

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: July 5, 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

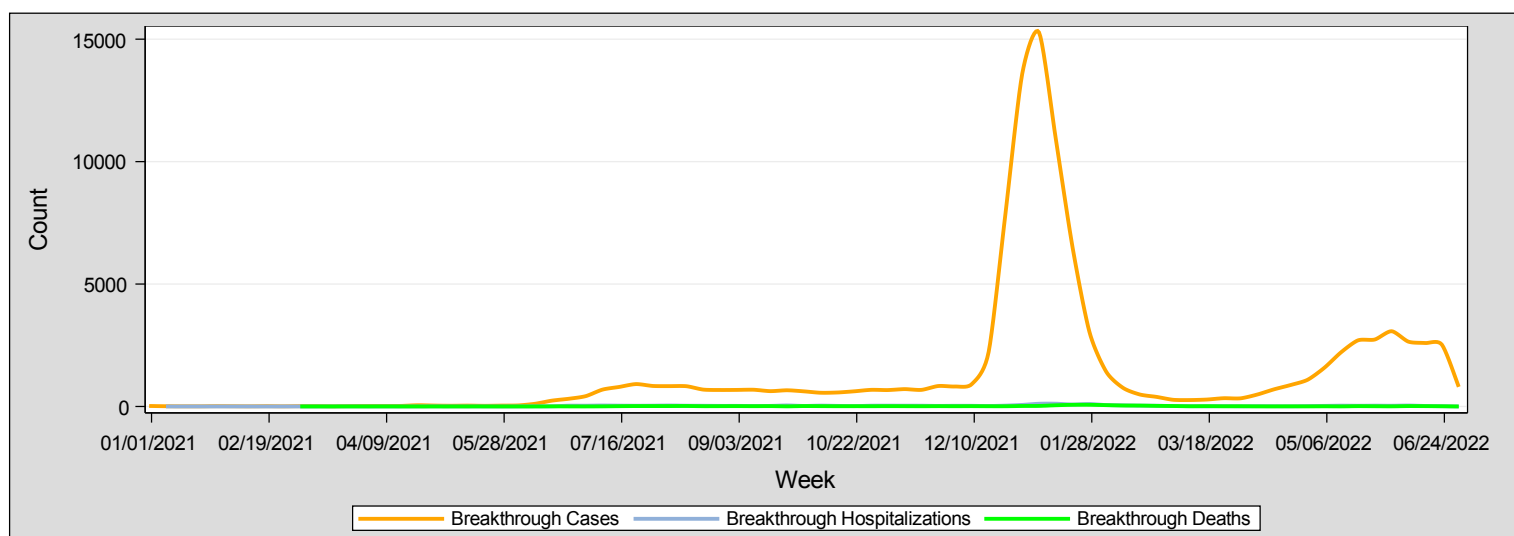


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

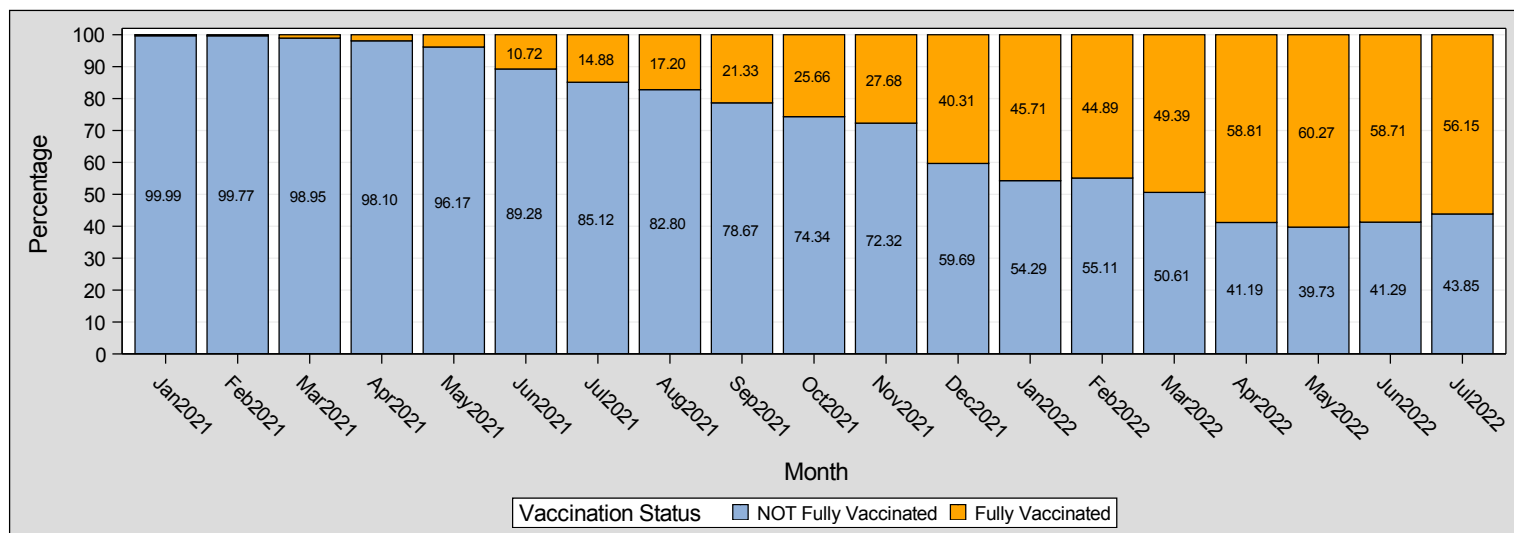


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	107458	100
Age (in years)		
5-11	1271	1
12-17	5292	5
18-24	9622	9
25-49	48857	45
50-64	25207	23
65+	17209	16
Gender		
Male	46867	44
Female	59834	56
Unknown	757	1
Race/Ethnicity		
Hispanic	21976	20
White	32929	31
Black	7969	7
API	13319	12
AEA	376	0
Other	8291	8
Unknown	22598	21
Travel History		
Yes	3577	3
No	23660	22
Unknown	80221	75
Hospitalization		
Yes	2247	2
No	26635	25
Unknown	78576	73
Death		
Yes	890	1
No	6421	6
Unknown	100147	93
Vaccine Type		
Pfizer	71155	66
Unknown	863	1
Moderna	28920	27
Janssen	6520	6
Underlying Conditions		
Yes	12894	12
No	94564	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
1306507	107458	1011667	447638	8225	44248

* 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>	2247	100
Age (in years)		
5-11	3	0
12-17	11	0
18-24	25	1
25-49	232	10
50-64	387	17
65+	1589	71
Gender		
Male	1218	54
Female	1027	46
Unknown	2	0
Race/Ethnicity		
Hispanic	295	13
White	1268	56
Black	262	12
API	218	10
AEA	12	1
Other	69	3
Unknown	123	5
Travel History		
Yes	78	3
No	1099	49
Unknown	1070	48
Death		
Yes	643	29
No	372	17
Unknown	1232	55
