

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: October 11, 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

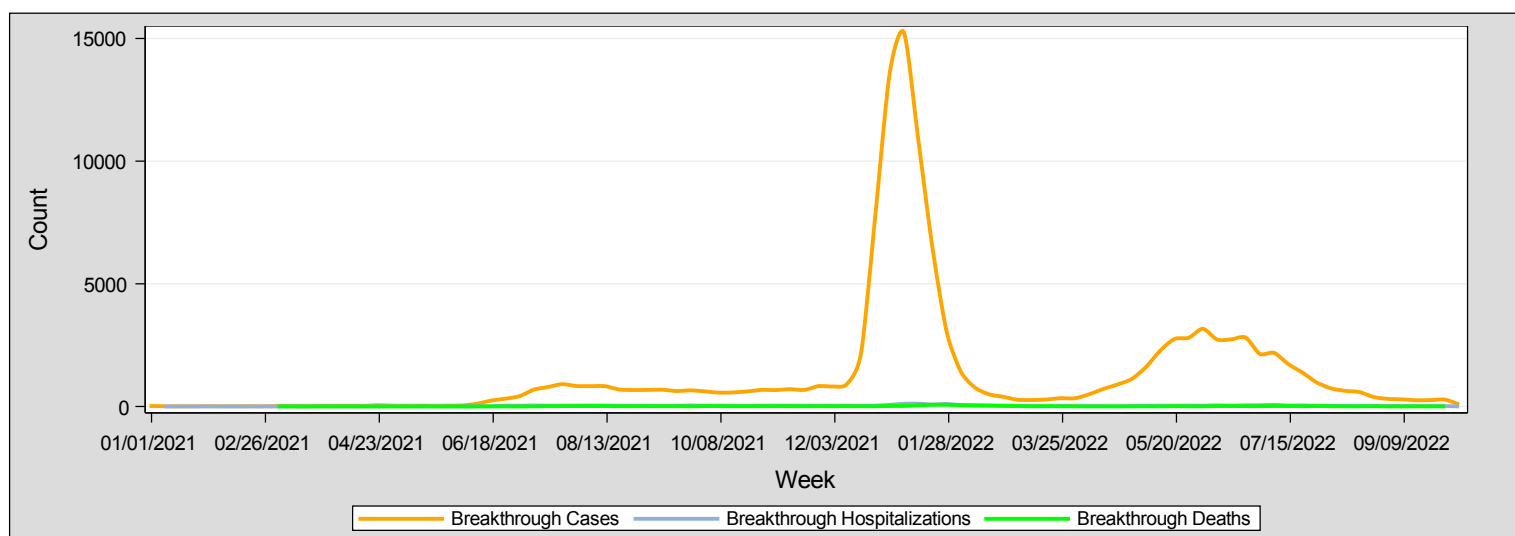


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

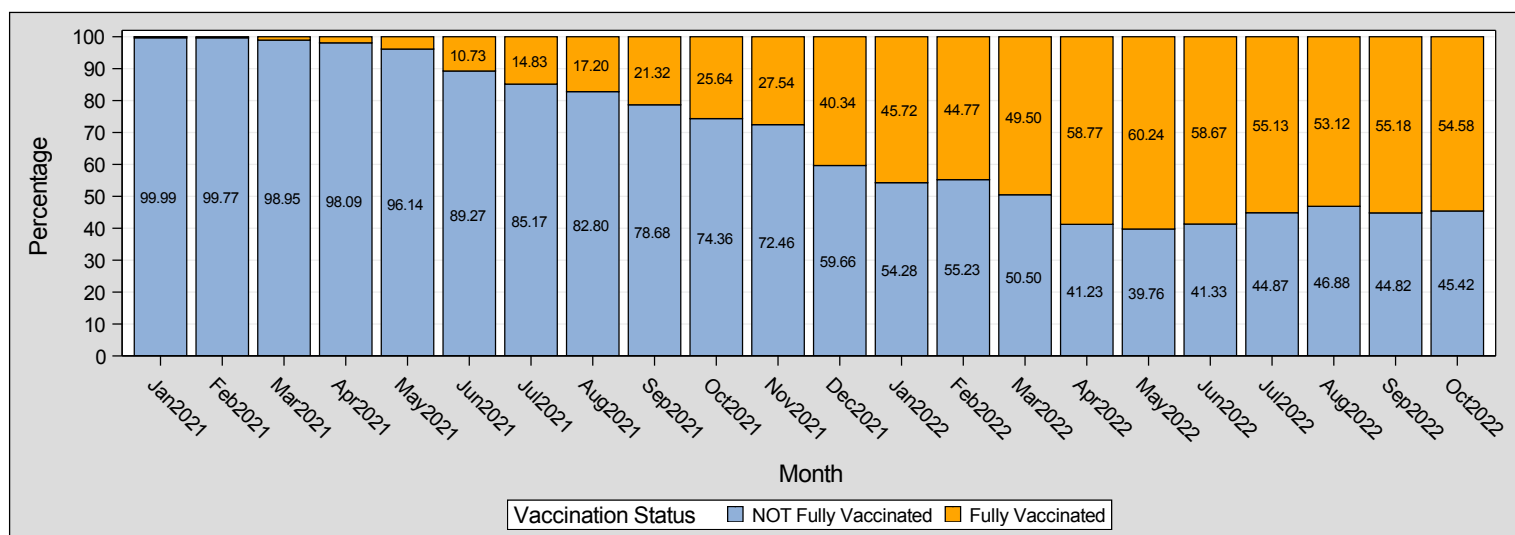


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	119857	100
Age (in years)		
<i>0-4</i>	1	0
<i>5-11</i>	1459	1
<i>12-17</i>	5704	5
<i>18-24</i>	10461	9
<i>25-49</i>	53379	45
<i>50-64</i>	28393	24
<i>65+</i>	20460	17
Gender		
<i>Male</i>	52215	44
<i>Female</i>	66699	56
<i>Unknown</i>	943	1
Race/Ethnicity		
<i>Hispanic</i>	24474	20
<i>White</i>	37295	31
<i>Black</i>	9141	8
<i>API</i>	15130	13
<i>AEA</i>	411	0
<i>Other</i>	8852	7
<i>Unknown</i>	24554	20
Travel History		
<i>Yes</i>	4807	4
<i>No</i>	29349	24
<i>Unknown</i>	85701	72
Hospitalization		
<i>Yes</i>	2794	2
<i>No</i>	33286	28
<i>Unknown</i>	83777	70
Death		
<i>Yes</i>	1049	1
<i>No</i>	8073	7
<i>Unknown</i>	110735	92
Vaccine Type		
<i>Pfizer</i>	79442	66
<i>Unknown</i>	990	1
<i>Moderna</i>	32621	27
<i>Janssen</i>	6803	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	16263	14
<i>No</i>	103594	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
1320108	119857	998066	459480	9079	46037

* 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 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	2794	100
Age (in years)		
5-11	4	0
12-17	16	1
18-24	28	1
25-49	287	10
50-64	488	17
65+	1971	71
Gender		
Male	1499	54
Female	1291	46
Unknown	4	0
Race/Ethnicity		
