

Central Oregon Public Health Quarterly

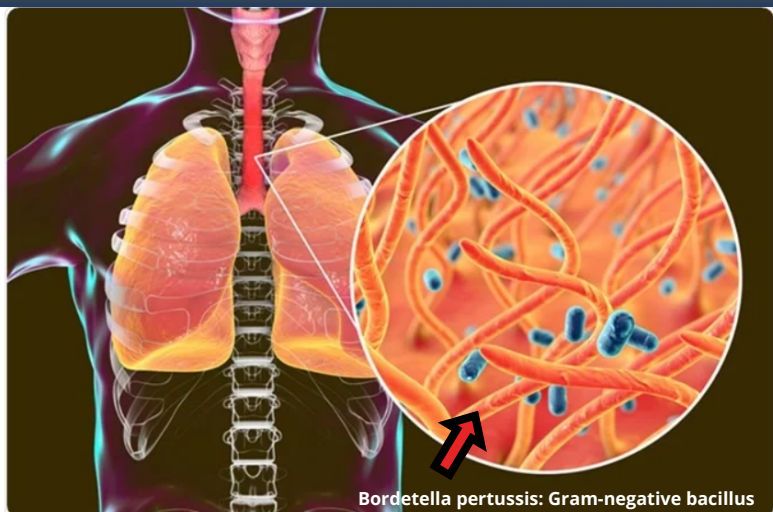
Communicable Disease Update for Crook, Deschutes, and Jefferson Counties
Fourth Quarter Report, 2024

24/7 Communicable
Disease reporting lines:

Crook
County:
541-447-5165

Deschutes
County:
541-322-7418

Jefferson
County:
541-475-4456



Bordetella pertussis: Gram-negative bacillus

Whooping cough bacteria *Bordetella pertussis* in human airways, 3D illustration - Illustration
Credit: Kateryna Kon / Shutterstock

Pertussis Spotlight

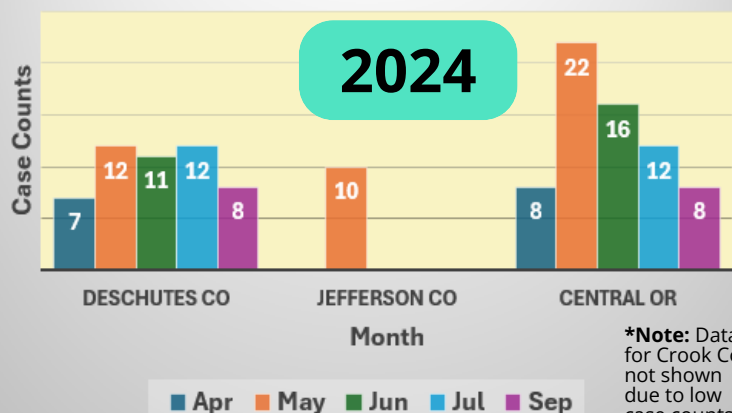


- Pertussis (aka 'Whooping Cough') is a highly contagious bacterial infection that affects the respiratory tract



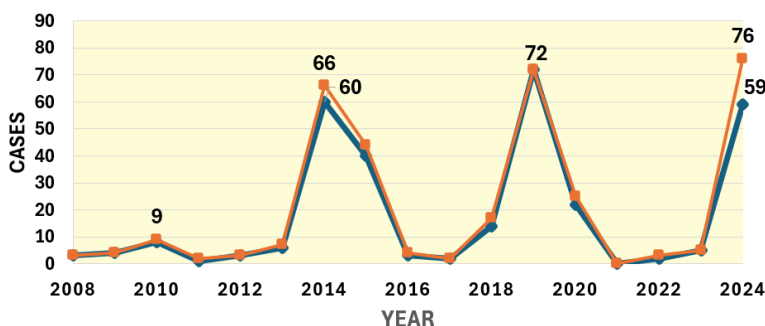
- An uptick in cases in our region occurred this past spring (peaking in May and holding steady for much of the summer)—with a steady decline occurring during the Aug-Oct timeframe

Monthly Pertussis Counts (Central OR; 2024)

