2024 Communicable Disease Epidemiology Report Yellowstone County, MT

RiverStone Health

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This report is an epidemiological overview of reportable communicable diseases in Yellowstone County, Montana. It includes years of data for comparison starting in 2020 and going through 2024. The goal of this report is to provide information on the burden of disease in the community and how that data has changed over time. All data was collected from the Montana Infectious Disease Information System (MIDIS). Data may be subject to change. This report includes data that was collected during the COVID-19 pandemic, during which many diseases were underreported, including influenza.

Diseases included in this report:

Reader's Note: Influenza data is based on typical respiratory season, starting with the 2019-2020 reporting period and going through the 2023-2024 reporting period. These time periods are typically October to June, which follows the Montana Department of Public Health and Services (DPHHS) reporting format. Other diseases will be based on full calendar years.

Respiratory Pathogens

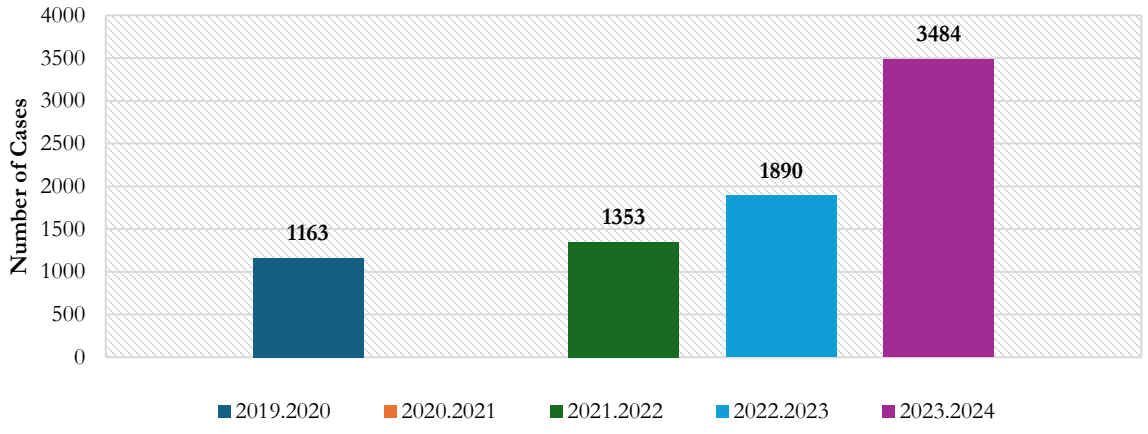
Influenza

Influenza is a highly contagious respiratory virus that can cause mild to severe illness. The virus is spread mainly by tiny droplets from when ill people cough, talk, or sneeze. The most effective way to prevent the spread of the illness is to get vaccinated every year. Figure 1 highlights a 5-year comparison of influenza cases in Yellowstone County from the 2019.2020 season to 2023- 2024. In the 2023- 2024 respiratory season there were 3,484 cases of flu reported in Yellowstone County.

The 2023- 2024 flu season marked a statistically significant (84%) increase compared to the 2022- 2023 season. The number of cases reported in 2023- 2024 was also notably higher than each of the prior four years, potentially representing a decrease in reporting during the height of the COVID-19 pandemic. Of the cases reported, 48.9% of influenza cases were influenza type A (1,703), 50.1% were type B (1769), and 0.34% were type AB (12).

When looking at populations affected by personal demographics, 53.2% of influenza cases occurred among females and 46.8% among males. Gender was reported in all cases.

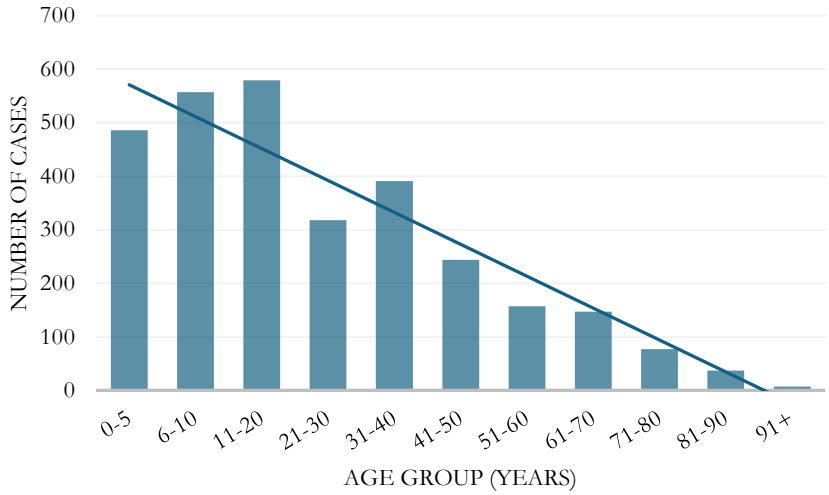
Figure 1. Five Year Comparison of Influenza Cases in Yellowstone County, by Respiratory Season 2019-2020 - 2023-2024



The highest number of cases were reported in people under the age range of 0-20 years. Figure 2 highlights influenza cases by age group in the most recently completed 2023- 2024 respiratory season.

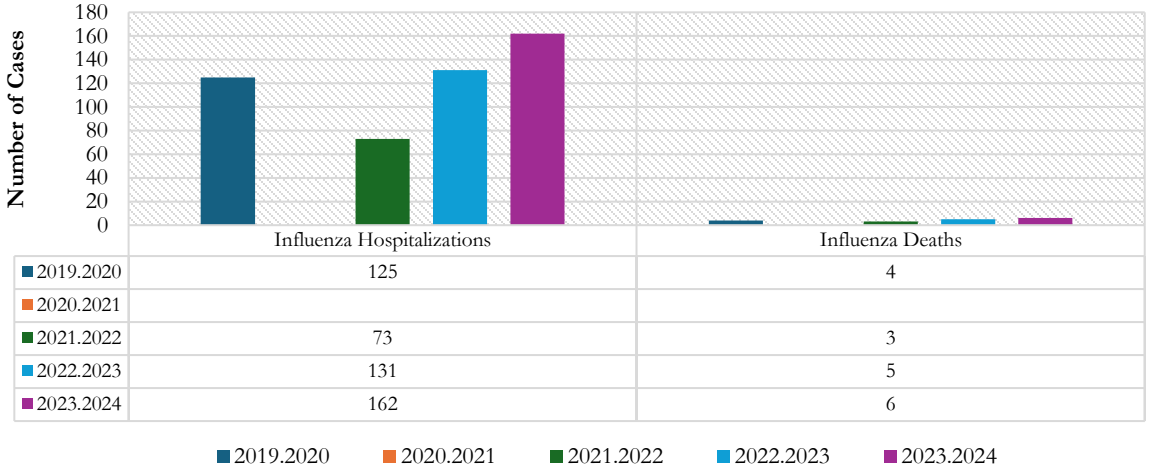
While the number of cases decreases with age, there is still an increased risk of poor health outcomes from the 65 and older age group. This risk includes hospitalization and death. Figure 3 highlights the hospitalizations and deaths due to influenza. In the 2023-2024 season, hospitalizations more than doubled since the 2022-2023 season. Figure 3 notes hospitalizations and deaths among flu cases over a 5-year timeframe.

