

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: August 23, 2022**

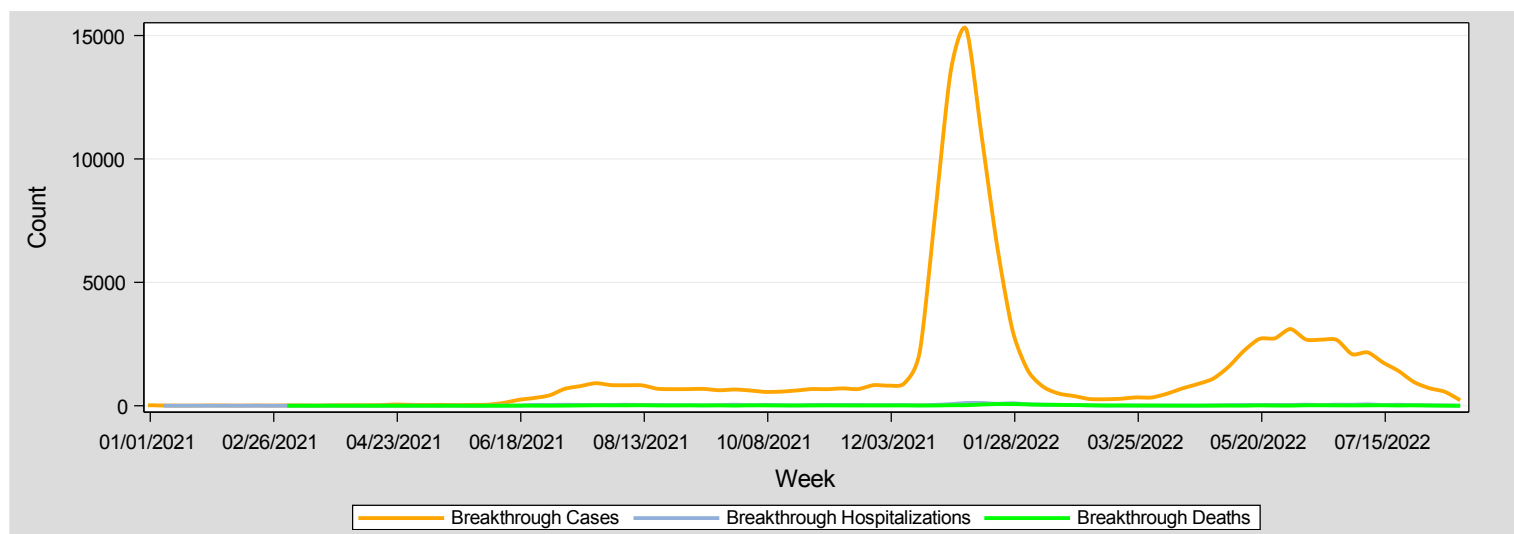
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

