Zoonotic Diseases Highlights 2015-2016

Hanna Oltean, MPH

Zoonotic Disease Epidemiologist

Washington State Department of Health

Reported Zoonotic Disease Cases in Humans, Washington, 2015-2016

DISEASE	2015 cases	2016* cases
Brucellosis	4	0
Coccidioidomycosis	25	13
Cryptococcus gattii	4	3
Hantavirus	1	0
Leptospirosis	2	0
Lyme disease	24	18
Q fever	3	5
Tularemia	4	0
Salmonellosis with zoonotic transmission	2 outbreaks	2 outbreaks
Shiga toxin-producing *E. coli* with zoonotic transmission	1 outbreak	0 outbreaks

*** Preliminary and partial year data only as of September 19, 2016**
No cases reported for: Anthrax, Plague, Psittacosis, Rabies (human)

Washington State Department of Health

Reported Vector-Borne Disease Cases in Humans, Washington, 2015-2016

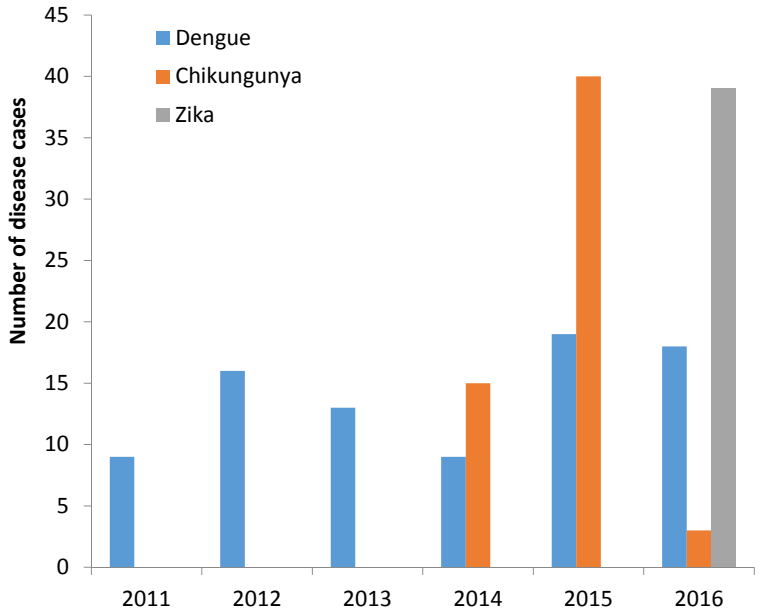
DISEASE	2015	2016*
Tick-borne relapsing fever	3	0
Lyme disease	24	18
West Nile virus	24	9
Chikungunya	40	3
Dengue	19	18
Zika	0	39
Unspecified flavivirus	1	7