Figure 2. Influenza Cases Reported by Age Group in the 2023-2024 Respiratory Season, Yellowstone County



Of those who died due to influenza, 50% were males and 50% were female. When considering age, 17% were in their 50s, 33% were in their 60s, 17% in their 70s, and 33% were in their 80s. Five of the six cases were influenza type A and one case was type B. For more information on influenza click here.

Figure 3. 5 Year Comparison of Influenza Cases in Yellowstone County, by Respiratory Season 2019-2020 - 2023-2024



	Influenza Hospitalizations	Influenza Deaths
2019.2020	125	4
2020.2021		
2021.2022	73	3
2022.2023	131	5
2023.2024	162	6

COVID-19

COVID-19 is a SARS-CoV-2 virus that is highly contagious and spreads quickly. It spreads from respiratory droplets that may come from a cough, speaking, or sneeze. The virus may also contaminate surfaces and spread from there. To prevent, follow respiratory guidance on hygiene practices like washing your hands, wearing a mask, and getting vaccinated.

Figure 4. Five Year Comparison of COVID-19 Case in Yellowstone County, 2020-2024

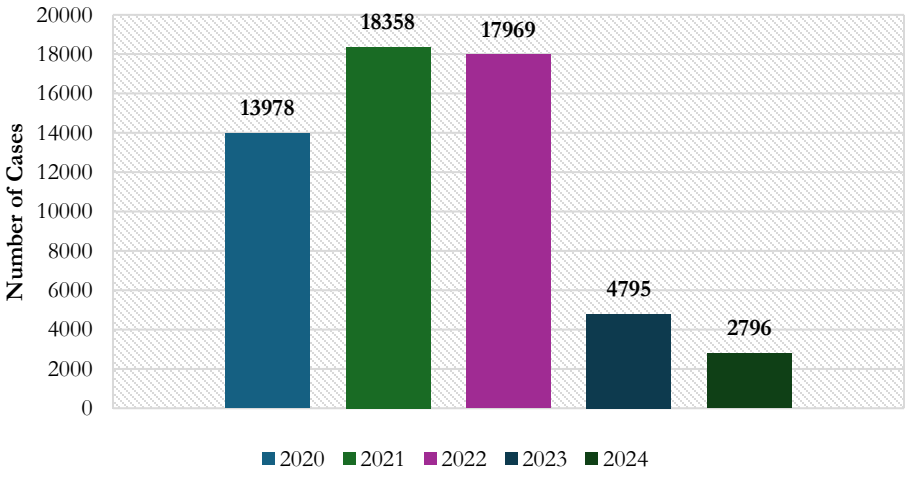
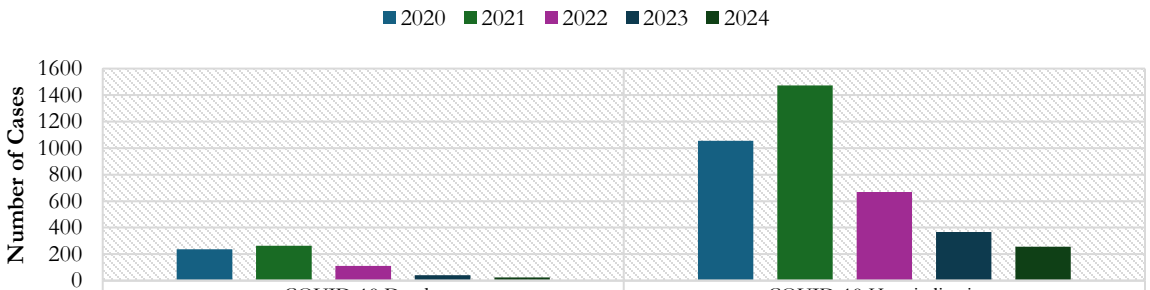


Figure 4 highlights COVID-19 trends from 2020 – 2024. In 2024, there were 2,796 cases of COVID-19 reported in Yellowstone County, which is 16% of the total cases reported in Montana. Since 2022, reported COVID cases have significantly decreased each year. From 2023 to 2024 there was a 42% decrease in reported cases. Despite this decrease, it is expected that we do not see the true burden of disease reflected in these numbers due to people increasing their use of home testing kits and not being tested and thus reported in clinical settings.

61% of COVID-19 cases reported were in females, 38% of cases were males, and 0.8% of reported cases were unknown of sex.

Figure 5 highlights the number of deaths and hospitalizations due to COVID since 2020. Deaths and hospitalizations continued with a yearly downward trend since 2021. There was a 30.7% decrease in hospitalizations due to COVID-19 from 2023 to 2024, ending the year with 255 hospitalizations compared to the previous year of 368. Of those hospitalizations, 4% were in people under the age of 18 years, 6% were in ages 18-49, 15% were in ages 50-65, 35% were in ages 66-79, 28% were 80-89, and 12% were ages 90+.

Figure 5. Comparison of Deaths and Hospitalizations due to COVID-19 in Yellowstone County, 2020-2024



	COVID-19 Deaths	COVID-19 Hospitalizations
2020	236	1054
2021	263	1474
2022	112	668
2023	41	368
2024	23	255

The average hospital stay was 5.3 days for patients. 16 of the hospitalizations were in the ICU. The number of deaths decreased by 43.9%, almost half, ending the year with 23 deaths. All deaths were reported in people over the age of 55 and as old as 101, with the average age being 81 years old. For more information on COVID-19 click here.

