

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: July 19, 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

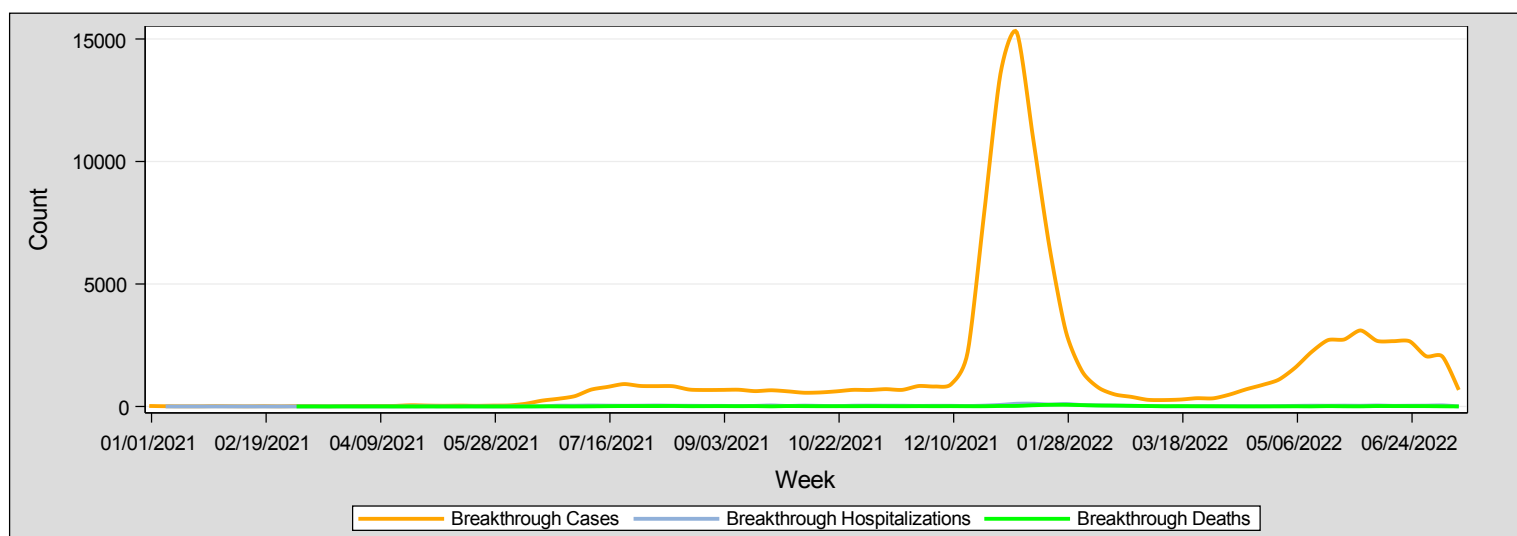


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

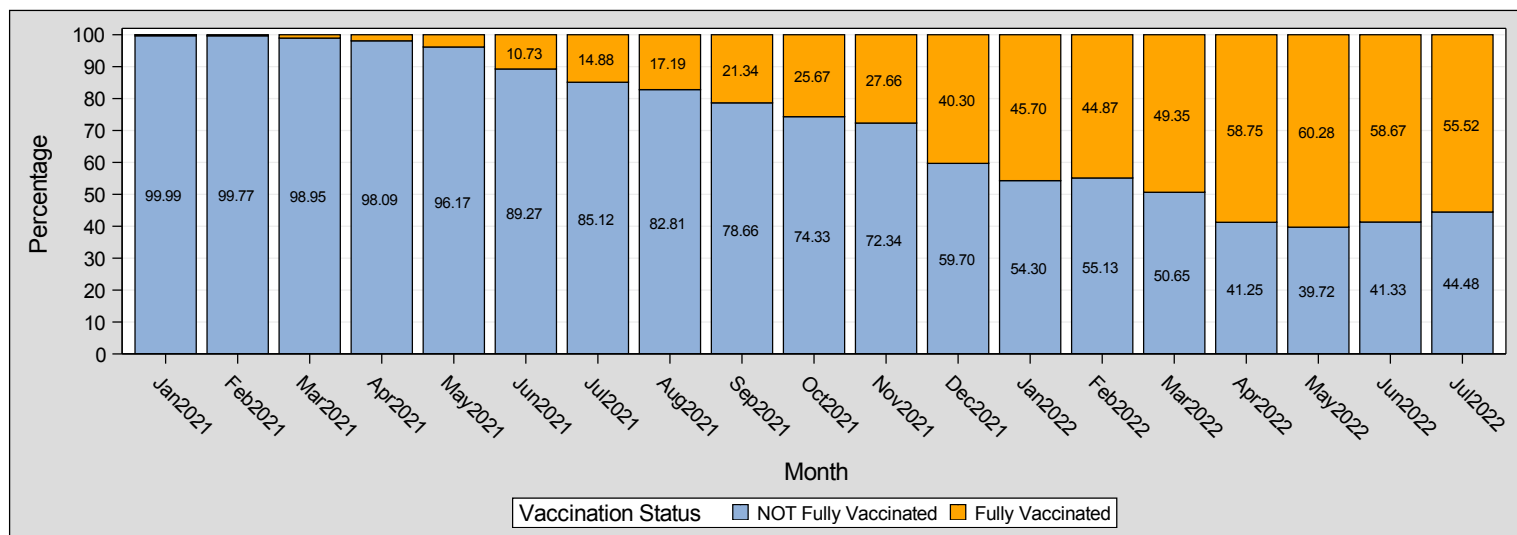


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	111730	100
Age (in years)		
5-11	1321	1
12-17	5411	5
18-24	9920	9
25-49	50404	45
50-64	26347	24
65+	18327	16
Gender		
Male	48723	44
Female	62217	56
Unknown	790	1
Race/Ethnicity		
Hispanic	22669	20
White	34242	31
Black	8352	7
API	13901	12
AEA	385	0
Other	8534	8
Unknown	23647	21
Travel History		
Yes	3803	3
No	24725	22
Unknown	83202	74
Hospitalization		
Yes	2381	2
No	27866	25
Unknown	81483	73
Death		
Yes	920	1
No	6722	6
Unknown	104088	93
Vaccine Type		
Pfizer	73918	66
Unknown	887	1
Moderna	30264	27
Janssen	6661	6
Underlying Conditions		
Yes	13674	12
No	98056	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
1306858	111730	1011316	451481	8550	44643

* 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>	2381	100
Age (in years)		
5-11	3	0
12-17	12	1
18-24	27	1
25-49	240	10
50-64	409	17
65+	1690	71
Gender		
Male	1276	54
Female	1102	46
Unknown	3	0
Race/Ethnicity		
Hispanic	305	13
White	1351	57
Black	278	12
API	231	10
AEA	12	1
Other	75	3
Unknown	129	5
Travel History		
Yes	83	3
No	1159	49
Unknown	1139	48
Death		
Yes	660	28
No	381	16