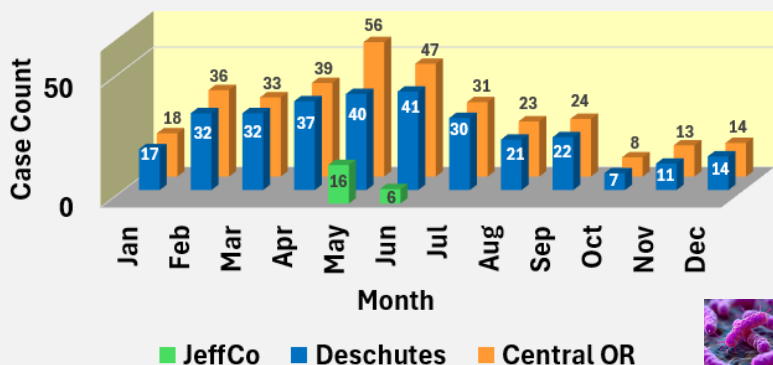


PERTUSSIS CASE COUNTS (CENTRAL OR & DESCHUTES CO; 2008-2024)

— Deschutes County — Tri-County Counts



Pertussis By Month of Year (Central OR & Deschutes Co, 2008-2024)



Central OR Pertussis Community Spread (2024)

- While cases of pertussis have been lower than usual the past few years, a recent resurgence has occurred in 2024 in the US, OR, & our region—trending somewhat higher than the previous peak occurring in 2019

- As of this past spring, cases in our region have been on the rise—with a high of 22 Central OR cases reported this past May, see above (this aligns with what we've seen in previous years with the majority of regional cases occurring in May, see graphic to left)

Why the current increase?

- Pertussis follows a cyclical pattern (**2-5yrs**), thought to be due to waning immunity from **acellular pertussis (aP) vaccines**
- 'Immunity debt' (decreasing adaptive immunity in some populations) is also thought to be fueling the recent resurgence in respiratory diseases—driven largely by stringent COVID19 health measures in recent years, followed by the rapid lifting of non-pharmaceutical interventions (NPIs)
- Low vaccination rates occurring in some populations
- Genetic changes to the bacteria causing pertussis
- Enhanced pertussis surveillance [Read more in a recent article by Wan et al. 2024 [here](#)]

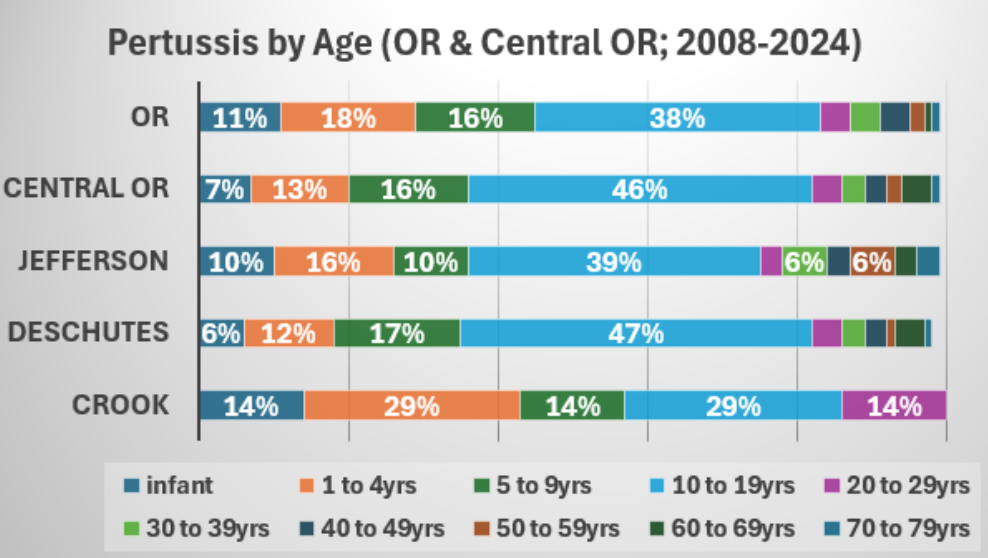
Pertussis is thought to peak in early summer months (often coinciding with school releases) due to increased social interactions & outdoor gatherings that facilitate the spread of the bacteria through respiratory droplets [Read more in a recent article by Hitz et al 2020 [here](#)]

*All data in report obtained from the Oregon Public Health Epidemiologists' User System; 2024 data current as of 11/19/2024; County data <5 not shown in any of the graphics (above) to protect confidentiality

Pertussis: Central OR prevalence across Selected Sociodemographic & Clinical Factors



