

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: September 20, 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

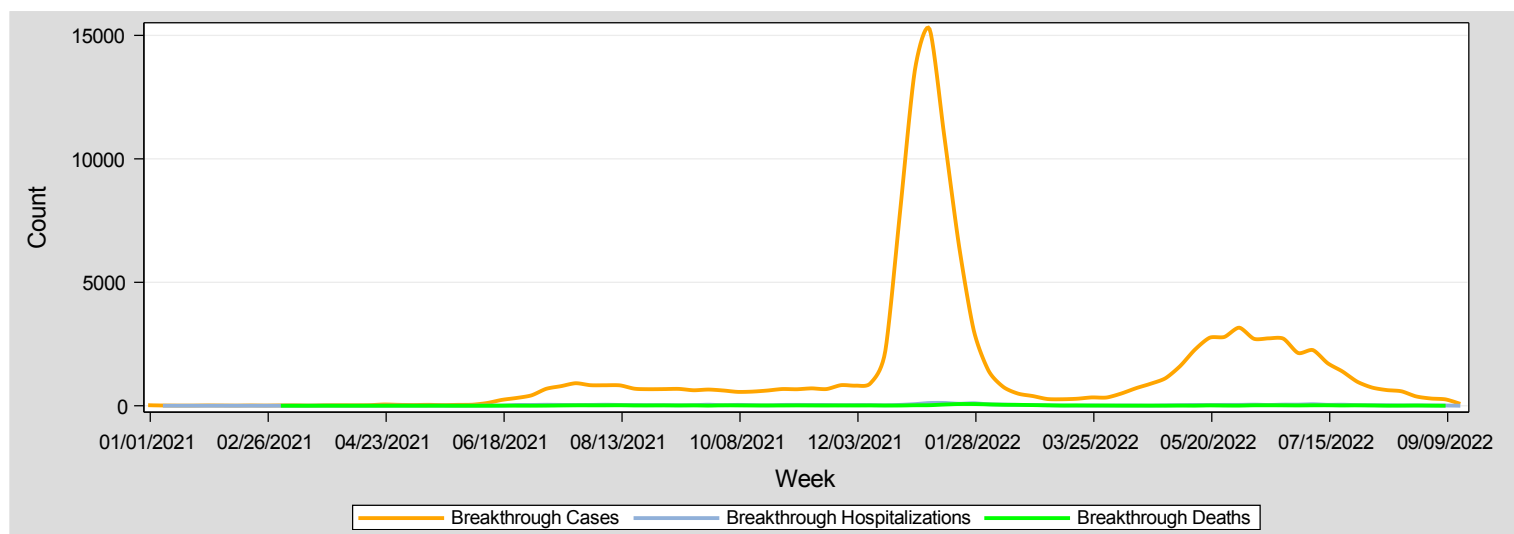


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

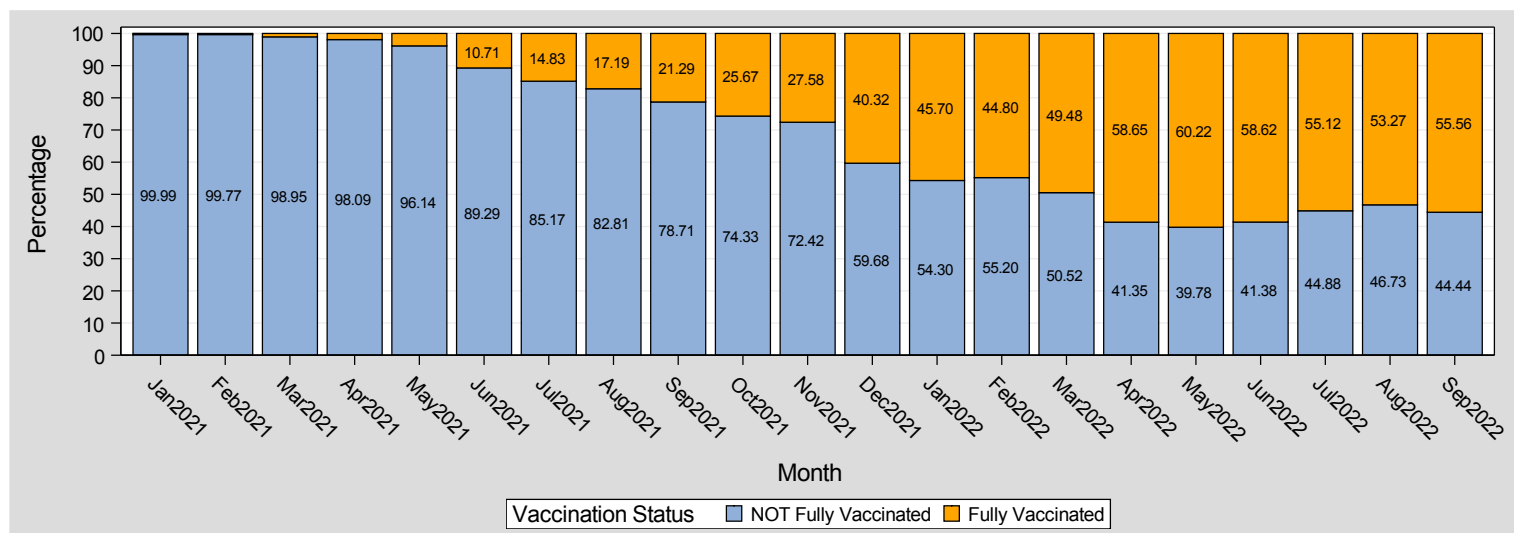


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	118905	100
Age (in years)		
5-11	1444	1
12-17	5680	5
18-24	10399	9
25-49	53085	45
50-64	28163	24
65+	20134	17
Gender		
Male	51812	44
Female	66145	56
Unknown	948	1
Race/Ethnicity		
Hispanic	24206	20
White	36822	31
Black	9026	8
API	14903	13
AEA	406	0
Other	8843	7
Unknown	24699	21
Travel History		
Yes	4620	4
No	28265	24
Unknown	86020	72
Hospitalization		
Yes	2710	2
No	32065	27
Unknown	84130	71
Death		
Yes	1028	1
No	7720	6
Unknown	110157	93
Vaccine Type		
Pfizer	78637	66
Unknown	955	1
Moderna	32504	27
Janssen	6808	6
Emergen	1	0
Underlying Conditions		
Yes	15711	13
No	103194	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
1318701	118905	999473	458712	9017	45895

* 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>	2710	100
Age (in years)		
5-11	4	0
12-17	16	1
18-24	28	1
25-49	274	10
50-64	477	18
65+	1911	71
Gender		
Male	1459	54
Female	1247	46
Unknown	4	0
Race/Ethnicity		
Hispanic	341	13
White	1548	57
Black	316	12
API	268	10
AEA	12	0
Other	83	3
Unknown	142	5
Travel History		
Yes	109	4
No	1341	49
Unknown	1260	46
Death		
Yes	734	27
No	444	16
Unknown	1532	57
Vaccine Type		
Pfizer	1578	58
Unknown	61	2
Moderna	846	31
