Montana Communicable Disease Epidemiology Update

April 22, 2026

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DPHHS Communicable Disease Epidemiology Supervisor

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Outline

- Overview of CDEpi Roles and Responsibilities
- 2025: Communicable Diseases in Montana
- Mpox Case
- Spotlight on Legionellosis
- Measles Update
- Communicable Disease Dashboards

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Montana DPHHS:

- Communicable Disease Epidemiology Section
- Infection Control Prevention & Healthcare Associated Infections Section
- Providing 24/7 on-call support
- 406-444-0273

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CDEpi's Mission:

- Ensure Montana has trained State, Tribal, and Local Public Health staff to conduct disease surveillance.
- Detect and investigate cases and outbreaks of communicable diseases 24/7.
- Implement control measures to stop communicable diseases and outbreaks from spreading.
- Monitor disease trends.
- Provide accurate communicable disease information to the public and medical community.

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Communicable Disease Reporting in Montana

Suspected or confirmed cases of the following diseases must be reported to your local or tribal health department, per ARM 37.114.201. Additionally reportable is any unusual incident or unexplained illness or death in a human or animal with potential human health implications, per ARM 37.114.203. If your Local or Tribal Public Health Jurisdiction is unavailable, call 406-444-0273 (*available 24/7*).

Acquired Immune Deficiency Syndrome (AIDS)
Acute flaccid myelitis (AFM) ①
Anthrax ①
Arboviral diseases, neuroinvasive and non-neuroinvasive ① (California serogroup, Chikungunya, Eastern equine encephalitis, Powassan, St. Louis encephalitis, West Nile virus, Western equine encephalitis, Zika virus infection)
Arsenic poisoning (urine levels ≥70 micrograms/liter total arsenic or ≥35 micrograms/liter methylated plus inorganic arsenic)
Babesiosis
Botulism (infant, foodborne, wound, and other) ①
Brucellosis ①
Cadmium poisoning (blood level ≥5 micrograms/liter or urine level ≥3 micrograms/liter)
Campylobacteriosis
Candida auris ①
Carbapenemase-producing carbapenem-resistant
Leptospirosis
Listeriosis ①
Lyme disease
Lymphogranuloma venereum
Malaria
Measles (rubeola) ①
Melioidosis ①
Meningococcal disease (*Neisseria meningitidis*) ①
Mercury poisoning (urine level ≥10 micrograms/liter or urine level ≥10 micrograms/liter elemental mercury/gram of creatinine or blood level ≥10 micrograms/liter elemental, organic, and inorganic mercury)
Mpox
Multisystem inflammatory syndrome in children (MIS-C)
Mumps
Pertussis
Plague (*Yersinia pestis*) ①

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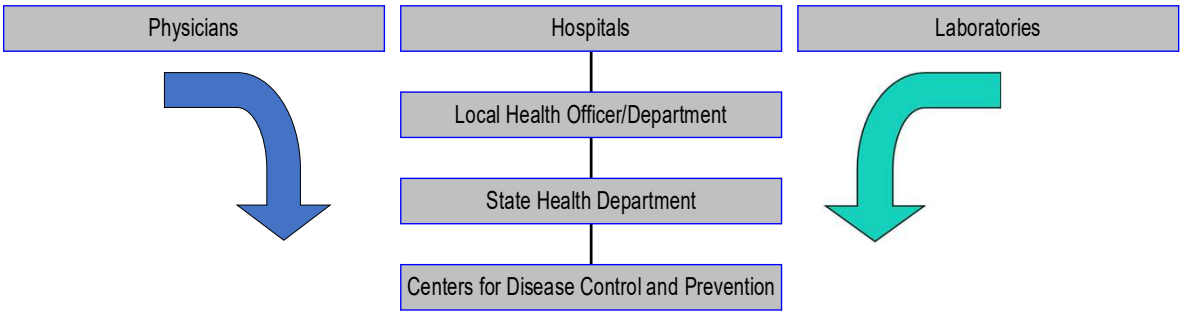
Communicable Disease Surveillance



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What happens after a case is reported?

- Disease Confirmation
- Disease Investigation
- Control Measures

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Medical Diagnosis vs. Case Definition

	Medical Diagnosis	Surveillance Case Definition
Application	Identification of disease to prescribe or recommend treatment of the patient	Identification of disease to compile information on trends and prevent the spread in a population
Treatment	Provider treats the patient based on science-based best practice recommendations	Public health makes recommendations for infectious disease prevention and control using science-based methods
Authority	Providers are practicing under a medical license and regulated under a licensing board	Public health law gives authority to enact control measures and request information on cases; oversight given by local board of health

Providers treat the patient, public health prevents disease in a community. CDEpi follows the CSTE and CDC case definitions when defining a disease – the physician's diagnosis will not always line up.