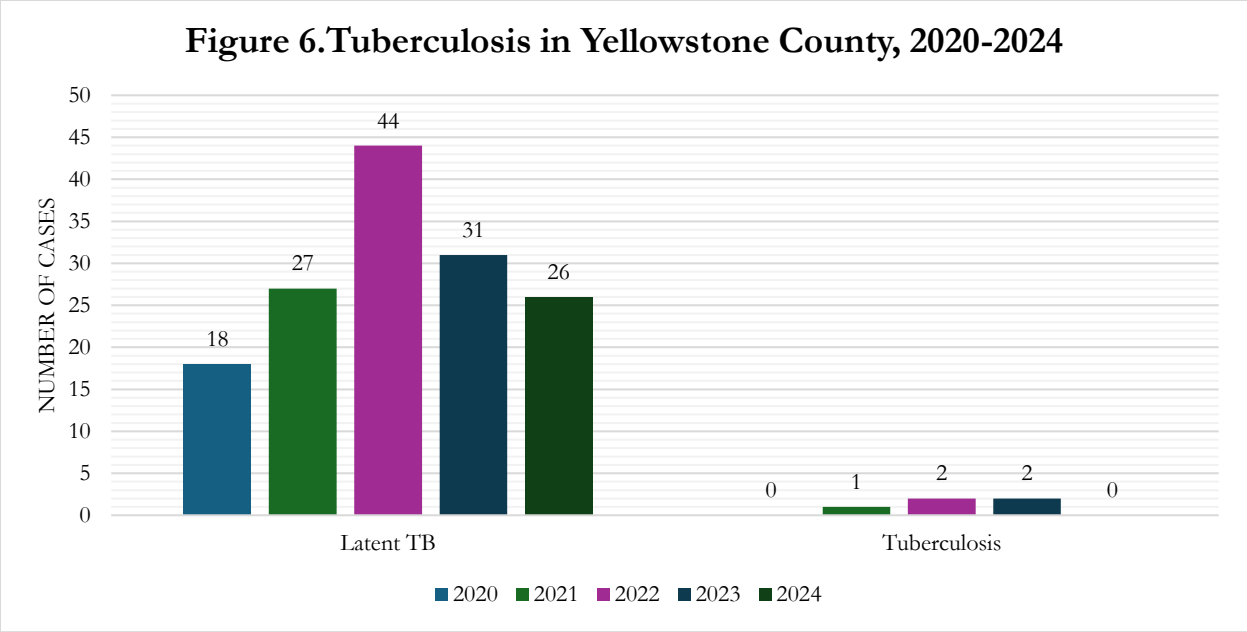
Bacterial Pathogens

Tuberculosis

Tuberculosis (TB) is a bacterial infection that typically affects the lungs and can be spread through the air from coughs, sneezes and spit. Latent tuberculosis (LTBI) occurs when the body has the TB bacteria, but the case does not experience symptoms and cannot spread the infection to others. If you have active TB, symptoms may include a long term cough, chest pain, fatigue, coughing up blood or sputum (phlegm) and more. If you feel sick or know someone who has a TB diagnosis, contact your provider for testing and treatment.

Montana reported 169 cases of LTBI in 2024, and Yellowstone County reported 16% of those cases. In 2024 there were 26 cases of Latent TB compared to 31 the previous year, a 16% decrease.

There were no cases of active TB in Yellowstone County in 2024. Over the course of five years, Yellowstone County has averaged 29 LTBI cases a year (Figure 6). For more information on TB click here.

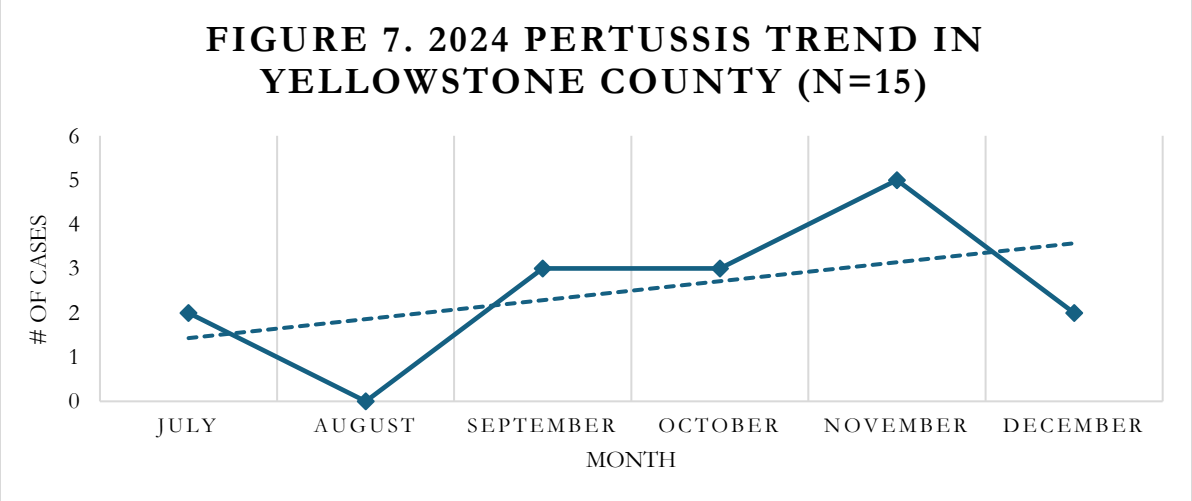


Pertussis

Figure 7 depicts the cases of pertussis reported in 2024 by month. Pertussis, also known as whooping cough, is best prevented through immunization and is known as a vaccine preventable disease (VPD). Pertussis is a highly contagious respiratory infection caused by the bacterium Bordetella pertussis and is easily spread from person to person through coughing or sneezing.

The World Health Organization (WHO) recommends the first dose be administered as early as 6 weeks of age and is followed with two more doses at 10-14 weeks of age and 14-18 weeks of age. A booster is then recommended during the second year of life. Local epidemiology may advice a further booster dose later in life. For more information on Pertussis click here.

In Montana, there were 144 cases reported in 2024, with Yellowstone County representing 10% of all cases.



15 cases were reported in Yellowstone County with the first two cases diagnosed in July, followed by a fluctuation in cases through the following months. November had the highest number of cases, with five people diagnosed. Prior to 2024, the last reported case of pertussis in Yellowstone County were in 2020.

