

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: October 4, 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

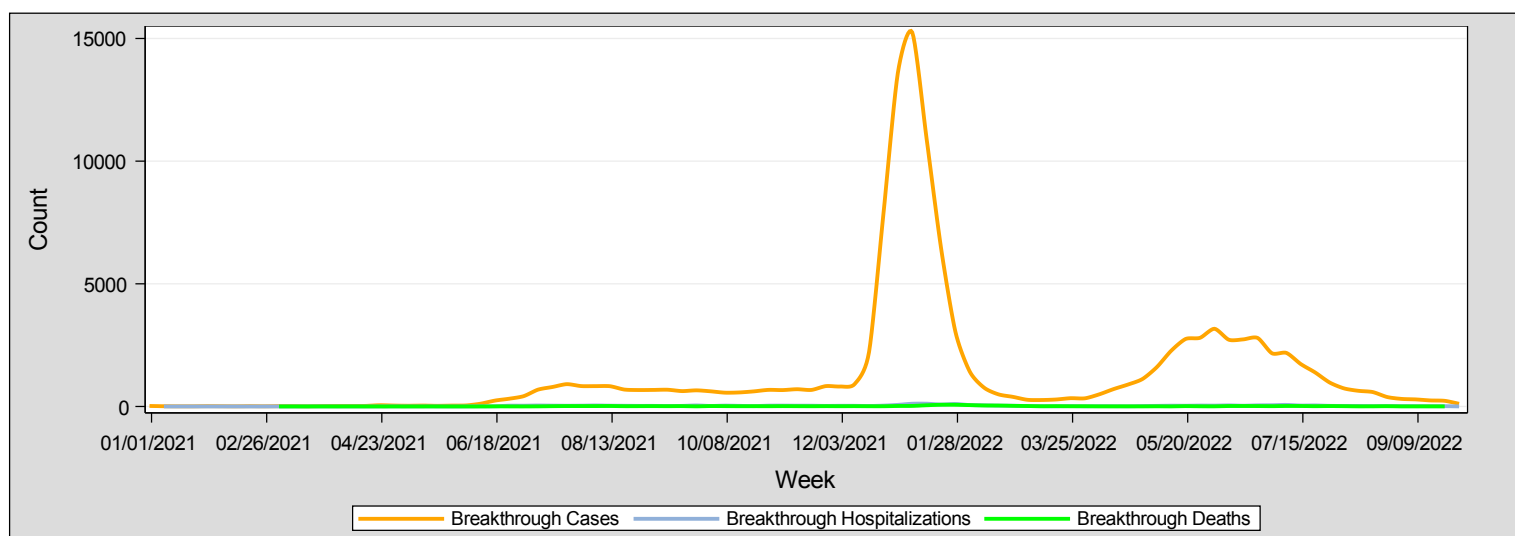


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

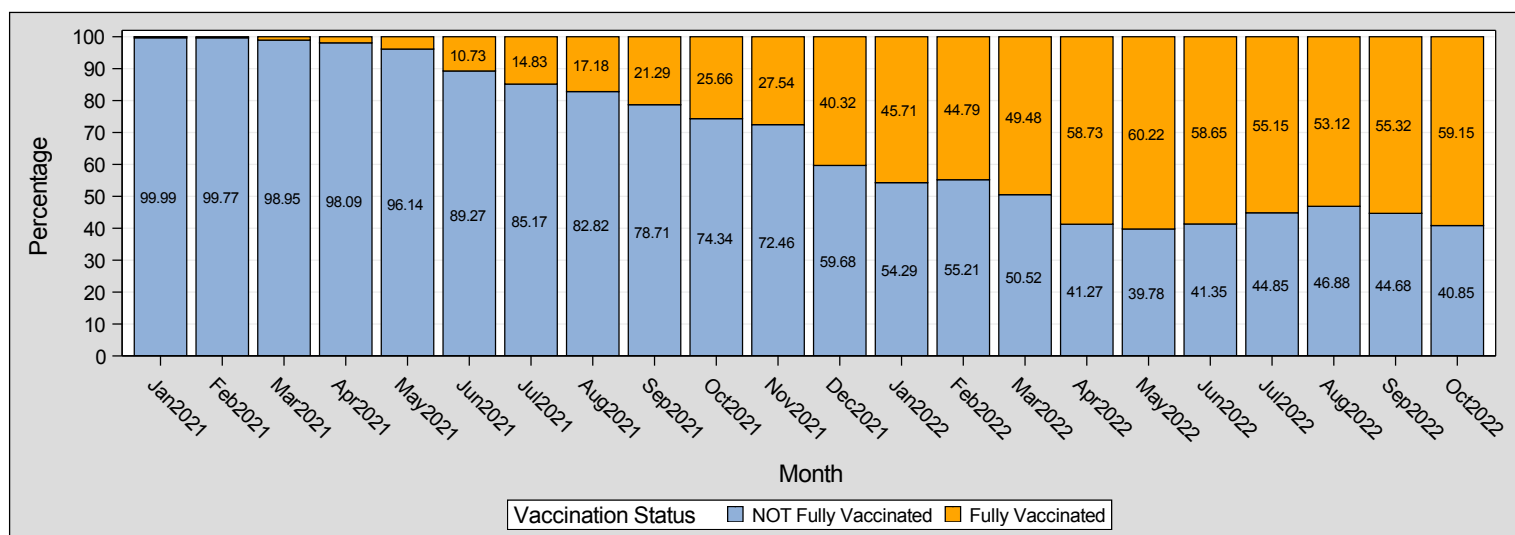


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	119534	100
Age (in years)		
5-11	1451	1
12-17	5697	5
18-24	10445	9
25-49	53281	45
50-64	28306	24
65+	20354	17
Gender		
Male	52082	44
Female	66509	56
Unknown	943	1
Race/Ethnicity		
Hispanic	24393	20
White	37148	31
Black	9093	8
API	15063	13
AEA	410	0
Other	8832	7
Unknown	24595	21
Travel History		
Yes	4750	4
No	29041	24
Unknown	85743	72
Hospitalization		
Yes	2769	2
No	32923	28
Unknown	83842	70
Death		
Yes	1043	1
No	7969	7
Unknown	110522	92
Vaccine Type		
Pfizer	79234	66
Unknown	989	1
Moderna	32512	27
Janssen	6798	6
Emergen	1	0
Underlying Conditions		
Yes	16092	13
No	103442	87

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
0	119534	2318174	459241	.	19810

* 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>	2769	100
Age (in years)		
5-11	4	0
12-17	16	1
18-24	28	1
25-49	282	10
50-64	484	17
65+	1955	71
Gender		
Male	1489	54
Female	1276	46
Unknown	4	0
Race/Ethnicity		
Hispanic	343	12
White	1586	57
Black	324	12
API	273	10
AEA	12	0
Other	86	3
Unknown	145	5
Travel History		
Yes	115	4
No	1380	50
Unknown	1274	46
Death		
Yes	745	27