Janssen	225	8
Underlying Conditions		
Yes	1931	71
No	779	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1028	100
Age (in years)		
<i>25-49</i>	32	3
<i>50-64</i>	126	12
<i>65+</i>	870	85
Gender		
<i>Male</i>	605	59
<i>Female</i>	421	41
<i>Unknown</i>	2	0
Race/Ethnicity		
<i>Hispanic</i>	114	11
<i>White</i>	681	66
<i>Black</i>	110	11
<i>API</i>	103	10
<i>AEA</i>	6	1
<i>Other</i>	10	1
<i>Unknown</i>	4	0
Hospitalization		
<i>Yes</i>	734	71
<i>No</i>	66	6
<i>Unknown</i>	228	22
Vaccine Type		
<i>Pfizer</i>	561	55
<i>Unknown</i>	24	2
<i>Moderna</i>	331	32
<i>Janssen</i>	112	11
Underlying Conditions		
<i>Yes</i>	603	59
<i>No</i>	425	41

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
1318701	1028	999473	7935	78	794

* 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	1931	71
	No	779	29
Hypertension	Yes	1243	N/A
Immunocompromised	Yes	113	N/A
Chronic Heart Disease	Yes	582	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	393	N/A
Diabetes	Yes	724	N/A
Neurologic/Neurodevelopmental	Yes	174	N/A
Chronic Lung Disease	Yes	518	N/A
Historically Healthy	Yes	227	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	603	59
	No	425	41
Hypertension	Yes	391	N/A
Immunocompromised	Yes	47	N/A
Chronic Heart Disease	Yes	217	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	164	N/A
Diabetes	Yes	233	N/A
Neurologic/Neurodevelopmental	Yes	52	N/A
Chronic Lung Disease	Yes	178	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).