OREGON HEALTH AUTHORITY

July 8, 2025

Emerging Pathogens of Concern

Western Oregon Infection Prevention Collaborative

Let’s Meet Your Team!

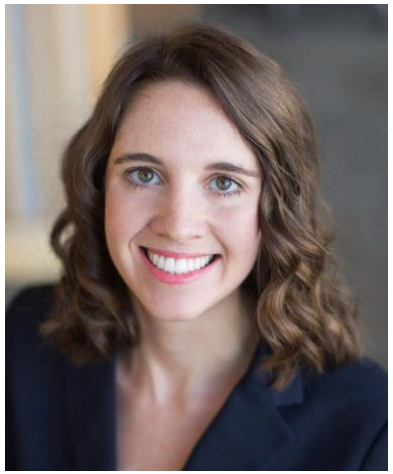
- Mary Edmondson

- Therese Phin

- Lex Zhung

- Mara Arias

- Katie Cox



- Dan Daniluk

- Claire Walker

Agenda

- Introduction to emerging pathogens
- Measles
- Avian influenza
- *Legionella*

Housekeeping and Reminders

- Please turn off any AI recording/technology (against OHA policy)

- During our presentations, please feel free to use the chat for any questions or comments you might have throughout all our presentations

- *The purpose of the WOIPC is to learn and discuss infection prevention topics, as well as connect with other IPs working in Western Oregon regions.*

We are so glad you are here today!

WOIPC and MDRO IP Power Hours

What's the scoop?

Western Oregon Infection Prevention Collaborative

- ✓ Monthly infection prevention sessions
- ✓ Broad infection prevention topics, led by OHA *Infection Preventionists and Epidemiologists for Western Oregon*

MDRO IP Power Hour

- ✓ MDRO dedicated sessions
- ✓ Every 2nd Month of the quarter (February, May, August, November)
- ✓ MDRO focused, led by *Therese Phin, MDRO Infection Preventionist*

What are emerging pathogens?

- New and unknown diseases
  - Zoonotic pathogens
- Reemerging and increasing diseases
  - Changes in immunization rates
  - Antimicrobial resistance
- Diseases affecting new population or geographic area
  - Travel
  - Climate change

Infection Prevention and Emerging Infectious Diseases

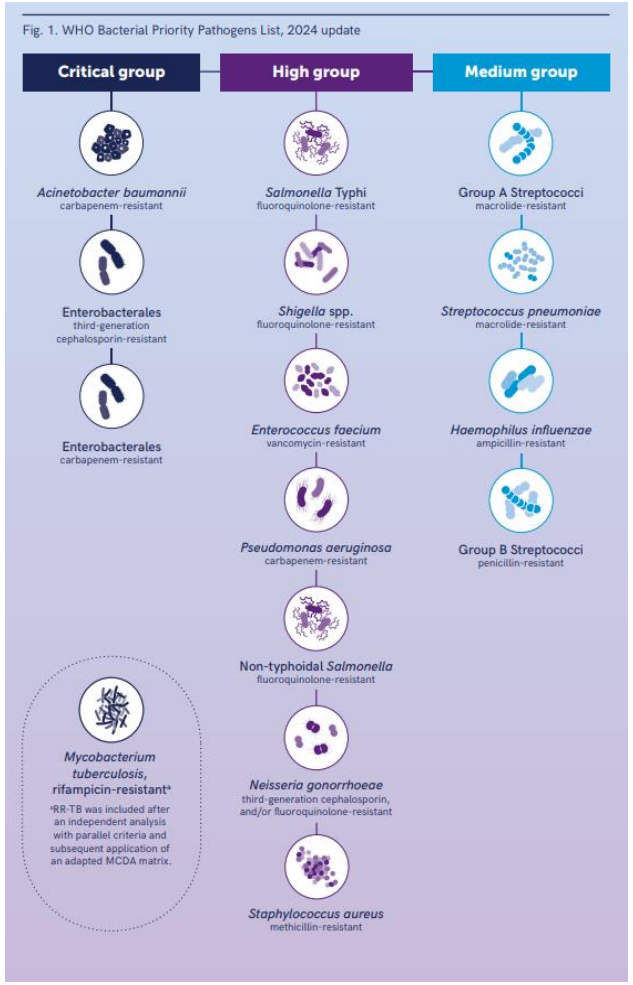
Infectious Disease Disasters: Bioterrorism, Emerging Infections, and Pandemics (Chapter 120)

As experts in the fields of surveillance, epidemiology, and prevention of communicable disease spread, infection preventionists play a critical role in emergency management of infectious disease disasters at the personal, hospital/healthcare facility, and community level.

Infection prevention plays a key role in controlling outbreaks, preventing future cases, and decreasing morbidity and mortality of emerging infectious diseases.

