

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: August 16, 2022**

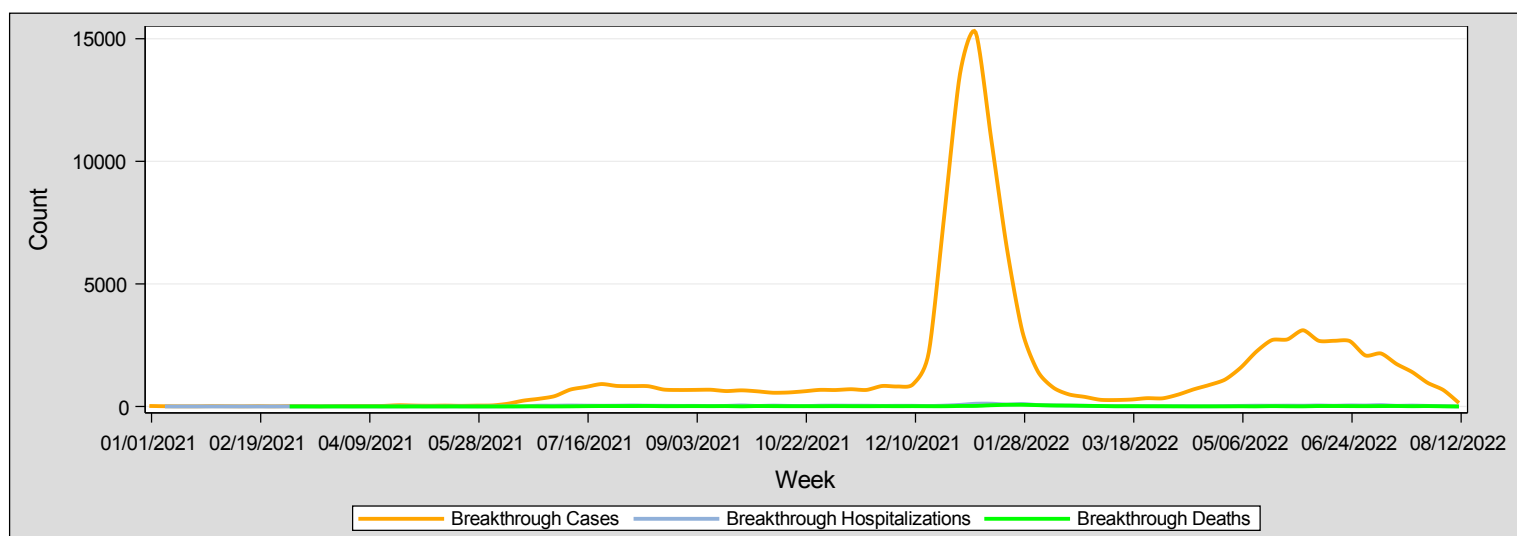
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