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2025: Montana Communicable Disease Year in Review

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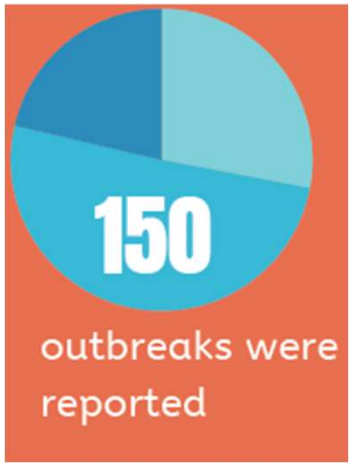
Communicable Disease: 2025 Summary



150 outbreaks (non-COVID) in healthcare and community settings were reported:

- 28% were enteric
- 51% were respiratory
- 21% were other, e.g., vaccine preventable diseases, health care-acquired infections, and hand, foot, and mouth disease
- Over 1,900 Montanans were sickened as part of an outbreak in 2025

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Communicable Disease: 2025 Summary

23 animals tested positive for rabies

- all were bats

A total of 295 recommendations for rabies postexposure prophylaxis were given in 2025

Over **17,000** communicable diseases reported:

50% were COVID-19 cases and over **4,000** cases of chlamydia and gonorrhea were reported

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Communicable Disease: 2025 Summary

356 pertussis cases were reported, compared to 143 reported in the previous year

24 foodborne outbreaks were reported

3 were linked to drinking raw milk, and one was linked to a sick food handler at a restaurant

5 cases of TB were reported, compared to a three-year average of 7 TB cases per year

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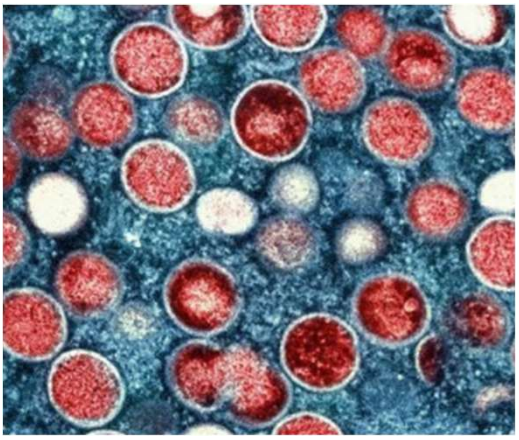
Mpox: first case reported in Montana since 2022



- One mpox case confirmed in 2025, adult male
- Hospitalized, not eligible for tecovirimat
- Significant lesions on chin, reconstructive surgery required
- Out of state sexual exposures prior to illness onset
- 3 family members were recommended PEP, 2 accepted and 1 declined. No community members were recommended PEP. HCW were also recommended PEP.
- Reminder to contact public health to help coordinate testing at MTPHL.

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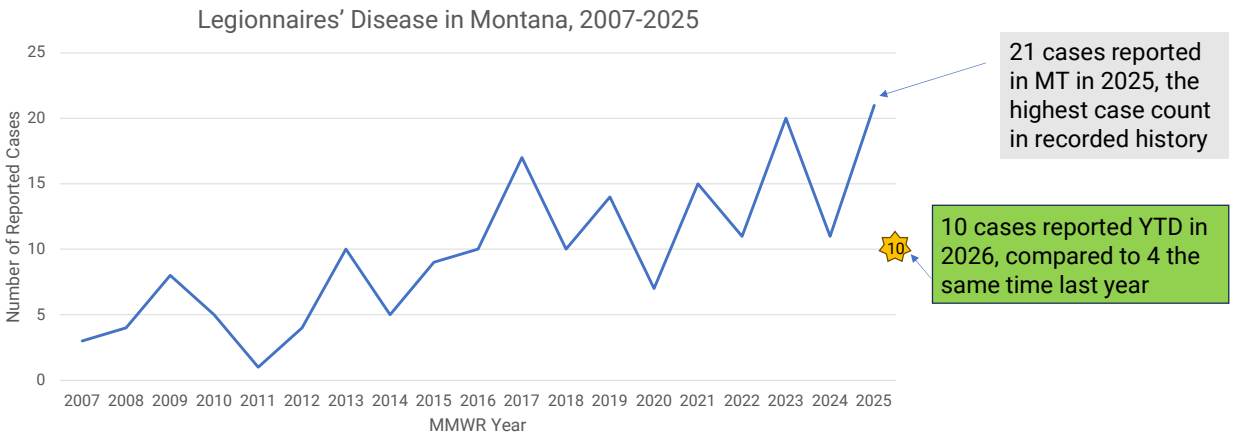
Legionellosis trends over time



