



Key Findings

- Provisional data indicate COVID-19 associated deaths will be the 3rd leading cause of death in Montana in 2021.
- Since the beginning of the pandemic, Montana AI/AN residents have been disproportionately affected by COVID-19. Mortality rates among AI/AN residents were 4.0 times higher than white residents in Montana.
- At least one underlying condition was listed for over two-thirds (69.2%) of all COVID-19 decedents.
- COVID-19 mortality is, largely, preventable. COVID-19 vaccination is the best protection against SARS-CoV-2 infection and at preventing severe COVID-19 illness, such as hospitalization and death.

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Covid-19 Associated Deaths among Montana Residents, Provisional Data January 2020–September 2021

Introduction

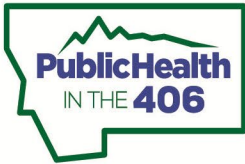
From January 21, 2020–October 12, 2021, the coronavirus disease (COVID-19) pandemic has resulted in over 44,000,000 cases and 710,000 deaths in the United States (U.S.) and these numbers continue to rise each day.¹ The first cases and COVID-19 associated deaths of COVID-19 in Montana were documented in March 2020, and as of October 12, 2021 there have been over 160,000 COVID-19 cases and over 2,000 deaths reported to the Montana Department of Public Health and Human Services (DPHHS).² This report utilizes provisional death certificate information from the DPHHS Office of Vital Records to describe the characteristics of COVID-19 associated deaths in Montana compared to the U.S. through September 30, 2021.

Data and Analysis

Data

Using incoming data from death certificates to produce provisional COVID-19 death counts, the DPHHS Office of Vital Records identified COVID-19 deaths among Montana residents. Provisional U.S. COVID-19 death count data came from death certificates reported to the National Vital Statistics System (NVSS) available through the Centers for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS). COVID-19 deaths were identified using International Classification of Diseases, Tenth Revision (ICD-10) code U07.1 listed as either the underlying cause or a contributing cause of death.

The data in this report for deaths occurring in 2020 and 2021 are provisional; provisional counts are not final and are subject to change. Counts may not include all deaths that occurred during a given time period, especially for more recent periods. Provisional death counts may not match counts from other sources, such as the daily COVID-19 case information reported by DPHHS, numbers from county health departments, or media reports.



Analysis

Two thousand one hundred COVID-19 deaths among Montana residents from January 1, 2020–September 30, 2021 where the death certificate was considered complete by the DPHHS Office of Vital Records and available for issuance as of October 11, 2021 were included in the analysis. Data for the U.S. included 700,952 COVID-19 deaths occurring from January 1, 2020–October 2, 2021 provided by the NCHS’s public use data set. Numbers, percentages, and age-adjusted rates by demographic characteristics were calculated and reported. Age-adjusted death rates were calculated using the direct method using the 2000 US standard population and age-specific mortality rates were calculated for deaths by age category.

Results

From January 1, 2020–September 30, 2021, 2,100 COVID-19 deaths were identified among Montana residents. Provisional death certificated data show that there were 1,258 COVID-19 deaths in 2020 and 842 COVID-19 deaths in the first nine months of 2021 (January–September). To date, the greatest number of COVID-19 deaths among Montana residents occurred in October through December 2020; however, provisional data show that September 2021 approached previous monthly highs (Figure).

Provisional data indicate that COVID-19-associated deaths was the 3rd leading cause of death in Montana for 2020 and will likely also rank as the 3rd leading cause in 2021. This ranking may change as death certificate data are finalized. From the average annual number of deaths for the 5-years prior to the pandemic (2015–2019), the leading causes of death in Montana were heart disease (average=2,206), cancer (average=2,088), chronic lower respiratory disease (average=720), cerebrovascular disease (average=433), and non-motor vehicle accidents (average=425).

Overall COVID-19 mortality rates among Montanans were statistically lower than the U.S. (72.8 [95% Confidence Interval [CI] 69.6–76.1] per 100,000 people compared to 86.7 [95% CI 86.5–87.0]) (Table 1). Compared to the U.S., mortality rates by age group, sex, and race in Montana were statistically significantly lower, except for American Indian/Alaska Natives (AI/AN). The COVID-19 mortality rate among AI/AN persons in Montana was 108% higher than AI/AN persons in the U.S.

The number and rate of COVID-19 deaths increased with increasing age. In Montana, the median age of COVID-19-associated death was 78 years (range 24–103 years). The mortality rate was 56% higher among males than females in Montana. In Montana, the age-adjusted mortality rate was 4.0 times higher among AI/AN residents than white residents. Median age of death among AI/AN residents was 68 years (range 30–97 years) and the median age of death among white residents was 80 years (range 24–103 years).

At least one underlying condition was reported for 1,430 of 2,100 (69.2%) of COVID-19 decedents; 283 of 410 (69.0%) of decedents aged less than 65 years also had at least one underlying condition reported (Table 2). The most reported underlying conditions were cardiovascular diseases, diabetes, and respiratory diseases (Table 2).

