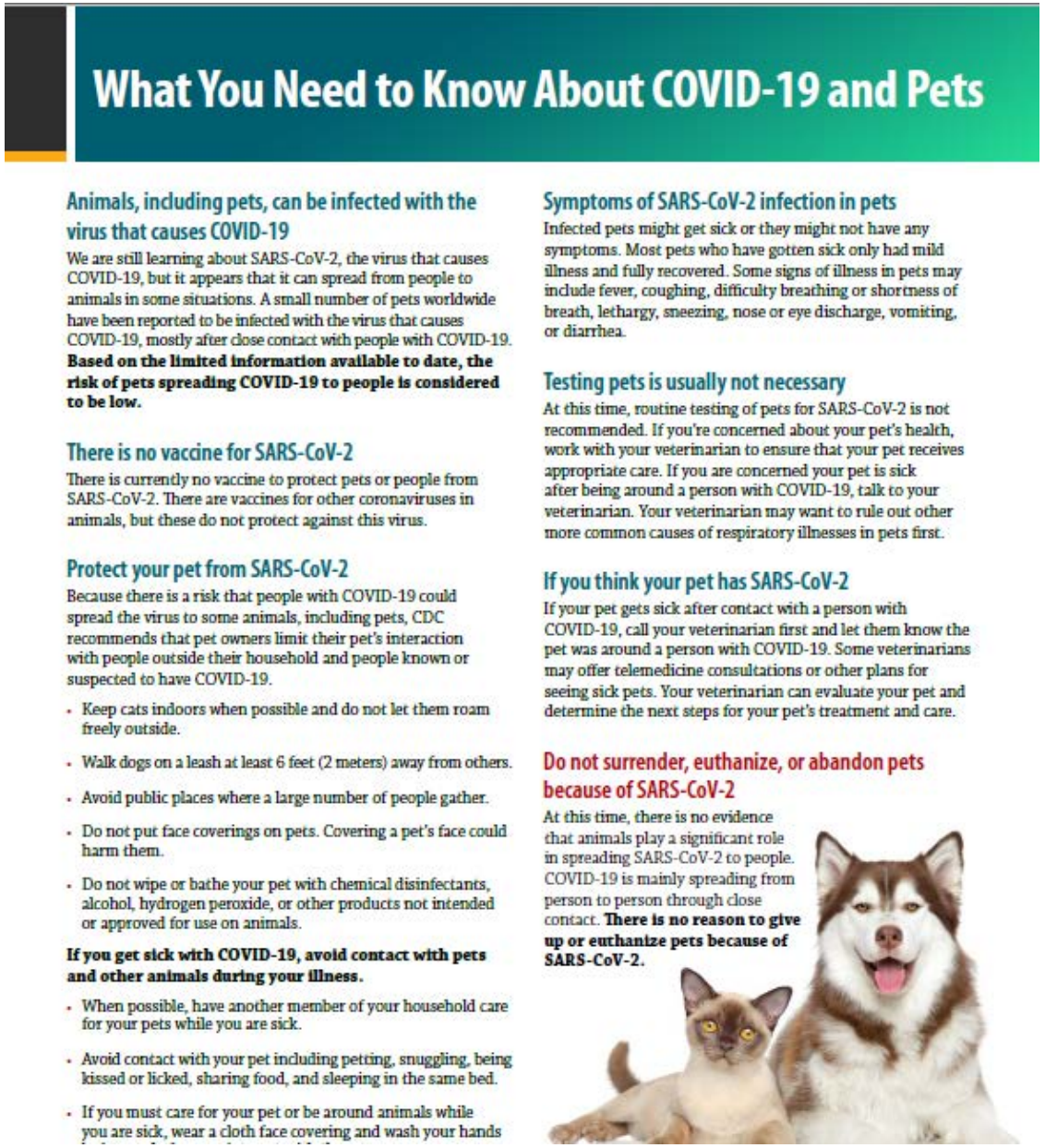
- Public Health Veterinarians & Animal Health Officials
- Veterinary Clinics
- Interacting with Wildlife



Pets and Other Animals | CDC

Handout for Pet Owners

- Answers common questions from pet owners
- Printable
- Free
- Can be used in clinic waiting rooms, websites, newsletters and more



What You Need to Know About COVID-19 and Pets

Animals, including pets, can be infected with the virus that causes COVID-19

We are still learning about SARS-CoV-2, the virus that causes COVID-19, but it appears that it can spread from people to animals in some situations. A small number of pets worldwide have been reported to be infected with the virus that causes COVID-19, mostly after close contact with people with COVID-19. **Based on the limited information available to date, the risk of pets spreading COVID-19 to people is considered to be low.**

There is no vaccine for SARS-CoV-2

There is currently no vaccine to protect pets or people from SARS-CoV-2. There are vaccines for other coronaviruses in animals, but these do not protect against this virus.