Age

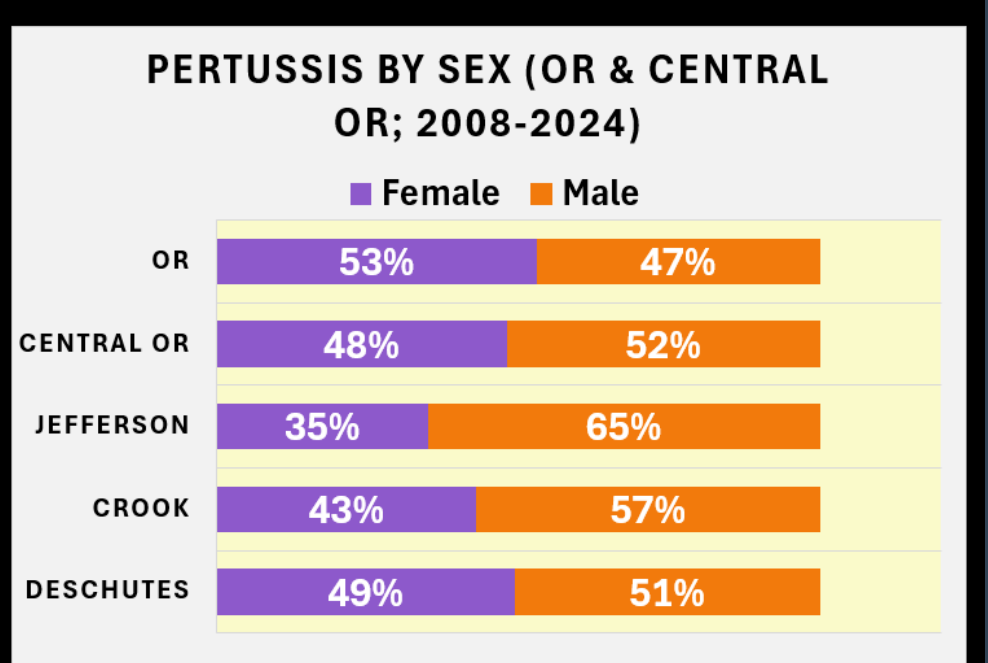


Note: Percentages <5% not shown

- The majority of pertussis cases diagnosed in our state & Central OR counties have occurred among 10-19yr olds—with 5-9yr olds the second most frequently diagnosed grouping in our region
- Signs & Symptoms:**
 - While adolescents/adults have symptoms that are generally similar to those in infants/young children, their symptoms are often milder leading to a higher chance of being missed by clinicians
- Adolescents who haven't received a pertussis booster since childhood may be particularly vulnerable to contracting the disease (*underscoring the importance that children stay up-to-date with their vaccines*) Read more [here](#).



