

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: October 18, 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

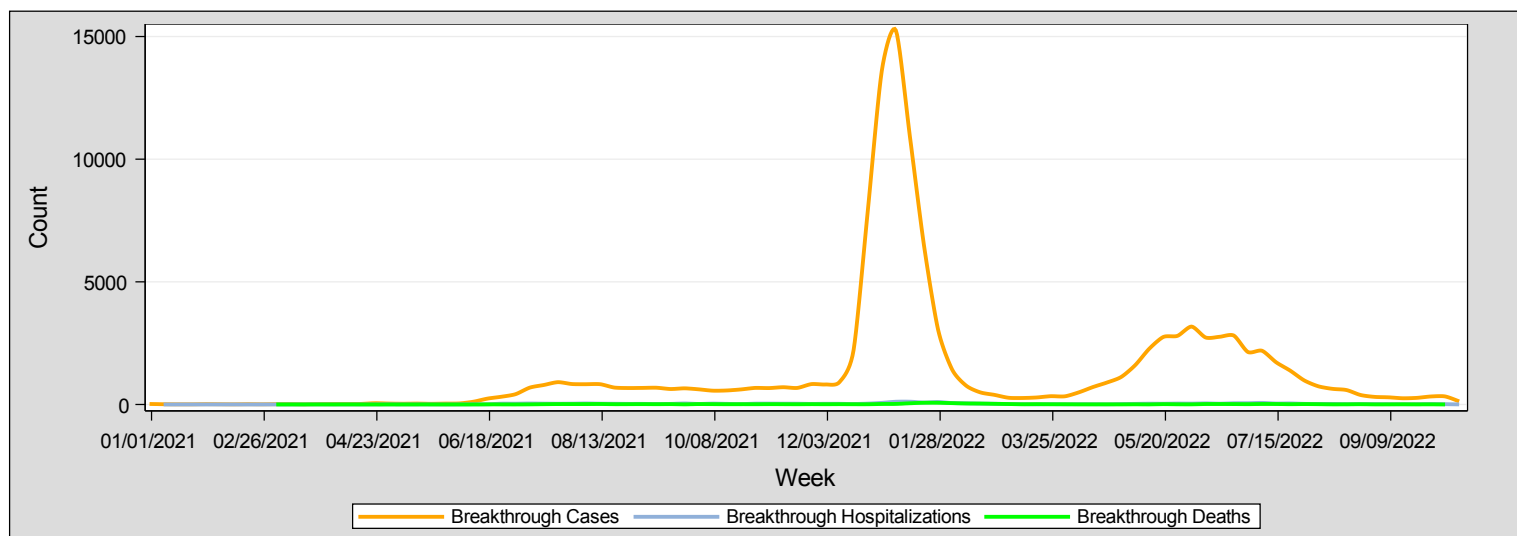


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

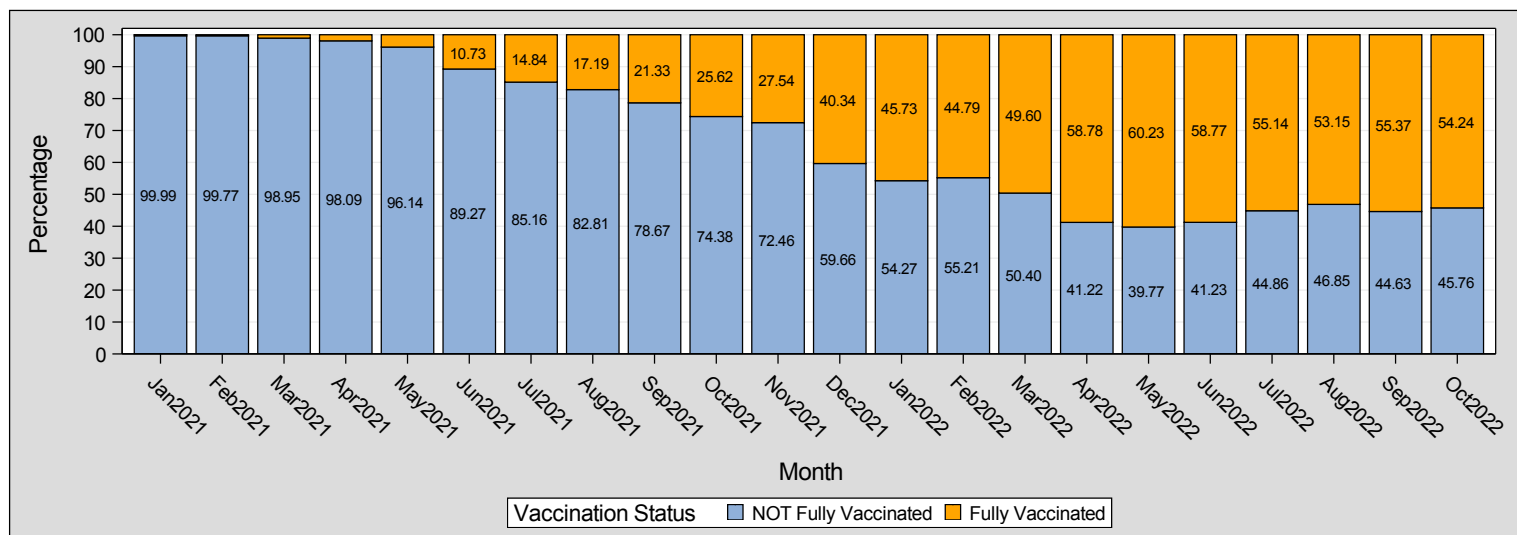


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	120326	100
Age (in years)		
<i>0-4</i>	2	0
<i>5-11</i>	1463	1
<i>12-17</i>	5721	5
<i>18-24</i>	10485	9
<i>25-49</i>	53528	44
<i>50-64</i>	28504	24
<i>65+</i>	20623	17
Gender		
<i>Male</i>	52408	44
<i>Female</i>	66982	56
<i>Unknown</i>	936	1
Race/Ethnicity		
<i>Hispanic</i>	24594	20
<i>White</i>	37493	31
<i>Black</i>	9190	8
<i>API</i>	15210	13
<i>AEA</i>	412	0
<i>Other</i>	8863	7
<i>Unknown</i>	24564	20
Travel History		
<i>Yes</i>	4870	4
<i>No</i>	29736	25
<i>Unknown</i>	85720	71
Hospitalization		
<i>Yes</i>	2820	2
<i>No</i>	33693	28
<i>Unknown</i>	83813	70
Death		
<i>Yes</i>	1056	1
<i>No</i>	8213	7
<i>Unknown</i>	111057	92
Vaccine Type		
<i>Pfizer</i>	79908	66
<i>Unknown</i>	1013	1
<i>Moderna</i>	32601	27
<i>Janssen</i>	6803	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	16428	14
<i>No</i>	103898	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
849880	120326	1468294	459830	14158	31317

* 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>	2820	100
Age (in years)		
5-11	4	0
12-17	16	1
18-24	28	1
25-49	292	10
50-64	490	17
65+	1990	71
Gender		
Male	1505	53
Female	1311	46