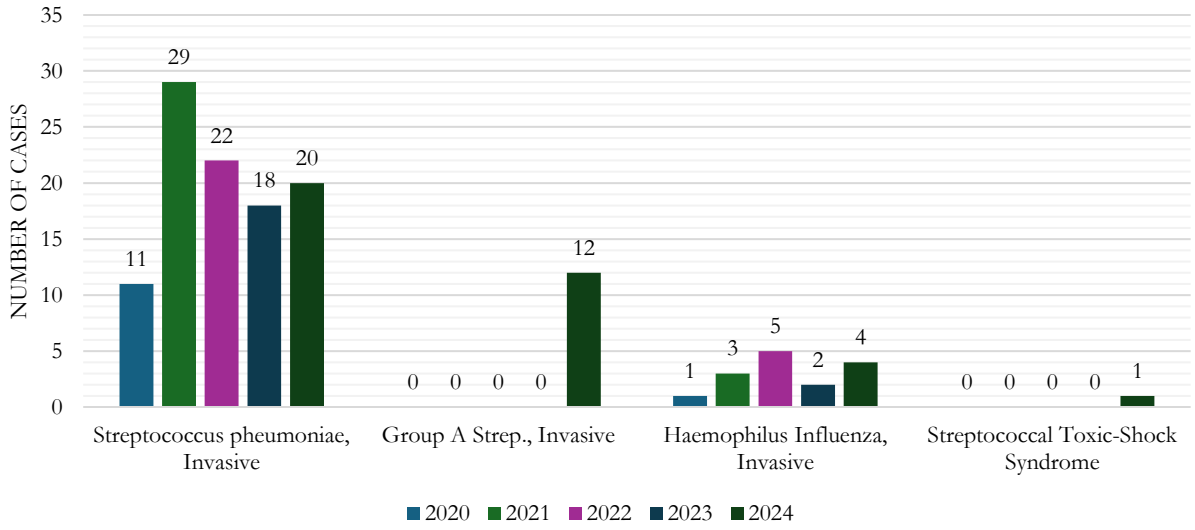
Four of the fifteen Yellowstone County cases (27%) were among children 6 years and under, the youngest being 5 months old. Ten of the fifteen cases (67%) were among teenagers ages 13 to 19. One case was reported in a 75-year-old male. 53% of cases were among males and 46% were among females.

Various Bacterial Diseases

Figure 8 highlights bacterial diseases reported in Yellowstone County between 2020 – 2024. **Streptococcus Pneumonia** is a bacterial infection that can affect any person with varying symptoms. It is spread from direct contact with respiratory secretions like mucus or saliva. The best prevention is to stay up to date with vaccines. In Montana there were 111 cases of invasive Streptococcus Pneumonia reported in 2024. Of those cases, 20 were reported in Yellowstone County (18%). Over the past five years, Yellowstone County has averaged 20 cases a year.

In 2024, 60% of Yellowstone County cases were among males and 40% were among females. The youngest case was in a child that was 5 months old while the oldest was 87 years old. 65% of cases were in ages 50, 25% were in ages 20-49, and the remaining 10% were in two children ages 1 and younger. For more information click here.

Figure 8. Bacterial Diseases in Yellowstone County, 2020-2024



Invasive Group A Streptococcus is a highly contagious bacterial infection that can range from minor to serious, with the serious outcomes causing inflammatory diseases. It is spread through respiratory droplets and direct contact. To prevent becoming ill with the disease, follow respiratory hygiene steps like washing your hands and wearing a mask when necessary. If you become ill, contact your provider for testing and treatment.

Montana reported 28 cases of invasive Group A Strep, with Yellowstone County contributing 12 of the cases (43%). Of the cases in Yellowstone County, 25% were in females and the remaining 75% was in males. 83% of cases were in ages 50-85 years old, with only two cases being in their thirties. For more information click here.

Streptococcal Toxic-shock Syndrome (STSS) is a rare but serious bacterial infection and happens when bacteria spreads into deep tissues and the bloodstream. Symptoms start with fever, chills, muscle aches, and nausea and vomiting but progress quickly causing low blood pressure, organ failure, tachycardia, and

tachypnea. Immediate medical attention is needed to treat STSS. You are considered higher risk for STSS if you have any of the following 65+ years old, have an open wound, have diabetes, or alcohol use disorder. To prevent, protect yourself from group A strep infections by following respiratory hygiene guidelines. In Montana, 14 cases of STSS were reported. Yellowstone County reported one case. For more information click here.

Haemophilus influenza is a bacterial infection that despite its name, does not cause the flu. This bacteria lives in people's nose and throat and typically do not cause harm unless they move to another part of the body. The disease spreads from coughing or sneezing and then becoming ill from the respiratory droplets as a result. To prevent illness, practice respiratory hygiene like washing hands and not having close contact with those that are ill.

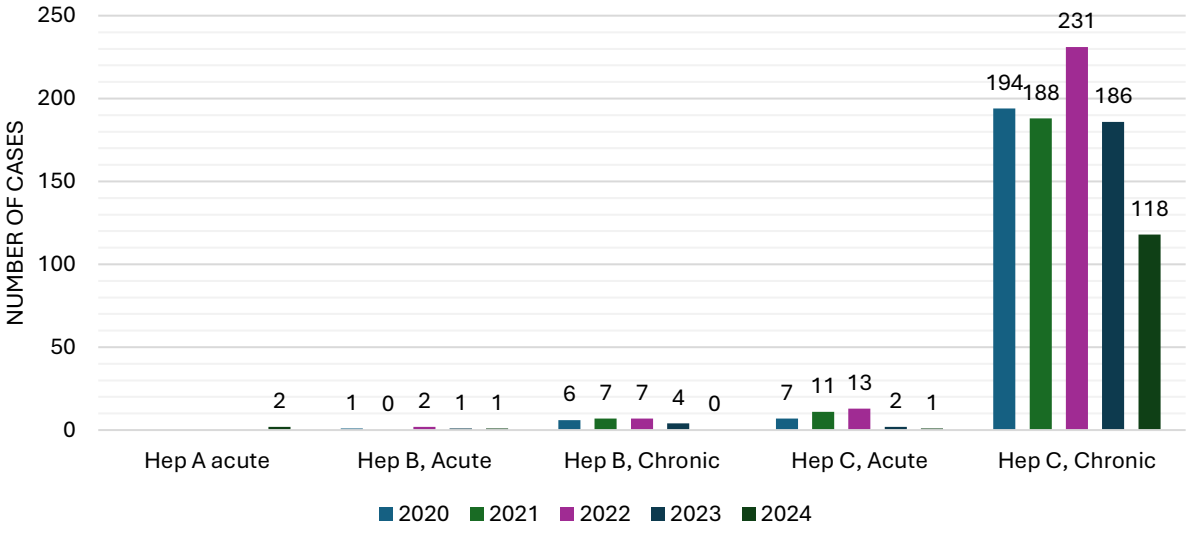
Montana reported 25 cases in 2024, with four of those cases coming from Yellowstone County (16%). Of the cases reported in 2024, they were evenly split among females and male and all cases were in ages 65+. For more information click here.

