

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: March 1, 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

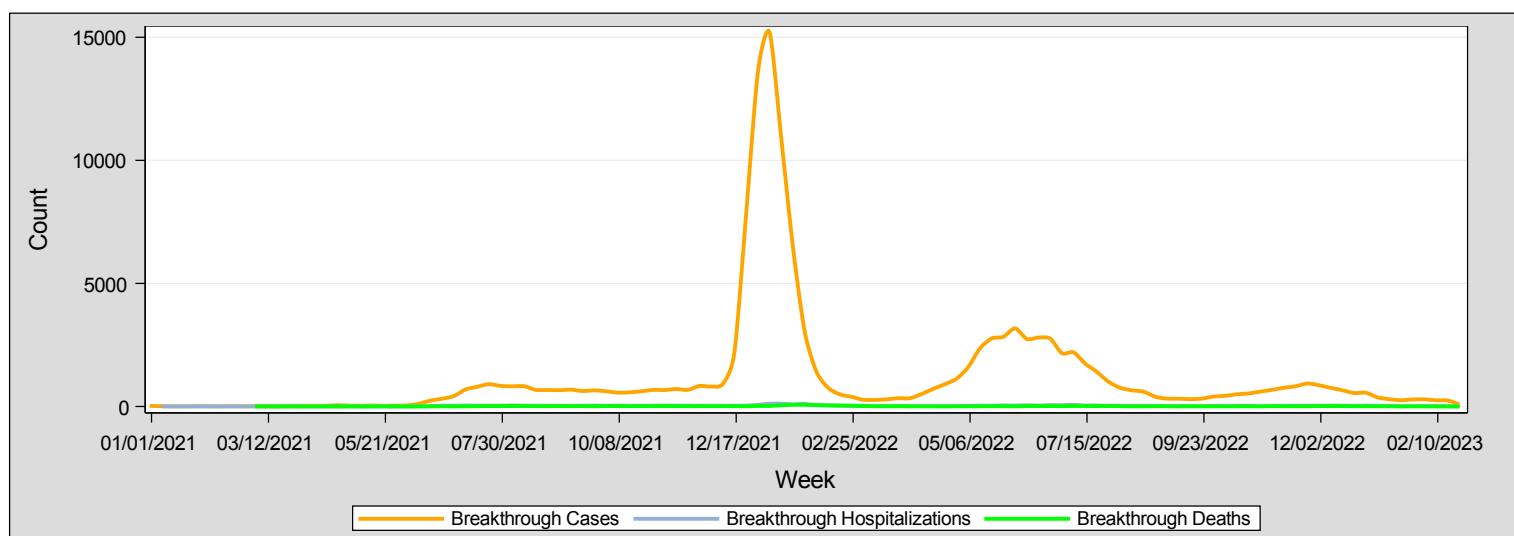


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

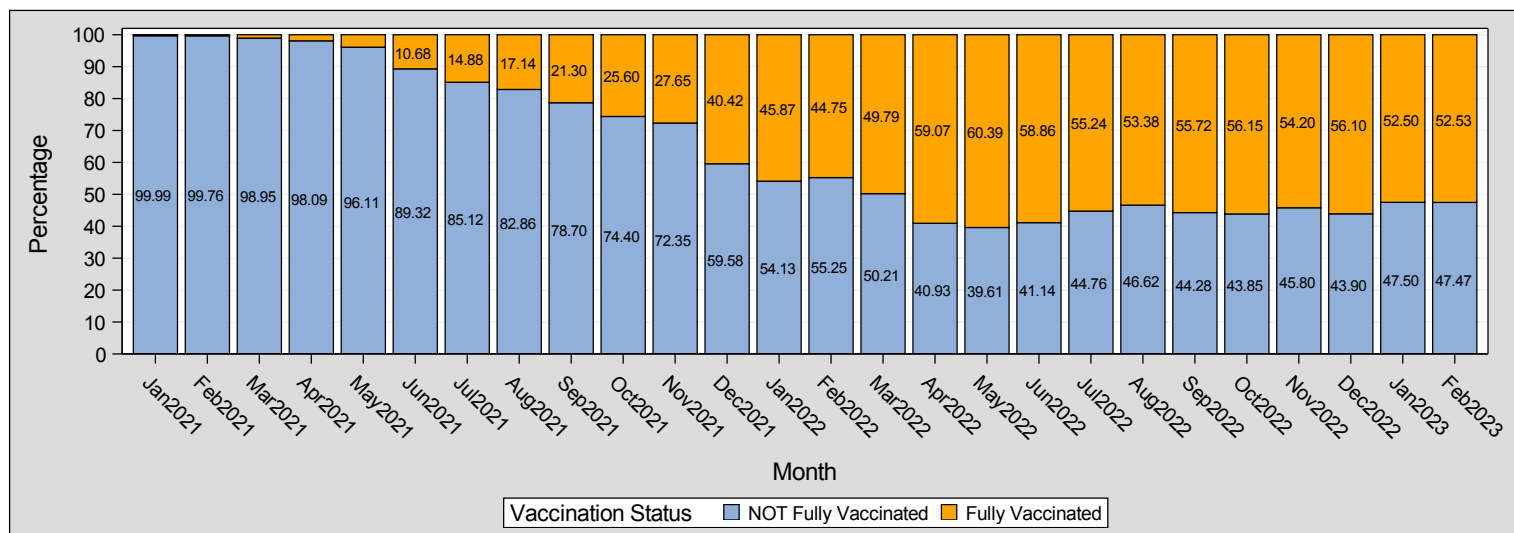


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	131096	100
Age (in years)		
<i>0-4</i>	11	0
<i>5-11</i>	1583	1
<i>12-17</i>	6015	5
<i>18-24</i>	11162	9
<i>25-49</i>	57051	44
<i>50-64</i>	31279	24
<i>65+</i>	23995	18
Gender		
<i>Male</i>	57159	44
<i>Female</i>	72977	56
<i>Unknown</i>	960	1
Race/Ethnicity		
<i>Hispanic</i>	27139	21
<i>White</i>	42038	32
<i>Black</i>	10375	8
<i>API</i>	16868	13
<i>AEA</i>	457	0
<i>Other</i>	9241	7
<i>Unknown</i>	24978	19
Travel History		
<i>Yes</i>	5788	4
<i>No</i>	36897	28
<i>Unknown</i>	88411	67
Hospitalization		
<i>Yes</i>	3450	3
<i>No</i>	41670	32
<i>Unknown</i>	85976	66
Death		
<i>Yes</i>	1219	1
<i>No</i>	10327	8
<i>Unknown</i>	119550	91
Vaccine Type		
<i>Pfizer</i>	87618	67
<i>Novavax</i>	6	0
<i>Unknown</i>	1127	1
<i>Moderna</i>	35266	27
<i>Janssen</i>	7078	5
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	20444	16
<i>No</i>	110651	84
<i>Unknown</i>	1	0

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
883685	131096	1434489	469080	14835	32700

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3450	100
Age (in years)		
5-11	5	0
12-17	20	1
18-24	36	1
25-49	351	10
50-64	599	17
65+	2439	71
Gender		
Male	1869	54
Female	1577	46
Unknown	4	0
Race/Ethnicity		
Hispanic	429	12
White	2008	58
Black	386	11
API	341	10
AEA	16	0
Other	107	3
Unknown	163	5