Figure. Number of COVID-19 associated deaths among Montana residents by month, Montana Office of Vital Records, January 1, 2020–September 30, 2021.

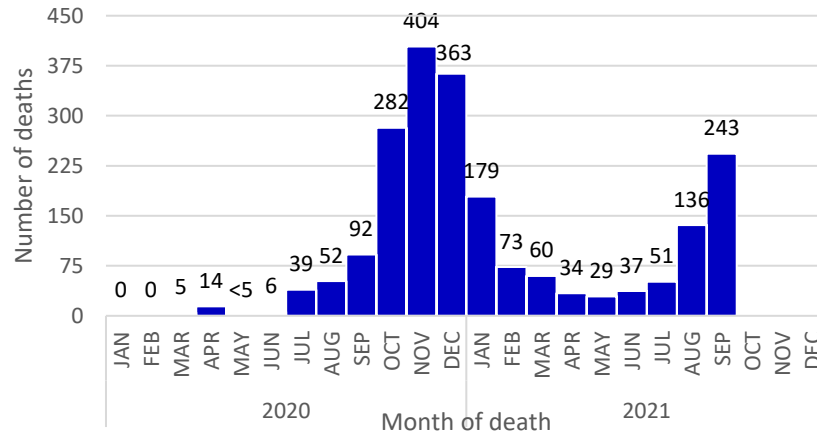


Table 1. Number and age-adjusted or age-specific rate of persons who died of COVID-19 among Montana and U.S. residents by demographic characteristics, Montana Office of Vital Records and National Center for Health Statistics, January 1, 2020–September 30, 2021.

Characteristic	Montana*		U.S.†
	n (%)	Age-adjusted rate per 100,000 people (95% Confidence Interval [CI])	Age-adjusted rate per 100,000 people (95% CI)
Total	2,100 (100.0)	72.8 (69.6–76.1)	86.7 (86.5–87.0)
Age group (years)§			
0-17	0 (0.0)	†	0.3 (0.3–0.3)
18-29	5 (0.2)	†	3.4 (3.3–3.5)
30-49	100 (4.8)	19.6 (15.9–23.8)	22.5 (22.2–22.7)
50-64	305 (14.5)	72.8 (64.8–81.4)	97.3 (96.7–97.8)
65-74	474 (22.6)	190.1 (173.4–208.0)	250.4 (249.1–251.6)
75-84	593 (28.2)	502.9 (463.2–545.1)	579.7 (577.1–582.4)
≥ 85	623 (29.7)	1,362.9 (1,258.0–1,474.2)	1,463.4 (1,456.9–1,469.9)
Sex			
Male	1,191 (56.7)	90.1 (85.0–95.6)	109.5 (109.2–109.9)
Female	909 (43.3)	57.8 (54.0–61.9)	68.3 (68.1–68.5)
Race			
White, non-Hispanic	1,695 (80.7)	61.8 (58.9–65.0)	70.9 (70.6–71.1)
American Indian/Alaska Native, non-Hispanic	324 (15.4)	308.1 (273.5–346.5)	148.0 (144.6–151.4)
Hispanic or Latinx	53 (2.5)	116.7 (86.0–155.8)	152.9 (152.1–153.8)
Black, non-Hispanic	15 (0.7)	†	133.5 (132.7–134.3)
Asian, non-Hispanic	12 (0.6%)	†	64.3 (63.5–65.1)
Unknown	<5	†	†

† Rates not calculated for categories in which there were less than 20 deaths. Rate not calculated for unknown race because the underlying population (denominator) is unknown.

*Data represents death occurring between January 1, 2020–September 30, 2021

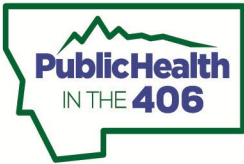
† Data represents death occurring between January 1, 2020–October 2, 2021

§Age-specific rate per 100,000 people

Table 2. Underlying clinical conditions and place of death among persons who died of COVID-19, overall and by age group in Montana, January 1, 2020–September 30, 2021.

	Overall	Less than 65 years	65 year and greater
	n (%)	n (%)	n (%)
Total	2,100 (100.0)	410 (100.0)	1,690 (100.0)
Select Underlying Clinical Conditions*			
≥ 1 underlying clinical condition [†]	1,430 (69.2)	283 (69.0)	1,170 (69.2)
≥ 2 underlying clinical conditions [†]	748 (35.6)	155 (37.8)	593 (35.1)
≥3 underlying clinical conditions [†]	241 (11.5)	52 (12.7)	189 (11.2)
Circulatory Disease [¶]	889 (42.3)	166 (40.5)	723 (42.8)
Diabetes ^{††}	399 (19.0)	94 (22.9)	305 (18.0)
Respiratory diseases [§]	339 (16.1)	53 (12.9)	286 (16.9)
Alzheimer’s disease, Vascular and Unspecified Dementia, and other neurologic disorders ^{§§}	290 (13.9)	<5	NA
Renal failure and Chronic Kidney disease ^{¶¶}	246 (11.7)	69 (16.8)	177 (10.5)
Obesity ^{†††}	148 (7.0)	67 (16.3)	81 (4.8)
Malignant Neoplasms and immunosuppressive disorders ^{§§§}	140 (6.7)	23 (5.6)	117 (6.9)
Chronic liver disease ^{¶¶¶}	51 (2.4)	31 (7.6)	20 (1.2)