Hepatitis

Figure 9 visualizes three different types of Hepatitis that are reportable in Montana. **Acute Hepatitis A**, a short-term liver infection caused by the hepatitis a virus (HAV), is best prevented by getting vaccinated. It is a contagious disease that spreads through close person to person contact and consuming contaminated drink or food. In 2024 Montana reported 5 cases of HAV, with 2 cases reported in Yellowstone County, the first in several years. For more information on HAV click here.

Hepatitis B is a vaccine-preventable disease caused by the Hepatitis B virus (HBV) that results in a liver infection. Hepatitis B is most commonly spread when blood, semen, or certain bodily fluids enter the body of someone from another person infected with HBV. Montana reported 5 acute HBV cases, and one case was reported from Yellowstone County (20%). For more information on HBV click here.

Figure 9. Hepatitis Cases in Yellowstone County, 2020-2024



Hepatitis C is a liver disease caused by hepatitis C virus (HCV) and can range from mild illness for a few weeks to a long-term illness. HCV is spread when blood from a person with an HCV infection enters the body of someone who does not have the virus. Because of how the virus is spread, you want to prevent it by

not sharing or reusing needles or other personal items that could encounter blood. HCV is the most common type of hepatitis reported in Montana, Yellowstone County, and the United States. Chronic HCV is a long-term infection of the virus whereas acute is the initial phase of infection and is usually asymptomatic with no long term health problems.

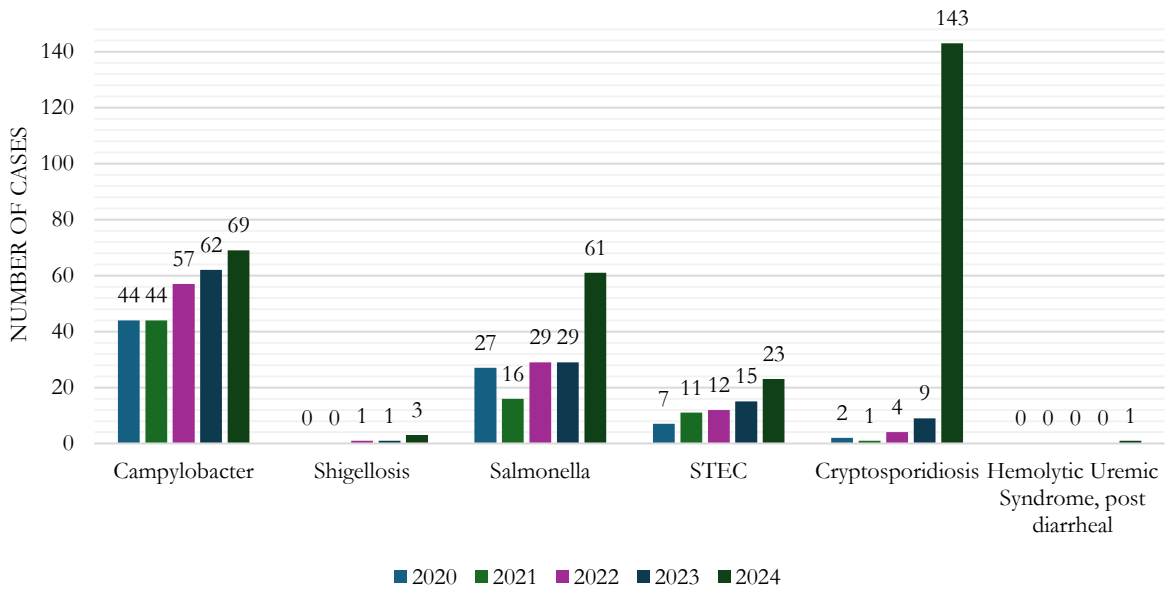
Montana reported 758 cases of HCV with Yellowstone County reporting 188 cases of chronic HCV and 1 case of acute HCV. The 2024 data show a 37% decrease in cases compared to the previous year of 186 cases of chronic HCV.

In Yellowstone County, 46% of HCV cases in 2024 were reported among females and 54% in males. Cases were seen in all ages from 16 to 75 years old, but most significantly found in the age range of 30-50. Subpopulations that are significantly higher risk included the American Indian Alaska Native (AI/AN) population, accounting for 31% of cases. For more information on HCV click here.

Enteric Pathogens

Yellowstone County had a significant increase in enteric pathogens in 2024 (Figure 10), including three outbreaks that occurred at different times of the year. The following enteric pathogens are all gastrointestinal illnesses that commonly include symptoms such as diarrhea, nausea, abdominal cramps, vomiting, and fever. These illnesses commonly cause infection in people from eating or drinking contaminated food or water, or from contact with someone who is sick with the infection. Diarrheal illnesses can also pass from animals to humans.

Figure 10. Enteric Pathogens in Yellowstone County, 2020-2024



Shigella is a bacterium and can, additionally, be spread through sexual activity with a person. Montana reported 20 cases, 3 of which were reported from Yellowstone County. This was a 200% increase from the previous year of one case. All cases occurred in males across a wide age range. No outbreaks in shigella were reported. For more information on shigella click here.

Campylobacter is a bacterium that causes the most diarrheal illnesses in the United States, affecting about 1.5 million people. Montana reported 425 cases of campylobacter, with Yellowstone County reporting 69 of those (16%). This was an 11% increase from the previous year of sixty-two cases in 2023. Cases were evenly distributed between females and males. No subpopulations were disproportionately affected by this disease. For more information on campylobacter click here.

Salmonella is a bacterium that affects over one million people a year in the United States and was reported in 242 people in Montana in 2024. Yellowstone County reported 61 cases, 25% of all Montana cases. Of those cases, 67% were in females and 33% were in males. The disease was distributed over the age range of 1 to 81 years old, with those ages 30-39 reporting significantly more cases than other age groups by double (16). No other subpopulations were high risk. Salmonella was the source of one outbreak in Yellowstone County in the summer of 2024. In Yellowstone, there were 44 cases that were exposed in Billings to a contaminated food source contributing to the multi-state outbreak that could be traced back to a specific food source.

Shiga toxin-producing E. coli (STEC), estimated to cause over 265,000 illnesses every year in the U.S., was another enteric pathogen that was prevalent. Montana reported 167 cases with 23 of those being from Yellowstone County. This was an increase from the previous year, continuing with a five-year trend of increasing cases and accounting for 14% of all cases in the state. For more information on the disease click here. There was an outbreak in Yellowstone County due to STEC in 2024 that was a part of a multistate outbreak with a common source. Of the 19 cases reported in Montana, 9 of them were in Yellowstone County. The common source was identified to be the fresh onions from McDonalds. For more information from the CDC click here.

