

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: November 15, 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

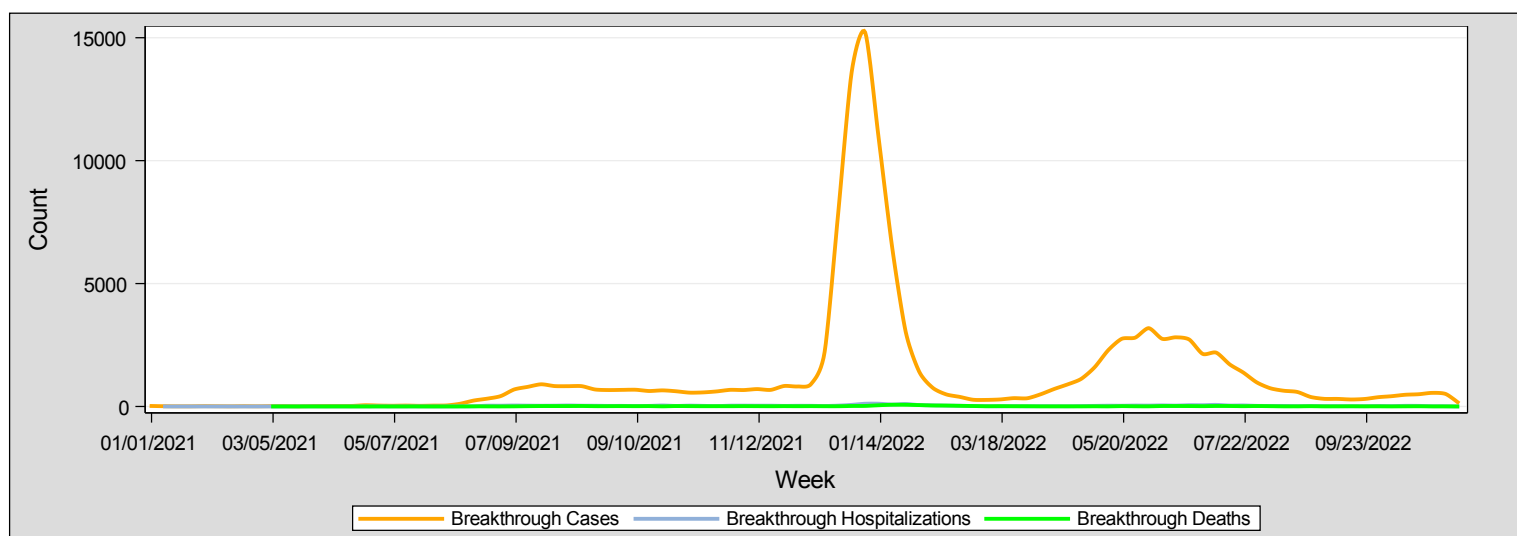


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

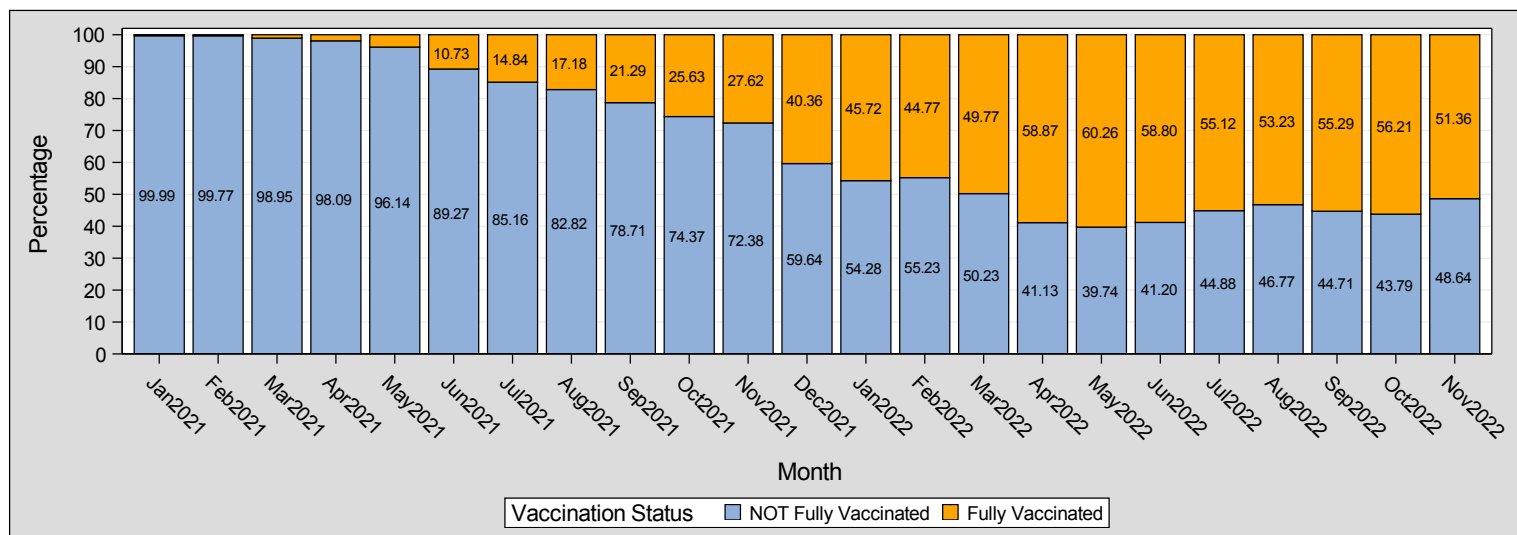


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	122591	100
Age (in years)		
<i>0-4</i>	2	0
<i>5-11</i>	1489	1
<i>12-17</i>	5786	5
<i>18-24</i>	10625	9
<i>25-49</i>	54316	44
<i>50-64</i>	29057	24
<i>65+</i>	21316	17
Gender		
<i>Male</i>	53441	44
<i>Female</i>	68207	56
<i>Unknown</i>	943	1
Race/Ethnicity		
<i>Hispanic</i>	25133	21
<i>White</i>	38474	31
<i>Black</i>	9464	8
<i>API</i>	15505	13
<i>AEA</i>	424	0
<i>Other</i>	8950	7
<i>Unknown</i>	24641	20
Travel History		
<i>Yes</i>	5104	4
<i>No</i>	31328	26
<i>Unknown</i>	86159	70
Hospitalization		
<i>Yes</i>	2941	2
<i>No</i>	35463	29
<i>Unknown</i>	84187	69
Death		
<i>Yes</i>	1080	1
<i>No</i>	8703	7
<i>Unknown</i>	112808	92
Vaccine Type		
<i>Pfizer</i>	81792	67
<i>Novavax</i>	3	0
<i>Unknown</i>	1020	1
<i>Moderna</i>	32944	27
<i>Janssen</i>	6831	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	17250	14
<i>No</i>	105341	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
851189	122591	1466985	461811	14402	31480

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	2941	100
Age (in years)		
5-11	5	0
12-17	17	1
18-24	29	1
25-49	308	10
50-64	511	17
65+	2071	70
Gender		
Male	1574	54