*** Preliminary and partial year data only as of September 19, 2016**

Washington State Department of Health

Zika/Arboviral Disease

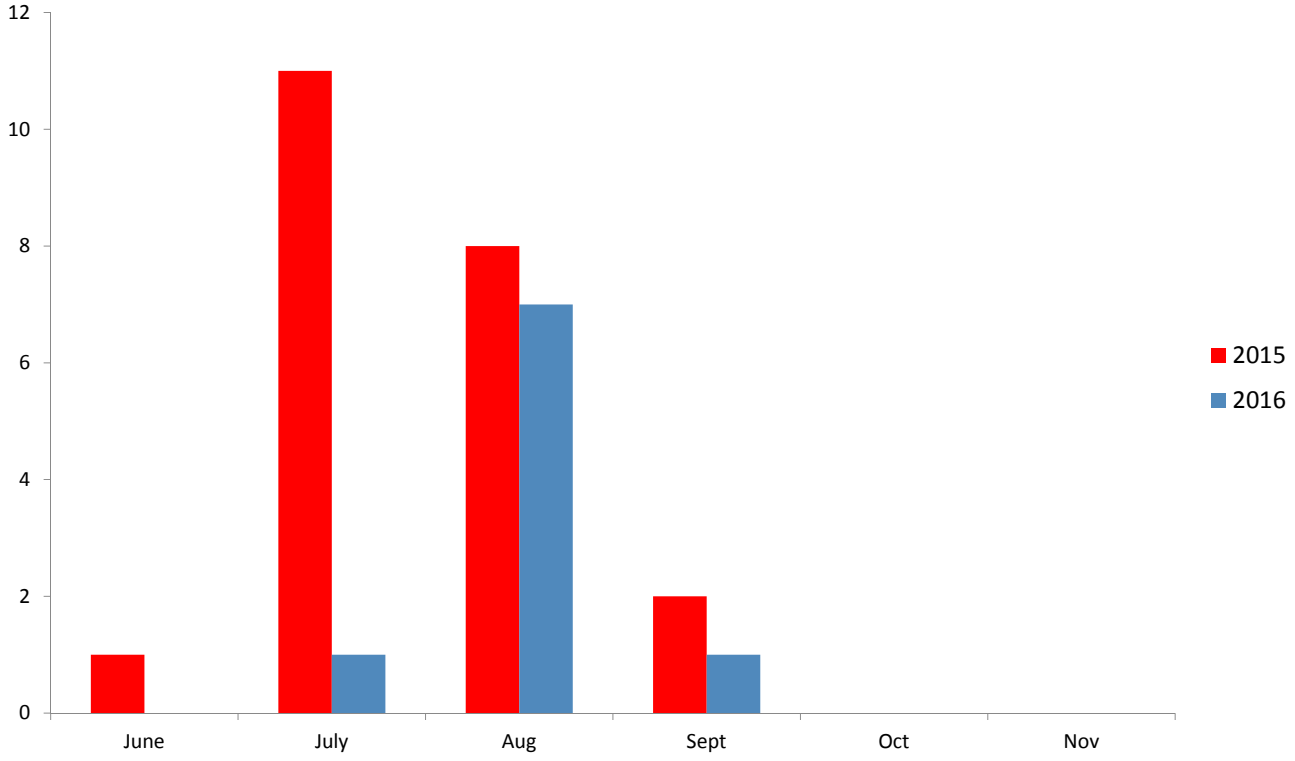
- Increase in Zika cases, decrease in chikungunya cases 2015-2016
  - Mirrors outbreaks in Central and South America and the Caribbean
- Increase in testing for patients with arboviral disease symptoms, largely driven by Zika concern
- Discuss in more detail during Zika presentation



