

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: December 6, 2022**

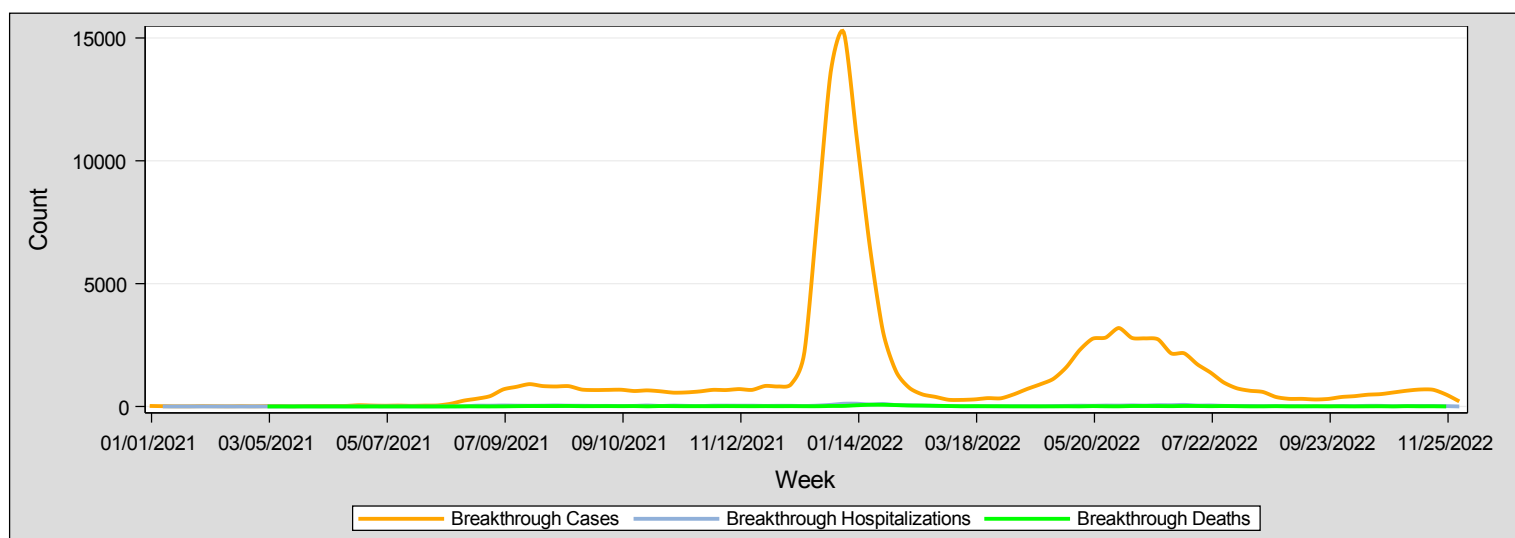
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