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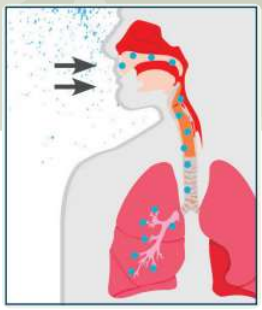
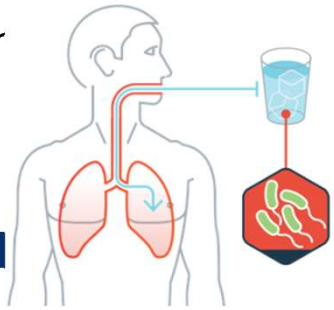
What is Legionellosis?



- An infection caused by the bacterium *Legionella*
- **Reservoir**: Water
- **Transmitted** by breathing in mist/small droplets of water that contain the bacteria or by aspirating water (when water accidently goes into the lungs while drinking). Generally <u>not</u> spread person-to-person



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Legionellosis

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- Three types of illness are caused by *Legionella* bacteria and are all referred to as legionellosis:
  - **Legionnaires' disease (LD)** – a type of severe pneumonia
  - **Pontiac Fever** – mild febrile illness that is self-limiting
  - **Extrapulmonary legionellosis** – very rare, an infection by *Legionella* bacteria at a site other than the lungs (like the heart or wounds)

- *Almost all reported Legionellosis cases are Legionnaires' disease*

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Legionnaires' Disease vs. Pontiac Fever

- Pontiac Fever
- Characterized by fever and muscle aches
- Mild infection, gets better without treatment
- No pneumonia, not known to be fatal
- Incubation period between a **few hours to 3 days**

Legionnaires' Disease

- Pneumonia: cough, fever, shortness of breath, muscle aches, headaches
- Severe illness
- About 1 in 10 cases will die, and most are hospitalized
- Incubation period of about **2 to 14 days**

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Legionellosis: Who is Susceptible?

- Most healthy people exposed to *Legionella* don't get sick. People at increased risk of getting sick include:
  - Current or former smokers
  - People 50 years or older
  - People with specific health issues or conditions

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Public Health Case Investigation

- The case investigation focuses on the 14 days prior to illness onset:
  - Travel history
  - Nights away from home (hospital, nursing home, hotel, etc.)
  - Hot tub use
  - CPAP, BiPAP, respiratory therapy equipment
- Legionnaires' disease investigations help identify risky exposures and help protect other individuals from getting sick

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Healthcare and Public Accommodation Exposures

- Exposure history can prompt an environmental investigation, which can help with remediation and prevent additional cases
- If healthcare exposures are identified in the 14 days prior to illness onset, the ICP/HAI section at DPHHS will be looped in and we will all work with the facility to identify risk factors for illness
- If a public setting/accommodation like a pool/hot tub or hotel is identified, we will work with the state and local/tribal environmental health to investigate and inspect the setting

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Why is legionellosis increasing?

- Potential factors:
  - An aging US population
  - Increase in diagnostic testing and awareness of legionellosis
  - Environmental factors such as flooding, drought, and warmer

Increased rainfall is associated with increased risk for legionellosis

L A HICKS [1,2,*], C E ROSE Jr [3], B S FIELDS [1], M L DREES [2,4], J P ENGEL [5], P R JENKINS [5], B S ROUSE [6], D BLYTHE [7], A P KHALIFAH [1], D R FEIKIN [1], C G WHITNEY [1]

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PMCID: PMC2870637 PMID: 17121693

Weather-Dependent Risk for Legionnaires' Disease, United States

Jacob E Simmering [1], Linnea A Polgreen [1], Douglas B Hornick [1], Daniel K Sewell [1], Philip M Polgreen [1,✉]

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PMCID: PMC5652433 PMID: 29048279

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Measles Update

To those who ask me, 'Why do you wish to eradicate measles?', I reply with the same answer that Hillary used when asked why he wished to climb Mt. Everest. He said, "Because it is there." To this may be added, "… and it can be done."

