

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: September 13, 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

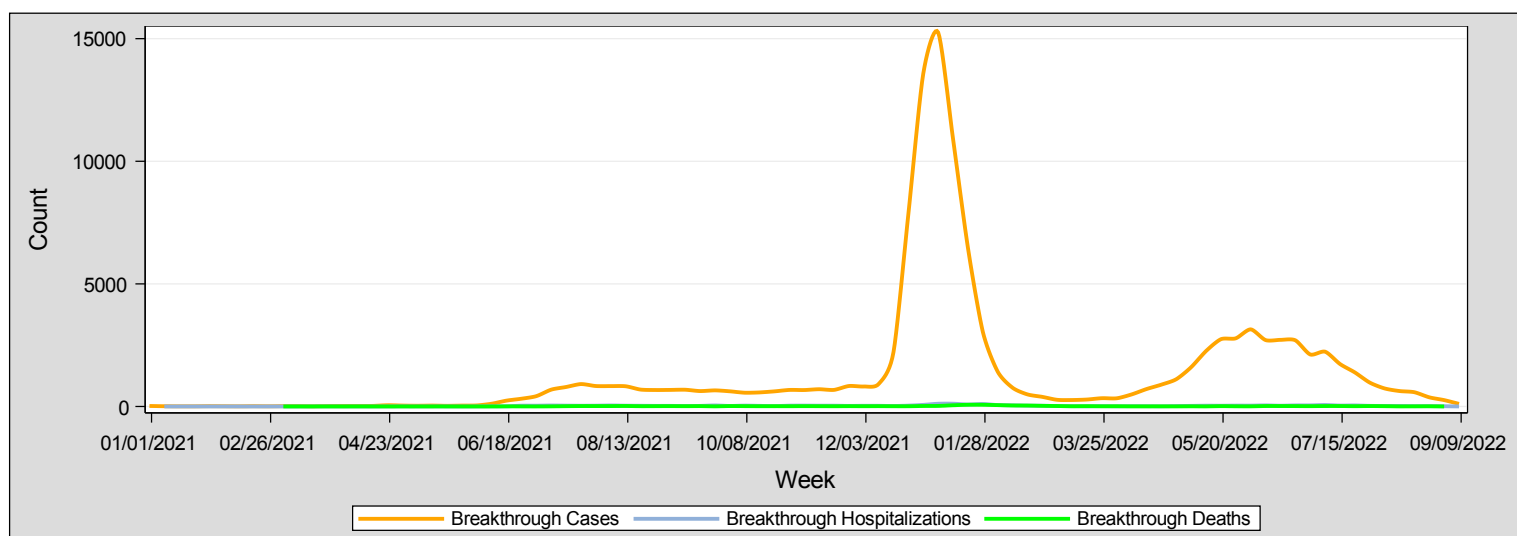


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

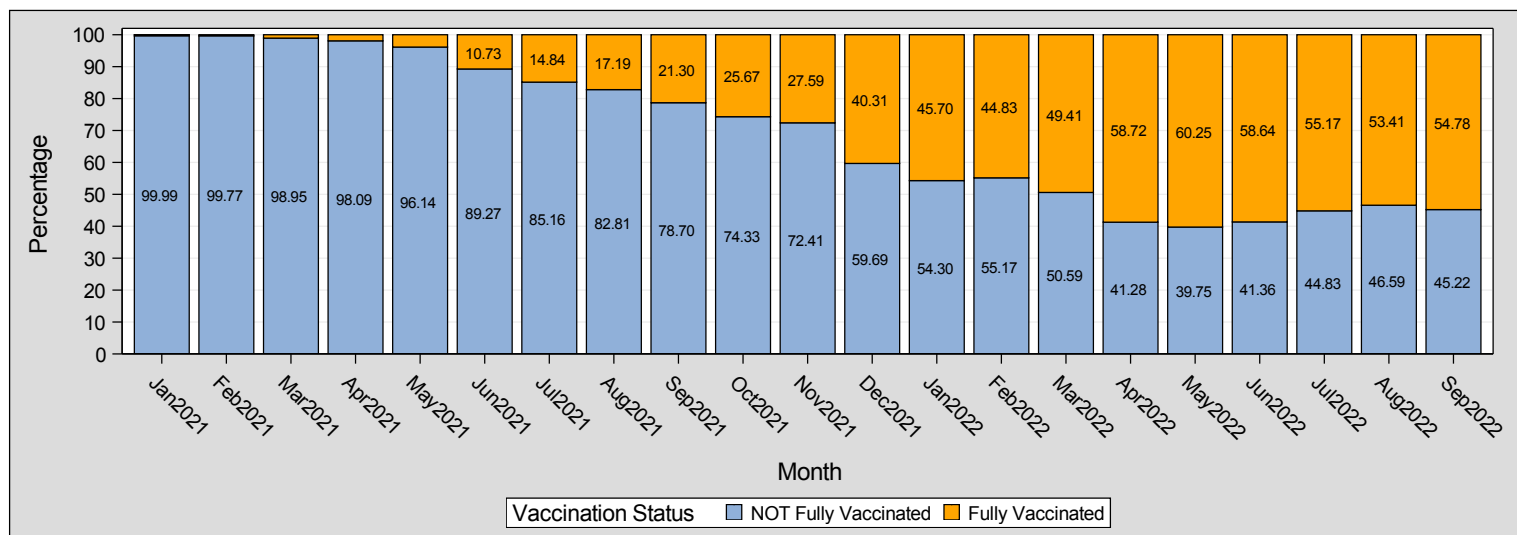


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	118505	100
Age (in years)		
<i>0-4</i>	1	0
<i>5-11</i>	1444	1
<i>12-17</i>	5662	5
<i>18-24</i>	10375	9
<i>25-49</i>	52964	45
<i>50-64</i>	28051	24
<i>65+</i>	20008	17
Gender		
<i>Male</i>	51649	44
<i>Female</i>	65947	56
<i>Unknown</i>	909	1
Race/Ethnicity		
<i>Hispanic</i>	24104	20
<i>White</i>	36622	31
<i>Black</i>	8978	8
<i>API</i>	14829	13
<i>AEA</i>	407	0
<i>Other</i>	8834	7
<i>Unknown</i>	24731	21
Travel History		
<i>Yes</i>	4560	4
<i>No</i>	27889	24
<i>Unknown</i>	86056	73
Hospitalization		
<i>Yes</i>	2689	2
<i>No</i>	31644	27
<i>Unknown</i>	84172	71
Death		
<i>Yes</i>	1017	1
<i>No</i>	7603	6
<i>Unknown</i>	109885	93
Vaccine Type		
<i>Pfizer</i>	78290	66
<i>Unknown</i>	960	1
<i>Moderna</i>	32439	27
<i>Janssen</i>	6815	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	15527	13
<i>No</i>	102978	87

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
1318253	118505	999921	458286	8990	45832

* 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>	2689	100
Age (in years)		
5-11	4	0
12-17	16	1
18-24	28	1
25-49	272	10
50-64	470	17
65+	1899	71
Gender		
Male	1448	54
Female	1237	46
Unknown	4	0
Race/Ethnicity		
Hispanic	338	13
White	1534	57