Protect your pet from SARS-CoV-2

Because there is a risk that people with COVID-19 could spread the virus to some animals, including pets, CDC recommends that pet owners limit their pet's interaction with people outside their household and people known or suspected to have COVID-19.

- Keep cats indoors when possible and do not let them roam freely outside.
- Walk dogs on a leash at least 6 feet (2 meters) away from others.
- Avoid public places where a large number of people gather.
- Do not put face coverings on pets. Covering a pet's face could harm them.
- Do not wipe or bathe your pet with chemical disinfectants, alcohol, hydrogen peroxide, or other products not intended or approved for use on animals.

If you get sick with COVID-19, avoid contact with pets and other animals during your illness.

- When possible, have another member of your household care for your pets while you are sick.
- Avoid contact with your pet including petting, snuggling, being kissed or licked, sharing food, and sleeping in the same bed.
- If you must care for your pet or be around animals while you are sick, wear a cloth face covering and wash your hands

Symptoms of SARS-CoV-2 infection in pets

Infected pets might get sick or they might not have any symptoms. Most pets who have gotten sick only had mild illness and fully recovered. Some signs of illness in pets may include fever, coughing, difficulty breathing or shortness of breath, lethargy, sneezing, nose or eye discharge, vomiting, or diarrhea.

Testing pets is usually not necessary

At this time, routine testing of pets for SARS-CoV-2 is not recommended. If you're concerned about your pet's health, work with your veterinarian to ensure that your pet receives appropriate care. If you are concerned your pet is sick after being around a person with COVID-19, talk to your veterinarian. Your veterinarian may want to rule out other more common causes of respiratory illnesses in pets first.

If you think your pet has SARS-CoV-2

If your pet gets sick after contact with a person with COVID-19, call your veterinarian first and let them know the pet was around a person with COVID-19. Some veterinarians may offer telemedicine consultations or other plans for seeing sick pets. Your veterinarian can evaluate your pet and determine the next steps for your pet's treatment and care.

Do not surrender, euthanize, or abandon pets because of SARS-CoV-2

At this time, there is no evidence that animals play a significant role in spreading SARS-CoV-2 to people. COVID-19 is mainly spreading from person to person through close contact. **There is no reason to give up or euthanize pets because of SARS-CoV-2.**