– 1967, Alexander Langmuir, chief epidemiologist at the Centers for Disease Control and Prevention,1949–1970

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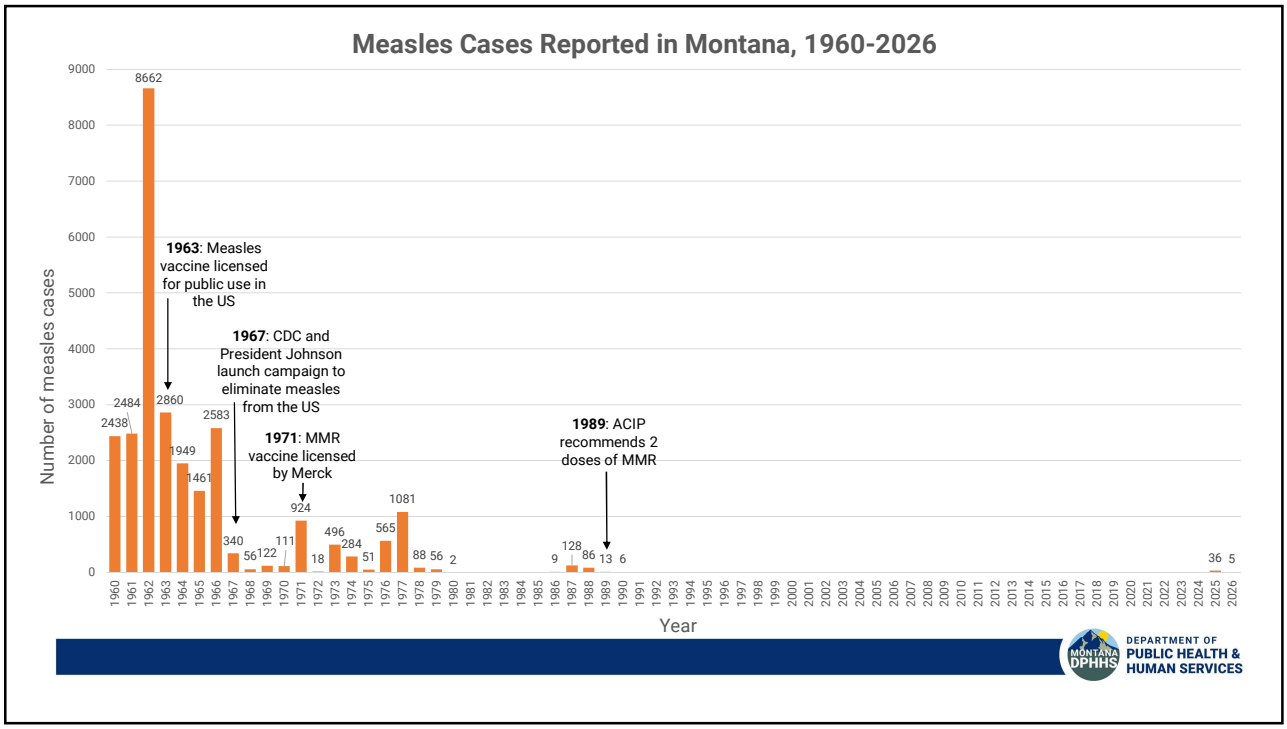

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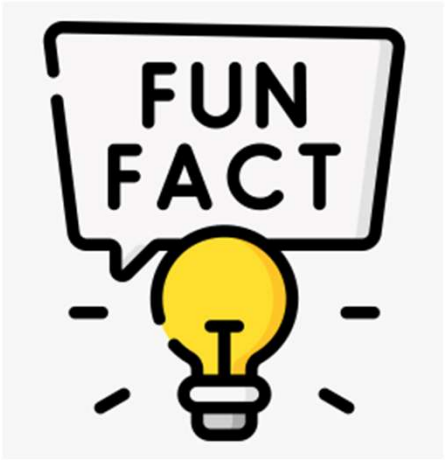
MONTANA



- Maurice Hilleman was a microbiologist born in Miles City, MT in 1919.
- Hilleman led the team at Merck that decided to combine measles vaccine with mumps and rubella, licensed in 1971.
- When his daughter Jeryl Lynn came down with mumps, Hilleman swabbed her throat and used that mumps virus to grow the laboratory strain still used today for the mumps component of the MMR vaccine.
- Dr. Hilleman was responsible for eight recommended childhood vaccinations: measles, mumps, hepatitis A, hepatitis B, chickenpox, *Neisseria meningitidis*, *Streptococcus pneumoniae,* and *Haemophilus influenzae*.

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Daily Montanan

GOVERNMENT & POLITICS ELECTION 2026 ENVIRONMENT JUSTICE LIVING WILDLIFE AND PARKS

HEALTHCARE

Montana health officials confirm five cases of measles

Montana's last outbreak was 35 years ago; contact local health officials if you need a vaccination

BY: DAILY MONTANAN STAFF - APRIL 17, 2025 5:39 PM

NEWS > LOCAL NEWS

5 measles cases confirmed in Gallatin County, 1st in Montana since 1990

The five cases are in children and adults who were exposed to measles while traveling outside of Montana.