* Preliminary and partial year data only as of September 19, 2016

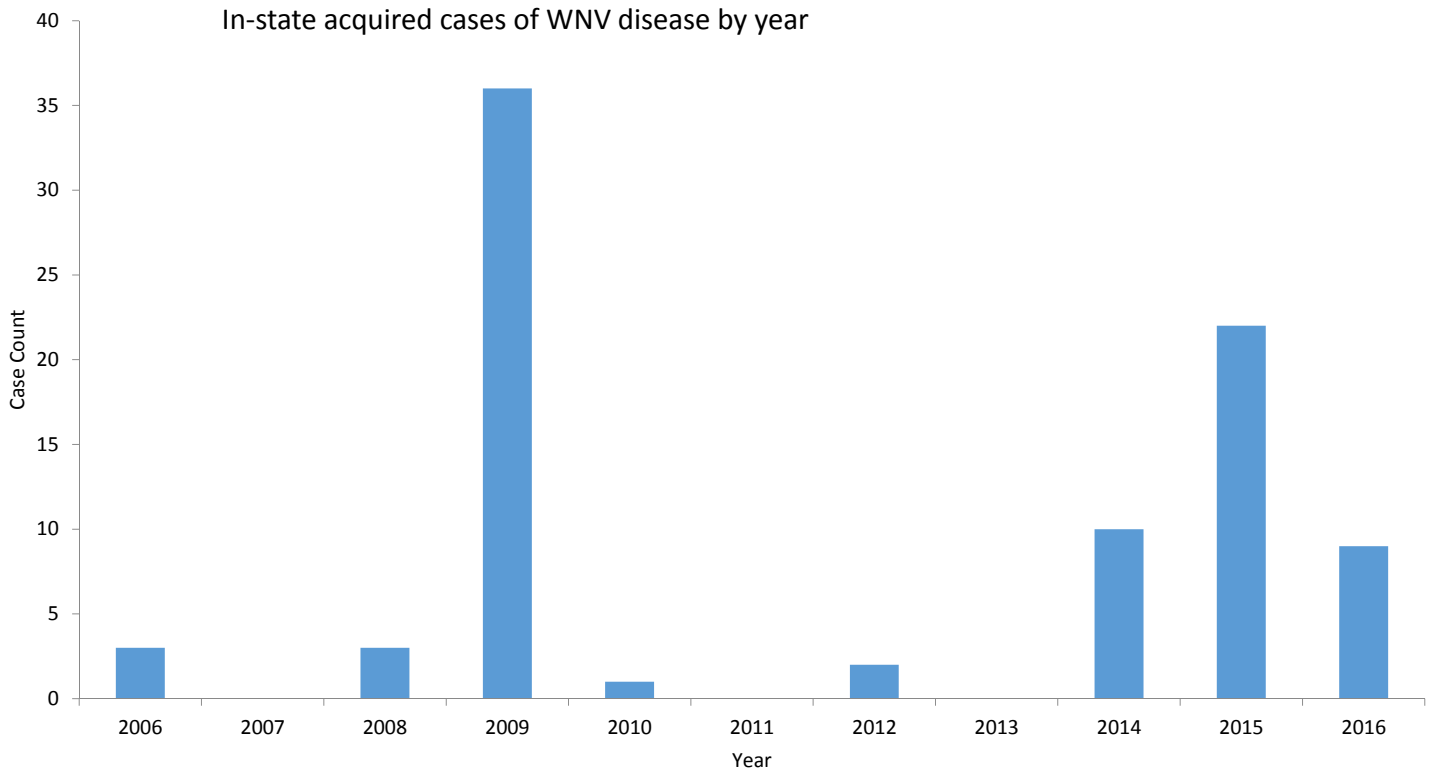
Washington State Department of Health

Onset month, in-state acquired cases of WNV disease, 2015 & 2016



Washington State Department of Health

In-state Acquired WNV Cases by Year, Washington, 2006-2016*

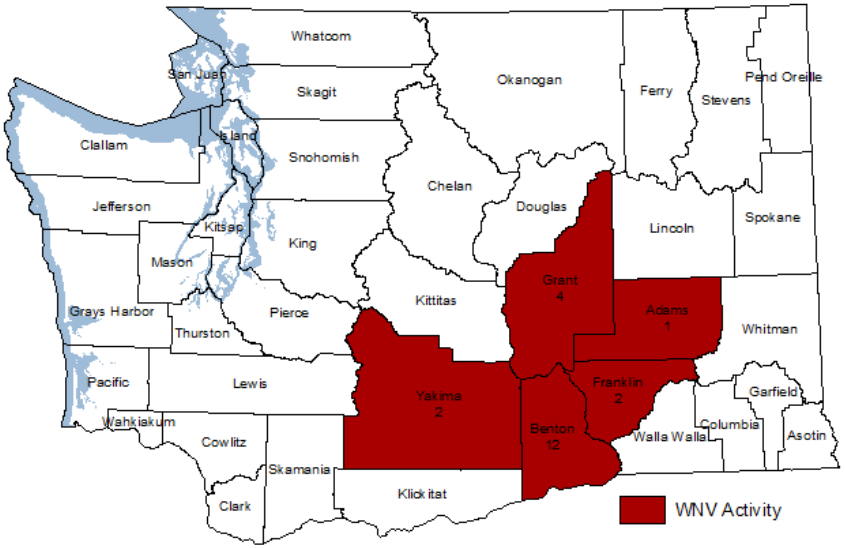


* Preliminary and partial year data only as of September 19, 2016

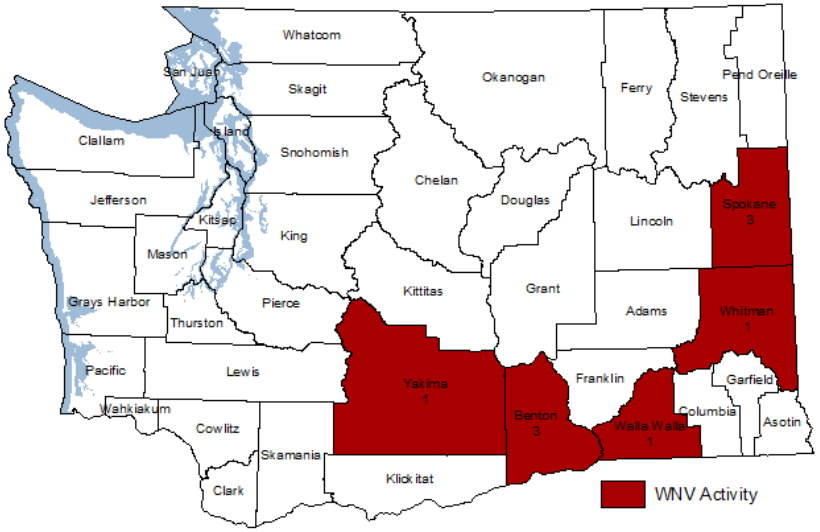
Washington State Department of Health