Unknown	4	0
Race/Ethnicity		
Hispanic	350	12
White	1616	57
Black	326	12
API	280	10
AEA	13	0
Other	88	3
Unknown	147	5
Travel History		
Yes	122	4
No	1409	50
Unknown	1289	46
Death		
Yes	752	27
No	473	17
Unknown	1595	57
Vaccine Type		
Pfizer	1637	58
Unknown	63	2
Moderna	892	32
Janssen	228	8
Underlying Conditions		
Yes	2024	72
No	796	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1056	100
Age (in years)		
25-49	32	3
50-64	131	12
65+	893	85
Gender		
Male	623	59
Female	433	41
Race/Ethnicity		
Hispanic	120	11
White	702	66
Black	112	11
API	104	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	752	71
No	70	7
Unknown	234	22
Vaccine Type		
Pfizer	575	54
Unknown	25	2
Moderna	343	32
Janssen	113	11
Underlying Conditions		
Yes	618	59
No	438	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
849880	1056	1468294	7956	124	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	2024	72
	No	796	28
Hypertension	Yes	1292	N/A
Immunocompromised	Yes	119	N/A
Chronic Heart Disease	Yes	602	N/A
Chronic Liver Disease	Yes	49	N/A
Chronic Kidney Disease	Yes	407	N/A
Diabetes	Yes	747	N/A
Neurologic/Neurodevelopmental	Yes	177	N/A
Chronic Lung Disease	Yes	540	N/A
Historically Healthy	Yes	240	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	618	59
	No	438	41
Hypertension	Yes	397	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	168	N/A
Diabetes	Yes	238	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).