Infection Control and Emerging Infectious Diseases

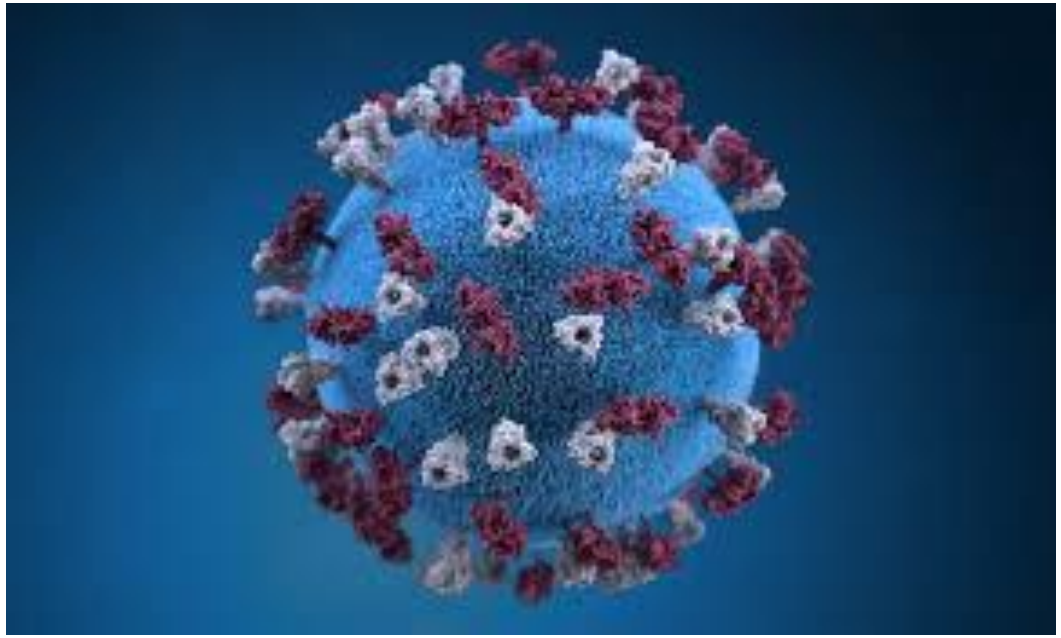
- APIC's Emerging Infectious Diseases
  - Playbooks for specific diseases
  - PPE checklist
  - IP response to emerging pathogens
- WHO Bacterial Priority Pathogens List, 2024



Measles

Measles – Clinical Overview

- Highly contagious disease cause by single-stranded, RNA-encoded paramyxovirus
- Acute viral respiratory illness, transmitted person-to-person or through fomites
- Characterized by generalized maculopapular rash, fever, and one of more of the following: cough, coryza, conjunctivitis, or Koplik spots
- Three stages of illness: prodrome, rash, and fever



https://publichealth.jhu.edu/2025/what-to-know-about-measles-and-vaccines

https://www.oregon.gov/oha/ph/diseasesconditions/communicabledisease/reportingcommunicabledisease/reportingguidelines/documents/measles.pdf

Three Stages of Illness

- Prodrome:
  - Starts with a mild to moderate fever and malaise.
  - Normally within 24 hours, onset of conjunctivitis, photophobia, coryza (sneezing, nasal congestion, and nasal discharge), increasingly severe cough, swollen lymph nodes, and Koplik spots.
- Rash:
  - Begins with flat, faint eruptions of upper lateral parts of the neck, behind the ears, along the hairline, and on the posterior parts of the cheeks. Usually appears within 3-4 days, with a range of 1-7 days after the onset of prodromal symptoms.
- Fever:
  - Worsens after prodrome stage when the rash appears. Temperatures may exceed 104F and usually fall 2-3 days after rash onset. Persistent high fever may indicate a complication.

https://www.oregon.gov/oha/ph/diseasesconditions/communicabledisease/reportingcommunicabledisease/reportingguidelines/documents/measles.pdf

Measles Epidemiology in the US

- As of 7/1/25: there have been 1267 confirmed cases reported in the U.S.
- There have been 27 outbreaks reported in 2025, with 88% of confirmed cases being outbreak-associated.
- 23% of these cases have been hospitalized (155 of 1267).
- 3 confirmed deaths have been reported.

https://www.youtube.com/watch?v=5qp18FcPc54


https://www.uclahealth.org/news/article/measles-cases-climb-2025-heres-what-know

https://www.cdc.gov/measles/data-research/index.html

Why is Measles emerging?

- One of the most contagious infectious diseases and the most contagious vaccine-preventable disease.
- Due to the COVID-19 pandemic, millions of measles vaccine doses were postponed or missed, thereby increasing the risk of larger outbreaks worldwide, including in the U.S.
- Increasing vaccine hesitancy and vaccine exemptions have contributed to the increase in measles outbreaks in the US.

https://www.cdc.gov/measles/about/index.html

How to prepare for a measles exposure?