WNV Human Cases by County of Likely Exposure

2015

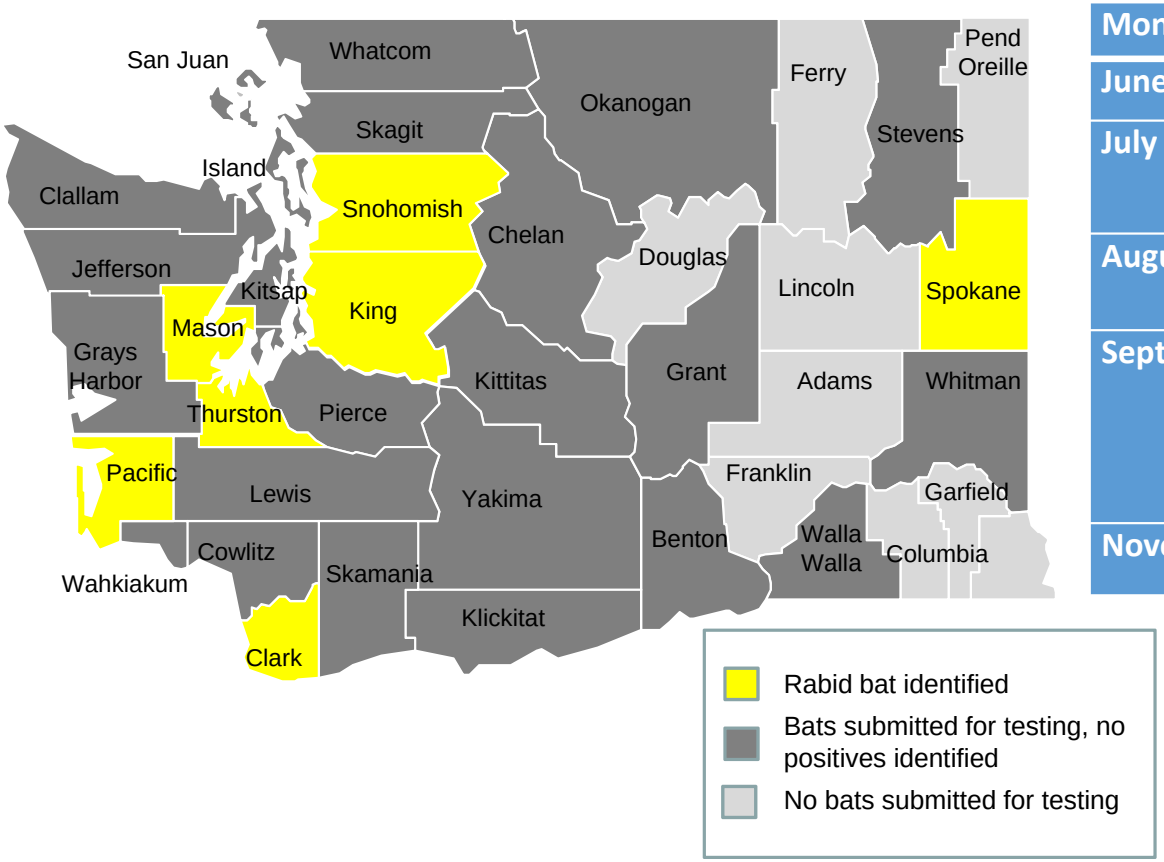


2016



Washington State Department of Health

Bats Tested for Rabies, Washington State,
January 1 – December 31, 2015 (N = 309 Tested Bats)



Month	County	# positive
June	Thurston	1 bat
July	Spokane	1 bat
	King	1 bat
August	Mason	1 bat
	Clark	1 bat
September	Pacific	1 bat
	King	1 bat
	Mason	1 bat
	Snohomish	1 bat
November	Jefferson	1 cat*

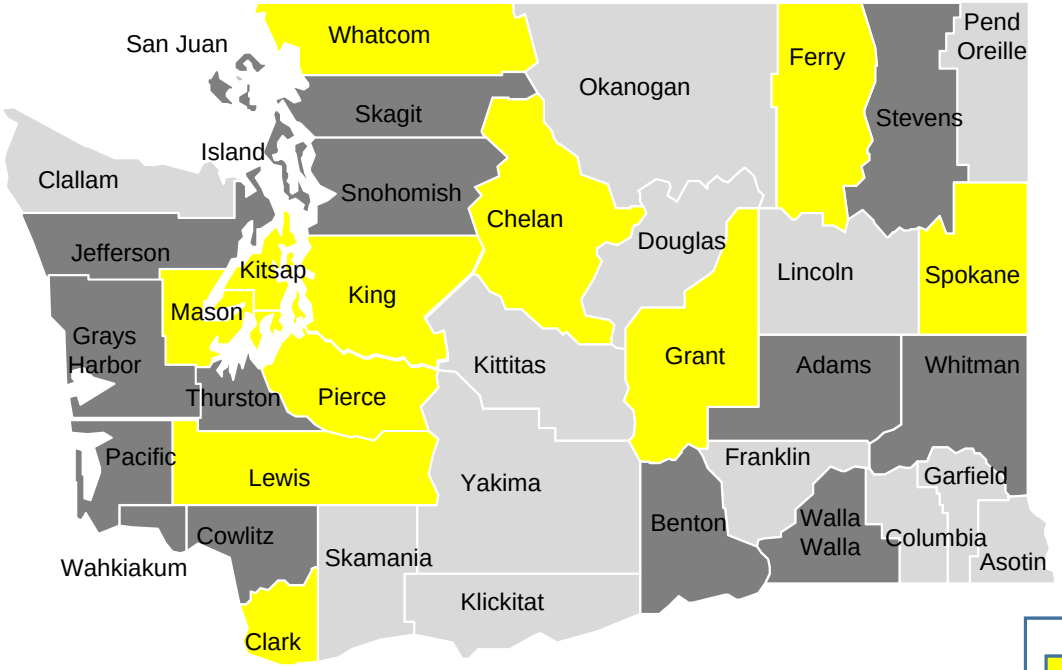
*bat variant rabies

Total positive bats=9

Washington State Department of Health

Washington State Department of Health

Bats Tested for Rabies, Washington State, January 1 – September 21, 2016 (N = 245 Tested Bats)



Month	County	# positive
May	King	1 bat
May	Clark	1 bat
June	Kitsap	1 bat
June	Whatcom	1 bat
June	Ferry	1 bat
July	Spokane	2 bats
July	Lewis	1 bat
July	Mason	1 bat
July	Chelan	1 bat
August	Grant	1 bat
August	Chelan	1 bat
August	Spokane	1 bat
August	Whatcom	1 bat
August	Lewis	1 bat
September	Chelan	1 bat
September	King	1 bat
September	Pierce	1 bat

