

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: November 29, 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

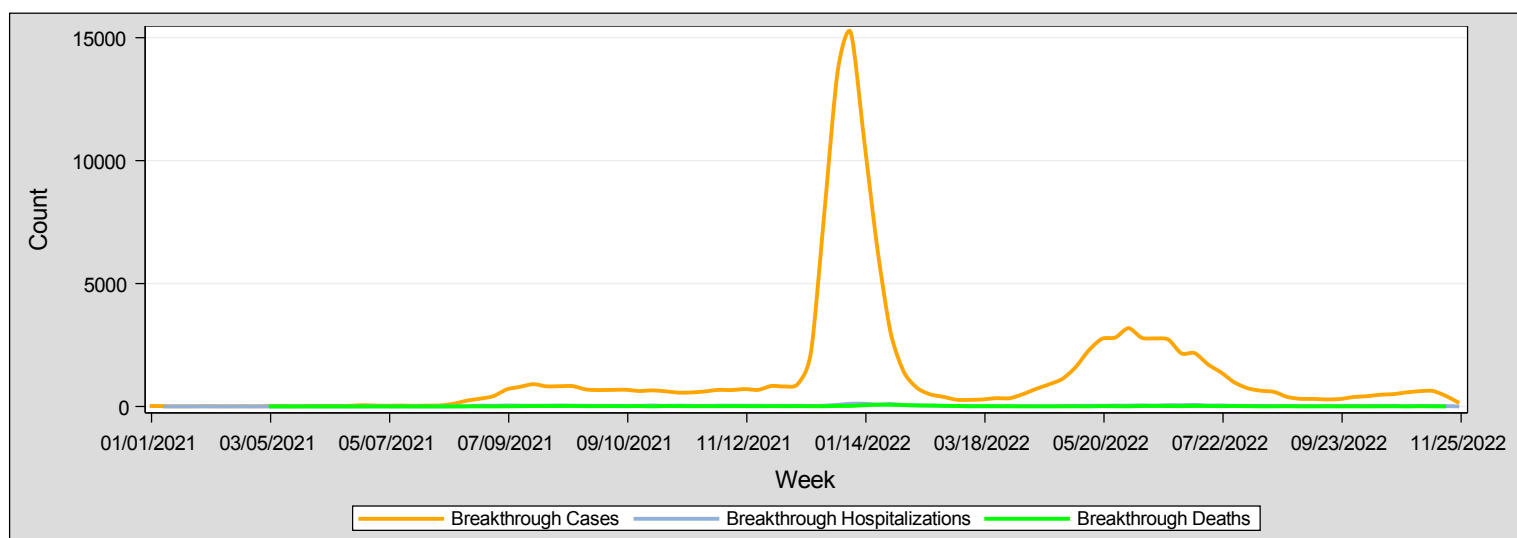


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

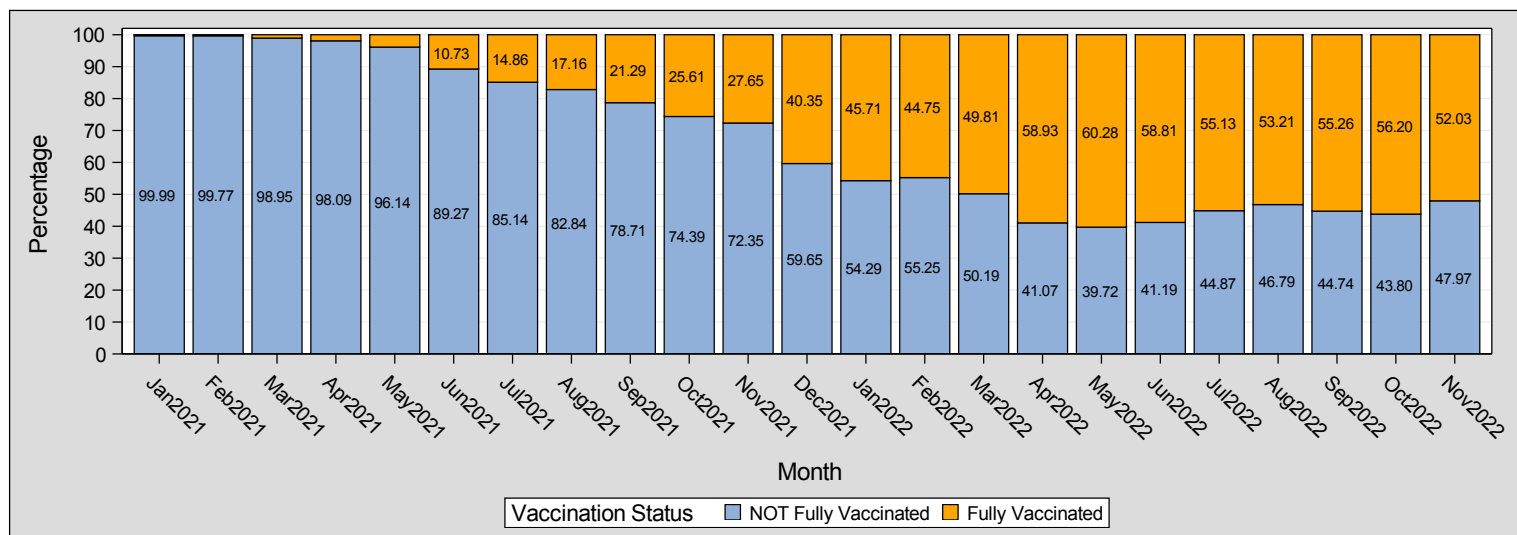


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	123789	100
Age (in years)		
<i>0-4</i>	2	0
<i>5-11</i>	1500	1
<i>12-17</i>	5810	5
<i>18-24</i>	10703	9
<i>25-49</i>	54710	44
<i>50-64</i>	29362	24
<i>65+</i>	21702	18
Gender		
<i>Male</i>	53954	44
<i>Female</i>	68896	56
<i>Unknown</i>	939	1
Race/Ethnicity		
<i>Hispanic</i>	25426	21
<i>White</i>	38993	31
<i>Black</i>	9567	8
<i>API</i>	15688	13
<i>AEA</i>	430	0
<i>Other</i>	8992	7
<i>Unknown</i>	24693	20
Travel History		
<i>Yes</i>	5203	4
<i>No</i>	32040	26
<i>Unknown</i>	86546	70
Hospitalization		
<i>Yes</i>	3007	2
<i>No</i>	36242	29
<i>Unknown</i>	84540	68
Death		
<i>Yes</i>	1093	1
<i>No</i>	8939	7
<i>Unknown</i>	113757	92
Vaccine Type		
<i>Pfizer</i>	82675	67
<i>Novavax</i>	4	0
<i>Unknown</i>	1037	1
<i>Moderna</i>	33204	27
<i>Janssen</i>	6868	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	17630	14
<i>No</i>	106159	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
851765	123789	1466409	463032	14533	31576

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3007	100
Age (in years)		
5-11	5	0
12-17	18	1
18-24	31	1
25-49	314	10
50-64	520	17
65+	2119	70
Gender		
Male	1613	54
Female	1390	46
Unknown	4	0
Race/Ethnicity		
Hispanic	371	12
White	1746	58
Black	343	11
API	294	10