- Ensure HCP have presumptive evidence of immunity to measles through vaccination, laboratory evidence of immunity, laboratory confirmation of disease, or born before 1957.
- Able to rapidly identify and isolate patients with known or suspected measles
- Adhering to Standard and Airborne Precautions for patients with known or suspected measles
- Routinely promoting and facilitating respiratory hygiene and cough etiquette
- Appropriately managing exposed and ill HCP

https://www.cdc.gov/infection-control/hcp/measles/index.html

Managing Measles Exposure for HCP

- Exposed HCP:
  - With presumptive evidence of immunity, no postexposure prophy, no work restriction, and daily monitoring of symptoms from 5th day after 1st exposure through the 21st day after their last exposure.
  - Without presumptive evidence of immunity, administer postexposure prophylaxis and exclude from work 5th day after 1st exposure through the 21st day after their last exposure.
- HCP infected with measles:
  - Exclude for 4 days after rash appears; immunocompromised HCP should be excluded for the duration of their illness.

https://www.cdc.gov/infection-control/hcp/healthcare-personnel-epidemiology-control/measles.html

Managing Measles Exposure for Patients

- Exposed patients with no presumptive evidence of immunity:
  - Placed on Airborne Precautions for 21 days after last exposure, or until discharge, if earlier.
  - Administer postexposure prophylaxis.
  - Notify LPHAs about patients who are being discharged so appropriate follow-up can occur.

https://www.npr.org/sections/shots-health-news/2025/02/21/nx-s1-5304458/measles-vaccine-booster-health

https://www.cdc.gov/infection-control/hcp/measles/index.html

Additional CDC Recommendations

- Consult with LPHA and OHA IPs in the event of a mass exposure among patients which would require them to be placed on Airborne Precautions
- Train and educate HCP on preventing transmission of measles
- Establish relationship with hospitals and LPHAs to promptly report suspected and confirmed cases
- Document the immunity status of your HCP and patients for easy access in the event of an exposure or outbreak

https://www.cdc.gov/infection-control/hcp/measles/index.html

Be Ready for Measles Toolkit

- Available to public health professionals to communicate with various community audiences about their cases and outbreaks
- Includes: fact sheets, social media graphics and videos, outbreak-related response tools for public health professionals and clinicians, measles case line list, measles investigation form, CDC checklist

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Avian Influenza

What’s going on with avian influenza?

- Avian influenza A (H5) or bird flu is enzootic in wild birds
  - Wild birds might not show signs of illness, but can carry the virus
- Avian influenza viruses can be “low pathogenic” or “highly pathogenic” based on the severity of disease they cause in poultry
- Highly pathogenic avian influenza (HPAI) H5N1 clade 2.3.4.4b is the strain currently circulating in North America

What's going on with avian influenza?

- H5 has spread from wild birds to many species of mammals to date.
  - In North America, H5 has caused large outbreaks in livestock (poultry and dairy cattle).
- During the North American H5N1 clade 2.3.4.4b outbreak, there has also been transmission of H5 from livestock to farm workers.
- There has been **no known human-to-human transmission** during the North American H5N1 clade 2.3.4.4b outbreak.