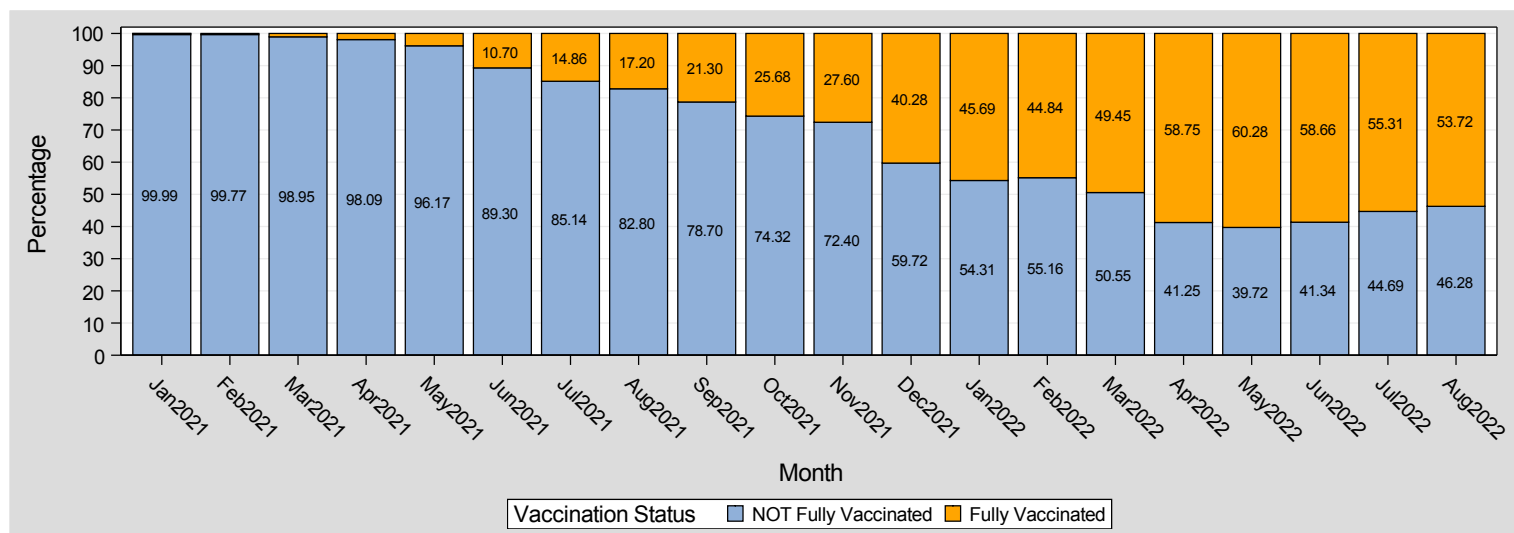
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	116930	100
<b>Age (in years)</b>		
<i>0-4</i>	2	0
<i>5-11</i>	1402	1
<i>12-17</i>	5583	5
<i>18-24</i>	10270	9
<i>25-49</i>	52398	45
<i>50-64</i>	27654	24
<i>65+</i>	19621	17
<b>Gender</b>		
<i>Male</i>	50957	44
<i>Female</i>	65161	56
<i>Unknown</i>	812	1
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	23696	20
<i>White</i>	36029	31
<i>Black</i>	8821	8
<i>API</i>	14593	12
<i>AEA</i>	401	0
<i>Other</i>	8749	7
<i>Unknown</i>	24641	21
<b>Travel History</b>		
<i>Yes</i>	4366	4
<i>No</i>	26807	23
<i>Unknown</i>	85757	73
<b>Hospitalization</b>		
<i>Yes</i>	2604	2
<i>No</i>	30426	26
<i>Unknown</i>	83900	72
<b>Death</b>		
<i>Yes</i>	994	1
<i>No</i>	7309	6
<i>Unknown</i>	108627	93
<b>Vaccine Type</b>		
<i>Pfizer</i>	77281	66
<i>Unknown</i>	940	1
<i>Moderna</i>	31940	27
<i>Janssen</i>	6768	6
<i>Emergen</i>	1	0
<b>Underlying Conditions</b>		
<i>Yes</i>	15004	13
<i>No</i>	101926	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
1314253	116930	1003921	456659	8897	45488

\* 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>	2604	100
<b>Age (in years)</b>		
5-11	5	0
12-17	14	1
18-24	28	1
25-49	259	10
50-64	457	18
65+	1841	71
<b>Gender</b>		
Male	1402	54
Female	1198	46
Unknown	4	0
<b>Race/Ethnicity</b>		
Hispanic	324	12
White	1488	57
Black	308	12
API	255	10
AEA	12	0
Other	78	3
Unknown	139	5
<b>Travel History</b>		
Yes	102	4
No	1285	49
Unknown	1217	47
<b>Death</b>		
Yes	714	27
No	426	16
Unknown	1464	56
<b>Vaccine Type</b>		
Pfizer	1513	58
Unknown	57	2
Moderna	810	31
Janssen	224	9
<b>Underlying Conditions</b>		
Yes	1854	71
No	750	29

**Table 4: Population Characteristics of COVID-19 Breakthrough Deaths**

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	994	100
<b>Age (in years)</b>		
25-49	32	3
50-64	123	12
65+	839	84
<b>Gender</b>		
Male	590	59
Female	404	41
<b>Race/Ethnicity</b>		
Hispanic	114	11
White	655	66
Black	106	11
API	102	10
AEA	6	1
Other	9	1
Unknown	2	0
<b>Hospitalization</b>		
Yes	714	72
No	63	6
Unknown	217	22
<b>Vaccine Type</b>		
Pfizer	544	55
Unknown	24	2
Moderna	315	32
Janssen	111	11
<b>Underlying Conditions</b>		
Yes	587	59
No	407	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
1314253	994	1003921	7900	76	787

\* 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	1854	71
	No	750	29
Hypertension	Yes	1196	N/A
Immunocompromised	Yes	110	N/A
Chronic Heart Disease	Yes	562	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	382	N/A
Diabetes	Yes	695	N/A
Neurologic/Neurodevelopmental	Yes	171	N/A
Chronic Lung Disease	Yes	497	N/A
Historically Healthy	Yes	222	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	587	59
	No	407	41
Hypertension	Yes	382	N/A
Immunocompromised	Yes	45	N/A
Chronic Heart Disease	Yes	211	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	159	N/A
Diabetes	Yes	227	N/A
Neurologic/Neurodevelopmental	Yes	51	N/A
Chronic Lung Disease	Yes	172	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).