

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: November 22, 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

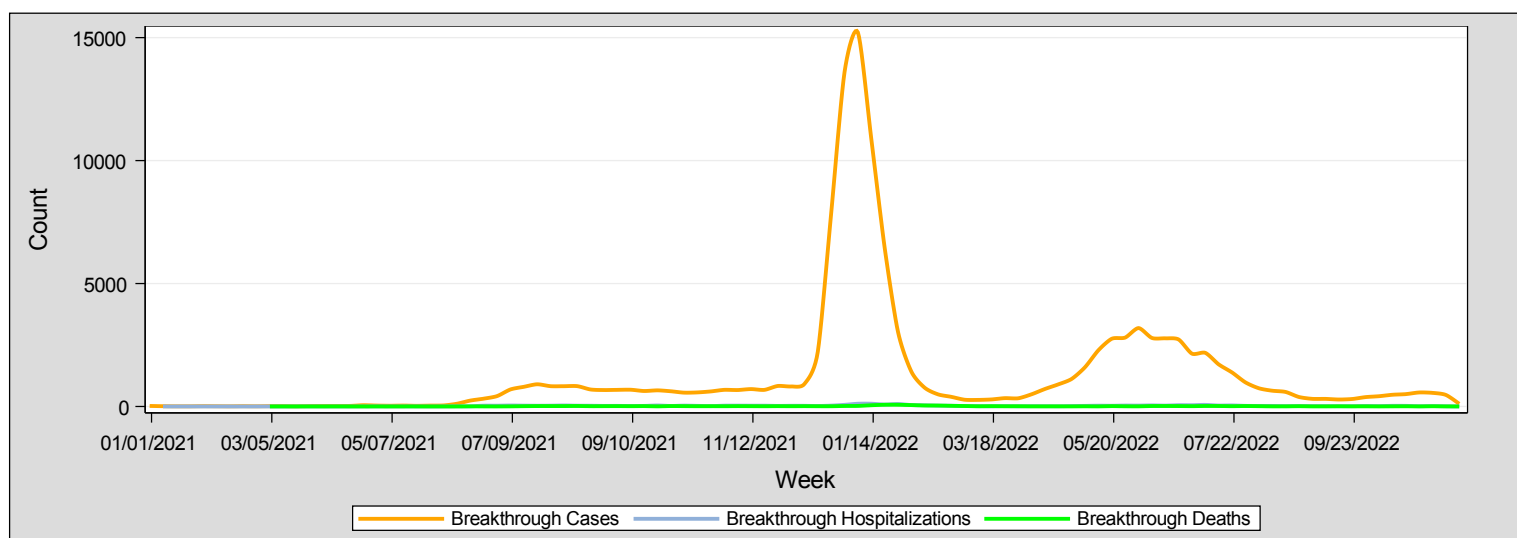


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

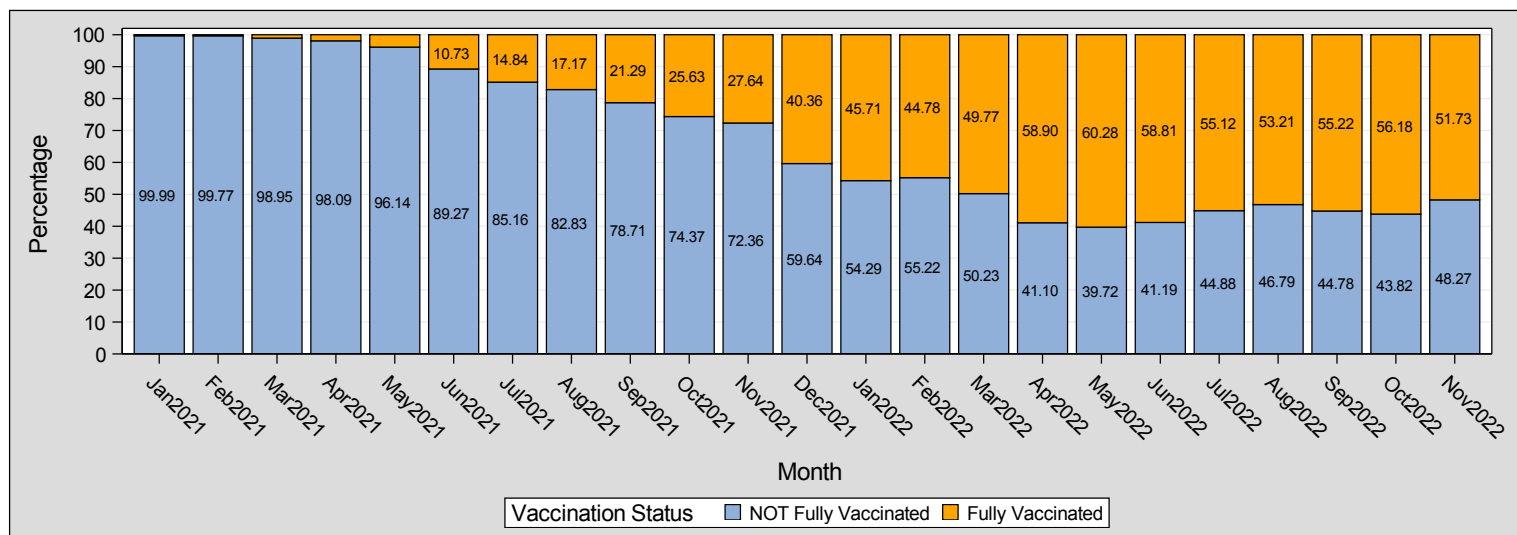


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	123101	100
Age (in years)		
<i>0-4</i>	2	0
<i>5-11</i>	1498	1
<i>12-17</i>	5795	5
<i>18-24</i>	10658	9
<i>25-49</i>	54500	44
<i>50-64</i>	29182	24
<i>65+</i>	21466	17
Gender		
<i>Male</i>	53680	44
<i>Female</i>	68482	56
<i>Unknown</i>	939	1
Race/Ethnicity		
<i>Hispanic</i>	25269	21
<i>White</i>	38713	31
<i>Black</i>	9516	8
<i>API</i>	15599	13
<i>AEA</i>	428	0
<i>Other</i>	8963	7
<i>Unknown</i>	24613	20
Travel History		
<i>Yes</i>	5170	4
<i>No</i>	31754	26
<i>Unknown</i>	86177	70
Hospitalization		
<i>Yes</i>	2971	2
<i>No</i>	35932	29
<i>Unknown</i>	84198	68
Death		
<i>Yes</i>	1091	1
<i>No</i>	8844	7
<i>Unknown</i>	113166	92
Vaccine Type		
<i>Pfizer</i>	82169	67
<i>Novavax</i>	3	0
<i>Unknown</i>	1031	1
<i>Moderna</i>	33047	27
<i>Janssen</i>	6850	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	17483	14
<i>No</i>	105618	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
851453	123101	1466721	462353	14458	31523

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	2971	100
Age (in years)		
5-11	5	0
12-17	18	1
18-24	29	1
25-49	310	10
50-64	516	17
65+	2093	70