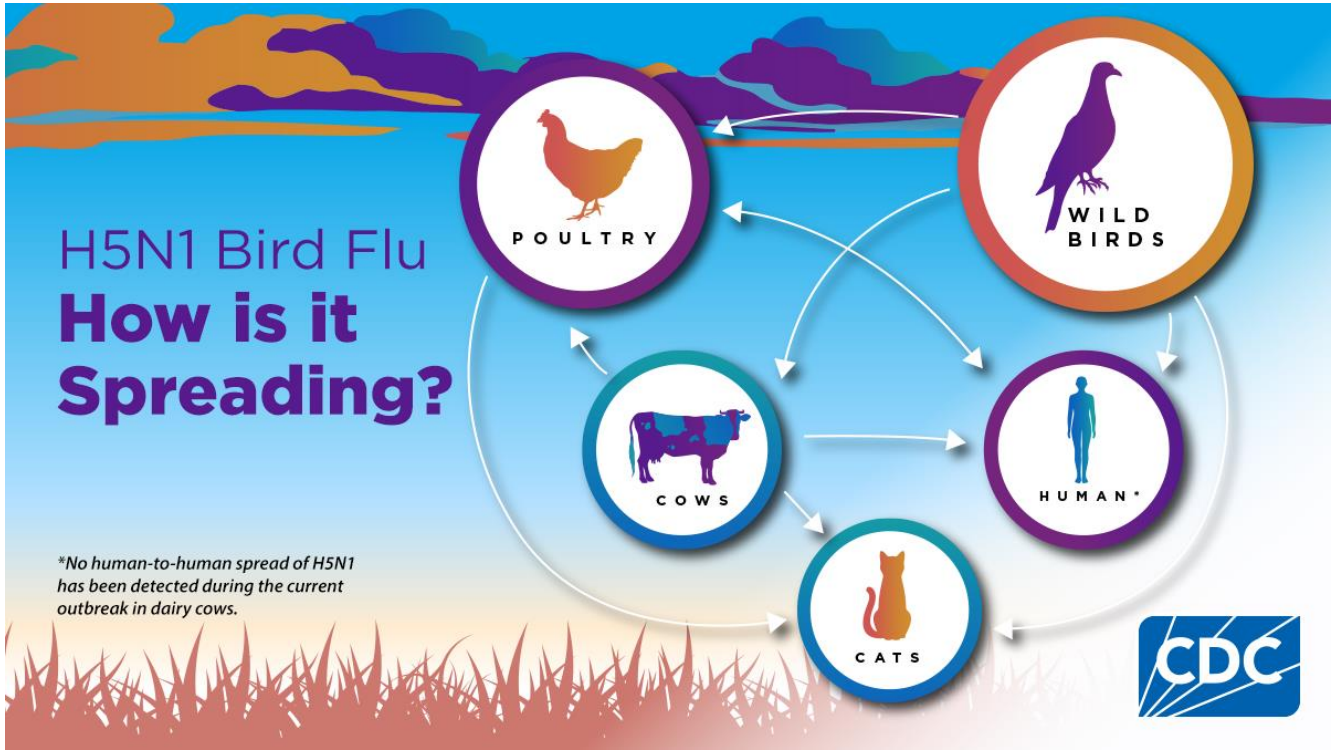

Image Source: https://www.cdc.gov/bird-flu/situation-summary/index.html

What's going on with avian influenza?

- There have been 70 confirmed human cases of H5 in the U.S. and 1 death since 2024.
  - There have also been 7 probable human cases who tested positive at a public health lab, but the infection was not confirmed by the CDC lab.
- Washington and California have reported the most human cases of H5 in the U.S.
- 67/70 (96%) human cases had known exposure to infected animals.
  - 3 human cases did not have a known exposure source.

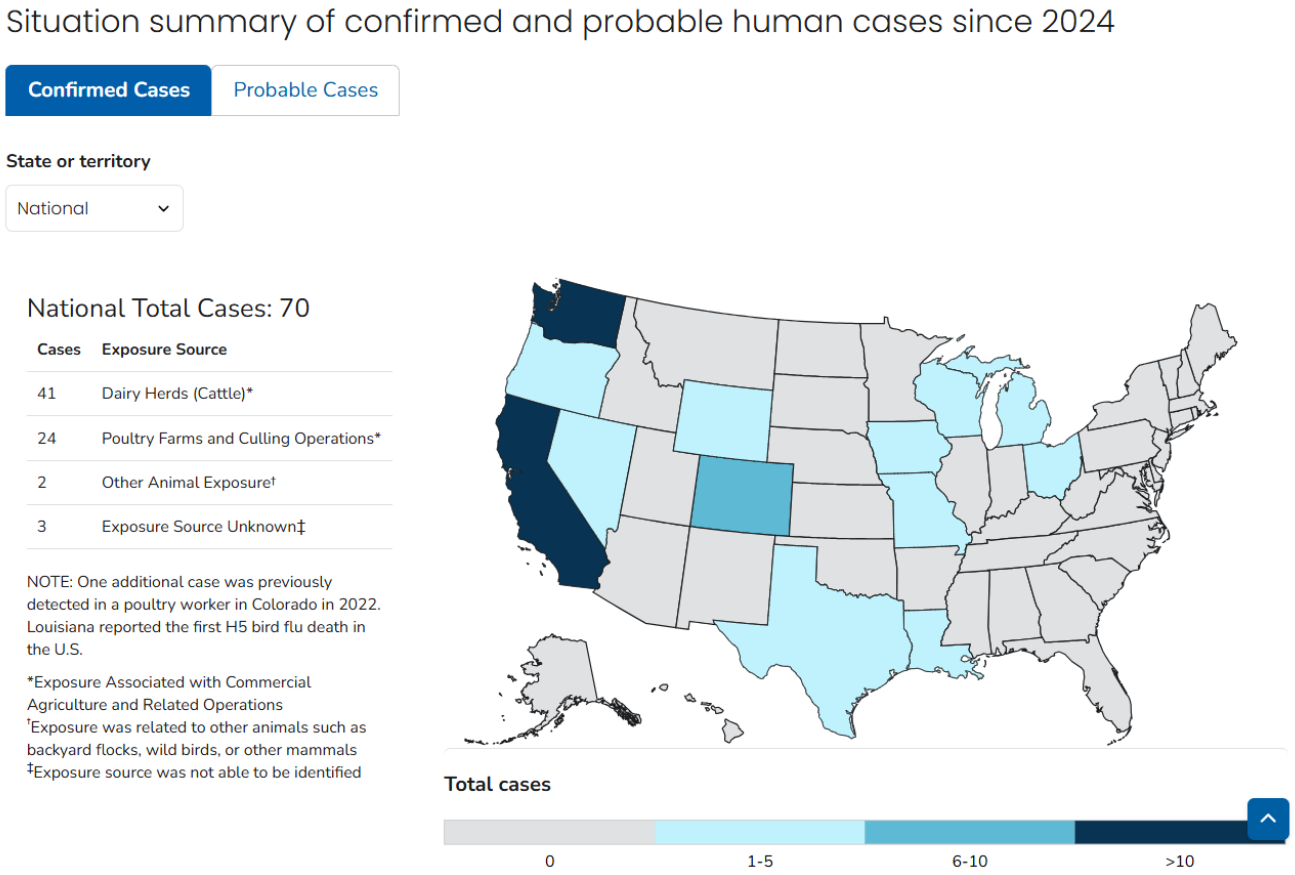

Image Source: https://www.cdc.gov/bird-flu/situation-summary/index.html

What's going on with avian influenza?

