

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: January 24, 2023**

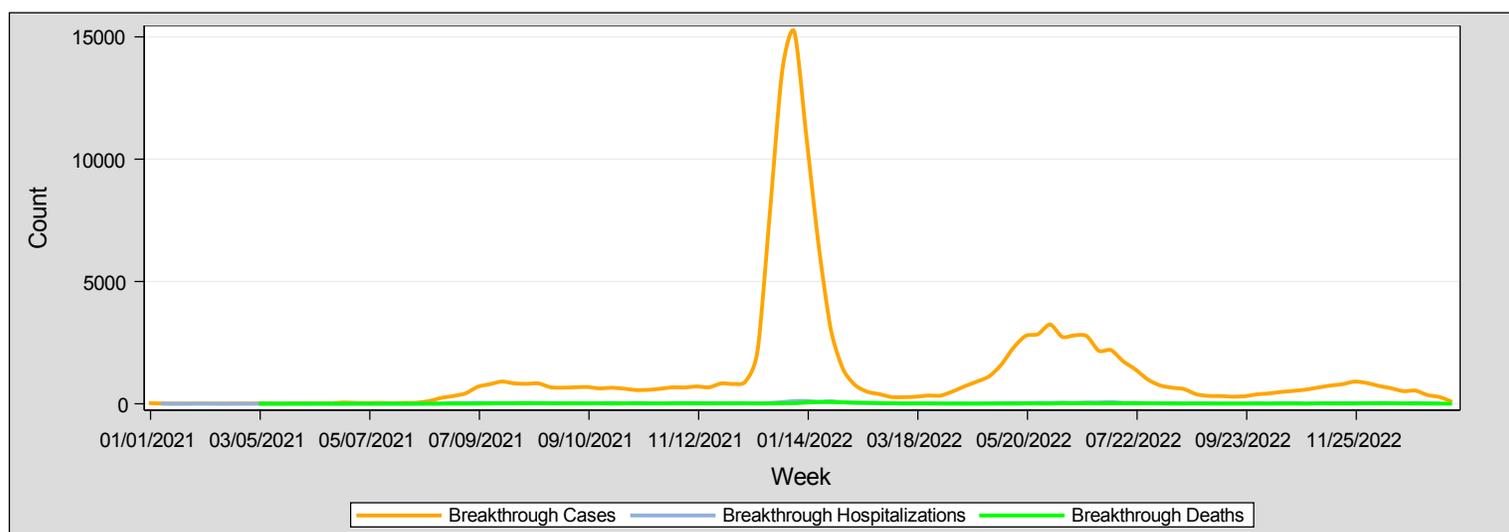
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

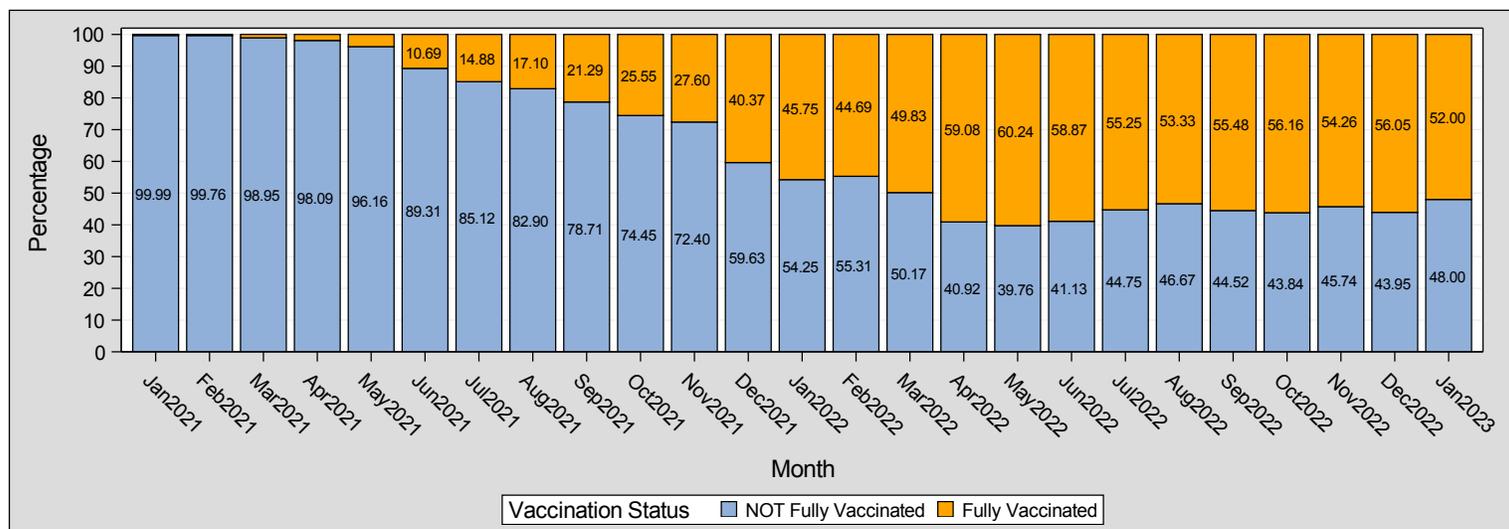
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	129421	100
<b>Age (in years)</b>		
<i>0-4</i>	7	0
<i>5-11</i>	1564	1
<i>12-17</i>	5951	5
<i>18-24</i>	11056	9
<i>25-49</i>	56551	44
<i>50-64</i>	30826	24
<i>65+</i>	23466	18
<b>Gender</b>		
<i>Male</i>	56420	44
<i>Female</i>	72027	56
<i>Unknown</i>	974	1
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	26659	21
<i>White</i>	41186	32
<i>Black</i>	10152	8
<i>API</i>	16556	13
<i>AEA</i>	447	0
<i>Other</i>	9219	7
<i>Unknown</i>	25202	19
<b>Travel History</b>		
<i>Yes</i>	5591	4
<i>No</i>	35283	27
<i>Unknown</i>	88547	68
<b>Hospitalization</b>		
<i>Yes</i>	3323	3
<i>No</i>	39811	31
<i>Unknown</i>	86287	67
<b>Death</b>		
<i>Yes</i>	1199	1
<i>No</i>	9856	8
<i>Unknown</i>	118366	91
<b>Vaccine Type</b>		
<i>Pfizer</i>	86544	67
<i>Novavax</i>	5	0
<i>Unknown</i>	1101	1
<i>Moderna</i>	34741	27
<i>Janssen</i>	7029	5
<i>Emergen</i>	1	0
<b>Underlying Conditions</b>		
<i>Yes</i>	19551	15
<i>No</i>	109870	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
870607	129421	1447567	467920	14866	32325