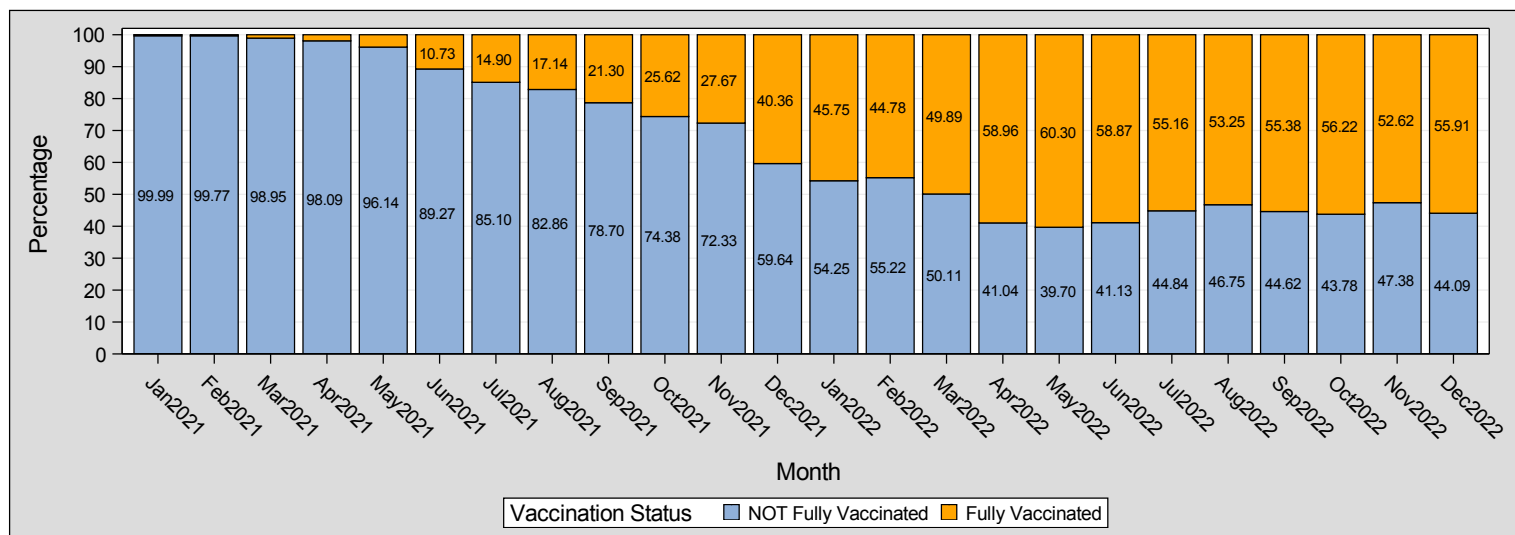
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	124763	100
<b>Age (in years)</b>		
<i>0-4</i>	3	0
<i>5-11</i>	1510	1
<i>12-17</i>	5837	5
<i>18-24</i>	10778	9
<i>25-49</i>	55052	44
<i>50-64</i>	29605	24
<i>65+</i>	21978	18
<b>Gender</b>		
<i>Male</i>	54384	44
<i>Female</i>	69429	56
<i>Unknown</i>	950	1
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	25615	21
<i>White</i>	39325	32
<i>Black</i>	9663	8
<i>API</i>	15823	13
<i>AEA</i>	432	0
<i>Other</i>	9047	7
<i>Unknown</i>	24858	20
<b>Travel History</b>		
<i>Yes</i>	5259	4
<i>No</i>	32436	26
<i>Unknown</i>	87068	70
<b>Hospitalization</b>		
<i>Yes</i>	3038	2
<i>No</i>	36691	29
<i>Unknown</i>	85034	68
<b>Death</b>		
<i>Yes</i>	1104	1
<i>No</i>	9071	7
<i>Unknown</i>	114588	92
<b>Vaccine Type</b>		
<i>Pfizer</i>	83299	67
<i>Novavax</i>	5	0
<i>Unknown</i>	1056	1
<i>Moderna</i>	33508	27
<i>Janssen</i>	6894	6
<i>Emergen</i>	1	0
<b>Underlying Conditions</b>		
<i>Yes</i>	17898	14
<i>No</i>	106865	86

**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
852037	124763	1466137	463741	14643	31630

**Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations**

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3038	100
<b>Age (in years)</b>		
5-11	5	0
12-17	18	1
18-24	31	1
25-49	318	10
50-64	529	17
65+	2137	70
<b>Gender</b>		
Male	1636	54
Female	1398	46
Unknown	4	0
<b>Race/Ethnicity</b>		
Hispanic	372	12
White	1767	58
Black	346	11
API	298	10
AEA	14	0
Other	93	3
Unknown	148	5
<b>Travel History</b>		
Yes	132	4
No	1559	51
Unknown	1347	44
<b>Death</b>		
Yes	783	26
No	532	18
Unknown	1723	57
<b>Vaccine Type</b>		
Pfizer	1772	58
Unknown	72	2
Moderna	960	32
Janssen	234	8
<b>Underlying Conditions</b>		
Yes	2190	72
No	848	28

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1104	100
<b>Age (in years)</b>		
25-49	33	3
50-64	134	12
65+	937	85
<b>Gender</b>		
Male	659	60
Female	445	40
<b>Race/Ethnicity</b>		
Hispanic	122	11
White	735	67
Black	118	11
API	111	10
AEA	6	1
Other	9	1
Unknown	3	0
<b>Hospitalization</b>		
Yes	783	71
No	73	7
Unknown	248	22
<b>Vaccine Type</b>		
Pfizer	604	55
Unknown	25	2
Moderna	360	33
Janssen	115	10
<b>Underlying Conditions</b>		
Yes	639	58
No	465	42

**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
852037	1104	1466137	8004	130	546

\* 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	2190	72
	No	848	28
Hypertension	Yes	1396	N/A
Immunocompromised	Yes	123	N/A
Chronic Heart Disease	Yes	658	N/A
Chronic Liver Disease	Yes	55	N/A
Chronic Kidney Disease	Yes	430	N/A
Diabetes	Yes	812	N/A
Neurologic/Neurodevelopmental	Yes	189	N/A
Chronic Lung Disease	Yes	583	N/A
Historically Healthy	Yes	266	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	639	58
	No	465	42
Hypertension	Yes	409	N/A
Immunocompromised	Yes	47	N/A
Chronic Heart Disease	Yes	232	N/A
Chronic Liver Disease	Yes	20	N/A
Chronic Kidney Disease	Yes	175	N/A
Diabetes	Yes	247	N/A
Neurologic/Neurodevelopmental	Yes	58	N/A
Chronic Lung Disease	Yes	185	N/A
Historically Healthy	Yes	24	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).