Black	315	12
API	266	10
AEA	12	0
Other	83	3
Unknown	141	5
Travel History		
Yes	108	4
No	1334	50
Unknown	1247	46
Death		
Yes	729	27
No	440	16
Unknown	1520	57
Vaccine Type		
Pfizer	1566	58
Unknown	61	2
Moderna	837	31
Janssen	225	8
Underlying Conditions		
Yes	1915	71
No	774	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1017	100
Age (in years)		
25-49	32	3
50-64	125	12
65+	860	85
Gender		
Male	600	59
Female	417	41
Race/Ethnicity		
Hispanic	114	11
White	670	66
Black	110	11
API	103	10
AEA	6	1
Other	10	1
Unknown	4	0
Hospitalization		
Yes	729	72
No	66	6
Unknown	222	22
Vaccine Type		
Pfizer	558	55
Unknown	24	2
Moderna	323	32
Janssen	112	11
Underlying Conditions		
Yes	599	59
No	418	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
1318253	1017	999921	7921	77	792

* 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	1915	71
	No	774	29
Hypertension	Yes	1233	N/A
Immunocompromised	Yes	113	N/A
Chronic Heart Disease	Yes	577	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	393	N/A
Diabetes	Yes	717	N/A
Neurologic/Neurodevelopmental	Yes	174	N/A
Chronic Lung Disease	Yes	516	N/A
Historically Healthy	Yes	227	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	599	59
	No	418	41
Hypertension	Yes	389	N/A
Immunocompromised	Yes	47	N/A
Chronic Heart Disease	Yes	216	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	163	N/A
Diabetes	Yes	233	N/A
Neurologic/Neurodevelopmental	Yes	52	N/A
Chronic Lung Disease	Yes	178	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).