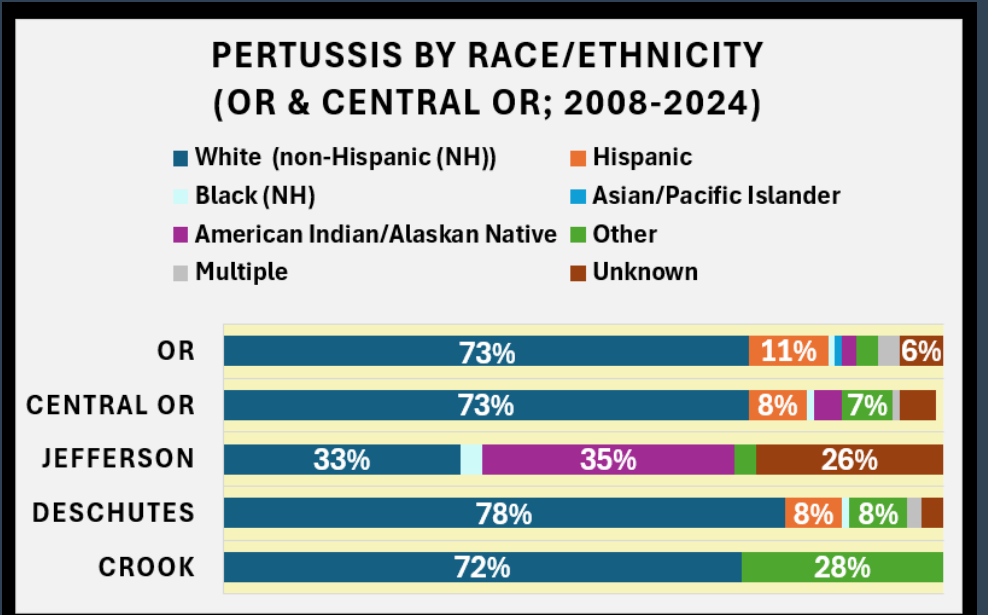
Sex



- A slightly higher percent of females were diagnosed with pertussis statewide (OR) compared to our region (2008-2024)
- In population-based studies, pertussis has been observed more frequently in females vs. males [Note: sex-based differences are not as pronounced in younger ages]:
 - Chromosomal Differences:** Differences in immune responses between males & females may in part be attributed to the X-chromosome (containing a higher # of immune-related genes & regulatory factors involved in both innate/adaptive immune responses)—leading to a more enhanced immune response in females & consequently a more symptomatic course of pertussis (esp. in older adults)
 - Hormonal Factors:** Progesterone & estrogen lead to more severe inflammation & prolonged immune responses in the presence of respiratory infections [Read more by *Peer et al. 2020* [here](#)]