Travel History		
Yes	146	4
No	1773	51
Unknown	1531	44
Death		
Yes	862	25
No	629	18
Unknown	1959	57
Vaccine Type		
Pfizer	2005	58
Unknown	88	3
Moderna	1106	32
Janssen	251	7
Underlying Conditions		
Yes	2488	72
No	962	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1219	100
Age (in years)		
<i>25-49</i>	35	3
<i>50-64</i>	148	12
<i>65+</i>	1036	85
Gender		
<i>Male</i>	736	60
<i>Female</i>	483	40
Race/Ethnicity		
<i>Hispanic</i>	133	11
<i>White</i>	824	68
<i>Black</i>	126	10
<i>API</i>	115	9
<i>AEA</i>	6	0
<i>Other</i>	10	1
<i>Unknown</i>	5	0
Hospitalization		
<i>Yes</i>	862	71
<i>No</i>	77	6
<i>Unknown</i>	280	23
Vaccine Type		
<i>Pfizer</i>	670	55
<i>Unknown</i>	30	2
<i>Moderna</i>	398	33
<i>Janssen</i>	121	10
Underlying Conditions		
<i>Yes</i>	696	57
<i>No</i>	523	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
883685	1219	1434489	8090	138	564

* 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	2488	72
	No	962	28
Hypertension	Yes	1582	N/A
Immunocompromised	Yes	138	N/A
Chronic Heart Disease	Yes	742	N/A
Chronic Liver Disease	Yes	63	N/A
Chronic Kidney Disease	Yes	488	N/A
Diabetes	Yes	921	N/A
Neurologic/Neurodevelopmental	Yes	208	N/A
Chronic Lung Disease	Yes	655	N/A
Historically Healthy	Yes	301	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	696	57
	No	523	43
Hypertension	Yes	448	N/A
Immunocompromised	Yes	49	N/A
Chronic Heart Disease	Yes	252	N/A
Chronic Liver Disease	Yes	25	N/A
Chronic Kidney Disease	Yes	190	N/A
Diabetes	Yes	269	N/A
Neurologic/Neurodevelopmental	Yes	61	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).