- Oregon has reported 1 human case of H5
- The case was linked to a poultry outbreak at a commercial poultry operation in Clackamas County

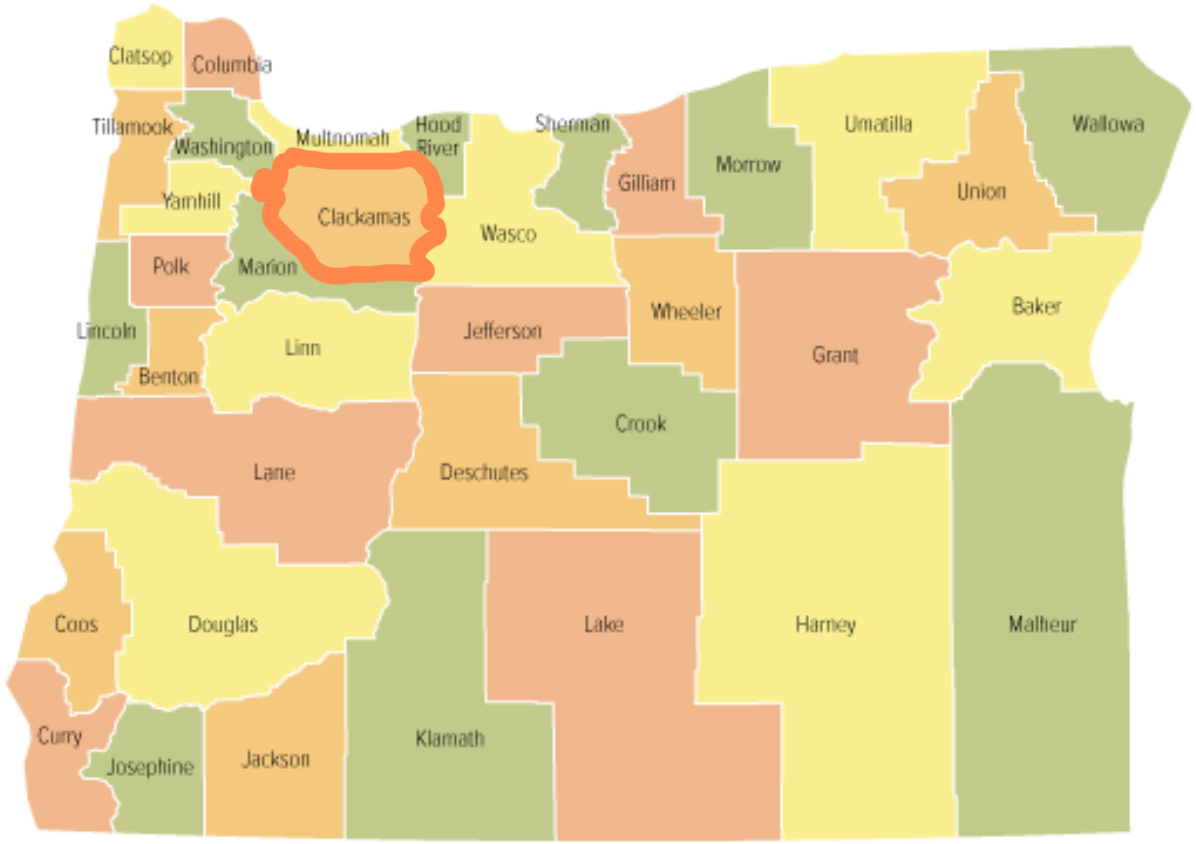

Image Source: https://sos.oregon.gov/archives/records/county/Pages/county-histories.aspx

What is the current risk to the public?

- The current public health risk is **very low.**
- There has been **no evidence of human-to-human transmission** during the North American H5N1 clade 2.3.4.4b outbreak.
- Who is most at risk?
  - People with prolonged, unprotected exposures to infected wild birds or other animals (dairy herds, poultry farms).
- How does H5 spread from infected birds and other animals to people?
  - The virus can spread through an infected animal's saliva, mucous, feces, and other body fluids (such as cow's milk).
  - Human infections can occur when enough of the virus enters a person's eyes, nose, or mouth, or is inhaled.

What happens when there is an animal outbreak?

- Oregon Department of Agriculture (ODA) provides PPE and training to the farmworkers.
- Oregon Health Authority (OHA) and Local Public Health Authorities (LPHAs) provide education and symptom monitoring.
  - If a person under symptom monitoring by public health following exposure to an animal with avian influenza infection develops symptoms, then OHA and LPHAs will coordinate testing and treatment.

What precautions can the public take to prevent infection?

- Avoid contact with sick or dead birds or animals and their droppings.
- If you find a sick or dead bird(s):
  - Do not touch it.
  - Report it.

- **For domestic birds:**
  - Oregon State Veterinarian (ODA)
    AHHotline@oda.oregon.gov
    Phone: 503-986-4711
    Alt Phone: 1-800-347-7028
- **For wild birds:**
  - Oregon Department of Fish and Wildlife (ODFW)
    Phone: 1-866-968-2600

What precautions can the public take to prevent infection?

