

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: September 6, 2022

Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or Moderna vaccine or one dose of the Johnson and Johnson (Janssen) vaccine.

Exclusion Criteria: The persons who were recently positive for COVID-19, defined as a positive <45 days prior to the current positive test under investigations were excluded.

Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

Following data have been obtained by matching COVID-19 cases information from Trisano (SNHD's surveillance system) to immunization records from Nevada WebIZ (Immunization database). Data is considered preliminary and subject to change.

Figure 1: Trends in Breakthrough Cases, Deaths and Hospitalizations

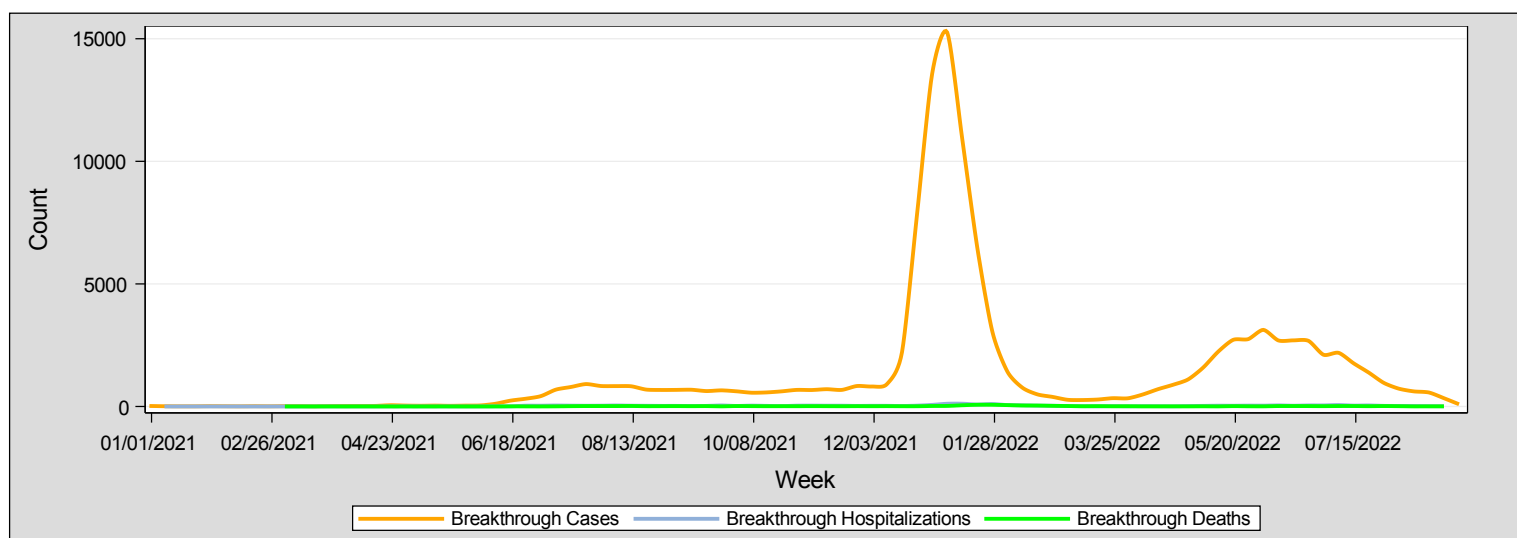


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

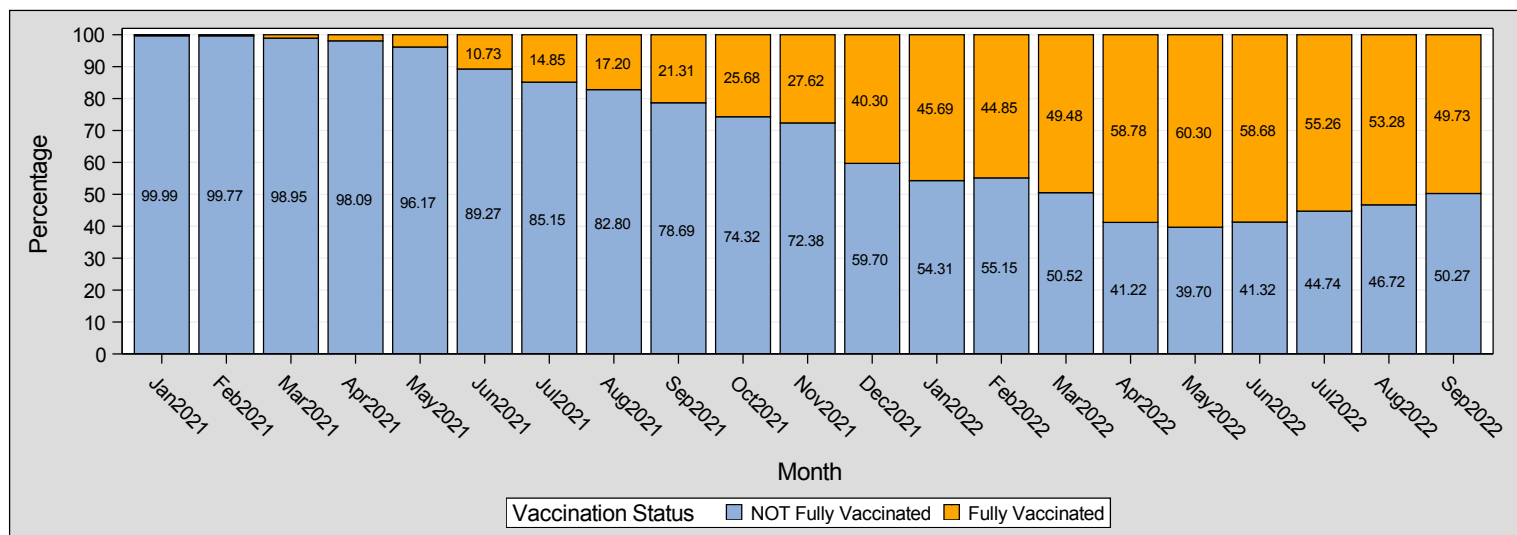


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	117900	100
Age (in years)		
<i>0-4</i>	1	0
<i>5-11</i>	1421	1
<i>12-17</i>	5632	5
<i>18-24</i>	10329	9
<i>25-49</i>	52746	45
<i>50-64</i>	27899	24
<i>65+</i>	19872	17
Gender		
<i>Male</i>	51375	44
<i>Female</i>	65709	56
<i>Unknown</i>	816	1
Race/Ethnicity		
<i>Hispanic</i>	23940	20
<i>White</i>	36418	31
<i>Black</i>	8920	8
<i>API</i>	14750	13
<i>AEA</i>	406	0
<i>Other</i>	8759	7
<i>Unknown</i>	24707	21
Travel History		
<i>Yes</i>	4502	4
<i>No</i>	27530	23
<i>Unknown</i>	85868	73
Hospitalization		
<i>Yes</i>	2660	2
<i>No</i>	31245	27
<i>Unknown</i>	83995	71
Death		
<i>Yes</i>	1012	1
<i>No</i>	7509	6
<i>Unknown</i>	109379	93
Vaccine Type		
<i>Pfizer</i>	77893	66
<i>Unknown</i>	952	1
<i>Moderna</i>	32258	27
<i>Janssen</i>	6796	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	15366	13
<i>No</i>	102534	87

Table 2: Breakthrough Case Rates

Fully Vaccinated Population*	Vaccinated Cases	Unvaccinated Population	Unvaccinated Cases	Vaccinated Case Rate per 100K population	Unvaccinated Case Rate per 100K population
1316816	117900	1001358	457629	8953	45701

* Please note that the numbers reported for fully vaccinated in the above table may not reflect the total number of completed doses reported on the SNHD dashboard. The CDC considers people to be fully vaccinated 2 weeks after their second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, or 2 weeks after a single-dose vaccine, such as Johnson & Johnson's Janssen vaccine.

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	2660	100
Age (in years)		
5-11	5	0
12-17	16	1
18-24	28	1
25-49	267	10
50-64	464	17
65+	1880	71
Gender		
Male	1432	54
Female	1225	46
Unknown	3	0
Race/Ethnicity		
Hispanic	330	12
