

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: January 4, 2023**

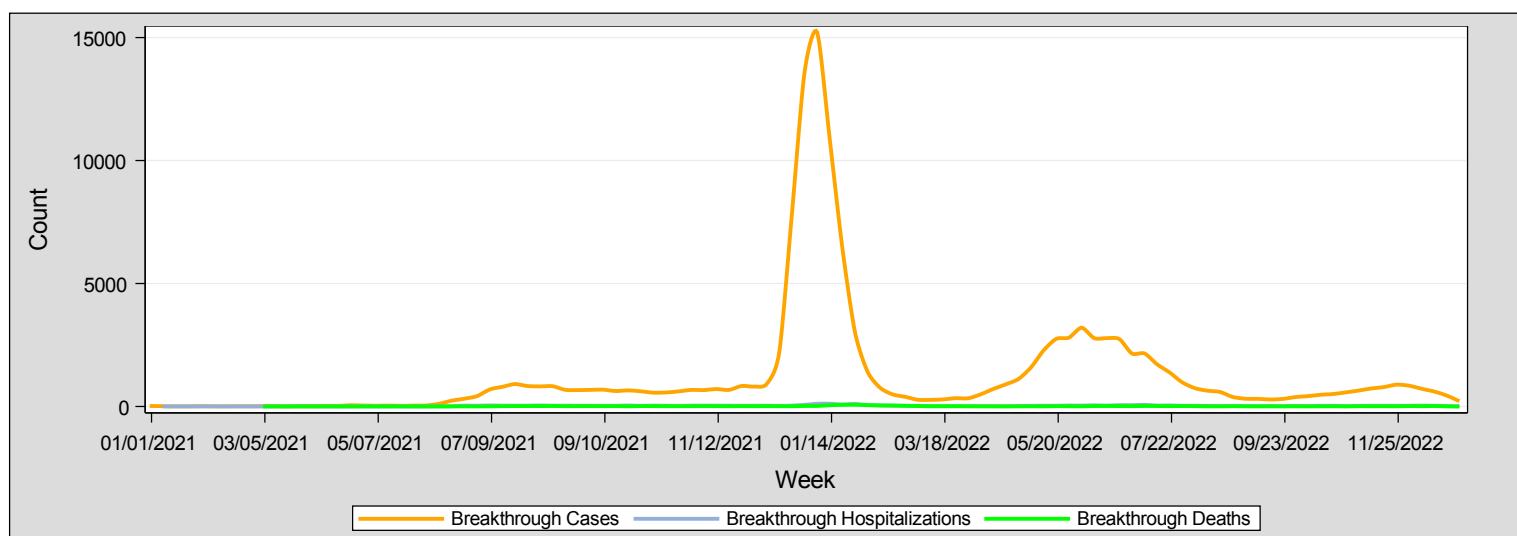
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