- Avoid consuming unpasteurized or raw dairy products, including raw milk and raw cheese.
- People who develop flu-like symptoms, should be encouraged seek care as they normally would.

Signs & symptoms of influenza, including novel influenzas

Symptoms of influenza-like illness (ILI) may include:

- Fever (temperature of 100ºF or greater) or feeling feverish or chills
- Cough
- Sore throat
- Runny or stuff nose
- Conjunctivitis
- Muscle or body aches
- Headaches
- Fatigue
- Diarrhea
- Nausea
- Vomiting

Where can infection preventionists (IPs) learn more about avian influenza?

- Resources from APIC
  - Avian Influenza Playbook
  - Key Points the Infection Preventionist Needs to Know about Avian Influenza
- Resources from CDC
  - H5 Bird Flu: Current Situation
  - Interim Guidance for Infection Control Within Healthcare Settings When Caring for Confirmed Cases, Probable Cases, and Cases Under Investigation for Infection with Novel Influenza A Viruses Associated with Severe Disease

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Legionella

Legionella Background

- *Legionellae* are gram-negative bacilli (50 species & 70 serogroups)
  - *L. pneumophila* is responsible for >90% of infections.
  - Thrive in warm, aquatic environments & are relatively resistant to chlorine & heat.
- Diseases
  - Legionellosis (Legionnaires' disease and Pontiac fever)
  - Extrapulmonary legionellosis (clinical evidence at an extrapulmonary site and diagnostic testing of *Legionella)*
- No reliable distinguishing clinical characteristics (primarily respiratory); laboratory diagnosis.
  - Culture of lower respiratory secretions + urine antigen test

Legionnaire's Disease vs. Pontiac Fever

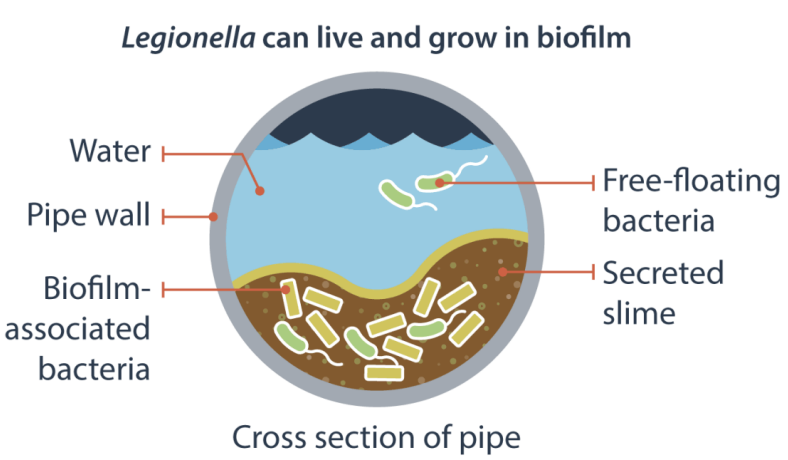
Legionnaire's Disease

- Radiographically or clinically diagnosed pneumonia
- Symptoms (develop 2-14 days after exposure)
  - Acute onset of lower respiratory illness with fever or cough
  - Chest discomfort, headache, malaise, myalgia, nausea, diarrhea, abdominal pain, shortness of breath
- Hospitalization is common. Case-fatality rate ~10% (HAI ~25%)