Vaccine Type		
Pfizer	1306	58
Unknown	51	2
Moderna	690	31
Janssen	200	9
Underlying Conditions		
Yes	1579	70
No	668	30

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	890	100
Age (in years)		
25-49	31	3
50-64	117	13
65+	742	83
Gender		
Male	531	60
Female	359	40
Race/Ethnicity		
Hispanic	107	12
White	582	65
Black	93	10
API	89	10
AEA	6	1
Other	9	1
Unknown	4	0
Hospitalization		
Yes	643	72
No	57	6
Unknown	190	21
Vaccine Type		
Pfizer	489	55
Unknown	20	2
Moderna	277	31
Janssen	104	12
Underlying Conditions		
Yes	517	58
No	373	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
1306507	890	1011667	7770	68	768

* 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	1579	70
	No	668	30
Hypertension	Yes	1012	N/A
Immunocompromised	Yes	93	N/A
Chronic Heart Disease	Yes	480	N/A
Chronic Liver Disease	Yes	45	N/A
Chronic Kidney Disease	Yes	331	N/A
Diabetes	Yes	586	N/A
Neurologic/Neurodevelopmental	Yes	142	N/A
Chronic Lung Disease	Yes	433	N/A
Historically Healthy	Yes	195	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	517	58
	No	373	42
Hypertension	Yes	333	N/A
Immunocompromised	Yes	40	N/A
Chronic Heart Disease	Yes	186	N/A
Chronic Liver Disease	Yes	18	N/A
Chronic Kidney Disease	Yes	137	N/A
Diabetes	Yes	190	N/A
Neurologic/Neurodevelopmental	Yes	42	N/A
Chronic Lung Disease	Yes	149	N/A
Historically Healthy	Yes	21	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).