

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: August 2, 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

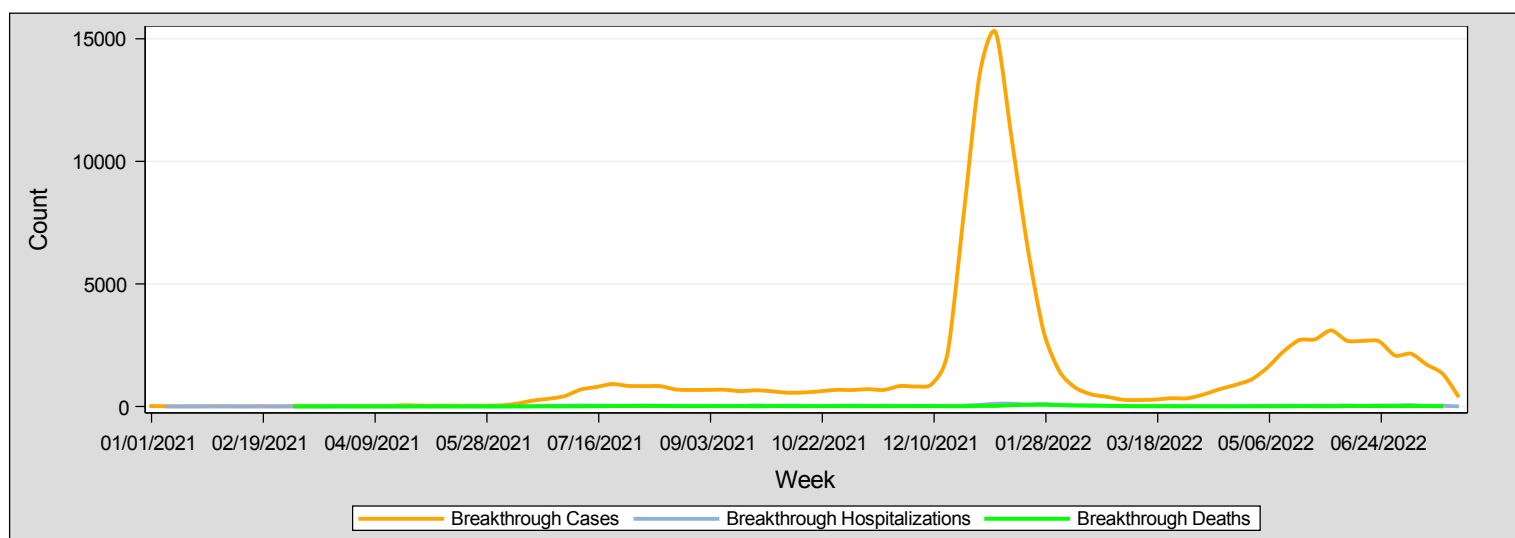


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

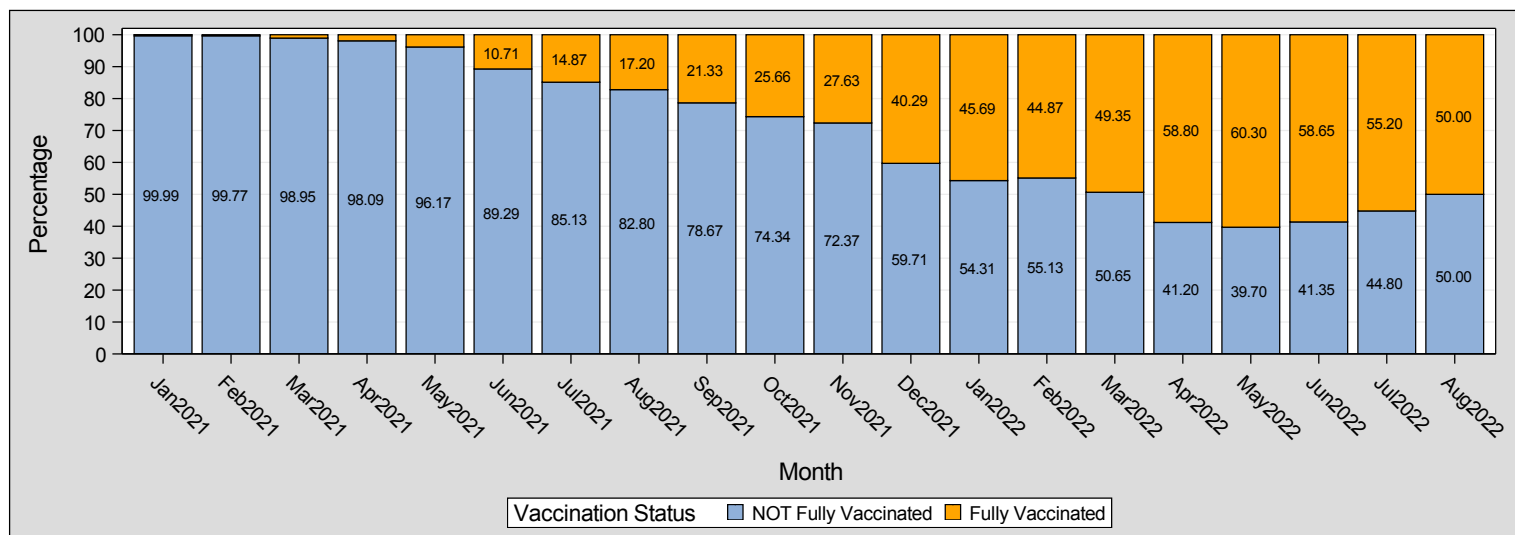


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	114635	100
Age (in years)		
<i>0-4</i>	1	0
<i>5-11</i>	1357	1
<i>12-17</i>	5497	5
<i>18-24</i>	10123	9
<i>25-49</i>	51524	45
<i>50-64</i>	27084	24
<i>65+</i>	19049	17
Gender		
<i>Male</i>	49996	44
<i>Female</i>	63834	56
<i>Unknown</i>	805	1
Race/Ethnicity		
<i>Hispanic</i>	23183	20
<i>White</i>	35167	31
<i>Black</i>	8599	8
<i>API</i>	14271	12
<i>AEA</i>	391	0
<i>Other</i>	8676	8
<i>Unknown</i>	24348	21
Travel History		
<i>Yes</i>	4015	4
<i>No</i>	25601	22
<i>Unknown</i>	85019	74
Hospitalization		
<i>Yes</i>	2491	2
<i>No</i>	28919	25
<i>Unknown</i>	83225	73
Death		
<i>Yes</i>	950	1
<i>No</i>	6978	6
<i>Unknown</i>	106707	93
Vaccine Type		
<i>Pfizer</i>	75786	66
<i>Unknown</i>	914	1
<i>Moderna</i>	31221	27
<i>Janssen</i>	6713	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	14281	12
<i>No</i>	100354	88

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
1308596	114635	1009578	454290	8760	44998

* 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>	2491	100
Age (in years)		
<i>5-11</i>	4	0
<i>12-17</i>	12	0
<i>18-24</i>	27	1
<i>25-49</i>	248	10
<i>50-64</i>	434	17
<i>65+</i>	1766	71
Gender		
<i>Male</i>	1334	54
<i>Female</i>	1153	46
<i>Unknown</i>	4	0
Race/Ethnicity		
<i>Hispanic</i>	309	12
<i>White</i>	1415	57
<i>Black</i>	296	12
<i>API</i>	247	10