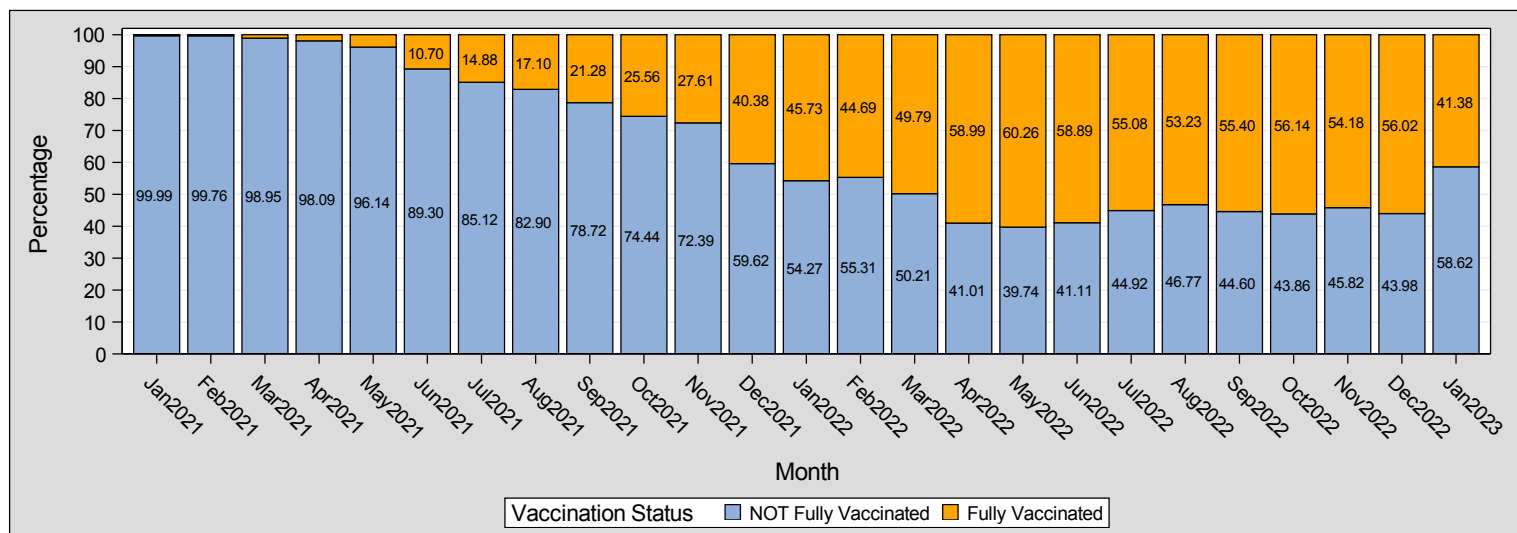
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	127846	100
<b>Age (in years)</b>		
<i>0-4</i>	4	0
<i>5-11</i>	1542	1
<i>12-17</i>	5913	5
<i>18-24</i>	10962	9
<i>25-49</i>	56017	44
<i>50-64</i>	30394	24
<i>65+</i>	23014	18
<b>Gender</b>		
<i>Male</i>	55702	44
<i>Female</i>	71176	56
<i>Unknown</i>	968	1
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	26237	21
<i>White</i>	40510	32
<i>Black</i>	9976	8
<i>API</i>	16257	13
<i>AEA</i>	443	0
<i>Other</i>	9159	7
<i>Unknown</i>	25264	20
<b>Travel History</b>		
<i>Yes</i>	5448	4
<i>No</i>	34121	27
<i>Unknown</i>	88277	69
<b>Hospitalization</b>		
<i>Yes</i>	3197	3
<i>No</i>	38513	30
<i>Unknown</i>	86136	67
<b>Death</b>		
<i>Yes</i>	1164	1
<i>No</i>	9557	7
<i>Unknown</i>	117125	92
<b>Vaccine Type</b>		
<i>Pfizer</i>	85460	67
<i>Novavax</i>	5	0
<i>Unknown</i>	1087	1
<i>Moderna</i>	34311	27
<i>Janssen</i>	6982	5
<i>Emergen</i>	1	0
<b>Underlying Conditions</b>		
<i>Yes</i>	18903	15
<i>No</i>	108943	85

**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
1324946	127846	993228	466540	9649	46972

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3197	100
<b>Age (in years)</b>		
5-11	5	0
12-17	18	1
18-24	31	1
25-49	329	10
50-64	551	17
65+	2263	71
<b>Gender</b>		
Male	1734	54
Female	1459	46
Unknown	4	0
<b>Race/Ethnicity</b>		
Hispanic	393	12
White	1865	58
Black	360	11
API	311	10
AEA	15	0
Other	97	3
Unknown	156	5
<b>Travel History</b>		
Yes	140	4
No	1653	52
Unknown	1404	44
<b>Death</b>		
Yes	817	26
No	572	18
Unknown	1808	57
<b>Vaccine Type</b>		
Pfizer	1860	58
Unknown	77	2
Moderna	1019	32
Janssen	241	8
<b>Underlying Conditions</b>		
Yes	2311	72
No	886	28

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1164	100
<b>Age (in years)</b>		
25-49	35	3
50-64	140	12
65+	989	85
<b>Gender</b>		
Male	701	60
Female	463	40
<b>Race/Ethnicity</b>		
Hispanic	128	11
White	783	67
Black	121	10
API	112	10
AEA	6	1
Other	10	1
Unknown	4	0
<b>Hospitalization</b>		
Yes	817	70
No	75	6
Unknown	272	23
<b>Vaccine Type</b>		
Pfizer	640	55
Unknown	27	2
Moderna	377	32
Janssen	120	10
<b>Underlying Conditions</b>		
Yes	670	58
No	494	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
1324946	1164	993228	8055	88	811

\* 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	2311	72
	No	886	28
Hypertension	Yes	1473	N/A
Immunocompromised	Yes	128	N/A
Chronic Heart Disease	Yes	699	N/A
Chronic Liver Disease	Yes	60	N/A
Chronic Kidney Disease	Yes	456	N/A
Diabetes	Yes	860	N/A
Neurologic/Neurodevelopmental	Yes	195	N/A
Chronic Lung Disease	Yes	605	N/A
Historically Healthy	Yes	279	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	670	58
	No	494	42
Hypertension	Yes	430	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	242	N/A
Chronic Liver Disease	Yes	24	N/A
Chronic Kidney Disease	Yes	186	N/A
Diabetes	Yes	256	N/A
Neurologic/Neurodevelopmental	Yes	59	N/A
Chronic Lung Disease	Yes	194	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).