Coverage of your favorite teams from Montana's Sports Leader

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Measles Illness Overview

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Measles Virus

- **Airborne transmission** through respiratory particles
  - Virus remains in air for 2 hours after ill person has left
- Highly contagious – 90% of susceptible exposed persons will get measles
  - **MMR vaccines are safe and highly effective**, with two doses being 97% effective against measles (one dose is 93% effective).
  - MMR vaccine or Immune globulin (IG) can be used as post-exposure prophylaxis (PEP) for non-immune, exposed individuals
- Transmissible 4 days prior and 4 days after rash appearance
  - Incubation period – 14 days to rash onset, ranges from 7-21 days

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Measles Illness

- Rash and respiratory illness caused by the measles virus
- 2-4 days prior to rash – very high fever, cough, runny nose (coryza), red eyes
- Rash is flat, begins at hairline and moves down the body
- Complications include pneumonia, encephalitis, death
  - Two children, one adult died in Southwestern US outbreak
  - US: 2,255 confirmed measles cases in 2025 in 45 states

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Public health response when a case of measles is detected:

- **All cases should isolate until 4 days after rash onset**
  - Can isolate at home if medically stable
- **In medical facilities: all cases should be in Airborne Infection Isolation Room (AIIR)**
  - Transporting case into AIIR can expose other patients, medical staff
  - Airborne precautions for healthcare staff
- **Testing**: Specimen collection, transport

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Testing for Measles at MTPHL

Specimen Criteria:
Collect the following specimens to test for measles infection at MTPHL:

- **Days 0-3 of rash onset**: collect Respiratory Specimen only (Throat, NP, Nasal Swab in viral transport media). You may also collect serum if the provider chooses.
- **Days 4-7 of rash onset**: collect Respiratory Specimen (Throat, NP, Nasal Swab) and Serum.
- **More than 7 days after rash onset**: collect Serum only.

- Testing prior to rash onset is not reliable, and not recommended
- PCR swab can be collected in a car, reducing exposure risk
- Measles testing at MTPHL – cost is $115
  - Turnaround time on measles PCR: 1 business day (M-F)
  - MTPHL courier runs daily

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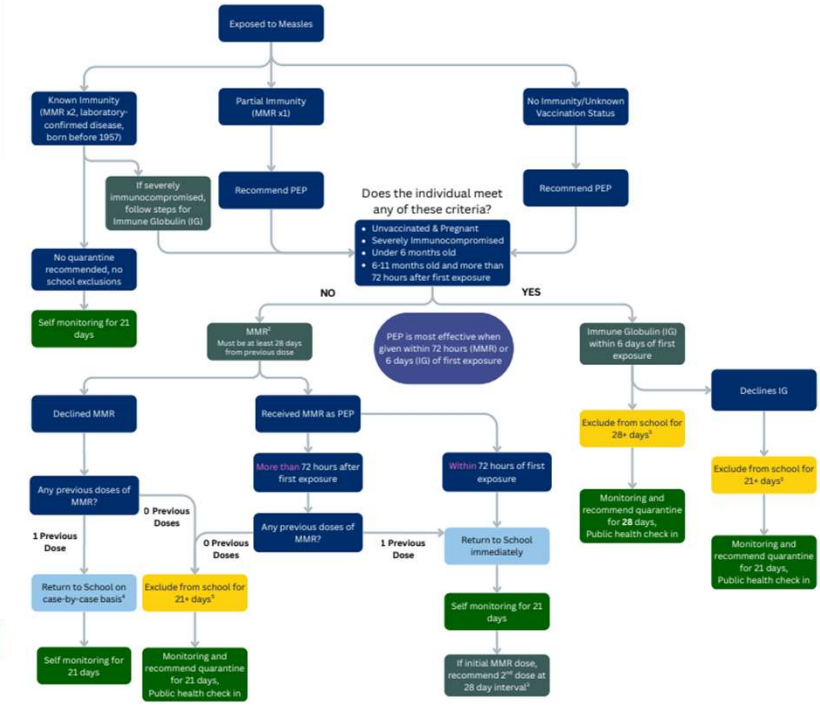
Post-exposure prophylaxis (PEP)

- Vaccinated/immune contacts do not need to quarantine, symptom monitoring for 21 days after exposure
- Recommendations for post-exposure prophylaxis as appropriate for non-immune contacts
  - Time Sensitive!!
  - MMR PEP < 3 days, IG PEP < 6 days