Race/Ethnicity



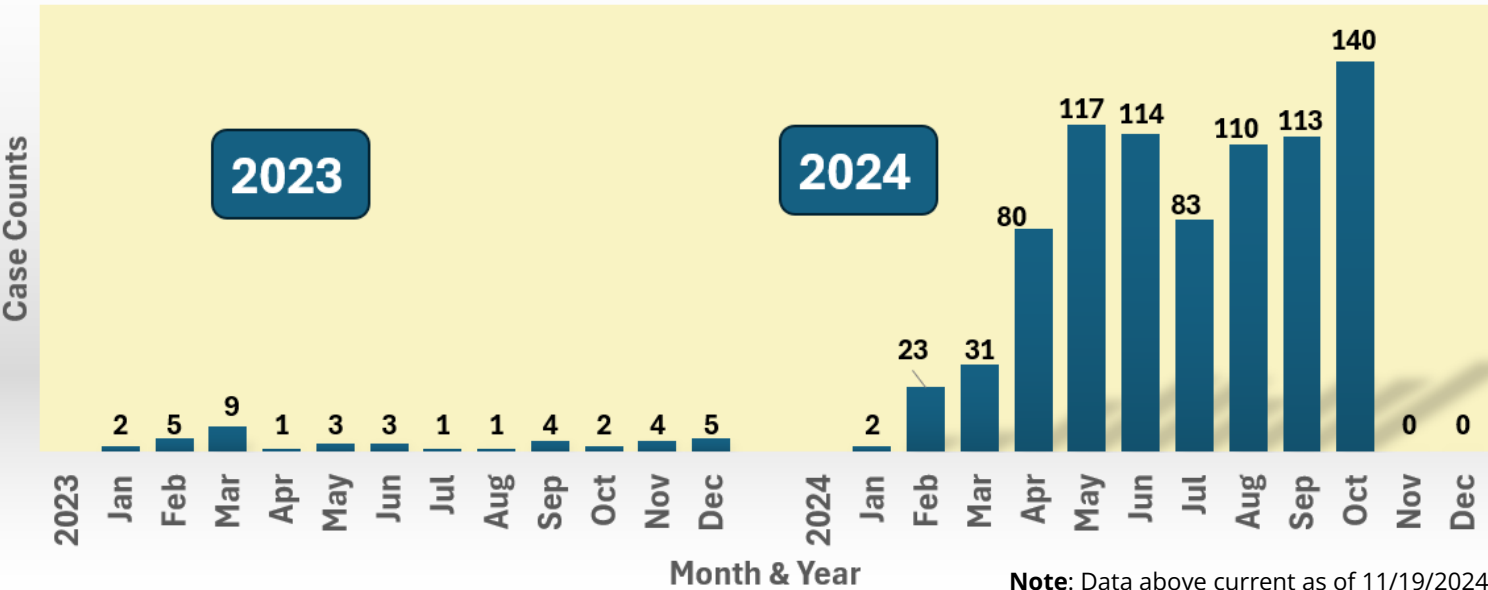
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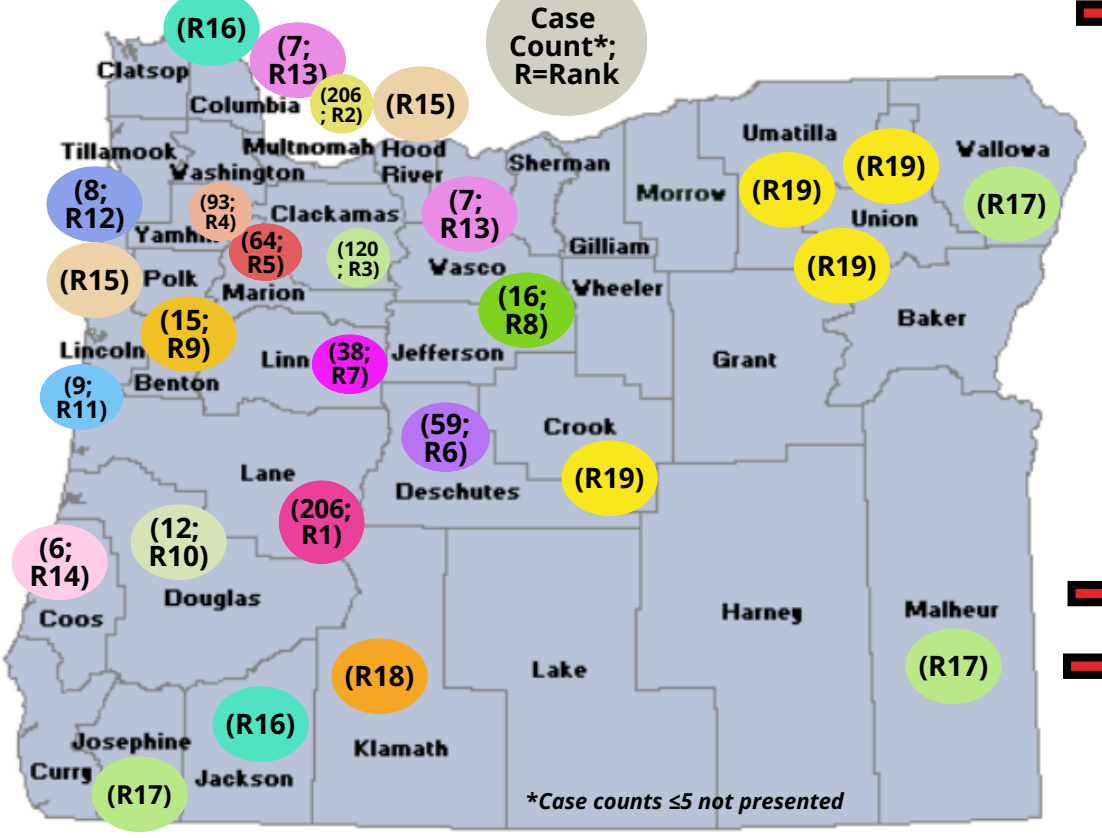
- In both OR & Central OR, the majority of pertussis cases over the past 16yrs have been among non-Hispanic (NH) whites, followed by Hispanics. When looking at individual Central OR county breakdowns, however, there are some noted differences. The majority of cases in Jefferson Co, for instance, were Am Indian/Alaskan Native, followed by NH whites. There was also a noted higher (%) of cases with an 'Unknown' race/ethnicity grouping in Jefferson Co as well.
- 2024 Community Transmission:** When restricting to just 2024 cases occurring in our region, the following breakdowns were noted:
 - Crook Co** (100% NH white)
 - Deschutes Co** (65% NH white; 5% Hispanic; 21% other; 9% unknown)
 - Jefferson Co** (69% Am In/Alaska N; 6% other; 25% unknown)

Pertussis Statewide (Oregon) Trends: 2023-2024

Case Counts of Pertussis by Month: OR 2023 & 2024



Counties



County	Count	Rank
Crook	59	6
Umatilla	16	8
Union	38	7
Klamath	120	3
Josephine	93	4
Malheur	64	5
Wallowa	8	12
Clatsop	2	20
Jackson	2	20
Hood River	2	20
Polk	2	20
Coos	2	20
Columbia	7	13
Wasco	7	13
Yamhill	8	12
Lincoln	9	11
Douglas	12	10
Benton	15	9
Jefferson	16	8
Linn	38	7
Deschutes	59	6
Marion	64	5
Washington	93	4
Clackamas	120	3
Multnomah	206	2
Lane	279	1

