

A breakthrough COVID-19 infection is defined as a positive SARS-CoV-2 specimen collected ≥ 14 days after completing the primary COVID-19 vaccine series of an FDA-authorized COVID-19 vaccine. Studies show that protection from COVID vaccination decreases over time; in response, the CDC has recommended booster doses for eligible populations to protect against waning immunity. As of 2/18/2022, Montana reports 38,372 cases of confirmed breakthrough disease, which includes 1,279 hospitalizations and 339 deaths. CDC data from November show that unvaccinated adults were more than 4 times more likely to become infected with COVID, compared to fully vaccinated adults. However, when booster doses were considered, unvaccinated adults were more than 13 times more likely to become infected compared to fully vaccinated adults with booster doses.¹

Hospitalizations and Deaths and Vaccination Status

COVID-19-related hospitalizations and deaths were analyzed between **April 1, 2021 and February 18, 2022** to review vaccination status. Since the beginning of April 2021, 81% of Montanans who were hospitalized and 78% of those who died were unvaccinated at the time of infection (Table 3). Of the 6,647 individuals who were hospitalized during this time period, 126 (2%) were <18 years old, 911 (14%) were 18 to 44 years old, 2,210 (33%) were 45 to 64 years old and 3,400 (51%) were ≥ 65 years old.

Additionally, COVID-19-related hospitalization and death data from **December 25, 2021 – February 18, 2022** (last 8 weeks) were analyzed to review vaccination status. Sixty-eight percent of Montanans who were hospitalized and 74% of those who died had not received a COVID-19 vaccine (Table 4). Of the 1,115 individuals who were hospitalized during this time period, 36 (3%) were <18 years old, 115 (10%) were 18 to 44 years old, 298 (27%) were 45 to 64 years old and 666 (60%) were ≥ 65 years old.

Table 3. Vaccination status of COVID-19 hospitalizations and deaths – April 1 to February 18, 2022

	HOSPITALIZATIONS	DEATHS
TOTAL REPORTED	6,647	1,528
UNVACCINATED	5,368 (81%)	1,189 (78%)
VACCINATED (BREAKTHROUGH CASE)	1,279 (19%)	339 (22%)
UNVACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	<1-102 (63)	23-103 (71)
VACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	7-101 (74)	20-101 (81)

Table 4. Vaccination status of COVID-19 hospitalizations and deaths – December 25 to February 18, 2022

	HOSPITALIZATIONS	DEATHS
TOTAL REPORTED	1,115	174
UNVACCINATED	755 (68%)	129 (74%)
VACCINATED (BREAKTHROUGH CASE)	360 (32%)	45 (26%)
UNVACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	<1-101 (66)	30-101 (73)
VACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	7-98 (73)	48-95 (78)

¹ CDC – COVID Data Tracker – Rates of COVID-19 Cases and Deaths by Vaccination Status. <https://covid.cdc.gov/covid-data-tracker/#rates-by-vaccine-status>. January 25, 2022.