AEA	14	0
Other	92	3
Unknown	147	5
Travel History		
Yes	132	4
No	1537	51
Unknown	1338	44
Death		
Yes	776	26
No	521	17
Unknown	1710	57
Vaccine Type		
Pfizer	1757	58
Unknown	69	2
Moderna	947	31
Janssen	234	8
Underlying Conditions		
Yes	2163	72
No	844	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1093	100
Age (in years)		
25-49	33	3
50-64	133	12
65+	927	85
Gender		
Male	651	60
Female	442	40
Race/Ethnicity		
Hispanic	121	11
White	726	66
Black	116	11
API	110	10
AEA	6	1
Other	9	1
Unknown	5	0
Hospitalization		
Yes	776	71
No	71	6
Unknown	246	23
Vaccine Type		
Pfizer	596	55
Unknown	25	2
Moderna	358	33
Janssen	114	10
Underlying Conditions		
Yes	631	58
No	462	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
851765	1093	1466409	7993	128	545

* 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	2163	72
	No	844	28
Hypertension	Yes	1376	N/A
Immunocompromised	Yes	123	N/A
Chronic Heart Disease	Yes	647	N/A
Chronic Liver Disease	Yes	55	N/A
Chronic Kidney Disease	Yes	426	N/A
Diabetes	Yes	799	N/A
Neurologic/Neurodevelopmental	Yes	187	N/A
Chronic Lung Disease	Yes	577	N/A
Historically Healthy	Yes	263	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	631	58
	No	462	42
Hypertension	Yes	407	N/A
Immunocompromised	Yes	47	N/A
Chronic Heart Disease	Yes	228	N/A
Chronic Liver Disease	Yes	20	N/A
Chronic Kidney Disease	Yes	173	N/A
Diabetes	Yes	245	N/A
Neurologic/Neurodevelopmental	Yes	57	N/A
Chronic Lung Disease	Yes	182	N/A
Historically Healthy	Yes	23	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).