Female	1363	46
Unknown	4	0
Race/Ethnicity		
Hispanic	366	12
White	1697	58
Black	338	11
API	291	10
AEA	13	0
Other	91	3
Unknown	145	5
Travel History		
Yes	129	4
No	1490	51
Unknown	1322	45
Death		
Yes	770	26
No	502	17
Unknown	1669	57
Vaccine Type		
Pfizer	1718	58
Unknown	67	2
Moderna	926	31
Janssen	230	8
Underlying Conditions		
Yes	2112	72
No	829	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1080	100
Age (in years)		
25-49	33	3
50-64	132	12
65+	915	85
Gender		
Male	644	60
Female	436	40
Race/Ethnicity		
Hispanic	121	11
White	716	66
Black	115	11
API	109	10
AEA	6	1
Other	9	1
Unknown	4	0
Hospitalization		
Yes	770	71
No	71	7
Unknown	239	22
Vaccine Type		
Pfizer	590	55
Unknown	25	2
Moderna	351	33
Janssen	114	11
Underlying Conditions		
Yes	629	58
No	451	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
851189	1080	1466985	7978	127	544

* 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	2112	72
	No	829	28
Hypertension	Yes	1349	N/A
Immunocompromised	Yes	122	N/A
Chronic Heart Disease	Yes	630	N/A
Chronic Liver Disease	Yes	55	N/A
Chronic Kidney Disease	Yes	418	N/A
Diabetes	Yes	779	N/A
Neurologic/Neurodevelopmental	Yes	181	N/A
Chronic Lung Disease	Yes	559	N/A
Historically Healthy	Yes	259	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	629	58
	No	451	42
Hypertension	Yes	406	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	172	N/A
Diabetes	Yes	243	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).