

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: January 31, 2023**

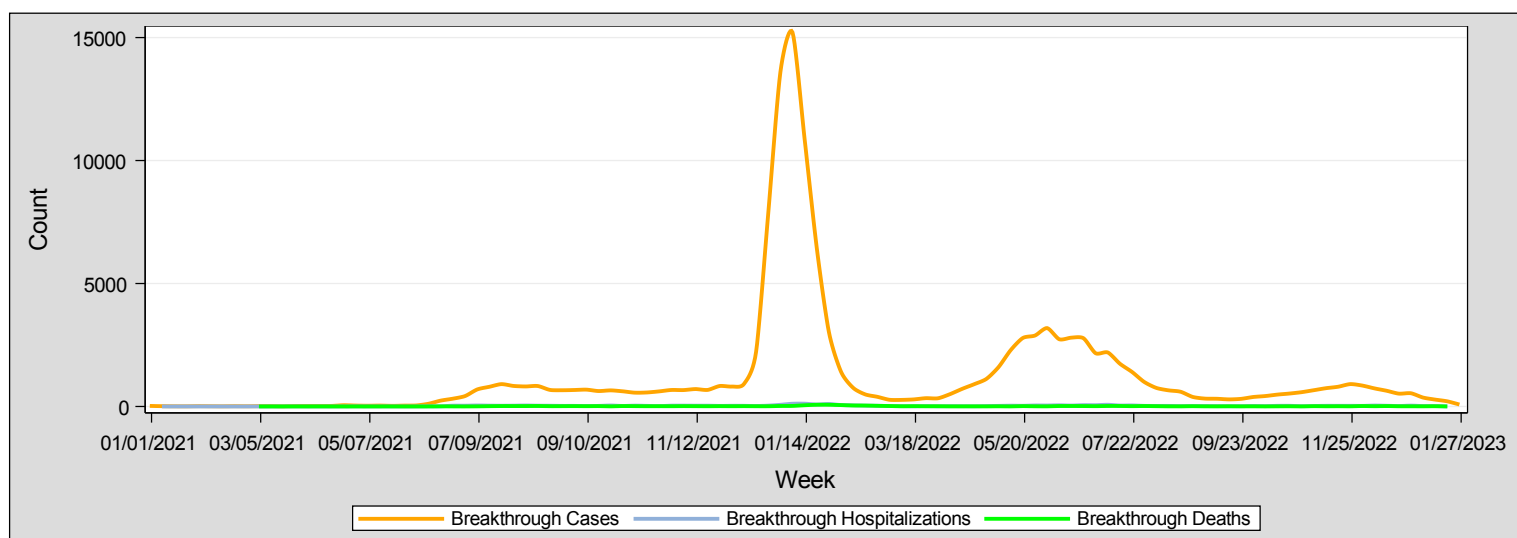
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