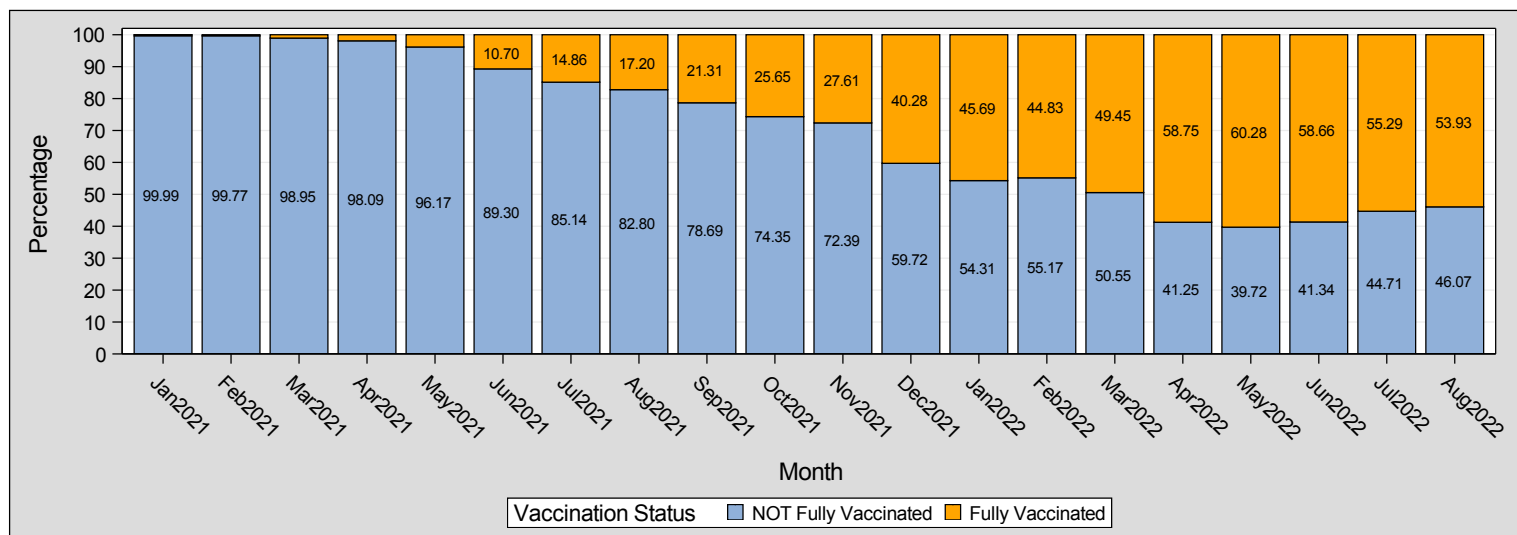
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	116178	100
<b>Age (in years)</b>		
<i>0-4</i>	1	0
<i>5-11</i>	1384	1
<i>12-17</i>	5541	5
<i>18-24</i>	10230	9
<i>25-49</i>	52120	45
<i>50-64</i>	27480	24
<i>65+</i>	19422	17
<b>Gender</b>		
<i>Male</i>	50648	44
<i>Female</i>	64720	56
<i>Unknown</i>	810	1
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	23520	20
<i>White</i>	35730	31
<i>Black</i>	8747	8
<i>API</i>	14476	12
<i>AEA</i>	398	0
<i>Other</i>	8724	8
<i>Unknown</i>	24583	21
<b>Travel History</b>		
<i>Yes</i>	4263	4
<i>No</i>	26364	23
<i>Unknown</i>	85551	74
<b>Hospitalization</b>		
<i>Yes</i>	2563	2
<i>No</i>	29846	26
<i>Unknown</i>	83769	72
<b>Death</b>		
<i>Yes</i>	984	1
<i>No</i>	7186	6
<i>Unknown</i>	108008	93
<b>Vaccine Type</b>		
<i>Pfizer</i>	76776	66
<i>Unknown</i>	930	1
<i>Moderna</i>	31715	27
<i>Janssen</i>	6756	6
<i>Emergen</i>	1	0
<b>Underlying Conditions</b>		
<i>Yes</i>	14772	13
<i>No</i>	101406	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
1312662	116178	1005512	455842	8851	45334

\* 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>	2563	100
<b>Age (in years)</b>		
5-11	4	0
12-17	14	1
18-24	28	1
25-49	253	10
50-64	450	18
65+	1814	71
<b>Gender</b>		
Male	1373	54
Female	1186	46
Unknown	4	0
<b>Race/Ethnicity</b>		
Hispanic	320	12
White	1461	57
Black	304	12
API	252	10
AEA	12	0
Other	78	3
Unknown	136	5
<b>Travel History</b>		
Yes	93	4
No	1256	49
Unknown	1214	47
<b>Death</b>		
Yes	706	28
No	419	16
Unknown	1438	56
<b>Vaccine Type</b>		
Pfizer	1492	58
Unknown	57	2
Moderna	792	31
Janssen	222	9
<b>Underlying Conditions</b>		
Yes	1821	71
No	742	29

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	984	100
<b>Age (in years)</b>		
25-49	32	3
50-64	122	12
65+	830	84
<b>Gender</b>		
Male	584	59
Female	400	41
<b>Race/Ethnicity</b>		
Hispanic	114	12
White	649	66
Black	103	10
API	101	10
AEA	6	1
Other	9	1
Unknown	2	0
<b>Hospitalization</b>		
Yes	706	72
No	63	6
Unknown	215	22
<b>Vaccine Type</b>		
Pfizer	540	55
Unknown	24	2
Moderna	310	32
Janssen	110	11
<b>Underlying Conditions</b>		
Yes	578	59
No	406	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
1312662	984	1005512	7886	75	784

\* 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	1821	71
	No	742	29
Hypertension	Yes	1182	N/A
Immunocompromised	Yes	104	N/A
Chronic Heart Disease	Yes	552	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	375	N/A
Diabetes	Yes	678	N/A
Neurologic/Neurodevelopmental	Yes	166	N/A
Chronic Lung Disease	Yes	487	N/A
Historically Healthy	Yes	220	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	578	59
	No	406	41
Hypertension	Yes	375	N/A
Immunocompromised	Yes	45	N/A
Chronic Heart Disease	Yes	204	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	154	N/A
Diabetes	Yes	222	N/A
Neurologic/Neurodevelopmental	Yes	49	N/A
Chronic Lung Disease	Yes	168	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).