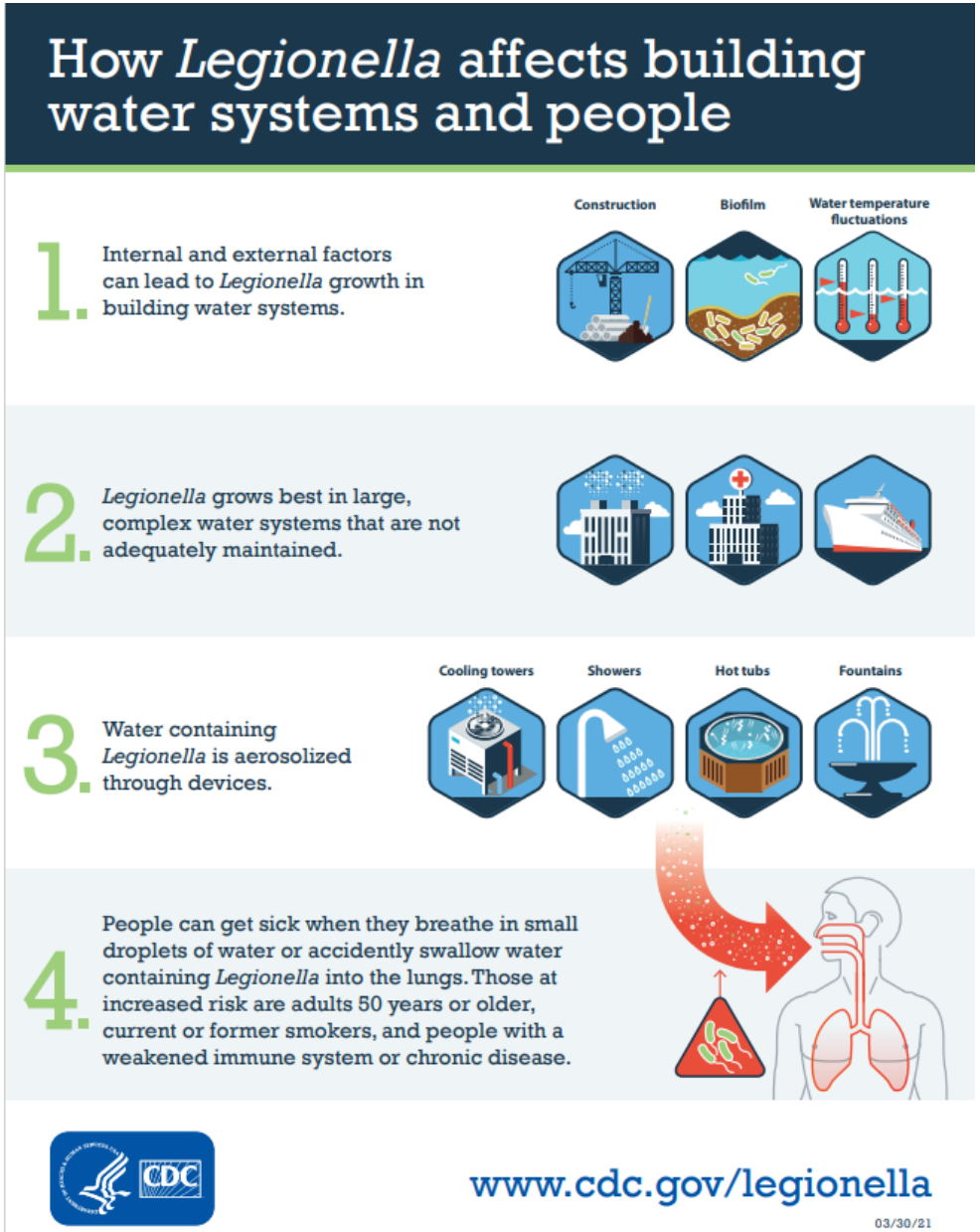
Pontiac Fever

- Milder, self-limiting illness without pneumonia
- Symptoms (develop <72 hours after exposure; last less than 1 week)
  - Chills, fatigue, fever, headaches, malaise, myalgia, nausea or vomiting
- Most patients fully recover without antimicrobial treatment or hospitalization.

How *Legionella* Spreads



https://www.cdc.gov/legionella/causes/index.html



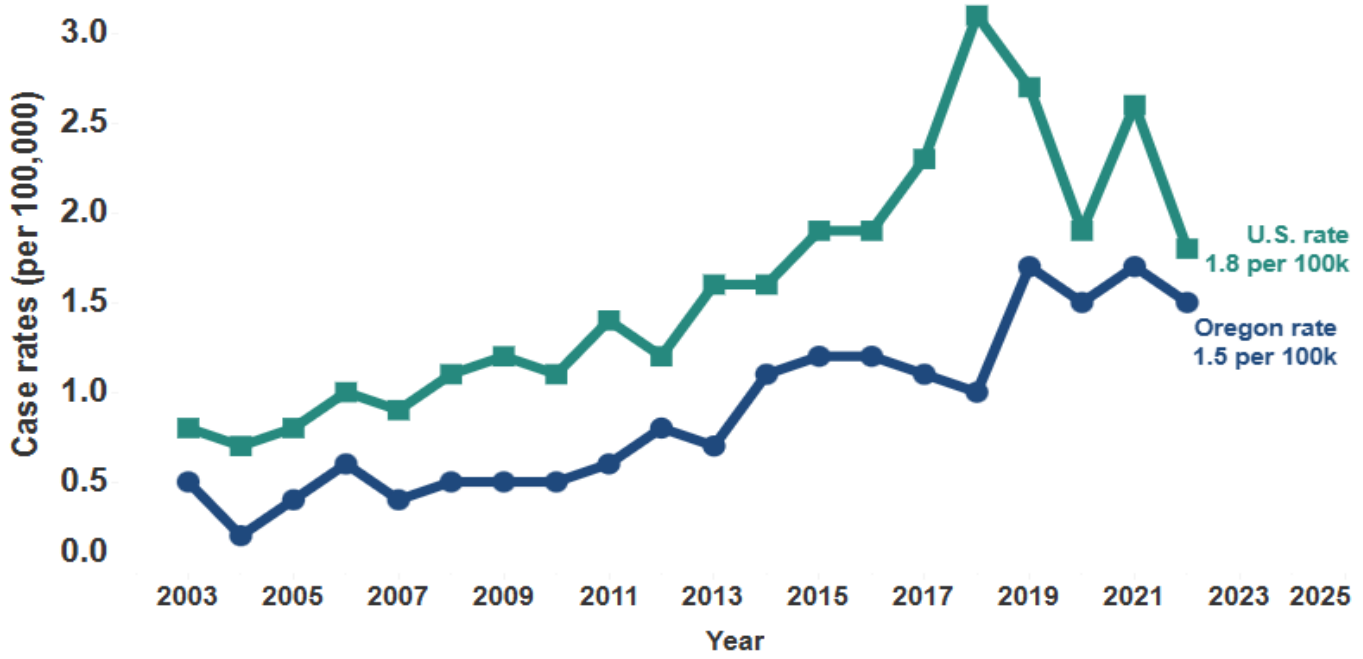
https://www.cdc.gov/legionella/infographics/legionella-affects-water-systems.pdf