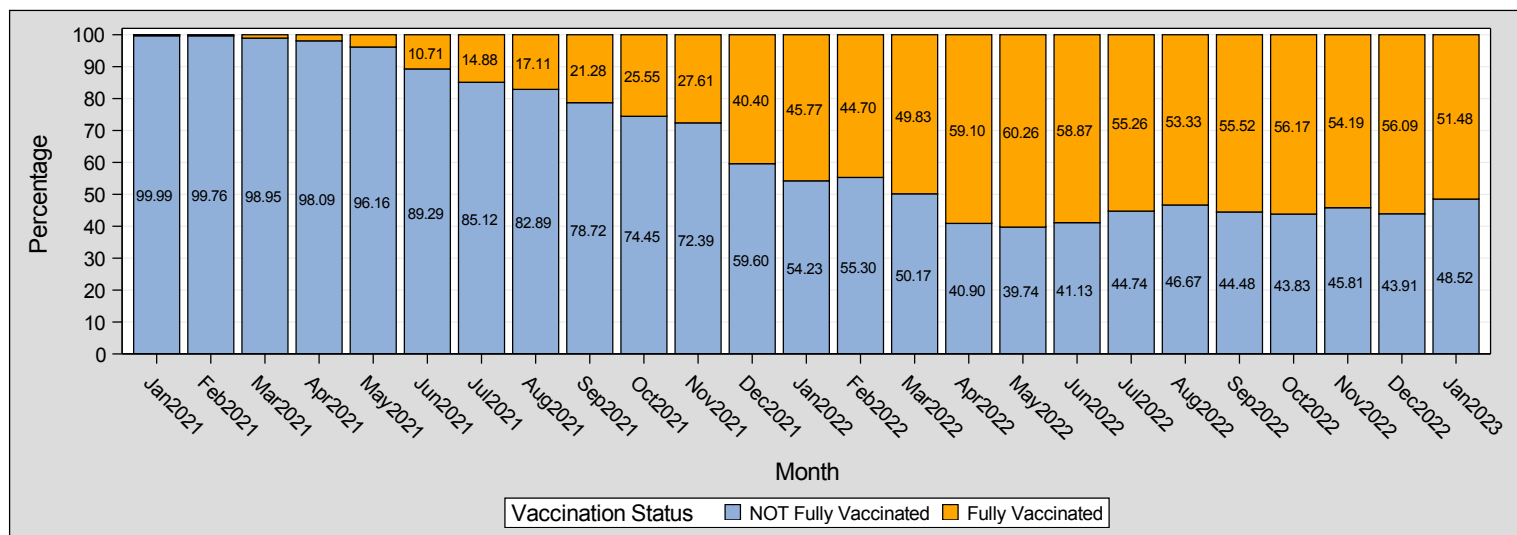
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	129669	100
<b>Age (in years)</b>		
0-4	8	0
5-11	1566	1
12-17	5958	5
18-24	11069	9
25-49	56620	44
50-64	30899	24
65+	23549	18
<b>Gender</b>		
Male	56526	44
Female	72174	56
Unknown	969	1
<b>Race/Ethnicity</b>		
Hispanic	26744	21
White	41321	32
Black	10195	8
API	16600	13
AEA	450	0
Other	9222	7
Unknown	25137	19
<b>Travel History</b>		
Yes	5628	4
No	35615	27
Unknown	88426	68
<b>Hospitalization</b>		
Yes	3355	3
No	40200	31
Unknown	86114	66
<b>Death</b>		
Yes	1200	1
No	9971	8
Unknown	118498	91
<b>Vaccine Type</b>		
Pfizer	86695	67
Novavax	5	0
Unknown	1109	1
Moderna	34820	27
Janssen	7039	5
Emergen	1	0
<b>Underlying Conditions</b>		
Yes	19741	15
No	109928	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
874682	129669	1443492	468082	14825	32427

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3355	100
<b>Age (in years)</b>		
5-11	5	0
12-17	19	1
18-24	34	1
25-49	340	10
50-64	586	17
65+	2371	71
<b>Gender</b>		
Male	1823	54
Female	1528	46
Unknown	4	0
<b>Race/Ethnicity</b>		
Hispanic	419	12
White	1958	58
Black	377	11
API	329	10
AEA	17	1
Other	100	3
Unknown	155	5
<b>Travel History</b>		
Yes	142	4
No	1725	51
Unknown	1488	44
<b>Death</b>		
Yes	849	25
No	609	18
Unknown	1897	57
<b>Vaccine Type</b>		
Pfizer	1953	58
Unknown	83	2
Moderna	1069	32
Janssen	250	7
<b>Underlying Conditions</b>		
Yes	2422	72
No	933	28

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1200	100
<b>Age (in years)</b>		
<i>25-49</i>	36	3
<i>50-64</i>	145	12
<i>65+</i>	1019	85
<b>Gender</b>		
<i>Male</i>	722	60
<i>Female</i>	478	40
<b>Race/Ethnicity</b>		
<i>Hispanic</i>	131	11
<i>White</i>	808	67
<i>Black</i>	126	11
<i>API</i>	115	10
<i>AEA</i>	6	1
<i>Other</i>	10	1
<i>Unknown</i>	4	0
<b>Hospitalization</b>		
<i>Yes</i>	849	71
<i>No</i>	77	6
<i>Unknown</i>	274	23
<b>Vaccine Type</b>		
<i>Pfizer</i>	659	55
<i>Unknown</i>	27	2
<i>Moderna</i>	392	33
<i>Janssen</i>	122	10
<b>Underlying Conditions</b>		
<i>Yes</i>	691	58
<i>No</i>	509	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
874682	1200	1443492	8075	137	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	2422	72
	No	933	28
Hypertension	Yes	1546	N/A
Immunocompromised	Yes	136	N/A
Chronic Heart Disease	Yes	725	N/A
Chronic Liver Disease	Yes	63	N/A
Chronic Kidney Disease	Yes	477	N/A
Diabetes	Yes	909	N/A
Neurologic/Neurodevelopmental	Yes	200	N/A
Chronic Lung Disease	Yes	640	N/A
Historically Healthy	Yes	292	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	691	58
	No	509	42
Hypertension	Yes	444	N/A
Immunocompromised	Yes	50	N/A
Chronic Heart Disease	Yes	249	N/A
Chronic Liver Disease	Yes	25	N/A
Chronic Kidney Disease	Yes	187	N/A
Diabetes	Yes	265	N/A
Neurologic/Neurodevelopmental	Yes	60	N/A
Chronic Lung Disease	Yes	198	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).