

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: July 12, 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

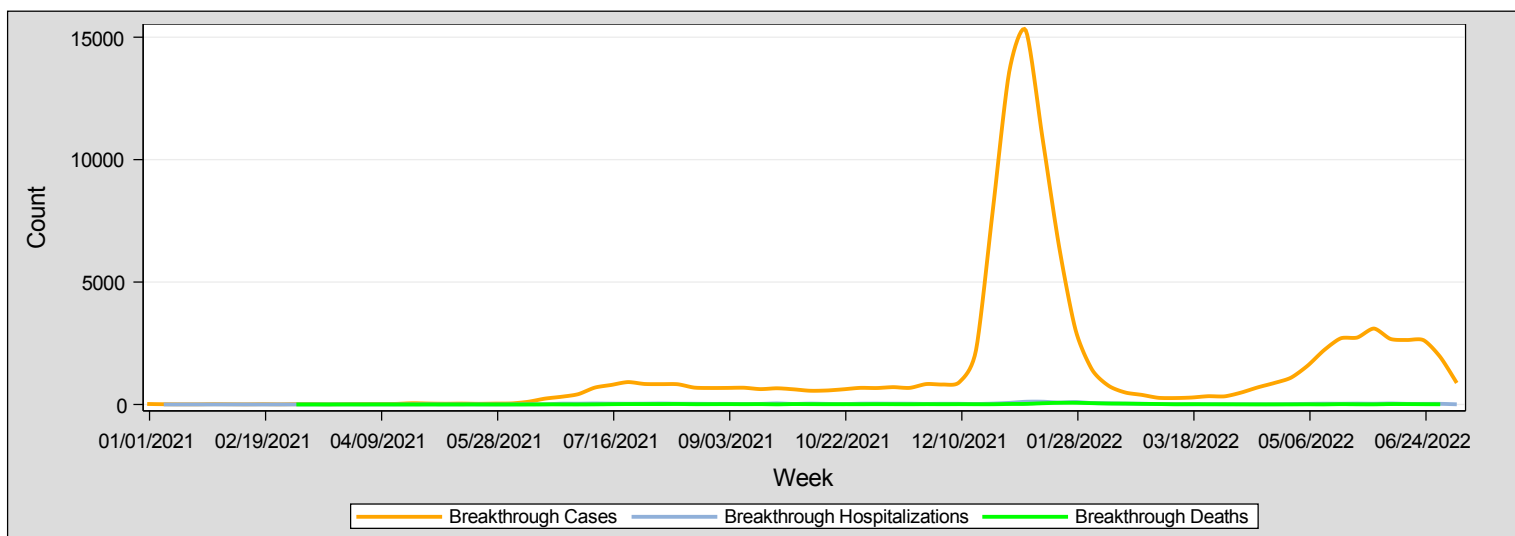


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

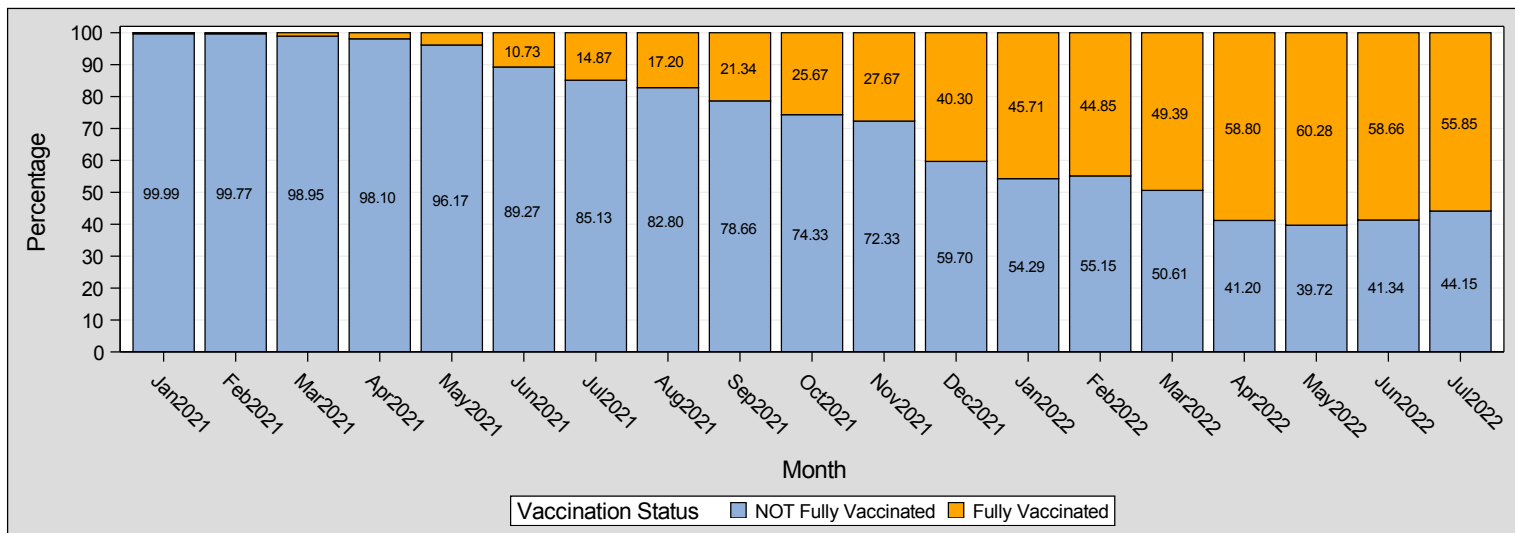


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	109698	100
Age (in years)		
5-11	1298	1
12-17	5361	5
18-24	9774	9
25-49	49683	45
50-64	25782	24
65+	17800	16
Gender		
Male	47860	44
Female	61065	56
Unknown	773	1
Race/Ethnicity		
Hispanic	22333	20
White	33622	31
Black	8165	7
API	13614	12
AEA	380	0
Other	8418	8
Unknown	23166	21
Travel History		
Yes	3679	3
No	24204	22
Unknown	81815	75
Hospitalization		
Yes	2312	2
No	27241	25
Unknown	80145	73
Death		
Yes	902	1
No	6587	6
Unknown	102209	93
Vaccine Type		
Pfizer	72632	66
Unknown	881	1
Moderna	29594	27
Janssen	6591	6
Underlying Conditions		
Yes	13280	12
No	96418	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
1307236	109698	1010938	449621	8392	44476

* 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>	2312	100
Age (in years)		
5-11	3	0
12-17	11	0
18-24	27	1
25-49	237	10
50-64	400	17
65+	1634	71
Gender		
Male	1247	54
Female	1062	46
Unknown	3	0
Race/Ethnicity		
Hispanic	298	13
White	1310	57
Black	269	12
API	227	10
AEA	12	1
Other	71	3
Unknown	125	5
Travel History		
Yes	82	4
No	1135	49
Unknown	1095	47
Death		
Yes	655	28