County name	Eligible population 5+	Dose 1	Dose 2	Dose 3	Fully Immunized	Total Doses Administered	Percent eligible with first dose (5+)	Percent Fully Vaccinated (5+)
BEAVERHEAD	9,091	5,460	4,383	2,540	5,078	12,383	60%	56%
BIG HORN	11,975	8,177	6,993	2,680	7,365	17,850	68%	62%
BLAINE	6,044	3,662	2,930	1,470	3,137	8,062	61%	52%
BROADWATER	6,092	2,307	1,717	922	1,955	4,946	38%	32%
CARBON	10,476	5,565	4,751	2,633	5,100	12,949	53%	49%
CARTER	1,141	377	332	177	354	886	33%	31%
CASCADE	76,124	42,630	33,794	17,120	37,845	93,544	56%	50%
CHOUTEAU	5,430	2,219	1,861	1,257	2,048	5,337	41%	38%
CUSTER	10,692	5,324	4,278	2,296	4,786	11,898	50%	45%
DANIELS	1,559	739	643	341	698	1,723	47%	45%
DAWSON	8,071	3,503	2,894	1,556	3,202	7,953	43%	40%
DEER LODGE	8,887	6,339	5,221	3,174	5,797	14,734	71%	65%
FALLON	2,646	1,083	943	463	993	2,489	41%	38%
FERGUS	10,495	5,469	4,721	2,703	5,121	12,893	52%	49%
FLATHEAD	99,993	51,786	40,373	21,753	44,644	113,912	52%	45%
GALLATIN	110,900	82,273	63,015	32,661	69,171	177,949	74%	62%
GARFIELD	1,188	319	253	103	296	675	27%	25%
GLACIER	12,447	10,421	7,228	3,097	7,785	20,746	84%	63%
GOLDEN VALLEY	788	384	324	154	356	862	49%	45%
GRANITE	3,218	1,446	1,147	601	1,254	3,194	45%	39%
HILL	14,914	9,840	7,590	3,974	8,970	21,404	66%	60%
JEFFERSON	11,819	6,682	5,668	3,171	6,076	15,521	57%	51%
JUDITH BASIN	1,880	794	687	383	748	1,864	42%	40%
LAKE	29,280	19,788	16,204	8,592	17,407	44,584	68%	59%
LEWIS & CLARK	66,257	44,871	36,602	20,987	39,461	102,460	68%	60%
LIBERTY	2,234	853	720	440	820	2,013	38%	37%
LINCOLN	19,480	9,413	7,583	4,121	8,289	21,117	48%	43%
MADISON	8,589	4,389	3,460	2,038	3,897	9,887	51%	45%
MCCONE	1,562	449	414	234	423	1,097	29%	27%
MEAGHER	1,726	1,008	867	487	951	2,362	58%	55%
MINERAL	4,302	2,619	1,886	1,162	2,357	5,667	61%	55%
MISSOULA	115,881	84,489	69,954	39,915	75,976	194,358	73%	66%
MUSSELSHELL	4,458	1,719	1,394	713	1,589	3,826	39%	36%
PARK	15,969	11,128	8,631	4,857	9,556	24,616	70%	60%
PETROLEUM	483	162	142	85	152	389	34%	31%
PHILLIPS	3,675	1,885	1,453	887	1,761	4,225	51%	48%
PONDERA	5,389	3,541	2,764	1,430	3,139	7,735	66%	58%
POWDER RIVER	1,588	500	400	200	457	1,100	31%	29%
POWELL	6,534	4,204	3,120	1,797	3,911	9,121	64%	60%
PRAIRIE	994	461	411	229	434	1,101	46%	44%
RAVALLI	42,972	24,379	19,501	11,694	21,875	55,574	57%	51%
RICHLAND	10,310	4,440	3,490	1,811	4,172	9,741	43%	40%
ROOSEVELT	9,918	5,611	4,146	1,972	4,890	11,729	57%	49%
ROSEBUD	8,160	5,421	4,296	2,130	4,818	11,847	66%	59%
SANDERS	11,641	5,001	4,140	2,264	4,434	11,405	43%	38%
SHERIDAN	3,075	1,931	1,698	975	1,832	4,604	63%	60%
SILVER BOW	33,267	23,689	20,218	11,047	21,555	54,954	71%	65%
STILLWATER	9,451	4,323	3,409	2,024	3,960	9,756	46%	42%
SWEET GRASS	3,523	1,697	1,314	786	1,539	3,797	48%	44%
TETON	5,819	3,100	2,186	1,216	2,625	6,502	53%	45%
TOOLE	4,391	2,309	1,743	740	2,147	4,792	53%	49%
TREASURE	623	425	294	141	317	860	68%	51%
VALLEY	6,931	3,356	2,712	1,653	3,166	7,721	48%	46%
WHEATLAND	2,035	803	695	395	750	1,893	39%	37%
WIBAUX	898	354	298	128	306	780	39%	34%
YELLOWSTONE	153,378	91,926	76,103	38,559	82,349	206,588	60%	54%
MONTANA	1,020,663	627,043	503,994	270,938	554,094	1,401,975	61%	54%