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Measles Epidemiology

Data as of 4/20/2026

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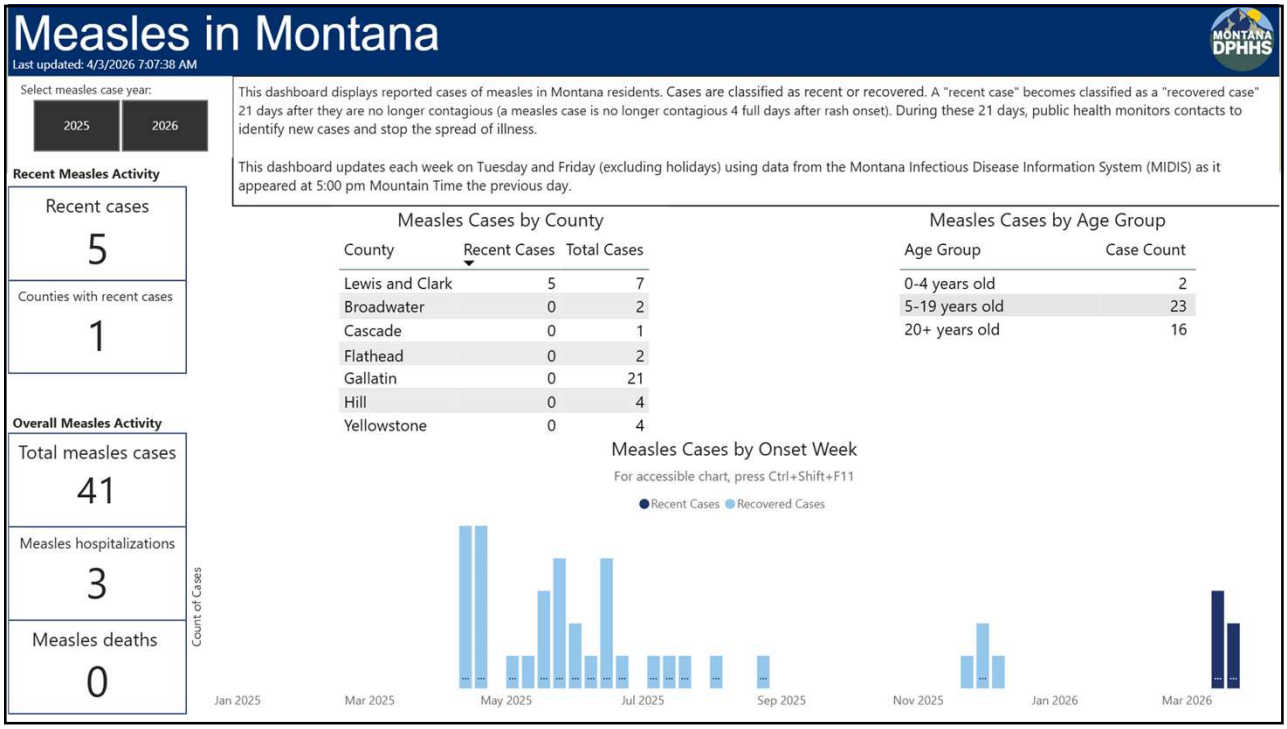

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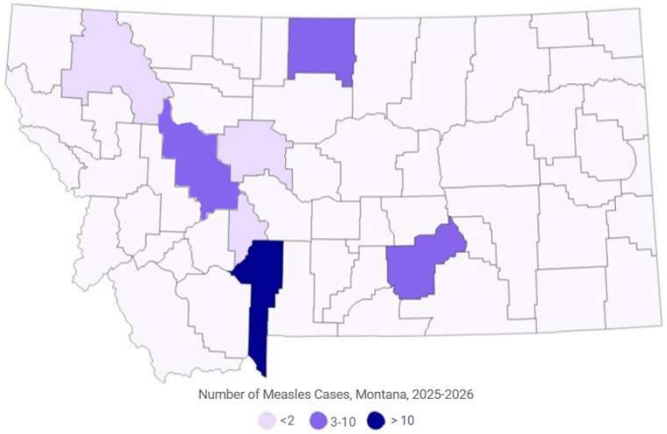
Measles Cases by County, Montana, 2025-2026 (n=41)



7 MT Counties with Measles Cases:

BROADWATER	2
CASCADE	1
FLATHEAD	2
GALLATIN	21
HILL	4
LEWIS AND CLARK	7
YELLOWSTONE	4

4 Montana Measles Outbreaks:

GALLATIN	n=8
HILL	n=4
GALLATIN	n=3
BROADWATER & GALLATIN	n=4

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Measles Cases, Montana, 2025-2026 (n=41)

Measles Case Characteristics		
Vaccination status	**No.**	**%**
Unvaccinated	28	68%
Not vaccinated due to age	2	5%
MMRx2 (documented)	7	17%
Unknown/unverified	3	7%
MMRx1 (documented)	1	2%
Immune due to illness	0	0%

Note: among all 22 pediatric cases, none were vaccinated
- 2 unvaccinated due to age
- Parent refusal

