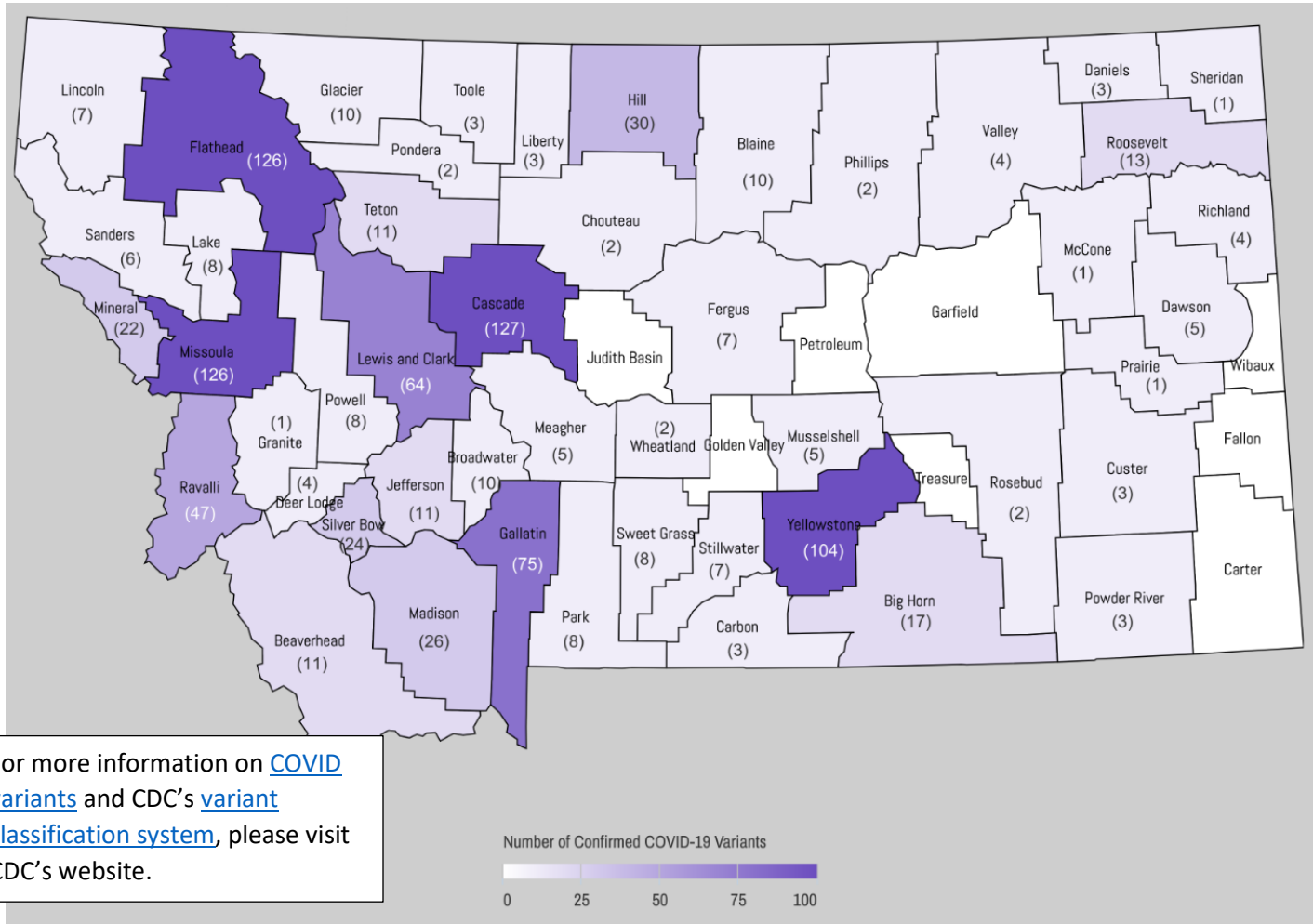


# COVID-19 Variants Identified in Montana

Updated 8/11/2021

This map includes the counties where variants of concern and variants of interest have been detected in Montana. The tables detail the types of variants detected, the classification of variant, and the counties in which they were detected. Last week MTPHHS reported 86 additional cases infected with variants of concern. Delta continues to be the dominant variant detected. Of the newly reported variant cases sequenced at MTPHL, 82 (95%) were Delta (B.1.617.2), 3 were Alpha (B.1.1.7) and 1 was Gamma (P.1). Variants of concern or interest have been detected in 48 counties.

**Figure 1. Total COVID Variants Identified in Montana, by County, 8/11/21 (n=982)**



For more information on [COVID variants](#) and CDC's [variant classification system](#), please visit CDC's website.

**Table 1. Cumulative SARS-CoV-2 variants detected in Montana by classification, 8/11/2021**

Variant Classification	Classification Explanation	Number
Variant of Interest (VOI)	A variant with specific genetic markers associated with changes to receptor binding, reduced neutralization by antibodies generated against previous infection or vaccination, reduced efficacy of treatments, potential diagnostic impact, or predicted increase in transmissibility or disease severity.	210
Variant of Concern (VOC)	A variant for which there is evidence of an increase in transmissibility, more severe disease (increased hospitalizations or deaths), significant reduction in neutralization by antibodies generated during previous infection or vaccination, reduced effectiveness of treatments or vaccines, or diagnostic detection failures.	1121
Variant of High Consequence	A variant of high consequence has clear evidence that prevention measures or medical countermeasures have significantly reduced effectiveness relative to previously circulating variants.	0
<b>Total</b>		<b>1331</b>