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3323	100
<b>Age (in years)</b>		
5-11	5	0
12-17	19	1
18-24	33	1
25-49	339	10
50-64	579	17
65+	2348	71
<b>Gender</b>		
Male	1808	54
Female	1511	45
Unknown	4	0
<b>Race/Ethnicity</b>		
Hispanic	415	12
White	1936	58
Black	373	11
API	326	10
AEA	16	0
Other	100	3
Unknown	157	5
<b>Travel History</b>		
Yes	142	4
No	1714	52
Unknown	1467	44
<b>Death</b>		
Yes	846	25
No	589	18
Unknown	1888	57
<b>Vaccine Type</b>		
Pfizer	1935	58
Unknown	82	2
Moderna	1057	32
Janssen	249	7
<b>Underlying Conditions</b>		
Yes	2400	72
No	923	28

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1199	100
<b>Age (in years)</b>		
<i>25-49</i>	37	3
<i>50-64</i>	146	12
<i>65+</i>	1016	85
<b>Gender</b>		
<i>Male</i>	721	60
<i>Female</i>	478	40
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	130	11
<i>White</i>	809	67
<i>Black</i>	126	11
<i>API</i>	114	10
<i>AEA</i>	6	1
<i>Other</i>	10	1
<i>Unknown</i>	4	0
<b>Hospitalization</b>		
<i>Yes</i>	846	71
<i>No</i>	75	6
<i>Unknown</i>	278	23
<b>Vaccine Type</b>		
<i>Pfizer</i>	659	55
<i>Unknown</i>	27	2
<i>Moderna</i>	391	33
<i>Janssen</i>	122	10
<b>Underlying Conditions</b>		
<i>Yes</i>	687	57
<i>No</i>	512	43

**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
870607	1199	1447567	8085	138	559

\* 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	2400	72
	No	923	28
Hypertension	Yes	1534	N/A
Immunocompromised	Yes	134	N/A
Chronic Heart Disease	Yes	723	N/A
Chronic Liver Disease	Yes	62	N/A
Chronic Kidney Disease	Yes	474	N/A
Diabetes	Yes	901	N/A
Neurologic/Neurodevelopmental	Yes	198	N/A
Chronic Lung Disease	Yes	633	N/A
Historically Healthy	Yes	291	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	687	57
	No	512	43
Hypertension	Yes	442	N/A
Immunocompromised	Yes	50	N/A
Chronic Heart Disease	Yes	247	N/A
Chronic Liver Disease	Yes	24	N/A
Chronic Kidney Disease	Yes	188	N/A
Diabetes	Yes	262	N/A
Neurologic/Neurodevelopmental	Yes	60	N/A
Chronic Lung Disease	Yes	199	N/A
Historically Healthy	Yes	26	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).