Legionella Epidemiology

Oregon 2022 Selected Reportable Communicable Disease Summary

Case rates of legionellosis in Oregon vs nationwide, 2003 to 2022.

U.S. case counts, population and birth estimates exclude Oregon for comparison.



U.S. data sources: Nationally Notifiable Infectious Diseases and Conditions, CDC Wonder (annual, weekly); Census Bureau's Annual Population Estimates as of July 1st of each year; Births: Final Data for 2021 from National Vital Statistics Reports. **Oregon data sources:** Orpheus, Portland State University's annual population estimates, Oregon's vital statistics birth data. **FoodNet data sources**: Foodborne Diseases Active Surveillance Network, Census Bureau's Annual Population estimates as of July 1st of each year.

Legionella and Infection Control

Question*: Does your facility have a water management program?*

CMS requires healthcare facilities to have water management program that complies with ASHRAE guidelines to reduce

Ref: *QSO*-17-30- Hospitals/CAHs/NHs
REVISED 07.06.2018

Considerations to control *Legionella*:

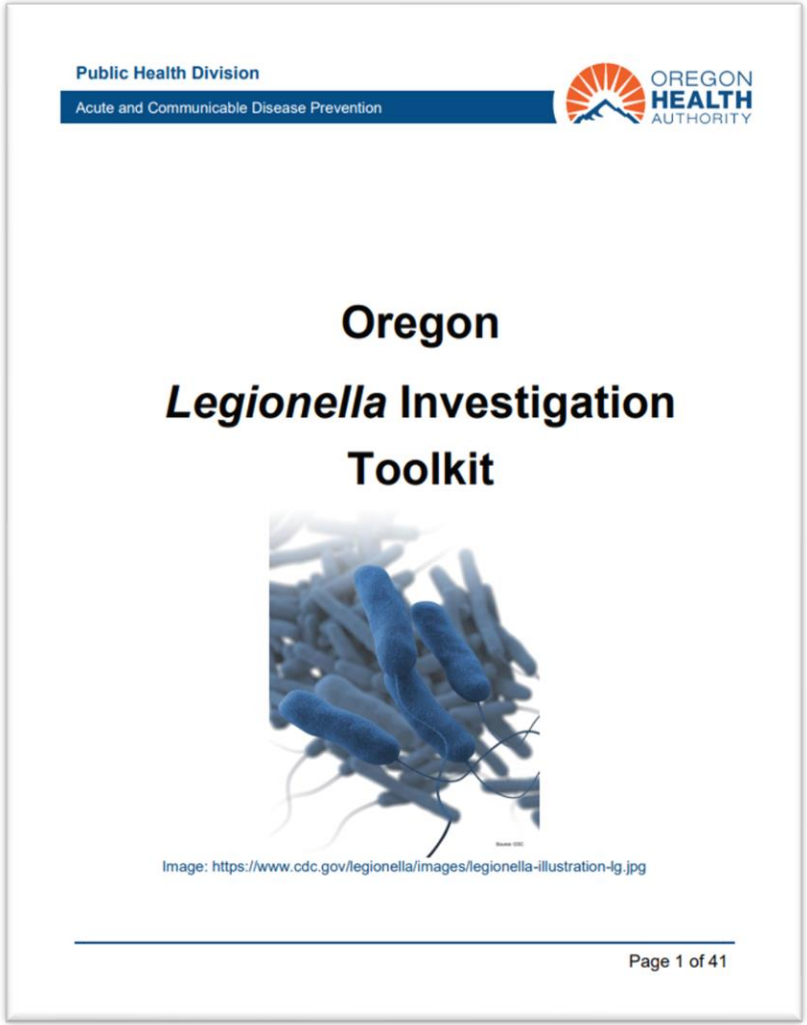
- Disinfectant
- Temperature
- Stagnation
- Equipment
- External factors: changes in public water systems, construction, water main breaks.

More about *Legionella*… this Fall!

Oregon *Legionella* Investigation Toolkit

Western Oregon Infection Prevention Collaborative (WOIPC) – October 2025

- In-depth session on *Legionella* investigation and water management programs.



Questions 💡 Comments 💡 Concerns 💡

- Any questions or concerns we can help with?

- Next Meeting:

Tuesday, August 12, 2025

1:00 pm – 2:00 pm

Session Topic:

MDRO-Focused – IP Power Hour: It's Okay to Have Dirty Urine

LPHA Introduction

Please reach out to us with any questions!

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Thank you!! 😊