**Table 2. Cumulative SARS-CoV-2 variants detected in Montana by location and lineage, MTPHHS, 8/11/2021**

County	Variants of Concern			Variants of Interest				Total # Cases
	B.1.1.7 Alpha	B.1.617.2 Delta	P.1 Gamma	B.1.427 Epsilon	B.1.429 Epsilon	B.1.525 Eta	B.1.526 (Iota)	
Beaverhead	3	6		2				11
Big Horn	4	11	2					17
Blaine	9	1						10
Broadwater	9	1						10
Carbon	2	1						3
Cascade	66	43	3	8	3		4	127
Chouteau	1			1				2
Custer	2				1			3
Daniels		3						3
Dawson	1	3			1			5
Deer Lodge	3		1					4
Fergus	2	5						7
Flathead	74	29	5	6		2	10	126
Gallatin	43	15	3		8	1	5	75
Glacier	6		3		1			10
Granite							1	1
Hill	19	3		1	3		4	30
Jefferson	9	1			1			11
Lake	6	1			1			8
Lewis & Clark	33	16		4	1		10	64
Liberty	1	1			1			3
Lincoln	1	1		2	3			7
Madison	7	8	6	2	3			26
McCone	1							1
Meagher		1	2	2				5
Mineral	12	10						22
Missoula	75	25	10	5	3	2	6	126
Musselshell	2	3						5
Park	4	2					2	8
Phillips					2			2
Pondera	1	1						2
Powder River	3							3
Powell	3			2			3	8
Prairie					1			1
Ravalli	43		1				3	47
Richland	1	2			1			4
Roosevelt	2				11			13
Rosebud		2						2
Sanders	3	1			1		1	6
Sheridan				1				1
Silver Bow	5	4	1	13	1			24
Stillwater	7							7
Sweet Grass	7				1			8
Teton	5	5		1				11
Toole	2	1						3
Valley	3				1			4
Wheatland	1	1						2
Yellowstone	64	36	1		2		1	104
<b>Total</b>	<b>545</b>	<b>243</b>	<b>38</b>	<b>50</b>	<b>51</b>	<b>5</b>	<b>50</b>	<b>982</b>
<b>Percentage</b>	<b>55%</b>	<b>25%</b>	<b>4%</b>	<b>5%</b>	<b>5%</b>	<b>1%</b>	<b>5%</b>	

**Note: The distribution of variants can be influenced by local testing capabilities. As a result, the data in table 2 may not reflect a standardized, statewide sample of variants. Data above are collected in collaboration with partners including, MSU, UM, Fyr Diagnostics, CDC, and other national reference labs.**

**Table 3. Outcome of patients infected with SARS-CoV-2 variants in Montana, by lineage, 8/11/2021**

	Variant lineage	Not Hospitalized	Hospitalized	Percentage Hospitalized	Deceased
Variants of Concern	B.1.1.7 Alpha	418	40	8.7%	6
	B.1.617.2 Delta	154	24	13.5%	3
	P.1 Gamma	23	6	20.7%	1
Variants of Interest	B.1.427 Epsilon	43	3	6.5%	0
	B.1.429 Epsilon	43	2	4.4%	1
	B.1.525 Eta	3	0	0.0%	0
	B.1.526 Iota	39	3	7.1%	0

Data in table 3 show the hospitalization and death status for cases where that information is recorded in Montana’s communicable disease database (n=801). Fourteen percent of cases infected with the Delta variant (B.1.617.2) were hospitalized and 3 died.

SARS-CoV-2 sequencing results are also reported to GISAID, which promotes the rapid sharing of data from all influenza viruses and the coronavirus causing COVID-19. These results do not contain county-level geography for all specimens, so the data in table 2 are the subset of the results reported to GISAID captured in table 4. A summary table of all the sequencing performed on SARS-CoV-2 specimens from Montana and reported to GISAID is below. More information about GISAID is available here: <https://www.gisaid.org>

**Table 4. Cumulative SARS-CoV-2 specimens sequenced in Montana by lineage, reported to GISAID, 8/11/2021**

Sequences not of concern or interest	Variants of Concern				Variants of Interest				Total # Sequenced
	B.1.1.7 Alpha	B.1.351 Beta	B.1.617.2 Delta	P.1 Gamma	B.1.427 Epsilon	B.1.429 Epsilon	B.1.525 Eta	B.1.526 Iota	
510	750	1	327	43	74	73	6	57	1841
28%	41%	<1%	18%	2%	4%	4%	<1%	3%	

Viruses constantly change through mutation. A variant has one or more mutations that differentiate it from other variants in circulation. As expected, multiple variants of SARS-CoV-2 have been documented in the US and globally throughout this pandemic.

**COVID Breakthrough Cases**

Breakthrough infection surveillance began in Montana on February 15, 2021. A breakthrough COVID-19 infection is defined as a positive SARS-CoV-2 RNA or antigen detection in a respiratory specimen that is 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 8/6/21, Montana reports 1030 cases of confirmed breakthrough disease, this includes 94 hospitalizations and 16 deaths, 139/147 with subtyping performed are known to be infected with variants of concern or interest.

**Table 5. SARS-CoV-2 variants detected in Montana breakthrough cases by lineage, 8/11/2021**

	Variants of Concern			Variants of Interest				Total # Variants
	B.1.1.7 Alpha	B.1.617.2 Delta	P.1 Gamma	B.1.427 Epsilon	B.1.429 Epsilon	B.1.525 Eta	B.1.526 Iota	
Breakthrough Cases	60	51	12	4	5	1	6	139

