

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: October 25, 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

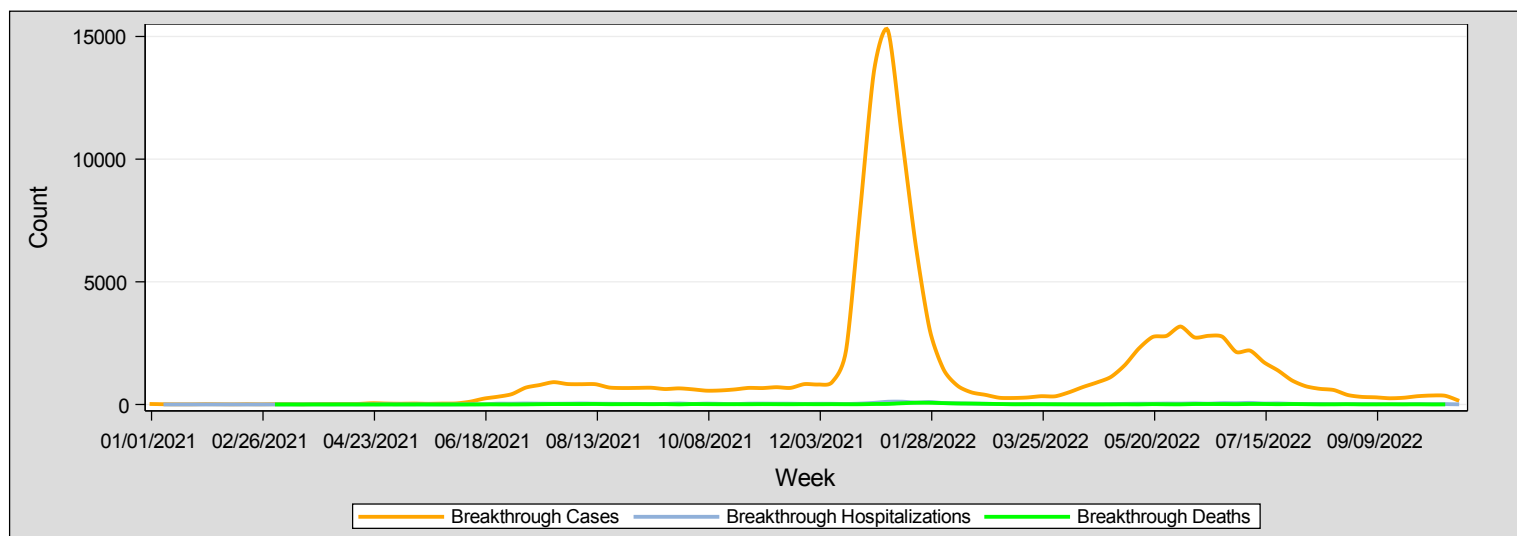


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

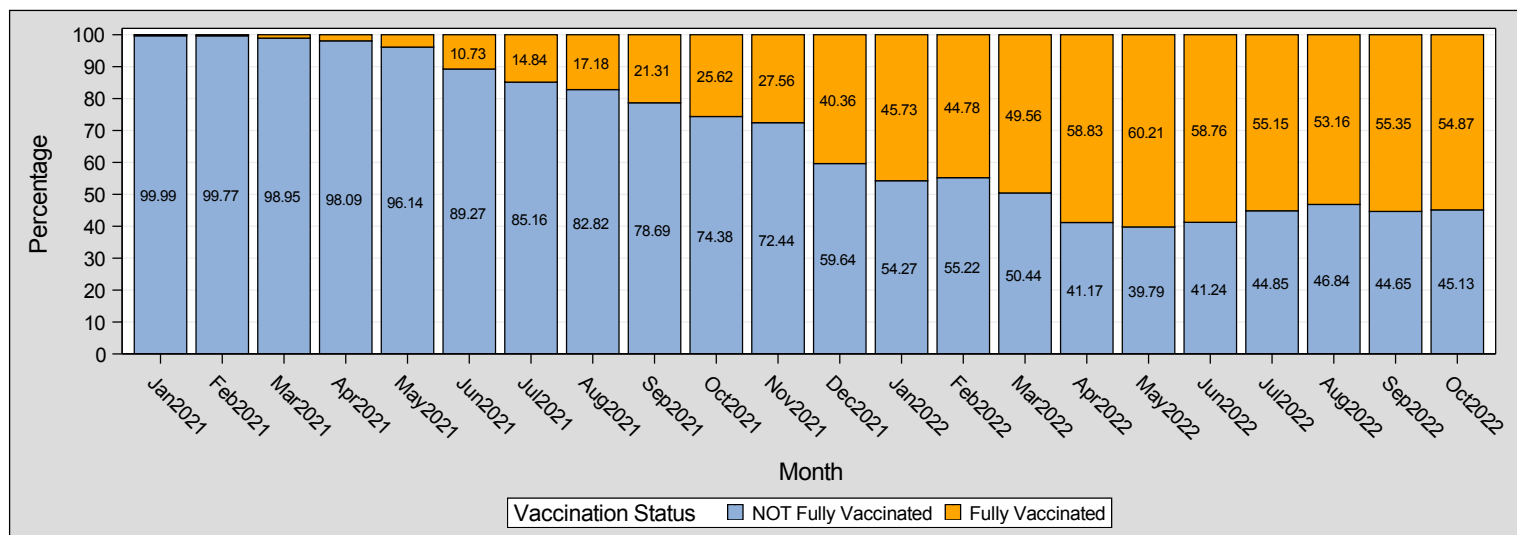


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	120753	100
Age (in years)		
0-4	2	0
5-11	1467	1
12-17	5742	5
18-24	10508	9
25-49	53659	44
50-64	28601	24
65+	20774	17
Gender		
Male	52604	44
Female	67213	56
Unknown	936	1
Race/Ethnicity		
Hispanic	24713	20
White	37706	31
Black	9241	8
API	15282	13
AEA	414	0
Other	8873	7
Unknown	24524	20
Travel History		
Yes	4939	4
No	30151	25
Unknown	85663	71
Hospitalization		
Yes	2850	2
No	34175	28
Unknown	83728	69
Death		
Yes	1061	1
No	8344	7
Unknown	111348	92
Vaccine Type		
Pfizer	80328	67
Novavax	2	0
Unknown	1029	1
Moderna	32597	27
Janssen	6796	6
Emergen	1	0
Underlying Conditions		
Yes	16631	14
No	104122	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
850347	120753	1467827	460184	14200	31351

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	2850	100
Age (in years)		
5-11	5	0
12-17	17	1
18-24	28	1
25-49	294	10
50-64	497	17
65+	2009	70
Gender		
Male	1523	53
Female	1323	46
Unknown	4	0
Race/Ethnicity		
Hispanic	354	12
White	1638	57
Black	329	12
API	285	10
AEA	13	0
Other	87	3
Unknown	144	5
Travel History		
Yes	126	4
No	1428	50
Unknown	1296	45
Death		