18 rabid bats identified so far during 2016

- Rabid bat identified
- Bats submitted for testing, no positives identified
- No bats submitted for testing

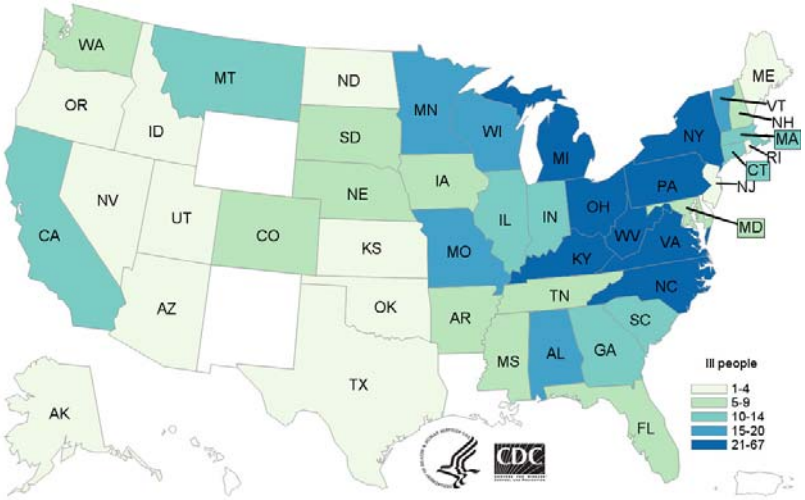
Office of Communicable Disease Epidemiology

Last updated 5/16/2016

Washington State Department of Health

Hatchery Chick Outbreak 2016

- Actually, 8 *Salmonella* outbreaks
- Total N =611
- WA N= 9
- WA cases in 5/8 outbreaks
- Outbreak linked to multiple hatcheries in the Midwest



Washington State Department of Health

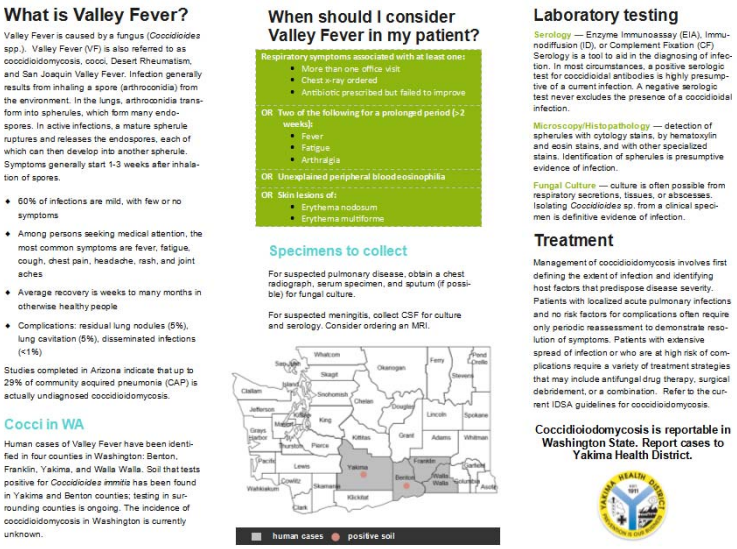
Tiny Turtles Outbreak 2015-2016

- Actually 4 *Salmonella* outbreaks
- Total N = 133
- WA N = 3
- Outbreak linked to tiny turtles, but could not be traced back to a single or a few sources
  - Multiple purchase locations, people reporting turtles as gifts

Washington State Department of Health

Cocci

- Several projects ongoing
  - Enhanced provider education
    - 5 presentations to provider groups in Yakima, Benton, and Walla Walla counties
    - New brochure for providers that can be customized by LHJ
  - Active surveillance project
    - Pilot project with Trios Hospital
    - Recruiting other participants
  - Survey of commercial laboratory data
    - Initial steps
- Addition to WAC (pull out from rare disease)
- Environmental sampling FAQ brochures
- Patient brochures



What is Valley Fever?