Cryptosporidium is a parasite commonly spread through bodies of water the fecal-oral route, or through food, soil, or surfaces infected with poop. If people were to swim while experiencing diarrheal illness, this would make it easy for those that are not infected to consume contaminated water. The most effective ways to prevent spreading the illness are to not swim while experiencing diarrheal symptoms, practice clean hygiene practices, and contact a provider if you have questions. For more information on cryptosporidium click here.

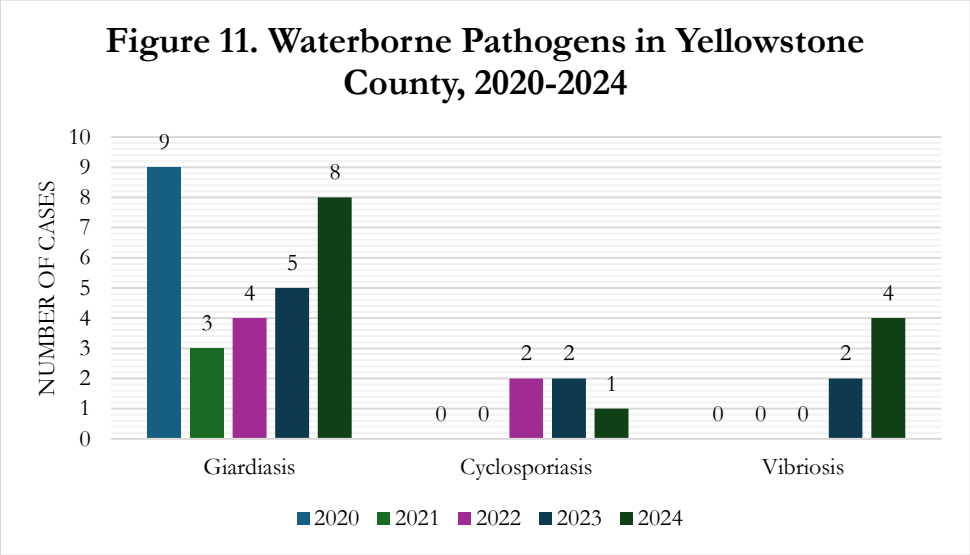
In 2024, Montana reported 217 cases of cryptosporidium. Yellowstone County reported 143 cases (66%). This is almost 16x the number reported the previous year, a large portion of which are do an outbreak. One subpopulation significantly affected by this illness was those ages 1-17 years old, accounting for 42% of cases reported in 2024. Following that age group with the highest number of cases was those 30-39 years old (28%). Of the 143 reported, 66 of them were linked via whole genome sequencing to an outbreak that was a result of swimming in bodies of water, primarily community pools. Additionally, over 70 people were epi-linked to this outbreak meeting the probable case definition.

Waterborne Pathogens

Waterborne pathogens come from consuming contaminated water, including some of the previously mentioned enteric pathogens from Figure 10. Figure 11 highlights pathogens spread from water sources such as when you eat food that was prepared with contaminated water, drinking contaminated water, and bathing or swimming in contaminated water. It may also be passed via the fecal-oral route from contaminated feces from humans and animals.

Montana reported 117 cases of giardiasis, and Yellowstone County reported 8 of those (7%). Giardiasis cases have been trending upwards for the last four years. Of the cases reported, seven were in males and only one was reported in a female. No other subpopulations were identified as high risk for this illness. For more information click here.

There were 3 cases **cyclosporiasis** reported in Montana, one of which came from Yellowstone County in 2024. No outbreaks were reported, and no subpopulations were considered high risk. Click here for more information.



Vibriosis, non-cholera producing, is a bacterium that has commonly infected people when they eat raw or undercooked seafood, especially shellfish. It can also be spread from exposing an open wound to seawater. Montana reported 13 cases, four cases came from Yellowstone County in 2024. Cases doubled from 2023 to 2024. In 2024, 75% of cases were in males with the remaining 25% in females. Cases were primarily seen in those ages 51 to 72 years old. Click here for more information.

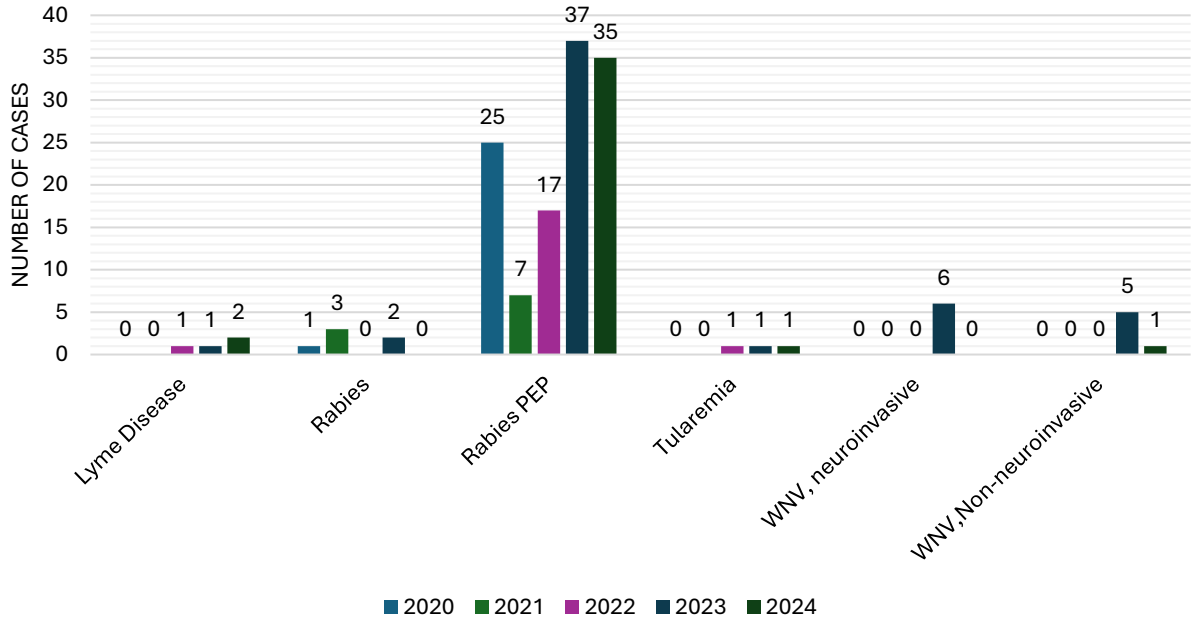
Vector Borne and Zoonotic Diseases

Vector Borne diseases are infections transmitted by vectors, such as mosquitoes, ticks, and fleas, that spread pathogens to humans through a bite or other contact. Zoonotic diseases are caused by pathogens that spread between animals and people, through bites and other means. This could include direct contact such as a person encountering body fluids from an infected animal, touching or petting, scratches, or bites from animals. A person could also encounter an area where animals have previously been, such as a chicken coop, habitats, plants and soil. These diseases can also be spread through contaminated water or food sources.

