Interim Analysis of COVID-19 cases in Montana (as of 2/26/2021)

This report is an interim epidemiological review of COVID-19 cases in Montana. Data is analyzed based on information available as of February 26th, 2021. Current case count at the time of analysis is:

Case Count = 99,909

This report is completed using data that is available during the time of analysis and there may be a delay between current case count and this report, due to rapidly changing updates. When data is limited to available information, number of cases included in analysis is indicated in graphs.

Geographic Distribution
There are 99,909 cases of COVID-19 reported from all 56 counties in Montana. Most cases are reported in more populous counties. Yellowstone County and Gallatin County are the most impacted to date, reporting 16% and 12% of all reported cases, respectively. Flathead (11%), Missoula (8%), Cascade (8%), and Lewis & Clark (6%) counties report more than 5,000 cases each (Figure 1).

Figure 1: Map of Reported Montana COVID-19 cases*

*Cases reported on the map initially included residents of other states who were tested and isolated in Montana. As COVID-19 is now widespread across the United States, the map no longer includes out of state residents who test positive in Montana to align with CSTE residency guidelines that classify cases by the individual’s state of residence. This is standard practice for all communicable diseases to ensure accurate data for Montana.
Epidemiological Data
A total of 99,909 cases were reported as of 2/26/2021. Illness onset date is available for less than half (46%) of reported cases. When onset date is not available, collection date is used to calculate an estimated onset date (Figure 2). Illness onsets that occurred within the past 10 days may not yet be reported due to lag time between illness onset, seeking healthcare for testing, and receiving test results. Of note, 8% of persons with data available indicated they had no symptoms at the time of the test.

Figure 2: Epi Curve for Montana COVID-19 cases

The first COVID-19 case in Montana was reported on 3/11/2020. Since then, the number of cases in Montana has climbed to 99,909 (Figure 3). An early peak occurred in late March. By June, 500 case reports were reached, and growth became exponential, then slowed through August and grew exponentially again in September. By October, an average of 5,000 new cases were reported every week. In November, weekly new cases have averaged 7,000 new reports, but have declined since then, with a slight uptick in early January, followed by a similar decline to that of December. Fewer than 2,000 new cases were reported during the average week in February and reports continue to decline.

Figure 3: Cumulative reported cases for COVID-19 in Montana
COVID-19 testing was initially available solely through the CDC. COVID-19 PCR testing capability was implemented by the Montana Public Health Laboratory (MTPHL) on March 9, 2020. Private laboratories began implementing COVID-19 testing in the weeks following. Private laboratories include reference laboratories and those in smaller hospital labs performing point-of-care (POC) testing. A total of 1,074,440 tests have been completed to date. In October through November, an average of 36,000 tests were completed weekly (Figure 4). An average of 25,000 COVID tests have been conducted weekly in February 2021.

Figure 4: Total Laboratory Testing for COVID-19 in Montana

To date, 95,968 positive tests have been resulted through MTPHL and private laboratories. Due to the addition of rapid tests, local health departments have investigated COVID-19 cases as they have been reported, but laboratory data may not have been migrated into the reporting system at the time of this report. The overall positivity rate for all laboratory testing to date is about 9.3% and has varied over time, from a low of <1% in May to a high of 19% in mid-November. Average positivity has been around 10% in December and in January has averaged 8% during most weeks. In February the positivity rate continued to decline and fell below 5% (Figure 5).

Figure 5: Positive Laboratory Tests for COVID-19 in Montana
Of all COVID-19 tests conducted in Montana, most were from persons tested in Yellowstone County (17%), followed by Gallatin (10%), Flathead (10%), Missoula (10%), and Cascade (9%) counties (Figure 6). Lab testing data is displayed for county of residence when known. When county of residence is unknown, the county of the facility collecting the test was used. Positive case reports are reflected in Figure 1 and are always counted by county of residence.

**Figure 6: COVID-19 Total Tests and Test Rate in Montana**

Counties with the highest COVID testing rates are Prairie (2,077.1/1,000), Liberty (2,012.0/1,000), Glacier (1,868.7/1,000), Toole (1,760.1/1,000), and Deer Lodge (1,703.8/1,000) counties (Figure 6 & 7). The average COVID testing rate for Montana is 1,004.9/1,000 population. Large scale community test events contribute to variations in COVID testing rates by county.

**Figure 7: Ranked COVID Test Rate by County in Montana**
Congregate Settings
A congregate setting is an environment where a number of people reside, meet, or gather in close proximity for either a limited or extended period of time. Examples of congregate settings include homeless shelters, group homes, prisons, detention centers, schools, and workplaces. There are 850 congregate settings that have experienced a COVID-19 outbreak in Montana. Most outbreaks occur in schools, assisted living facilities (ALF) and long-term care facilities (LTCF), but outbreaks in other settings, such as correctional facilities, group homes, and mental health facilities have been reported (Figure 8).

Figure 8: Type and number of congregate settings experiencing a COVID-19 outbreak in Montana

A total of 16,413 cases can be attributed to outbreaks at congregate setting; most of them are residents, meaning people who reside at these locations (i.e. residents, inmates, students) versus staff, who frequent these settings as employees (i.e. nursing staff, jailors, teachers) (Figure 9). 477 persons with COVID-19 have died as part of outbreaks associated with congregate settings, about 36% of all COVID-19 reported deaths in the state. Most of those deaths (98%) occurred at ALFs and LTCFs.