Measles Case Determination Method		
Case Status	**No.**	**%**
Confirmed by lab testing	30	73%
Confirmed by epi linkage	11	27%

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Measles Cases, Montana, 2025-2026 (n=41)

Measles Case Demographics		
Sex	**No.**	**%**
Female	21	51%
Male	20	49%
Race	**No.**	**%**
White	39	95%
Unknown	2	5%
Ethnicity	**No.**	**%**
Hispanic	7	17%
Non-Hispanic	30	73%
Unknown	4	10%
Age		
Median	10 years	
Range	11 months - 60 years	
Pregnancy	2 cases	

Measles Symptoms		
Fever	**No.**	**%**
Yes	37	90%
No	1	3%
Unknown	3	7%
Highest Fever (n=20) Median, Range	103°F (101-105.7°F)	
Rash		
Yes	40	98%
No	1	2%
GI Symptoms	9	22%
Days from fever to rash	Median = 2 days Range = 0-6 days	

Cough	**No.**	**%**
Yes	34	83%
No	5	12%
Unknown	2	5%
Coryza		
Yes	28	68%
No	11	27%
Unknown	2	5%
Conjunctivitis		
Yes	19	46%
No	21	51%
Unknown	1	2%

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7 breakthrough measles cases reported in Montana with 2 MMR documented:

- Ages: 21-36 years, median 24 years
- Sex: 5 males 2 females
- None hospitalized
- Rash: n=6, often atypical
- Fevers: n=6
  (range: 102-105°F)
  1 reported no fever
- Cough: n=4 Coryza: n=3
  Conjunctivitis: n=2
- 5 break through cases with known exposures to measles:
  - 1 household
  - 1 travel
  - 3 workplace
  - 2 no known exposure, no travel outside of the state

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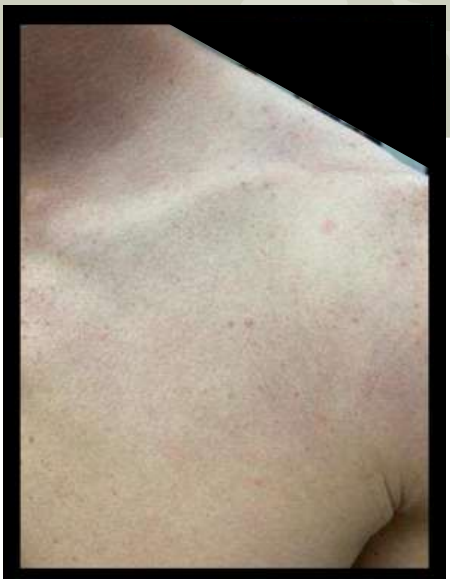
Atypical measles rash examples



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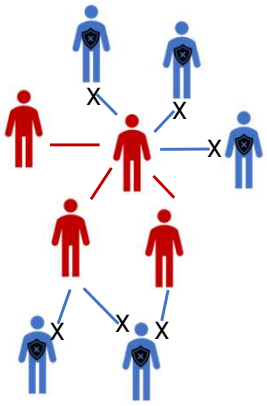
Measles Transmission Dynamics

- **NONE of our breakthrough measles cases infected others, indicating measles infections in a vaccinated person may be less infectious.**
- Multiple factors impact secondary transmission:
  - Ability to isolate, how quickly
  - Proximity, duration of contact with others
  - Number of people exposed
  - Vaccination status of others around you
  - Some of our breakthrough cases had large exposure events: Black Friday shopper, Costco and Walmart shoppers, restaurant server
- Unvaccinated measles cases and secondary transmission:
  - Montana: Multiple households had all unvaccinated household member developed illness



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Communicable Disease Dashboards