<i>AEA</i>	12	0
<i>Other</i>	76	3
<i>Unknown</i>	136	5
Travel History		
<i>Yes</i>	86	3
<i>No</i>	1208	48
<i>Unknown</i>	1197	48
Death		
<i>Yes</i>	683	27
<i>No</i>	397	16
<i>Unknown</i>	1411	57
Vaccine Type		
<i>Pfizer</i>	1452	58
<i>Unknown</i>	57	2
<i>Moderna</i>	767	31
<i>Janssen</i>	215	9
Underlying Conditions		
<i>Yes</i>	1761	71
<i>No</i>	730	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	950	100
Age (in years)		
25-49	32	3
50-64	118	12
65+	800	84
Gender		
Male	562	59
Female	388	41
Race/Ethnicity		
Hispanic	111	12
White	628	66
Black	99	10
API	95	10
AEA	6	1
Other	9	1
Unknown	2	0
Hospitalization		
Yes	683	72
No	59	6
Unknown	208	22
Vaccine Type		
Pfizer	526	55
Unknown	24	3
Moderna	294	31
Janssen	106	11
Underlying Conditions		
Yes	552	58
No	398	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
1308596	950	1009578	7841	73	777

* 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	1761	71
	No	730	29
Hypertension	Yes	1142	N/A
Immunocompromised	Yes	100	N/A
Chronic Heart Disease	Yes	533	N/A
Chronic Liver Disease	Yes	46	N/A
Chronic Kidney Disease	Yes	369	N/A
Diabetes	Yes	655	N/A
Neurologic/Neurodevelopmental	Yes	162	N/A
Chronic Lung Disease	Yes	473	N/A
Historically Healthy	Yes	213	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	552	58
	No	398	42
Hypertension	Yes	356	N/A
Immunocompromised	Yes	44	N/A
Chronic Heart Disease	Yes	197	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	149	N/A
Diabetes	Yes	208	N/A
Neurologic/Neurodevelopmental	Yes	48	N/A
Chronic Lung Disease	Yes	161	N/A
Historically Healthy	Yes	22	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).