Figure 9: Number of COVID-19 residents and staff by type of congregate setting in Montana
Age and Demographic Distribution
To date, persons between 20-29 years of age account for 18% of all reported COVID-19 cases in Montana. The next most common age group is 30-39 years (16%), followed by 40-49 (14%) and 50-59 years (13%) (Figure 10). The median age for all cases is 39 years of age (range: <1-108 years). Fifty percent of cases are between 24-58 years of age.

Figure 10: Age Distribution for COVID-19 cases in Montana

Persons infected with COVID-19 are somewhat equally distributed among men and women, with 52% of cases reported as female and 48% reported as male. Of 78,458 (78%) persons with known race at the time of report, 80% of persons identify as white and 10% as American Indian or Alaska Native. Other race was listed by 9% of persons, and less than 1% identified as either African American, Asian, Native Hawaiian, or Pacific Islander each (Table 1). Ninety-six percent of all persons with ethnicity information available, identify as non-Hispanic and four percent as Hispanic. Native Americans make up about 7% of Montana’s population, but represent 11% of reported COVID-19 cases in the state.

Table 1: Race of COVID-19 Cases in Montana

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<tr>
<th>Race*</th>
<th>Count</th>
<th>Percent</th>
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<tr>
<td>White</td>
<td>62,726</td>
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<td>Asian</td>
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<tr>
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<td>Other</td>
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Transmission Characteristics
Data on disease transmission of recently diagnosed persons is limited, as the highest priority during case investigation is case follow-up, contact tracing, and gathering essential information on cases. Data entry, particularly on supportive information such as exposure information and underlying conditions, are available when enough resources allow for additional data entry. However, of those persons with available transmission data, which is currently limited to 45% of reported cases, about half were a
contact to another confirmed COVID-19 case. No exposure was identified for approximately one out of four (24%) cases. At the time of the report, one out of six (15%) persons reported a workplace exposure. These exposures are not mutually exclusive and do not directly determine where infection was acquired, but rather provide a broad overview of activities that nearly half of COVID-19 patients describe during the period of time they likely were infected with COVID-19.

Outcomes
The current outcomes of COVID-19 cases in Montana depict the impact of the illness on the population. There are currently 1,676 (2%) persons actively infected and 96,879 (97%) persons who have recovered, meaning they have cleared the illness and are released from isolation (Figure 11). There are 1,354 persons infected with COVID-19 who have died. Persons who died were between 29 and 103 years of age, with a median age of 79 years old. Fifty-six percent were male. For those who died, and race was known (n=1,166), 837 (72%) of them identified as white, 202 (17%) as Native American and 120 (10%) as other race or multi-race. Less than 1% identified as African American and less than 1% identified as Asian.

Figure 11: Current infections and illness outcomes for Montana COVID-19

Persons who required hospitalization for COVID-19 are generally much older than those not requiring hospitalization (Figure 12). To date, 4,573 persons have been hospitalized with a median age of 70 years, half of them are between 58 and 79 years old. Those who did not require hospitalization have a median age of 38, and half of patients are between 24 and 56 years old.

At the time of this report, information on pre-existing and underlying conditions was available for 35% of hospitalized patients. Of hospitalized patients with data available, 69% indicated they have at least one pre-existing condition. Hypertension was listed by 69% of hospitalized patients as a condition and diabetes was listed by 49% of patients. These conditions are not mutually exclusive.

At the time of this report, information on pre-existing and underlying conditions was available for 59% of deceased patients. Of those who died, and data was available, 77% indicated they had at least one
pre-existing condition. Hypertension was listed for 39% of deceased patients and diabetes was listed for 25% of patients. These conditions are not mutually exclusive.

Figure 12: Age Distribution among COVID-19 cases compared by known hospitalization status

Reports of hospitalizations and deaths vary by county. Yellowstone County has reported the most cases, hospitalizations, and deaths during the outbreak so far. Counties reporting thirty or more deaths include Yellowstone (226), Cascade (144), Missoula (82), Big Horn (68), Silver Bow (78), Flathead (74), Lewis & Clark (62), Roosevelt (53), Gallatin (50), Rosebud (44) and Hill (39). Darker shading indicates higher number of persons hospitalized. Number of deaths reported by county are enumerated (Figure 13).

Figure 13: COVID-19 Hospitalizations and Deaths by County
The number of persons who have died increased with the surge of new cases in late 2020, and then declined in January and February of 2021 as fewer new cases were reported (Figure 14). Data is displayed by date of death. Average weekly hospitalizations due to COVID-19 peaked mid-November, during the same time as the greatest numbers of new cases were reported. Average hospitalizations have declined in December and continue to decline in 2021.

*Figure 14: Reported COVID-19 related hospitalizations and deaths over time*
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MONTANA COVID-19 CASES

MARCH 31, 2020
210 cumulative cases reported
22 counties

JUNE 30, 2020
1,016 cumulative cases reported
37 counties

SEPTEMBER 30, 2020
13,480 cumulative cases reported
55 counties

DECEMBER 31, 2020
79,735 cumulative cases reported
56 counties

FEBRUARY 26, 2021
99,099 cumulative cases reported
56 counties
COVID-19 Case Rates Per 100,000 Population - Montana and neighboring states, February 26, 2021

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<tr>
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<td>Montana</td>
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<td>North Dakota</td>
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<td>South Dakota</td>
<td>112,470</td>
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<td>Wyoming</td>
<td>54,471</td>
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Case counts based on CDC case reports and 2019 population estimates from the U.S. Census Bureau.
Recovered COVID-19 includes cases who have recovered and are released from isolation.

Active COVID-19 includes cases who are hospitalized or recovering but still remain in isolation.