Pertussis Quick Facts

Illness Description

- Pertussis generally lacks fever & progresses via 3 stages:
 - Catarrhal** (1-2wks): intermittent, non-productive cough
 - Paroxysmal** [spasms of cough with gasp/whoop/vomiting] (1+ wks)
 - Convalescent** [gradual resolution] (2+ wks)

Spread

- Transmission via direct contact with respiratory secretions/droplets from a cough/sneeze
- Precise duration/intensity of exposure needed to cause infection is unclear ...although 1+hr with a contagious individual in a confined space is considered to be a significant exposure

Diagnosis

- Confirmed Case:** Acute cough of any duration+ isolation of *B. pertussis* from clinical specimen or PCR test+ for *B. pertussis*
- Presumptive Case:** A cough lasting 14+ days with: paroxysms, inspiratory 'whoop,' post-tussive vomiting or apnea or cough of any duration with any of the symptoms above + contact with lab confirmed case

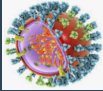
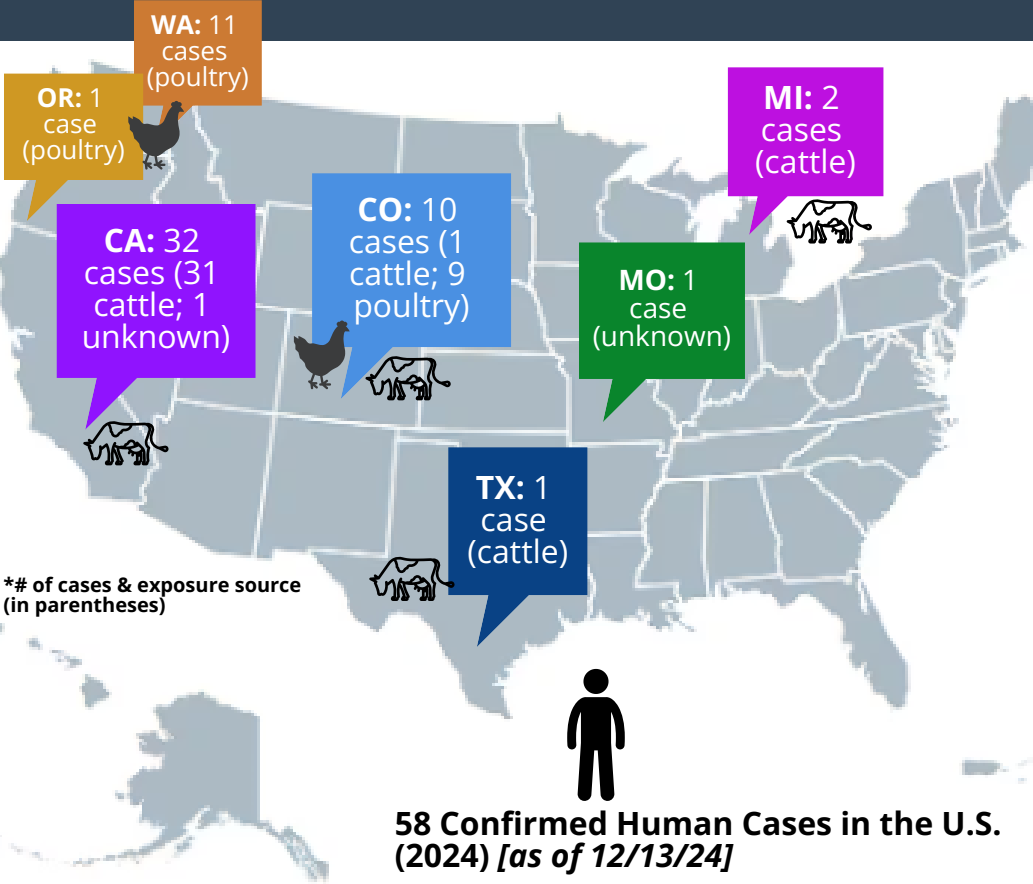
Treatment Best Practice

- Early Tx is Key:** Treat paroxysmal cough within 2wks of onset [CAUTION: initiating Tx>3 weeks post-onset is unlikely to be effective]
- Tx Best Practice:**
 - >1yr: Treat within 3-wks of cough onset
 - <1yr & pregnant women: Treat within 6-wks of cough onset

OREGON CASE REPORTING: Health care providers are required by law to report cases & suspected cases of pertussis to local health departments within one working day of identification. Because pertussis is a restrictable, reportable disease, exposed, under-vaccinated children should be excluded from attendance at school (for 21 days after last exposure) unless PH officer determines exclusion is not necessary. See Investigative guidelines [here](#).