https://www.cdc.gov/coronavirus/2019-ncov/community/pdf/covid-19-and-pets.pdf

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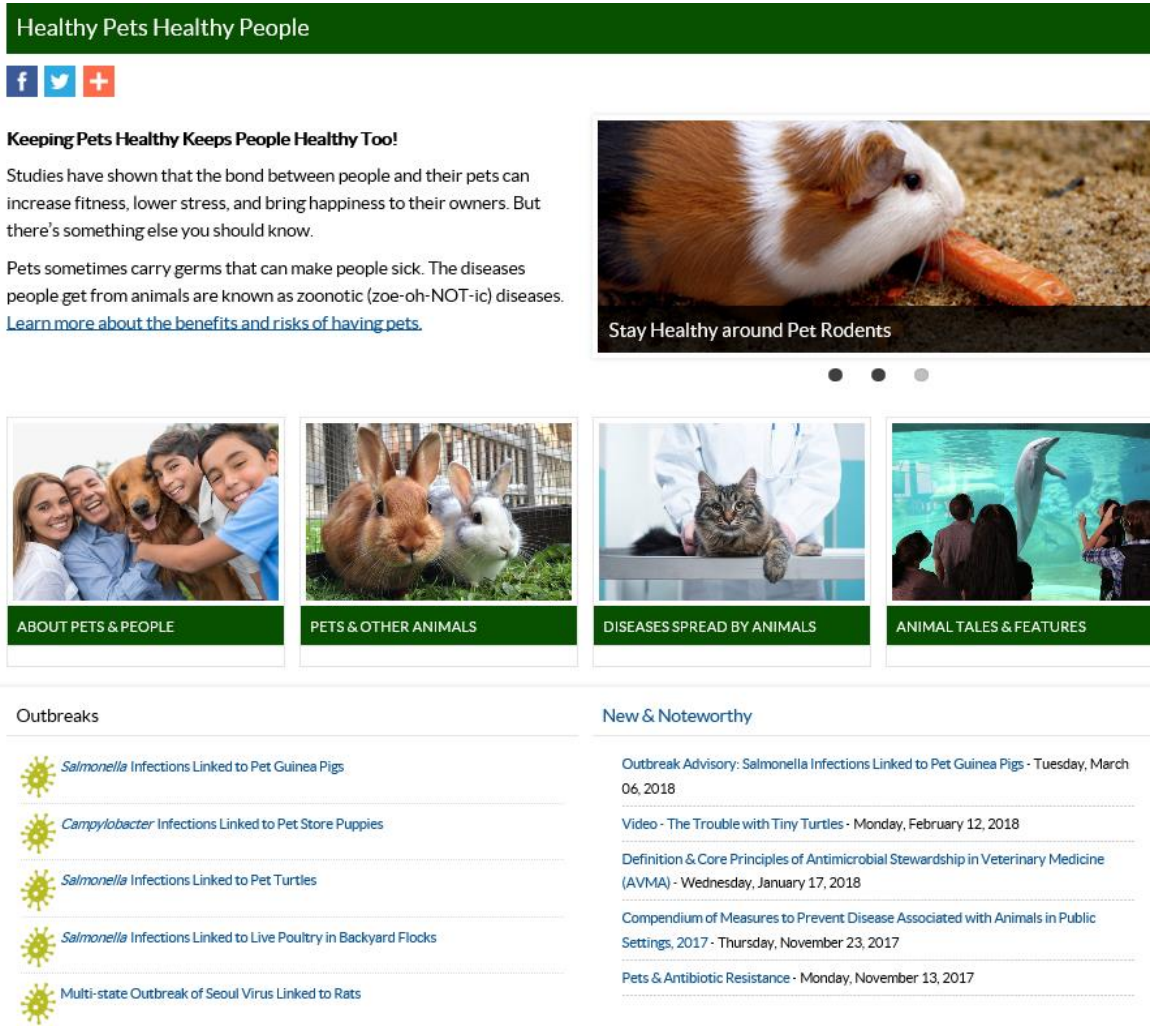
zohucall@cdc.gov

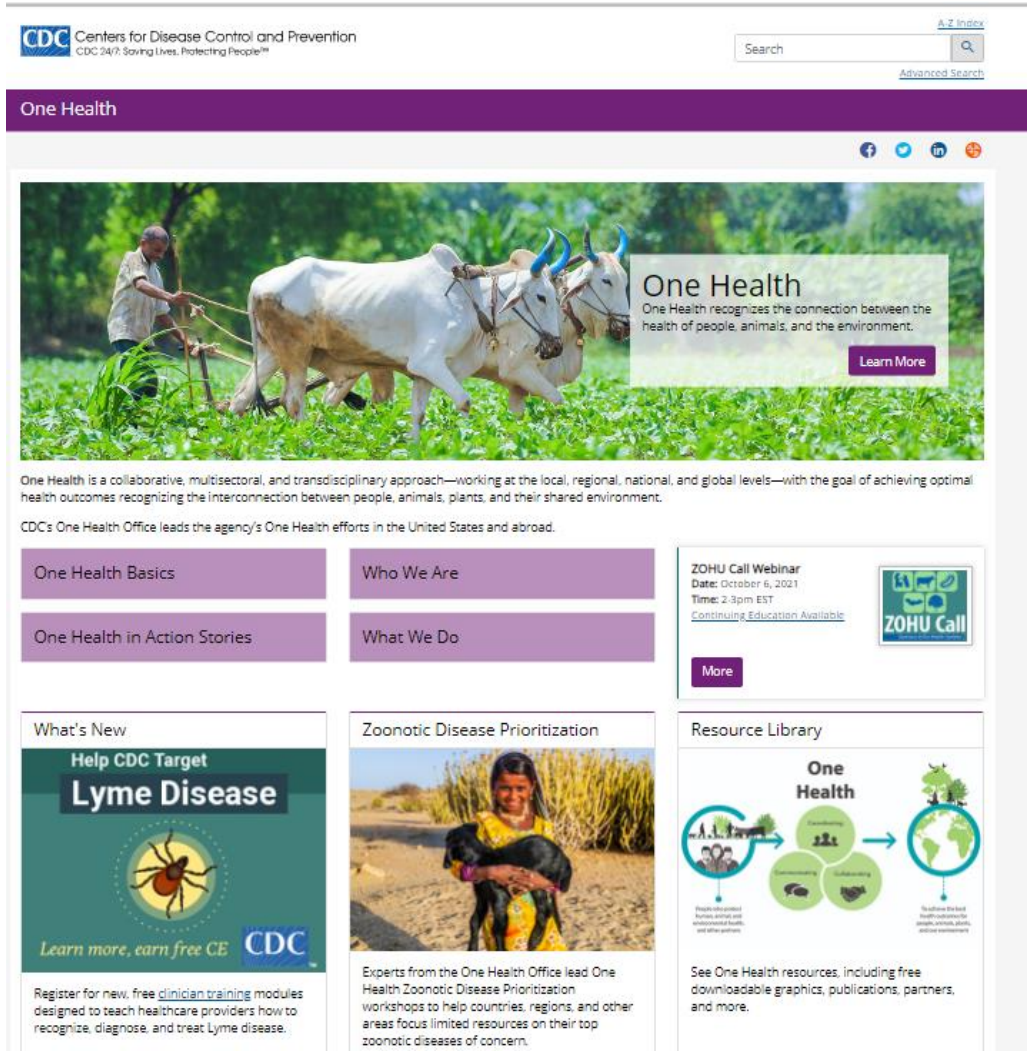
A Global Resource: Healthy Pets, Healthy People

