

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: July 26, 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

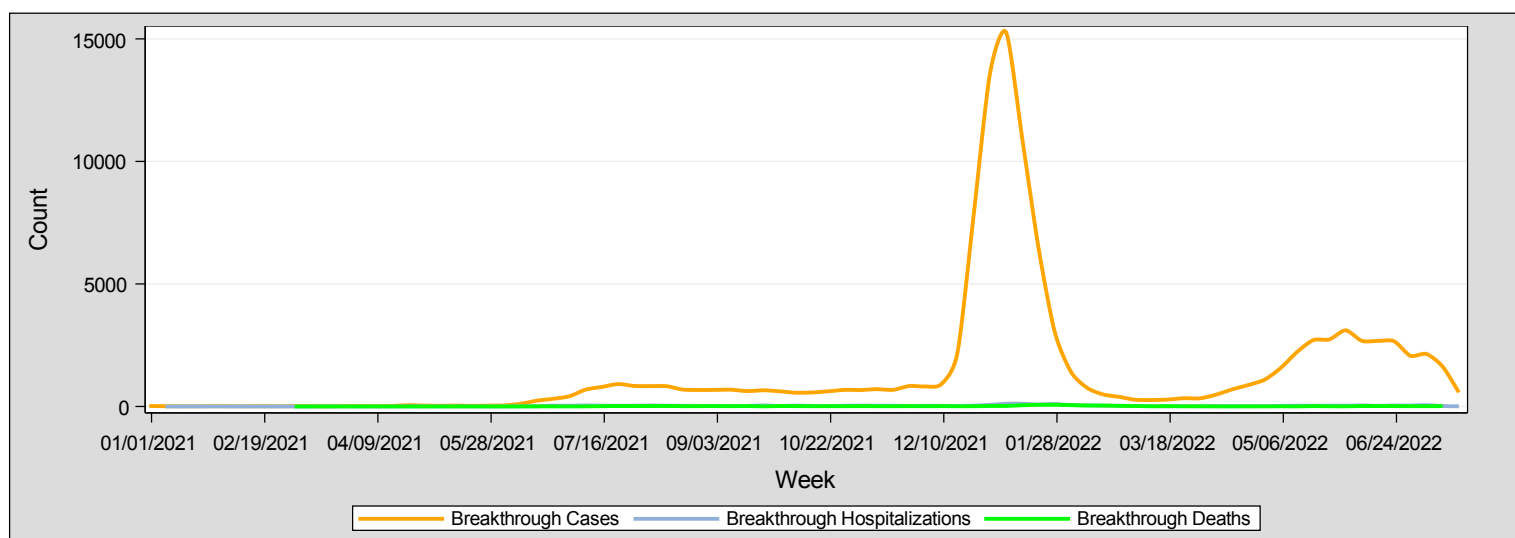


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

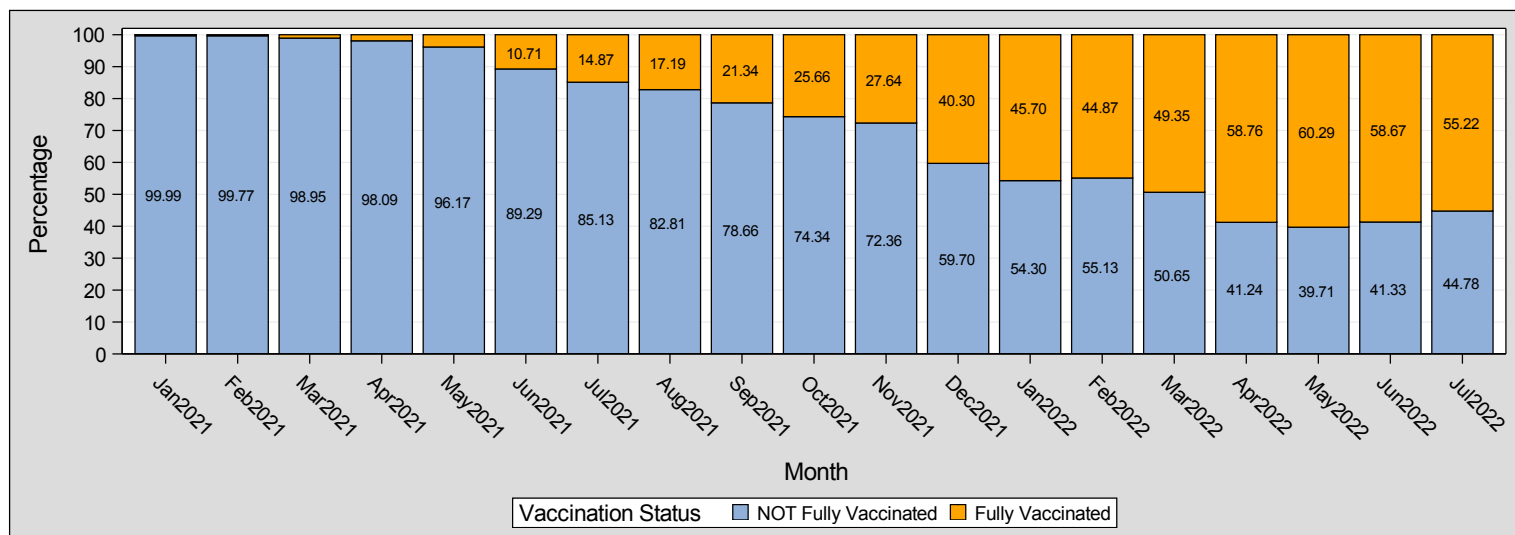


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	113408	100
Age (in years)		
<i>0-4</i>	1	0
<i>5-11</i>	1340	1
<i>12-17</i>	5452	5
<i>18-24</i>	10042	9
<i>25-49</i>	51058	45
<i>50-64</i>	26789	24
<i>65+</i>	18726	17
Gender		
<i>Male</i>	49438	44
<i>Female</i>	63172	56
<i>Unknown</i>	798	1
Race/Ethnicity		
<i>Hispanic</i>	22954	20
<i>White</i>	34765	31
<i>Black</i>	8490	7
<i>API</i>	14116	12
<i>AEA</i>	389	0
<i>Other</i>	8627	8
<i>Unknown</i>	24067	21
Travel History		
<i>Yes</i>	3911	3
<i>No</i>	25194	22
<i>Unknown</i>	84303	74
Hospitalization		
<i>Yes</i>	2437	2
<i>No</i>	28420	25
<i>Unknown</i>	82551	73
Death		
<i>Yes</i>	935	1
<i>No</i>	6858	6
<i>Unknown</i>	105615	93
Vaccine Type		
<i>Pfizer</i>	74985	66
<i>Unknown</i>	896	1
<i>Moderna</i>	30831	27
<i>Janssen</i>	6695	6
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	13992	12
<i>No</i>	99416	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
1307043	113408	1011131	453126	8677	44814

* 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>	2437	100
Age (in years)		
5-11	3	0
12-17	12	0
18-24	27	1
25-49	243	10
50-64	419	17
65+	1733	71
Gender		
Male	1305	54
Female	1128	46
Unknown	4	0
Race/Ethnicity		
Hispanic	307	13
White	1386	57
Black	286	12
