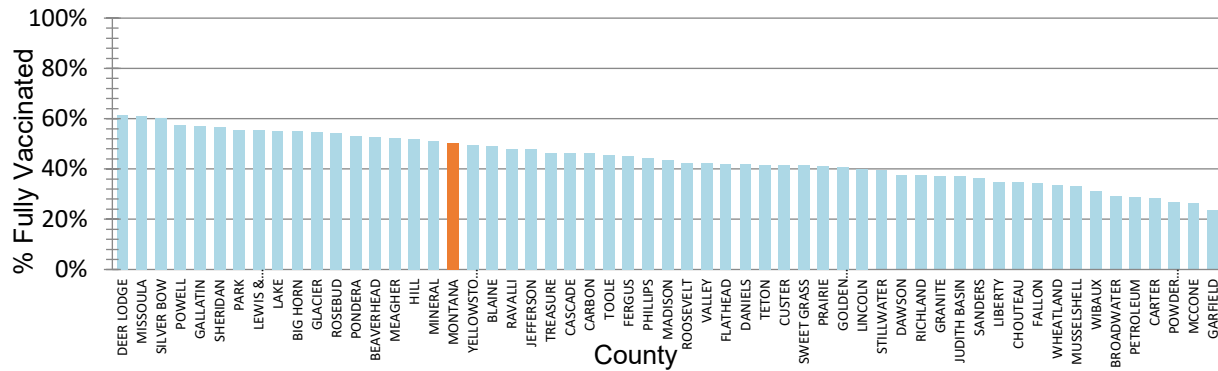


Figure 4. Percent of Eligible Montanans (5+ years) Fully Vaccinated by County – Montana, 11/19/2021



Variant and Breakthrough Cases

Figure 6 displays the percentage of the most common SARS-CoV-2 lineages detected each week, among all samples sequenced that were collected that week. There were 6,929 samples that were sequenced and their lineages were reported to GISAID since September 2020; figure 5 displays the number of specimens sequenced by week. A variant is a lineage that has one or more mutations that differentiate it from other lineages in circulation. Delta is the only Variant of Concern at this time, and it is the dominant circulating strain in Montana. Of specimens collected and sequenced in October and November 1,867/1,873 (99.8%) are Delta. Aside from Delta, all other former variants of concern and interest have been re-classified as Variants Being Monitored. Delta has been the predominant variant in Montana since July 2021.

Figure 5. Number of COVID-19 samples sequenced by collection date, Montana 11/22/2021 [n=6,929]

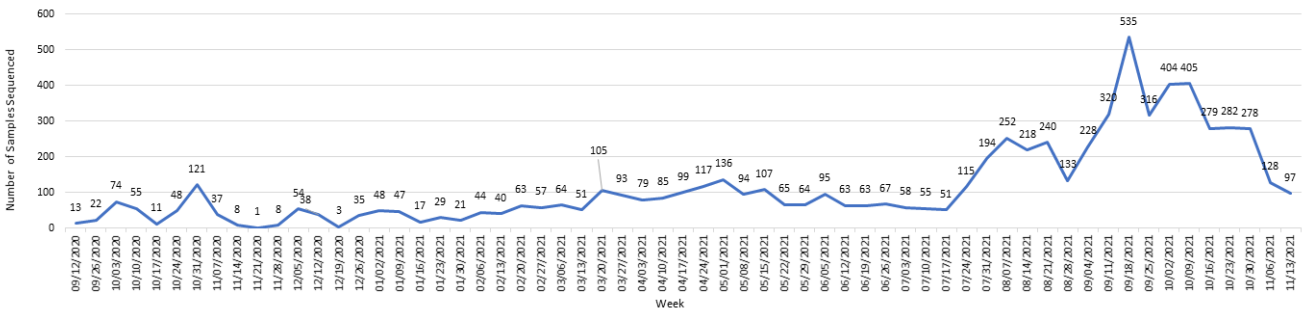
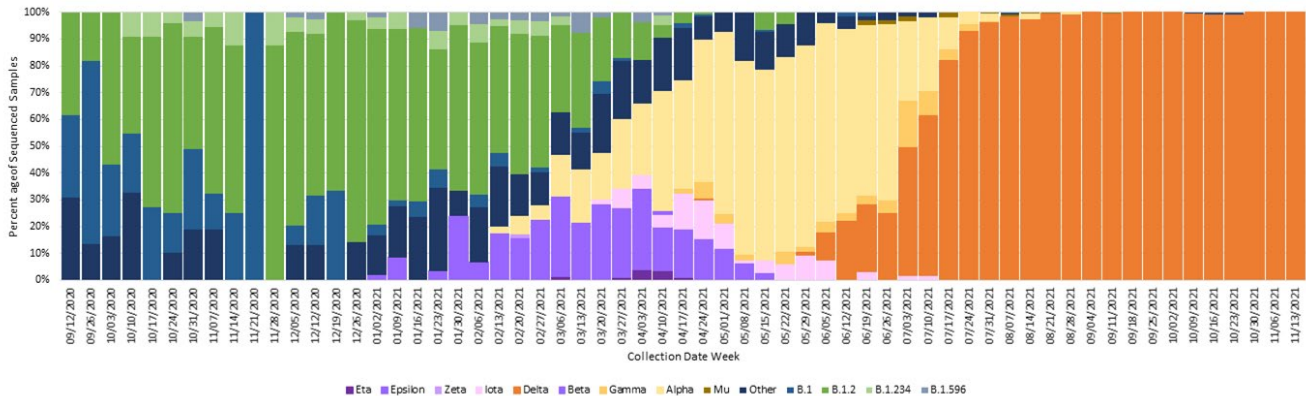