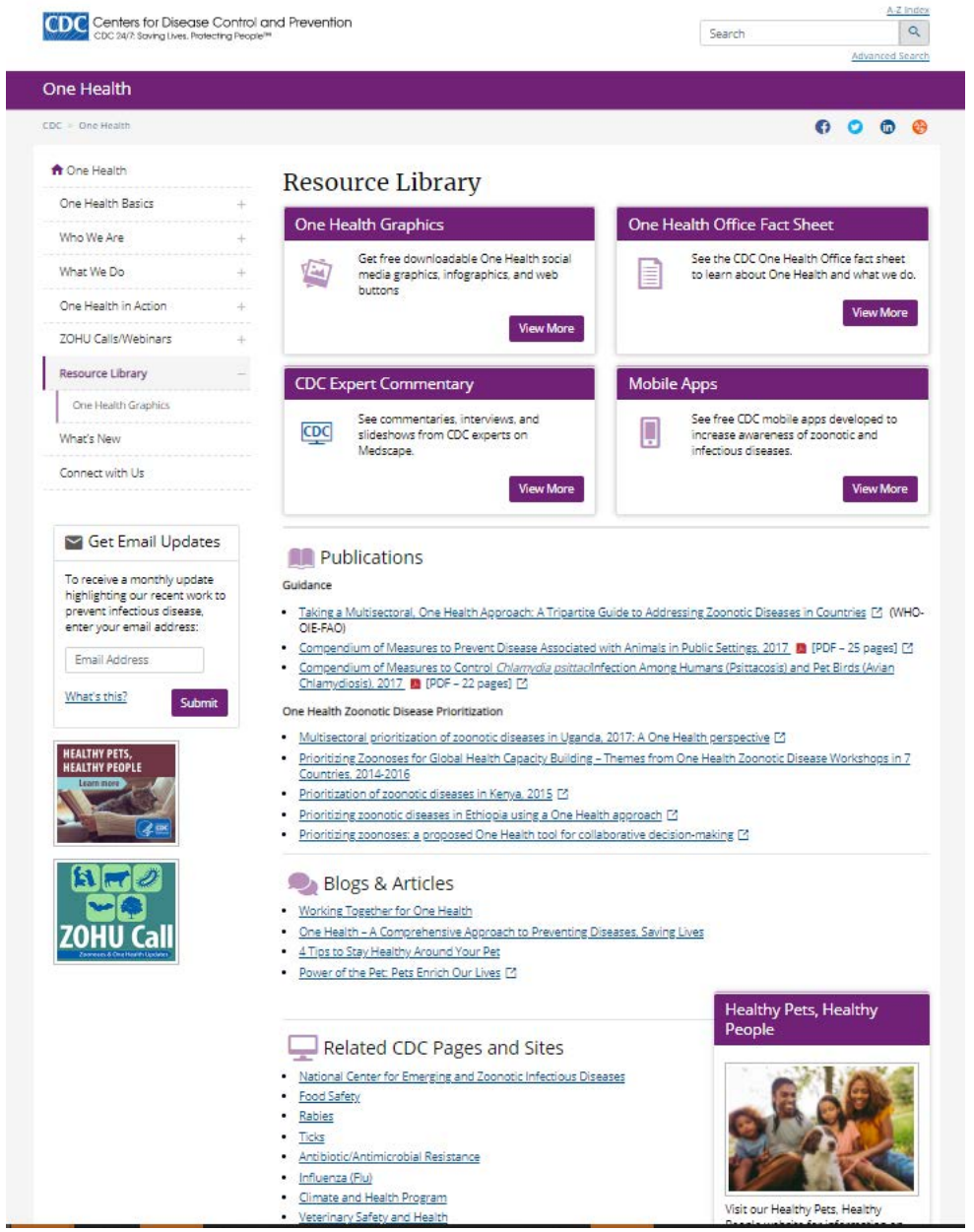
www.cdc.gov/healthypets



One Health Office Resources – Learn More!

www.cdc.gov/onehealth





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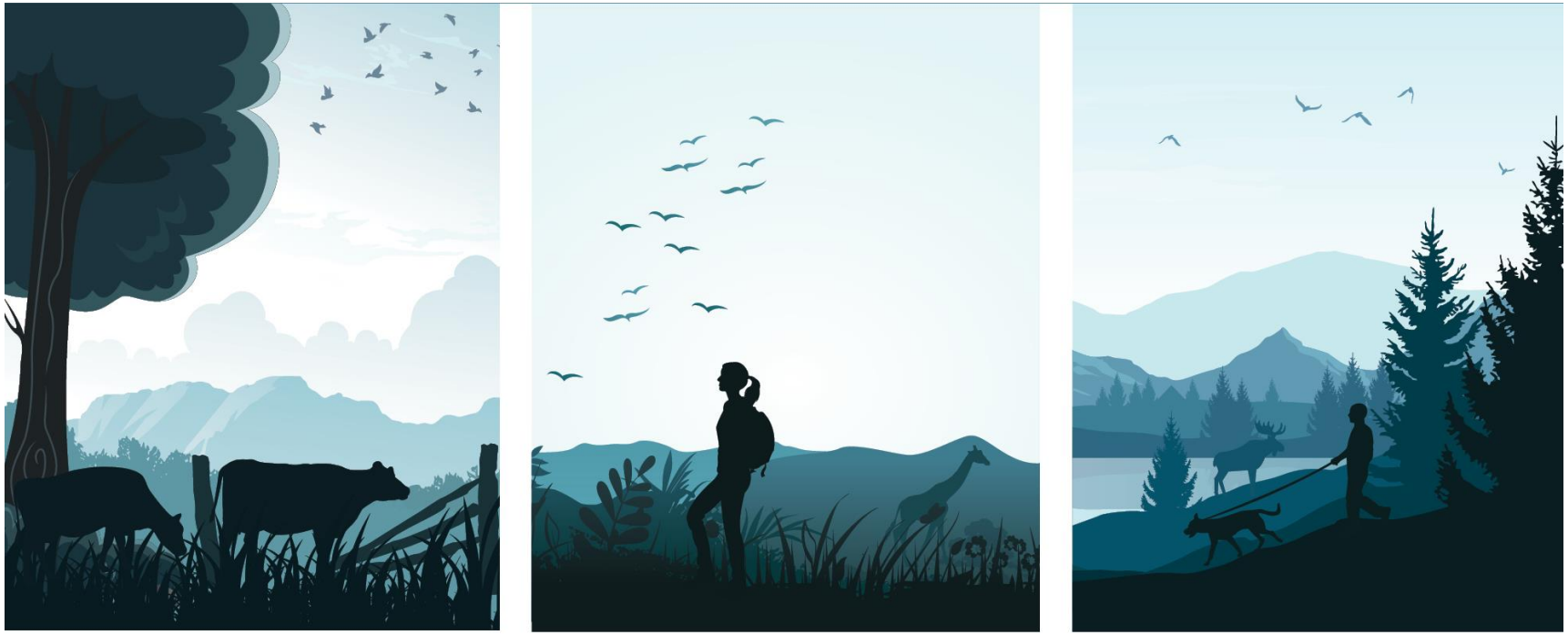

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