API	239	10
AEA	12	0
Other	75	3
Unknown	132	5
Travel History		
Yes	85	3
No	1183	49
Unknown	1169	48
Death		
Yes	674	28
No	389	16
Unknown	1374	56
Vaccine Type		
Pfizer	1422	58
Unknown	56	2
Moderna	747	31
Janssen	212	9
Underlying Conditions		
Yes	1722	71
No	715	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	935	100
Age (in years)		
25-49	31	3
50-64	116	12
65+	788	84
Gender		
Male	553	59
Female	382	41
Race/Ethnicity		
Hispanic	110	12
White	617	66
Black	98	10
API	93	10
AEA	6	1
Other	9	1
Unknown	2	0
Hospitalization		
Yes	674	72
No	58	6
Unknown	203	22
Vaccine Type		
Pfizer	519	56
Unknown	23	2
Moderna	289	31
Janssen	104	11
Underlying Conditions		
Yes	546	58
No	389	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
1307043	935	1011131	7826	72	774

* 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	1722	71
	No	715	29
Hypertension	Yes	1113	N/A
Immunocompromised	Yes	97	N/A
Chronic Heart Disease	Yes	527	N/A
Chronic Liver Disease	Yes	46	N/A
Chronic Kidney Disease	Yes	359	N/A
Diabetes	Yes	632	N/A
Neurologic/Neurodevelopmental	Yes	160	N/A
Chronic Lung Disease	Yes	465	N/A
Historically Healthy	Yes	209	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	546	58
	No	389	42
Hypertension	Yes	351	N/A
Immunocompromised	Yes	43	N/A
Chronic Heart Disease	Yes	196	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	148	N/A
Diabetes	Yes	202	N/A
Neurologic/Neurodevelopmental	Yes	47	N/A
Chronic Lung Disease	Yes	159	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).