Yes	757	27
No	484	17
Unknown	1609	56
Vaccine Type		
Pfizer	1660	58
Unknown	63	2
Moderna	898	32
Janssen	229	8
Underlying Conditions		
Yes	2044	72
No	806	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1061	100
Age (in years)		
25-49	32	3
50-64	130	12
65+	899	85
Gender		
Male	626	59
Female	435	41
Race/Ethnicity		
Hispanic	119	11
White	704	66
Black	112	11
API	108	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	757	71
No	69	7
Unknown	235	22
Vaccine Type		
Pfizer	579	55
Unknown	25	2
Moderna	344	32
Janssen	113	11
Underlying Conditions		
Yes	620	58
No	441	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
850347	1061	1467827	7959	125	542

* 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	2044	72
	No	806	28
Hypertension	Yes	1306	N/A
Immunocompromised	Yes	121	N/A
Chronic Heart Disease	Yes	608	N/A
Chronic Liver Disease	Yes	50	N/A
Chronic Kidney Disease	Yes	411	N/A
Diabetes	Yes	757	N/A
Neurologic/Neurodevelopmental	Yes	178	N/A
Chronic Lung Disease	Yes	543	N/A
Historically Healthy	Yes	242	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	620	58
	No	441	42
Hypertension	Yes	400	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	225	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	170	N/A
Diabetes	Yes	239	N/A
Neurologic/Neurodevelopmental	Yes	56	N/A
Chronic Lung Disease	Yes	180	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).