Valley Fever is caused by a fungus (*Coccidioides* spp.). Valley Fever (VF) is also referred to as coccidioidomycosis, cocci, Desert Rheumatism, and San Joaquin Valley Fever. Infection generally results from inhaling a spore (arthroconidia) from the environment. In the lungs, arthroconidia transform into spherules, which form many endospores. In active infections, a mature spherule ruptures and releases the endospores, each of which can then develop into another spherule. Symptoms generally start 1-3 weeks after inhalation of spores.

- 60% of infections are mild, with few or no symptoms
- Among persons seeking medical attention, the most common symptoms are fever, fatigue, cough, chest pain, headache, rash, and joint aches
- Average recovery is weeks to many months in otherwise healthy people
- Complications: residual lung nodules (5%), lung cavitation (5%), disseminated infections (<1%)

Studies completed in Arizona indicate that up to 29% of community acquired pneumonia (CAP) is actually undiagnosed coccidioidomycosis.

Cocci in WA

Human cases of Valley Fever have been identified in four counties in Washington: Benton, Franklin, Yakima, and Walla Walla. Soil that tests positive for *Coccidioides immitis* has been found in Yakima and Benton counties; testing in surrounding counties is ongoing. The incidence of coccidioidomycosis in Washington is currently unknown.

When should I consider Valley Fever in my patient?

Respiratory symptoms associated with at least one:
- More than one office visit
- Chest x-ray ordered
- Antibiotic prescribed but failed to improve

OR Two of the following for a prolonged period (>2 weeks):
- Fever
- Fatigue
- Arthralgia

OR Unexplained peripheral blood eosinophilia

OR Skin lesions of:
- Erythema nodosum
- Erythema multiforme

Specimens to collect

For suspected pulmonary disease, obtain a chest radiograph, serum specimen, and sputum (if possible) for fungal culture.

For suspected meningitis, collect CSF for culture and serology. Consider ordering an MRI.

Laboratory testing

Serology — Enzyme Immunoassay (EIA), Immunodiffusion (ID), or Complement Fixation (CF). Serology is a tool to aid in the diagnosing of infection. In most circumstances, a positive serologic test for coccidioidal antibodies is highly presumptive of a current infection. A negative serologic test never excludes the presence of a coccidioidal infection.

Microscopy/Histopathology — detection of spherules with cytology stains, by hematoxylin and eosin stains, and with other specialized stains. Identification of spherules is presumptive evidence of infection.

Fungal Culture — culture is often possible from respiratory secretions, tissues, or abscesses. Isolating *Coccidioides* sp. from a clinical specimen is definitive evidence of infection.

Treatment

Management of coccidioidomycosis involves first defining the extent of infection and identifying host factors that predispose disease severity. Patients with localized acute pulmonary infections and no risk factors for complications often require only periodic reassessment to demonstrate resolution of symptoms. Patients with extensive spread of infection or who are at high risk of complications require a variety of treatment strategies that may include antifungal drug therapy, surgical debridement, or a combination. Refer to the current IDSA guidelines for coccidioidomycosis.

Coccidioiodomycosis is reportable in Washington State. Report cases to Yakima Health District.

Washington State Department of Health

Rabies Workgroup

- Re-convening workgroup from 2014
- Points of discussion:
  - Mass bat exposure events
  - Bat-in-bedroom scenarios
  - Timing of prophylaxis
- Guideline revisions may be ahead

Washington State Department of Health

Cross-agency disease reporting workgroup

- Sub-workgroup of the surveillance and data systems One Health workgroup
- Cross-agency reporting of zoonotic disease
- Starting with WSDA → DOH and DOH→ WSDA
  - Lists of conditions that will be cross-reported
  - Reporting forms

Washington State Department of Health

Questions?

Hanna.Oltean@doh.wa.gov

Washington State Department of Health