

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: December 13, 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

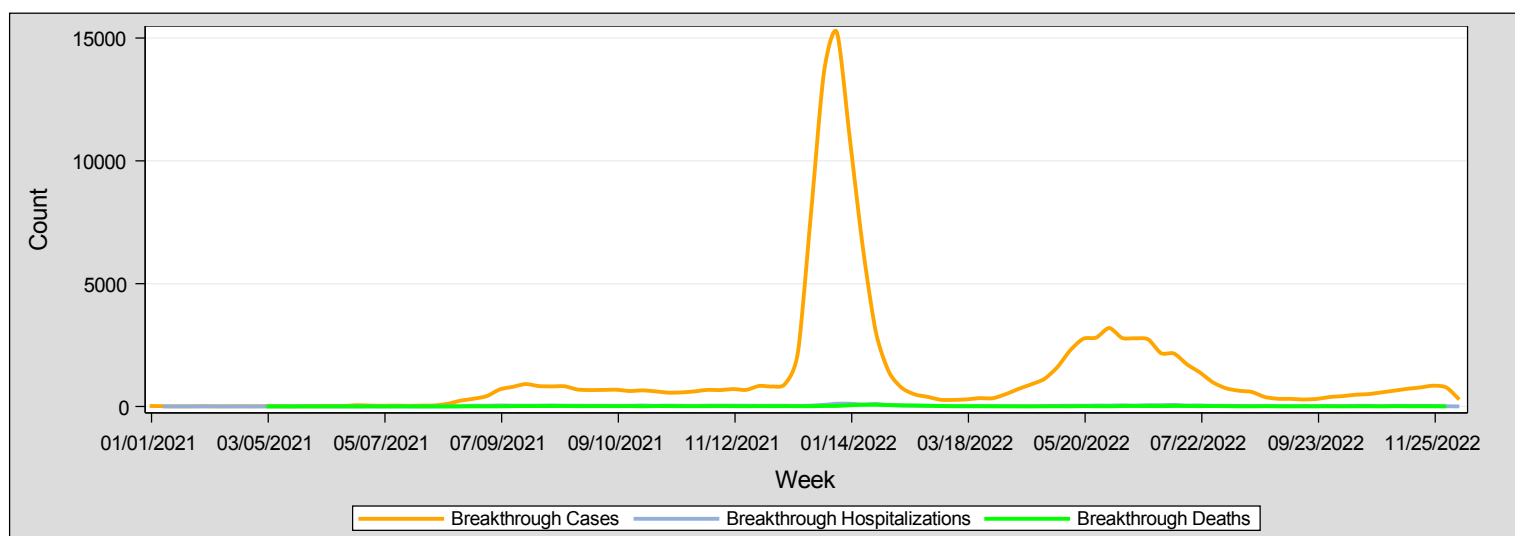


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

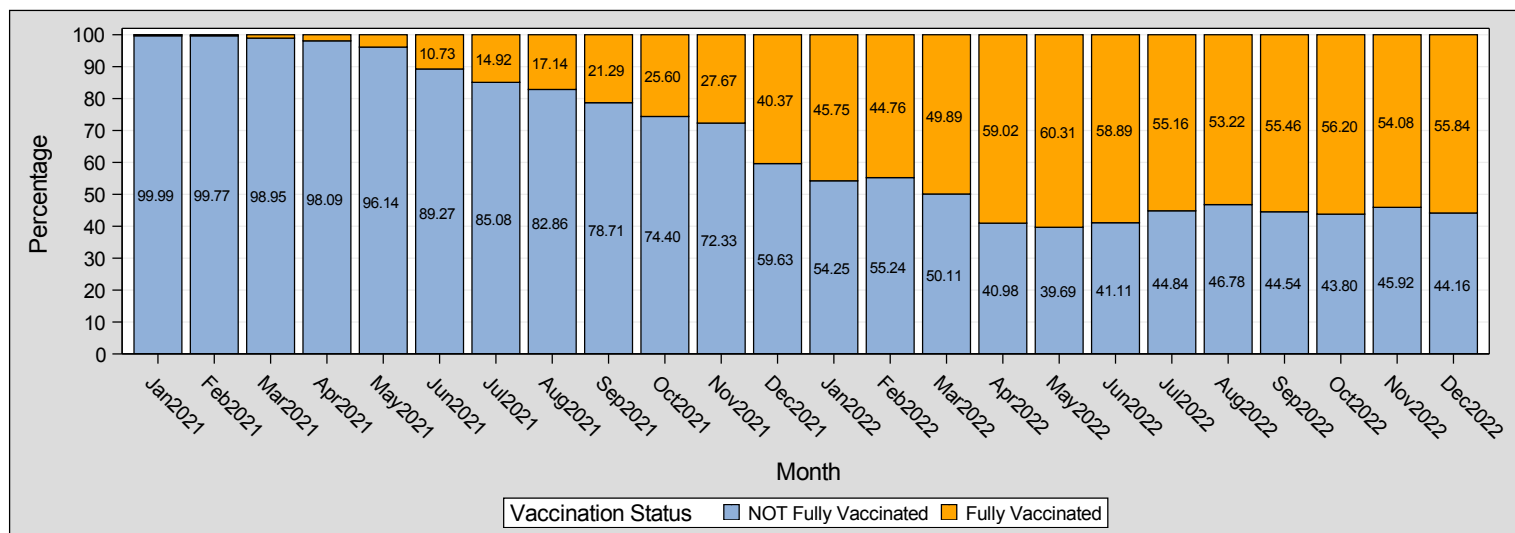


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	126104	100
Age (in years)		
<i>0-4</i>	3	0
<i>5-11</i>	1525	1
<i>12-17</i>	5883	5
<i>18-24</i>	10855	9
<i>25-49</i>	55502	44
<i>50-64</i>	29959	24
<i>65+</i>	22377	18
Gender		
<i>Male</i>	54933	44
<i>Female</i>	70211	56
<i>Unknown</i>	960	1
Race/Ethnicity		
<i>Hispanic</i>	25859	21
<i>White</i>	39752	32
<i>Black</i>	9781	8
<i>API</i>	15961	13
<i>AEA</i>	435	0
<i>Other</i>	9096	7
<i>Unknown</i>	25220	20
Travel History		
<i>Yes</i>	5329	4
<i>No</i>	32961	26
<i>Unknown</i>	87814	70
Hospitalization		
<i>Yes</i>	3069	2
<i>No</i>	37276	30
<i>Unknown</i>	85759	68
Death		
<i>Yes</i>	1115	1
<i>No</i>	9238	7
<i>Unknown</i>	115751	92
Vaccine Type		
<i>Pfizer</i>	84202	67
<i>Novavax</i>	5	0
<i>Unknown</i>	1065	1
<i>Moderna</i>	33891	27
<i>Janssen</i>	6940	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	18211	14
<i>No</i>	107893	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
847954	126104	1470220	464798	14872	31614

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3069	100
Age (in years)		
5-11	5	0
12-17	18	1
18-24	31	1
25-49	322	10
50-64	532	17
65+	2161	70
Gender		
Male	1655	54
Female	1410	46
Unknown	4	0
Race/Ethnicity		
Hispanic	375	12
White	1788	58