No	458	17
Unknown	1566	57
Vaccine Type		
Pfizer	1612	58
Unknown	62	2
Moderna	868	31
Janssen	227	8
Underlying Conditions		
Yes	1981	72
No	788	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1043	100
Age (in years)		
25-49	32	3
50-64	130	12
65+	881	84
Gender		
Male	615	59
Female	428	41
Race/Ethnicity		
Hispanic	118	11
White	692	66
Black	112	11
API	103	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	745	71
No	67	6
Unknown	231	22
Vaccine Type		
Pfizer	569	55
Unknown	24	2
Moderna	337	32
Janssen	113	11
Underlying Conditions		
Yes	609	58
No	434	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
0	1043	2318174	7948	.	343

* 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	1981	72
	No	788	28
Hypertension	Yes	1270	N/A
Immunocompromised	Yes	116	N/A
Chronic Heart Disease	Yes	595	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	403	N/A
Diabetes	Yes	737	N/A
Neurologic/Neurodevelopmental	Yes	176	N/A
Chronic Lung Disease	Yes	530	N/A
Historically Healthy	Yes	236	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	609	58
	No	434	42
Hypertension	Yes	393	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	221	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	166	N/A
Diabetes	Yes	236	N/A
Neurologic/Neurodevelopmental	Yes	52	N/A
Chronic Lung Disease	Yes	180	N/A
Historically Healthy	Yes	23	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).