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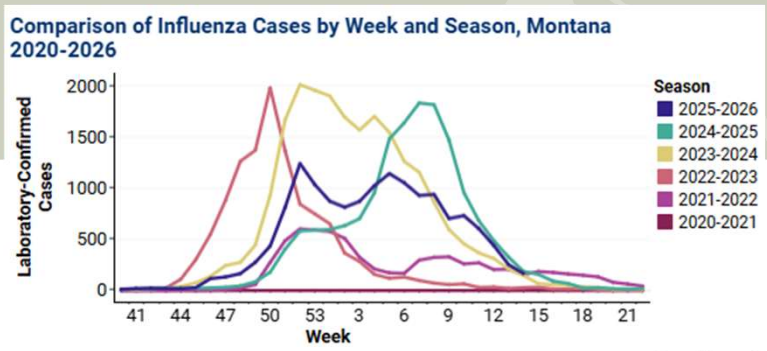
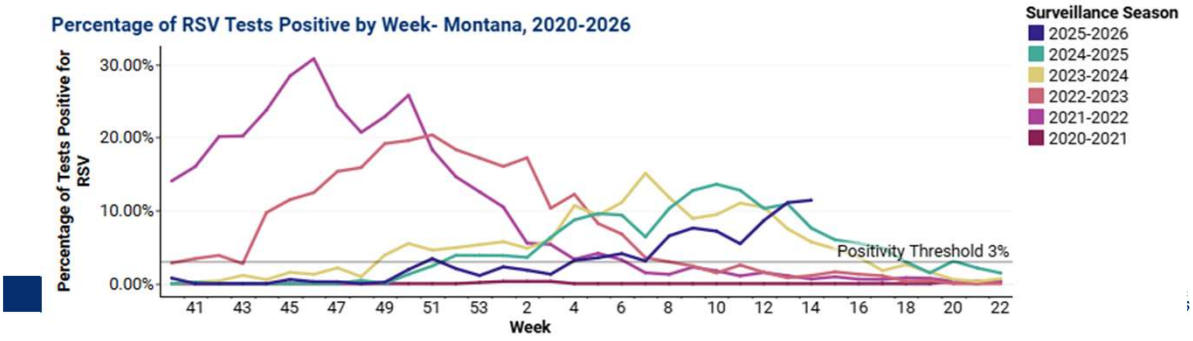
Respiratory Illness Data

RSV vaccine recommendations extended through April 30, 2026





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Tick Surveillance

- New: Citizen surveillance program to submit ticks for identification
- Black legged ticks in Montana first announced in spring 2025, none detected since

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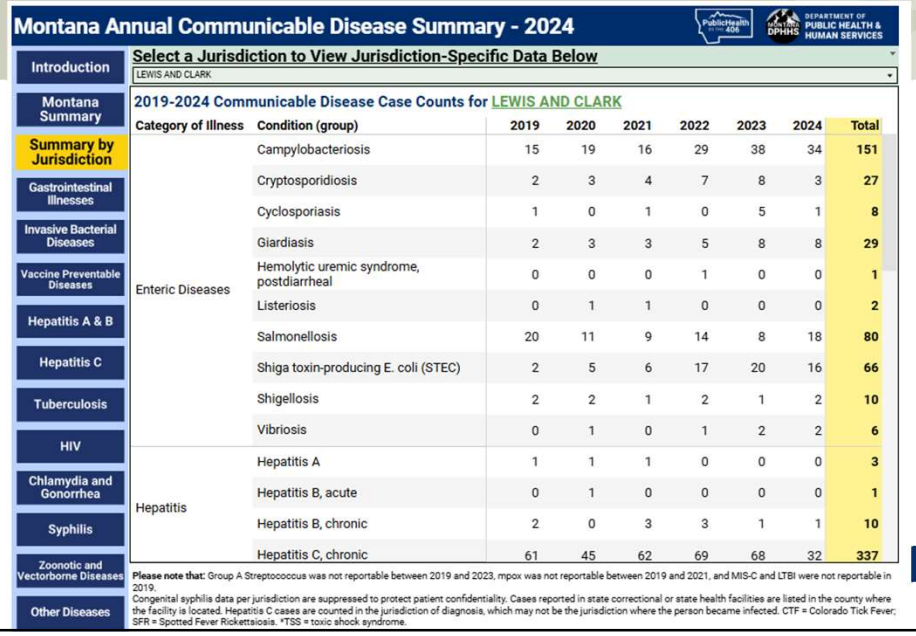
Communicable Disease Dashboards



Category of Illness	Condition (group)	2019	2020	2021	2022	2023	2024	Total
Enteric Diseases	Campylobacteriosis	15	19	16	29	38	34	151
	Cryptosporidiosis	2	3	4	7	8	3	27
	Cyclosporiasis	1	0	1	0	5	1	8
	Giardiasis	2	3	3	5	8	8	29
	Hemolytic uremic syndrome, postdiarrheal	0	0	0	1	0	0	1
	Listeriosis	0	1	1	0	0	0	2
	Salmonellosis	20	11	9	14	8	18	80
	Shiga toxin-producing E. coli (STEC)	2	5	6	17	20	16	66
	Shigellosis	2	2	1	2	1	2	10
	Vibriosis	0	1	0	1	2	2	6
Hepatitis	Hepatitis A	1	1	1	0	0	0	3
	Hepatitis B, acute	0	1	0	0	0	0	1
	Hepatitis B, chronic	2	0	3	3	1	1	10
	Hepatitis C, chronic	61	45	62	69	68	32	337

- New annual summary dashboard
- Outbreaks dashboard

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Thank You!

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406-444-0273 – 24/7 Public Health Emergency Support

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