Black	348	11
API	298	10
AEA	14	0
Other	94	3
Unknown	152	5
Travel History		
Yes	134	4
No	1574	51
Unknown	1361	44
Death		
Yes	787	26
No	541	18
Unknown	1741	57
Vaccine Type		
Pfizer	1788	58
Unknown	74	2
Moderna	973	32
Janssen	234	8
Underlying Conditions		
Yes	2214	72
No	855	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1115	100
Age (in years)		
25-49	33	3
50-64	135	12
65+	947	85
Gender		
Male	666	60
Female	449	40
Race/Ethnicity		
Hispanic	124	11
White	741	66
Black	119	11
API	111	10
AEA	6	1
Other	10	1
Unknown	4	0
Hospitalization		
Yes	787	71
No	75	7
Unknown	253	23
Vaccine Type		
Pfizer	610	55
Unknown	25	2
Moderna	364	33
Janssen	116	10
Underlying Conditions		
Yes	646	58
No	469	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
847954	1115	1470220	8011	131	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	2214	72
	No	855	28
Hypertension	Yes	1411	N/A
Immunocompromised	Yes	124	N/A
Chronic Heart Disease	Yes	667	N/A
Chronic Liver Disease	Yes	55	N/A
Chronic Kidney Disease	Yes	432	N/A
Diabetes	Yes	824	N/A
Neurologic/Neurodevelopmental	Yes	190	N/A
Chronic Lung Disease	Yes	590	N/A
Historically Healthy	Yes	267	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	646	58
	No	469	42
Hypertension	Yes	413	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	233	N/A
Chronic Liver Disease	Yes	21	N/A
Chronic Kidney Disease	Yes	176	N/A
Diabetes	Yes	250	N/A
Neurologic/Neurodevelopmental	Yes	59	N/A
Chronic Lung Disease	Yes	187	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).