Unknown	1340	56
Vaccine Type		
Pfizer	1389	58
Unknown	55	2
Moderna	727	31
Janssen	210	9
Underlying Conditions		
Yes	1676	70
No	705	30

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	920	100
Age (in years)		
25-49	31	3
50-64	116	13
65+	773	84
Gender		
Male	543	59
Female	377	41
Race/Ethnicity		
Hispanic	110	12
White	604	66
Black	97	11
API	90	10
AEA	6	1
Other	10	1
Unknown	3	0
Hospitalization		
Yes	660	72
No	58	6
Unknown	202	22
Vaccine Type		
Pfizer	509	55
Unknown	21	2
Moderna	286	31
Janssen	104	11
Underlying Conditions		
Yes	537	58
No	383	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
1306858	920	1011316	7810	70	772

* 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	1676	70
	No	705	30
Hypertension	Yes	1075	N/A
Immunocompromised	Yes	95	N/A
Chronic Heart Disease	Yes	515	N/A
Chronic Liver Disease	Yes	46	N/A
Chronic Kidney Disease	Yes	351	N/A
Diabetes	Yes	619	N/A
Neurologic/Neurodevelopmental	Yes	153	N/A
Chronic Lung Disease	Yes	455	N/A
Historically Healthy	Yes	206	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	537	58
	No	383	42
Hypertension	Yes	344	N/A
Immunocompromised	Yes	42	N/A
Chronic Heart Disease	Yes	193	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	147	N/A
Diabetes	Yes	200	N/A
Neurologic/Neurodevelopmental	Yes	47	N/A
Chronic Lung Disease	Yes	154	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).