No	378	16
Unknown	1279	55
Vaccine Type		
Pfizer	1351	58
Unknown	52	2
Moderna	704	30
Janssen	205	9
Underlying Conditions		
Yes	1630	71
No	682	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	902	100
Age (in years)		
25-49	31	3
50-64	116	13
65+	755	84
Gender		
Male	534	59
Female	368	41
Race/Ethnicity		
Hispanic	109	12
White	591	66
Black	95	11
API	89	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	655	73
No	58	6
Unknown	189	21
Vaccine Type		
Pfizer	500	55
Unknown	20	2
Moderna	279	31
Janssen	103	11
Underlying Conditions		
Yes	527	58
No	375	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
1307236	902	1010938	7787	69	770

* 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	1630	71
	No	682	29
Hypertension	Yes	1041	N/A
Immunocompromised	Yes	93	N/A
Chronic Heart Disease	Yes	494	N/A
Chronic Liver Disease	Yes	46	N/A
Chronic Kidney Disease	Yes	341	N/A
Diabetes	Yes	601	N/A
Neurologic/Neurodevelopmental	Yes	146	N/A
Chronic Lung Disease	Yes	444	N/A
Historically Healthy	Yes	201	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	527	58
	No	375	42
Hypertension	Yes	339	N/A
Immunocompromised	Yes	40	N/A
Chronic Heart Disease	Yes	190	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	142	N/A
Diabetes	Yes	193	N/A
Neurologic/Neurodevelopmental	Yes	43	N/A
Chronic Lung Disease	Yes	150	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).