In Yellowstone County, the most common zoonotic disease reported is **Rabies, post exposure prophylaxis (PEP)**. Rabies PEP is different from a rabies diagnosis in that with PEP, a person has received a series of vaccines and sometimes an immune globulin injection immediately after that exposure to stop the disease from developing. Rabies, without medical intervention, develops and is almost always fatal once symptoms appear so it's important to get medical intervention if you are bitten or scratched by an animal that may have rabies.

In 2024, Montana reported 223 Rabies PEP cases, with Yellowstone County reporting 35 of those. This was two cases less than the previous year. Of those cases, 66% were in females and 34% were in males. The disease was present across a large age range but was primarily found to be reported in those ages 4 to 25 years old (51%). There were no cases of Rabies reported in Yellowstone County, but Montana reported 7 cases from other counties. For more information on rabies PEP click here.

Figure 12. Vector Borne and Zoonotic Diseases in Yellowstone County, 2020-2024



Lyme Disease is a bacterial infection that is spread to people from the bite of a blacklegged tick. To prevent this, wear long sleeves and pants outdoors and check yourself for tick bites. Montana reported 8 cases with two from Yellowstone County. For more information on Lyme Disease click here.

West Nile Virus (WNV) is a vector borne disease that is spread to people through infected mosquito bites. To prevent becoming ill with WNV you can use insect repellent, wear long sleeves and pants, empty standing water, and using mosquito nets when possible. Montana had 3 cases of non-neuroinvasive WNV and 3 cases of neuroinvasive. Yellowstone County had one case of WNV, non-neuroinvasive – meaning it did not affect the nervous system of the person who became ill. Compared to 2023, we saw an 80% decrease in WNV non-neuroinvasive in 2024. No cases of WNV neuroinvasive were reported whereas in 2023 there were six cases. For more information on WNV click here.

Tularemia is an illness that is caused by a bacteria and spreads in different ways including bites from ticks and deer fly bites or from contact with infected animals, most commonly rodents, rabbits, and hares. Three cases were reported in Montana with one of those cases being from Yellowstone County. Yellowstone County has averaged one case a year for the past three years. For more information click here.

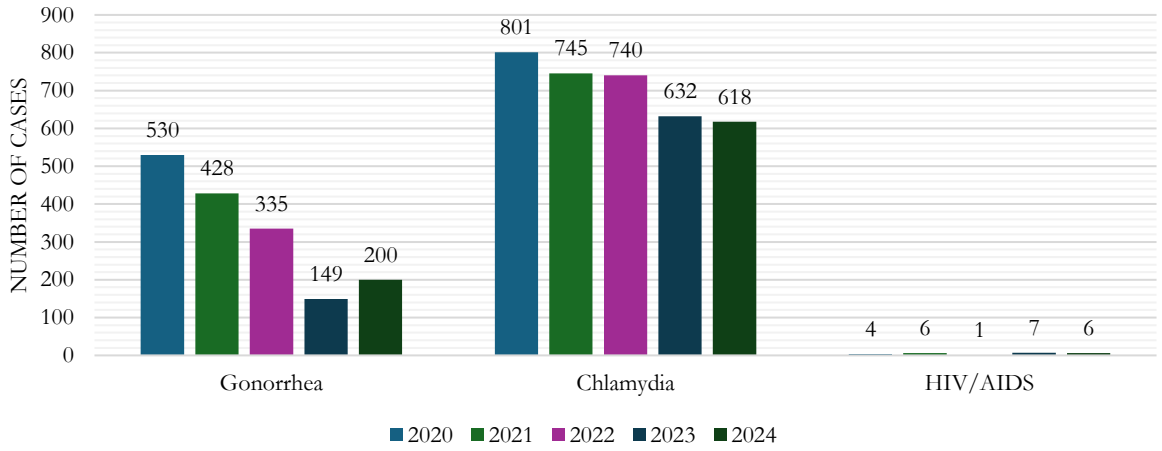
Sexually Transmitted Diseases

Sexually transmitted diseases (STD) are infections that are passed from person to person and can be a virus, bacteria, fungus, or parasites that people become ill with through sexual contact. Sexual contact includes vaginal, oral, and anal touching including intercourse. Symptoms of STDs vary depending on disease and can be mild to extreme. The best way to prevent becoming ill with an STD is to practice safe sexual contact using condoms, get tested if you are sexually active, and to get vaccinated for vaccine-preventable STDs. Get tested when pregnant to avoid passing and STD to your child and share your STD results with your intimate partners before engaging in sexual acts.

Table 13 highlights sexually transmitted disease trends in Yellowstone County from 2020 – 2024. Montana reported 3,390 cases of **Chlamydia** in 2024, Yellowstone County reported 618 cases (1%). The 2024 data show a 2% decrease from 2023. Of the cases reported in Yellowstone, 68% were in females and 32% were in males.

One subpopulation that was most impacted by reported cases of chlamydia was those ages 18-29 (67%), whereas other age groups averaged about 10% of cases. While those who identified their race and ethnicity as White accounted for 63% of chlamydia cases, the second subpopulation with the highest rate of chlamydia was the AI/AN population (22%). Over the past five years Yellowstone County has averaged 707 cases of chlamydia per year, but there is a steady decline in cases. To learn more about chlamydia click here.

Figure 13. Sexually Transmitted Diseases in Yellowstone County, 2020-2024



Montana reported 754 cases of **Gonorrhea**, with Yellowstone County contributing 200 of those cases (27%). Yellowstone County cases increased by 25% in 2024 from 2023. The cases were evenly distributed between males and females. As with chlamydia, there is a higher prevalence of disease in the 18-29 age range (40%), followed by ages 30-39 (29%). Similar with race and ethnicity demographics, those who were White accounted for 53% of cases followed by the AI/AN population with 37% of cases. For more information click here.

Human Immunodeficiency Virus (HIV) is a virus that attacks the body's immune system and can lead to an acquired immunodeficiency syndrome (AIDS) if left untreated. One of the main ways to prevent **HIV/AIDS** is using PrEP, PEP, condoms, and never sharing needles.