White	1519	57
Black	315	12
API	262	10
AEA	12	0
Other	83	3
Unknown	139	5
Travel History		
Yes	104	4
No	1318	50
Unknown	1238	47
Death		
Yes	727	27
No	433	16
Unknown	1500	56
Vaccine Type		
Pfizer	1550	58
Unknown	58	2
Moderna	827	31
Janssen	225	8
Underlying Conditions		
Yes	1890	71
No	770	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1012	100
Age (in years)		
25-49	32	3
50-64	124	12
65+	856	85
Gender		
Male	599	59
Female	413	41
Race/Ethnicity		
Hispanic	113	11
White	668	66
Black	110	11
API	103	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	727	72
No	66	7
Unknown	219	22
Vaccine Type		
Pfizer	555	55
Unknown	24	2
Moderna	321	32
Janssen	112	11
Underlying Conditions		
Yes	597	59
No	415	41

Table 5: Breakthrough Death Rates

Fully Vaccinated Population	Vaccinated Deaths	Unvaccinated Population	Unvaccinated Deaths	Vaccinated Death Rate per 100K population	Unvaccinated Death Rate per 100K population
1316816	1012	1001358	7918	77	791

* Please note that the numbers reported for fully vaccinated in the above table may not reflect the total number of completed doses reported on the SNHD dashboard. The CDC considers people to be fully vaccinated 2 weeks after their second dose in a 2-dose series, such as the Pfizer or Moderna vaccines, or 2 weeks after a single-dose vaccine, such as Johnson & Johnson's Janssen vaccine.

Table 6: Breakdown of COVID-19 Breakthrough Hospitalizations according to Underlying conditions

Variable	Outcome	N	%
Underlying Medical Condition	Yes	1890	71
	No	770	29
Hypertension	Yes	1219	N/A
Immunocompromised	Yes	110	N/A
Chronic Heart Disease	Yes	575	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	389	N/A
Diabetes	Yes	707	N/A
Neurologic/Neurodevelopmental	Yes	174	N/A
Chronic Lung Disease	Yes	507	N/A
Historically Healthy	Yes	223	N/A

Table 7: Breakdown of COVID-19 Breakthrough Deaths according to Underlying conditions

Variable	Outcome	N	%
Underlying Medical Condition	Yes	597	59
	No	415	41
Hypertension	Yes	389	N/A
Immunocompromised	Yes	47	N/A
Chronic Heart Disease	Yes	216	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	163	N/A
Diabetes	Yes	232	N/A
Neurologic/Neurodevelopmental	Yes	52	N/A
Chronic Lung Disease	Yes	176	N/A
Historically Healthy	Yes	23	N/A

- Notes:**
- * White, Black, Asian, and AEA are non-Hispanic. AEA=American Indian/Eskimos/Alaskan Natives & API=Asian Pacific Islander
 - * The report does not include breakthrough hospitalizations from State approved facilities as State is responsible for their investigation.
 - * The breakdown of underlying conditions are not mutually exclusive (i.e., a person can have more than one risk factor).