Figure 6. Percent of COVID-19 variants in sequenced samples by collection date, Montana 11/22/2021



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. Depending on the specific vaccine administered, completion of series could be one or two doses of vaccine. As of 11/23/21, Montana reports 14,221 cases of confirmed breakthrough disease, which includes 829 hospitalizations and 229 deaths. Over the past 8 weeks (September 25 – November 19) the number of cases among unvaccinated individuals was 4.3 times higher than the number of cases among vaccinated individuals; the number of hospitalizations and deaths among unvaccinated individuals were 3.9 and 2.8 times higher, respectively, compared to vaccinated individuals.

Hospitalizations and Deaths and Vaccination Status

COVID-19-related hospitalizations and deaths were analyzed between **April 1 and November 19** to review vaccination status. Since the beginning of April this year, 83% of Montanans who were hospitalized and 77% of those who died were unvaccinated at the time of infection (Table 4). Of the 4,931 individuals who were hospitalized during this time period, 85 (2%) were <18 years old, 742 (15%) were 18 to 44 years old, 1,699 (34%) were 45 to 64 years old and 2,405 (49%) were ≥ 65 years old.

Additionally, COVID-19-related hospitalization and death data from **September 25– November 19** (last 8 weeks) were analyzed to review vaccination status. Seventy-nine percent of Montanans who were hospitalized and 74% of those who died had not received a COVID-19 vaccine (Table 5). Of the 2,136 individuals who were hospitalized during this time period, 40 (2%) were <18 years old, 260 (12%) were 18 to 44 years old, 717 (34%) were 45 to 64 years old and 1,119 (52%) were ≥ 65 years old.

Table 4. Vaccination status of COVID-19 hospitalizations and deaths – April 1 to November 19, 2021

	HOSPITALIZATIONS	DEATHS
TOTAL REPORTED	4,931	942
UNVACCINATED	4,107 (83%)	722 (77%)
VACCINATED (BREAKTHROUGH CASE)	824 (17%)	220 (23%)
UNVACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	<1-102 (62)	24-103 (70)
VACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	16-101 (75)	43-101 (82)

Table 5. Vaccination status of COVID-19 hospitalizations and deaths – September 25 – November 19, 2021

	HOSPITALIZATIONS	DEATHS
TOTAL REPORTED	2,136	406
UNVACCINATED	1,698 (79%)	300 (74%)
VACCINATED (BREAKTHROUGH CASE)	438 (21%)	106 (26%)
UNVACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	<1-97 (63)	24-103 (71)
VACCINATED AGE RANGE IN YEARS (MEDIAN AGE)	17-101 (75)	45-101 (82)