Avian Influenza Update

Confirmed human cases by state & exposure source (2024)



H5N1 (Avian Influenza) Update

- H5N1 is a subtype of influenza that primarily affects birds—although in rare cases can also infect mammals/humans
- In the U.S., outbreaks of H5N1 in wild birds (mostly aquatic birds) & poultry have been on-going since 2022
- As of 2024, there have also been reported outbreaks in dairy cattle & several recent cases in humans (among those working in the US dairy and poultry industries). **OR had its first human case [Nov 15, 24]** among a worker at a commercial poultry operation in Clackamas Co (they had mild symptoms & fully recovered)
- While CDC considers the current public health risk **low**, the situation is being actively monitored—with current trends being updated [here](#).

Viral Strain Classifications

- Influenza A virus subtype H5N1 (A/H5N1) can be classified as Low Pathogenic Avian Influenza (LPAI) or High Pathogenic Avian Influenza (HPAI)—based on the severity of symptoms in chickens & does not predict severity of symptoms in other species. Read more on classifying H5N1 [here](#).

Data in table (below) collated from CDC data found [here](#).

Confirmed Animal Cases*					
Source	Detections	US	OR	Crook	Deschutes
Wild Birds	Widespread (globally)	10,718 (1/2022-12/10/2024)	529 (1/2022-12/2/2024); 1 (11/10/24-12/2/2024)	8 (2022-2024)	6 (2022-2024)
Poultry	Sporadic outbreaks	122,790,926 (1/2022-12/12/2024)	906,641 affected flocks 2022-2024 (40 backyard flocks; 3 commercial flocks)	Backyard flock impacted (Oct 2024)	0
Dairy Cattle	Multi-state outbreak	832 (3/2024-12/2024)	0	0	0
Swine	Sporadic infections	1 (2024)	1	1 (Oct 2024)	0

*Note: No detections in Jefferson Co (as of 12/13/24)

Risk Factors for HPAI*

- Direct Contact:** with infected animals
 - Indirect Contact:** with environments contaminated by bodily fluids from infected animals (e.g. live bird markets)
 - Handling Poultry:** Working with infected poultry (e.g. slaughtering, defeathering, prep for consumption)
 - Hunting:** field dressing/butchering
 - Working with Wild Animals**
- *Read more on risks [here](#).

Symptoms

- Eye redness or discharge
- Fever
- Chills
- Coughing
- Sore throat
- Runny nose
- Muscle aches

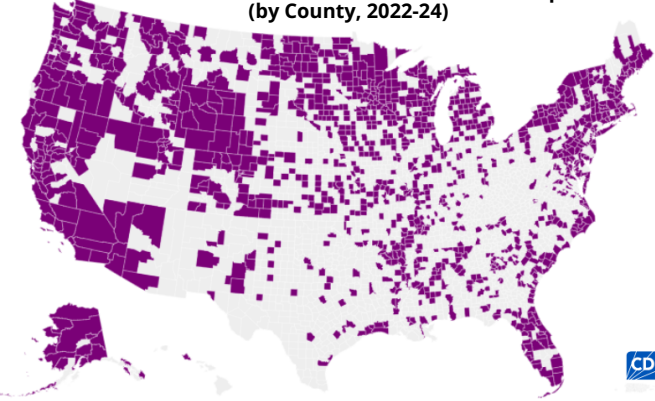
Tx

- Some **antiviral drugs** may help if taken within 2-days of symptoms

Prevention

- Wear protective clothing** (e.g. gloves) when working with birds/livestock
- Wash hands** frequently (after handling livestock)
- Get flu shot**
- Cook poultry/eggs** to 165F
- Keep poultry/livestock** away from wildlife

H5N1 Detected in Wild Bird Populations (by County, 2022-24)



Detections of Highly Pathogenic Avian Influenza (HPAI) in Wild Birds (Central OR; 2022-2024)