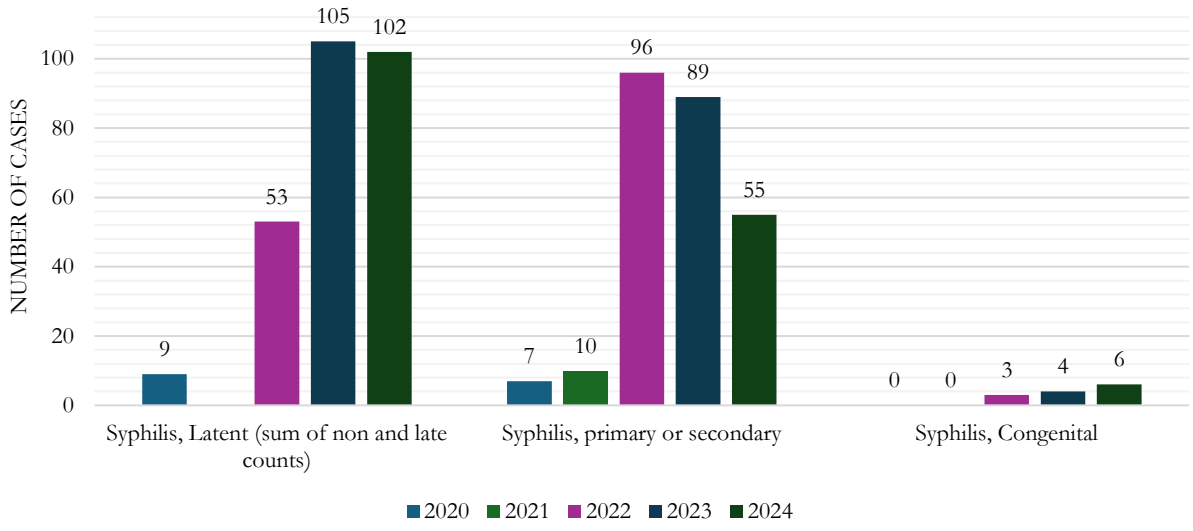
Montana reported 27 cases of HIV/AIDS with 6 of those reported from Yellowstone County (22%). Yellowstone County reported the most cases out of all counties. All cases reported were in males, with most cases being in their 30s. For more information click here.

Syphilis

Syphilis is a sexually transmitted infection that can be treated and cured, and anyone who is sexually active can become ill with syphilis. There are several stages of syphilis including primary, secondary, latent, and tertiary. Each stage can have different symptoms and without treatment, can be become severe and cause lifelong health problems. Another type of syphilis includes congenital syphilis where a baby becomes infected with the disease due to it being passed from a mother to the baby during pregnancy.

For more information on congenital syphilis click here. In Figure 14 below, the stages are broken up into primary and secondary, latent, and congenital syphilis. For more information on syphilis click here.

Figure 14. Syphilis Cases in Yellowstone County, 2020-2024



Since 2019, syphilis rates have been on the rise in the United States and Montana. Montana reported 608 cases in 2024 (congenital syphilis included). Yellowstone County reported its first decrease in certain types of syphilis cases reported since 2019. There were 55 cases of primary/secondary syphilis reported, a 38% decrease. 102 latent syphilis cases were reported, a 3% decrease. Congenital syphilis did increase by 50%, going from four cases in 2023 to six cases in 2024. Excluding congenital syphilis cases, there were 157 cases of syphilis reported, which is 27% of the total amount of cases reported in Montana (592). Yellowstone County is the largest hotspot for reported syphilis cases of all types.

Of the cases reported in 2024 (excluding congenital syphilis cases), 58% were in females and 42% were in males. 23% of cases were in ages 18-29, 37% were in ages 30-39, 26% were in ages 40-49, 10% were in ages 50-59, 4% were in 60+.

Multidrug-Resistant Pathogens

In 2024, **Carbapenemase-producing Organism (CPO)** became a reportable condition, resulting in only one year of data displayed in Figure 16. CPO is a multidrug-resistant pathogen that are classified as an urgent threat to public health per the Centers for Disease Control (CDC).

CPO infections are difficult to treat and associated with high mortality.

Montana reported 8 cases in 2024 with 3 of them from Yellowstone County. Yellowstone County was the only county to report multiple cases. For more information on CPO click here.

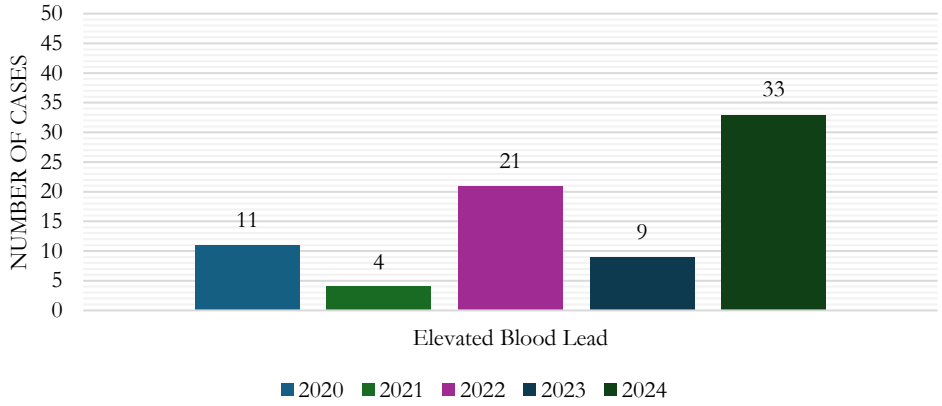
Heavy Metal Exposure

Lead is a heavy metal that naturally occurs in the environment that can cause negative health outcomes. You can be exposed to lead from certain paints, ingesting contaminated food or water, or by breathing in lead dust. To prevent lead exposure by ensuring your home has had any potential lead hazards removed, ensure proper work protecting when necessary, and speak with your providers or public health if concerned. While lead poisoning is not a communicable disease, it is still a reportable condition in Montana due to its severe health outcomes if left untreated.

Montana reported 200 cases of elevated blood lead levels. Figure 15 shows that in 2024 there were 33 cases of **lead poisoning** in Yellowstone County. Compared to the previous year of reported cases this was over a 260% increase.

Of the cases reported, 16 were in children ages 4 and under and 75% of those cases were reported in females compared to 25% in males. The remaining 17 cases were seen in a large age range of adults, with 82% of those cases seen in males. For information on lead poisoning click here.

Figure 15. Heavy Metal Cases in Yellowstone County, 2020-2024



Sources

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Montana Infectious Disease Information System. 2025. Montana Department of Public Health and Human Services.