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	5,144	4,134	807	4,805	10,085	57%	53%
BIG HORN	11,975	7,378	6,244	1,456	6,582	15,078	62%	55%
BLAINE	6,044	3,287	2,786	846	2,981	6,919	54%	49%
BROADWATER	6,092	2,133	1,557	489	1,785	4,179	35%	29%
CARBON	10,476	5,260	4,541	1,554	4,866	11,355	50%	46%
CARTER	1,141	349	306	37	326	692	31%	29%
CASCADE	76,124	39,174	31,693	8,687	35,387	79,554	51%	46%
CHOUTEAU	5,430	2,059	1,711	841	1,880	4,611	38%	35%
CUSTER	10,692	4,967	3,962	1,260	4,446	10,189	46%	42%
DANIELS	1,559	697	600	213	652	1,510	45%	42%
DAWSON	8,071	3,279	2,758	651	3,038	6,688	41%	38%
DEER LODGE	8,887	5,974	4,913	1,899	5,470	12,786	67%	62%
FALLON	2,646	991	869	274	910	2,134	37%	34%
FERGUS	10,495	5,135	4,354	1,411	4,718	10,900	49%	45%
FLATHEAD	99,993	47,868	37,882	11,615	41,875	97,365	48%	42%
GALLATIN	110,900	75,789	57,748	16,056	63,471	149,593	68%	57%
GARFIELD	1,188	307	242	54	284	603	26%	24%
GLACIER	12,447	9,668	6,316	1,564	6,822	17,548	78%	55%
GOLDEN VALLEY	788	345	289	64	320	698	44%	41%
GRANITE	3,218	1,378	1,095	308	1,204	2,781	43%	37%
HILL	14,914	8,767	6,617	2,313	7,758	17,697	59%	52%
JEFFERSON	11,819	6,282	5,263	1,879	5,656	13,424	53%	48%
JUDITH BASIN	1,880	752	642	138	700	1,532	40%	37%
LAKE	29,280	18,295	15,031	4,554	16,164	37,880	62%	55%
LEWIS & CLARK	66,257	41,657	33,891	12,714	36,614	88,262	63%	55%
LIBERTY	2,234	806	679	312	775	1,797	36%	35%
LINCOLN	19,480	8,806	7,190	2,131	7,831	18,127	45%	40%
MADISON	8,589	4,136	3,317	1,057	3,728	8,510	48%	43%
MCCONE	1,562	433	402	109	410	944	28%	26%
MEAGHER	1,726	968	826	268	902	2,062	56%	52%
MINERAL	4,302	2,423	1,745	399	2,192	4,567	56%	51%
MISSOULA	115,881	79,003	64,837	21,893	70,618	165,733	68%	61%
MUSSELSHELL	4,458	1,605	1,301	241	1,487	3,147	36%	33%
PARK	15,969	10,457	7,961	2,374	8,832	20,792	65%	55%
PETROLEUM	483	152	132	49	140	333	31%	29%
PHILLIPS	3,675	1,773	1,341	551	1,632	3,665	48%	44%
PONDERA	5,389	3,315	2,519	815	2,871	6,649	62%	53%
POWDER RIVER	1,588	466	379	101	427	946	29%	27%
POWELL	6,534	3,999	2,996	567	3,762	7,562	61%	58%
PRAIRIE	994	440	389	79	410	908	44%	41%
RAVALLI	42,972	22,923	18,372	6,514	20,646	47,809	53%	48%
RICHLAND	10,310	4,106	3,235	761	3,877	8,102	40%	38%
ROOSEVELT	9,918	4,779	3,603	809	4,211	9,191	48%	42%
ROSEBUD	8,160	5,083	3,937	1,066	4,441	10,086	62%	54%
SANDERS	11,641	4,645	3,967	841	4,230	9,453	40%	36%
SHERIDAN	3,075	1,857	1,615	680	1,745	4,152	60%	57%
SILVER BOW	33,267	22,223	18,834	6,098	20,075	47,155	67%	60%
STILLWATER	9,451	4,081	3,215	1,087	3,737	8,383	43%	40%
SWEET GRASS	3,523	1,599	1,242	494	1,460	3,335	45%	41%
TETON	5,819	2,918	1,995	735	2,424	5,648	50%	42%
TOOLE	4,391	2,112	1,646	293	1,996	4,051	48%	45%
TREASURE	623	393	269	78	290	740	63%	47%
VALLEY	6,931	3,146	2,516	972	2,932	6,634	45%	42%
WHEATLAND	2,035	736	642	143	682	1,521	36%	34%
WIBAUX	898	326	272	44	280	642	36%	31%
YELLOWSTONE	153,378	85,056	70,469	21,080	76,244	176,605	55%	50%
MONTANA	1,020,663	581,700	467,287	144,325	514,001	1,193,312	57%	50%