Hispanic	346	12
White	1604	57
Black	325	12
API	274	10
AEA	13	0
Other	88	3
Unknown	144	5
Travel History		
Yes	118	4
No	1394	50
Unknown	1282	46
Death		
Yes	750	27
No	461	16
Unknown	1583	57
Vaccine Type		
Pfizer	1622	58
Unknown	63	2
Moderna	882	32
Janssen	227	8
Underlying Conditions		
Yes	2004	72
No	790	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1049	100
Age (in years)		
25-49	32	3
50-64	130	12
65+	887	85
Gender		
Male	619	59
Female	430	41
Race/Ethnicity		
Hispanic	119	11
White	697	66
Black	112	11
API	103	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	750	71
No	68	6
Unknown	231	22
Vaccine Type		
Pfizer	571	54
Unknown	25	2
Moderna	340	32
Janssen	113	11
Underlying Conditions		
Yes	614	59
No	435	41

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
1320108	1049	998066	7953	79	797

* 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	2004	72
	No	790	28
Hypertension	Yes	1282	N/A
Immunocompromised	Yes	117	N/A
Chronic Heart Disease	Yes	600	N/A
Chronic Liver Disease	Yes	49	N/A
Chronic Kidney Disease	Yes	405	N/A
Diabetes	Yes	741	N/A
Neurologic/Neurodevelopmental	Yes	176	N/A
Chronic Lung Disease	Yes	536	N/A
Historically Healthy	Yes	236	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	614	59
	No	435	41
Hypertension	Yes	395	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	223	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	167	N/A
Diabetes	Yes	236	N/A
Neurologic/Neurodevelopmental	Yes	55	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).