Gender		
Male	1593	54
Female	1374	46
Unknown	4	0
Race/Ethnicity		
Hispanic	369	12
White	1720	58
Black	340	11
API	291	10
AEA	14	0
Other	91	3
Unknown	146	5
Travel History		
Yes	131	4
No	1510	51
Unknown	1330	45
Death		
Yes	775	26
No	509	17
Unknown	1687	57
Vaccine Type		
Pfizer	1736	58
Unknown	67	2
Moderna	937	32
Janssen	231	8
Underlying Conditions		
Yes	2135	72
No	836	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1091	100
Age (in years)		
25-49	33	3
50-64	133	12
65+	925	85
Gender		
Male	650	60
Female	441	40
Race/Ethnicity		
Hispanic	121	11
White	726	67
Black	116	11
API	110	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	775	71
No	72	7
Unknown	244	22
Vaccine Type		
Pfizer	594	54
Unknown	25	2
Moderna	357	33
Janssen	115	11
Underlying Conditions		
Yes	630	58
No	461	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
851453	1091	1466721	7989	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	2135	72
	No	836	28
Hypertension	Yes	1361	N/A
Immunocompromised	Yes	123	N/A
Chronic Heart Disease	Yes	635	N/A
Chronic Liver Disease	Yes	55	N/A
Chronic Kidney Disease	Yes	421	N/A
Diabetes	Yes	786	N/A
Neurologic/Neurodevelopmental	Yes	181	N/A
Chronic Lung Disease	Yes	568	N/A
Historically Healthy	Yes	260	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	630	58
	No	461	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	244	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).