NA= Not available due to complementary data suppression.
 * Select significant conditions contributing to due to COVID-19 death as listed on the death certificate. More than one significant condition may be listed so totals may exceed 100%.
 † Includes decedents for whom at least one of the following conditions were reported: chronic lower respiratory disease, tuberculosis, hypertensive diseases, ischemic heart disease, cardiac arrhythmia, heart failure, cerebrovascular diseases, other diseases of the circulatory system, congenital heart disease, diabetes, Alzheimer’s disease, vascular and unspecified dementia, other neurologic disorders, chronic kidney diseases, obesity, malignant neoplasms, immunosuppressive disorders, chronic liver disease.
 § chronic lower respiratory disease (International Classification of Disease 10 [ICD 10] codes J40-J47) and tuberculosis (A15-A19)
 ¶ hypertensive diseases (I10-I15), ischemic heart disease (I20-I25), cardiac arrhythmia (I44, I45, I47-I49), heart failure (I50), cerebrovascular diseases (I60-I69), other diseases of the circulatory system (I00-I09, I26-I43, I51, I52, I70-I99), congenital heart disease (Q20-Q24)
 †† diabetes (E10-E14)
 §§ Alzheimer’s disease (G30), vascular and unspecified dementia (F01, F03), and other neurologic disorders (G40)
 ¶¶ chronic kidney diseases (N00-N19), which includes renal failure (N17-N19)
 ††† obesity (E65-E68)
 §§§ malignant neoplasms (C00-C97), HIV (B20), Immunosuppressive disorders (D80-D89)
 ¶¶¶ chronic liver disease (K70-K77)



Conclusions

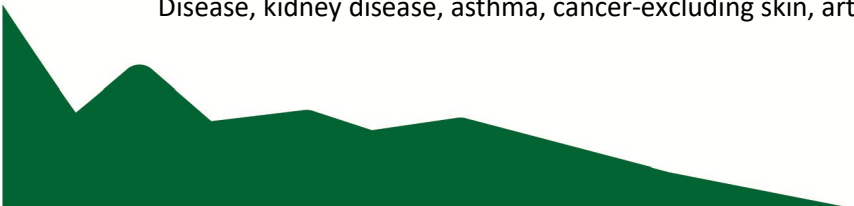
From January 1, 2020–September 30, 2021, provisional data from Montana death certificates documented 2,100 COVID-19 deaths among Montana residents. The overall age-adjusted COVID-19 associated mortality rate in Montana was lower than the U.S. COVID-19 mortality rate increased with increasing age and was higher among males than females. This analysis documented that Montana AI/AN residents were disproportionately affected by COVID-19. Mortality rates among Montana AI/AN residents were 4.0 times higher than white Montana residents and were 108% higher than AI/AN residents in the U.S.

At least one underlying condition was listed for over two-thirds (69.2%) of all COVID-19 decedents, including two-thirds of COVID-19 decedents under age 65 years (69.0%). The most commonly reported underlying conditions were cardiovascular diseases, diabetes, and respiratory diseases. Many adults in Montana are at increased risk for severe COVID-19 illness or death. In 2020, 55% of Montana adults reported one or more diagnosed chronic condition(s)* and 16% were current cigarette smokers.³

This analysis is subject to at least one major limitation. The DPHHS Office of Vital Record and NCHS data in this report come from death certificates and these data are not yet complete and are subject to change. Therefore, this analysis likely underestimates the number of deaths that occurred, particularly for more recent time periods.

These data indicate that COVID-19 remains a leading cause of death in Montana. Presently, COVID-19 mortality is, largely, preventable. Vaccination is the best protection against SARS-CoV-2 infection and at preventing severe COVID-19 outcomes, such as hospitalization and death. The COVID-19 vaccine is widely available to Montanans aged 12 years and older. In addition to vaccination, DPHHS encourages all Montana residents and visitors to exercise personal responsibility and take precautionary measures to slow the spread of the virus, including wearing a face covering when appropriate, avoiding large crowds, staying home when not feeling well, and washing hands frequently.

*Cardiovascular disease (stroke, heart attack, heart disease), diabetes, Chronic Obstructive Pulmonary Disease, kidney disease, asthma, cancer-excluding skin, arthritis, obese (Body Mass Index ≥ 30).



References

1. Centers for Disease Control and Prevention. COVID Data Tracker. Available at <https://covid.cdc.gov/covid-data-tracker/>. Accessed on October 12, 2021.
2. Montana Department of Public Health and Human Services. Interim Analysis of COVID-19 cases in Montana (as of 10/12/2021). Available at <https://dphhs.mt.gov/publichealth/cdepi/diseases/coronavirusmt/demographics>. Accessed October 12, 2021.
3. Montana Department of Public Health and Human Services. 2020 Montana Behavioral Risk Factor Surveillance System.