

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: May 3, 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

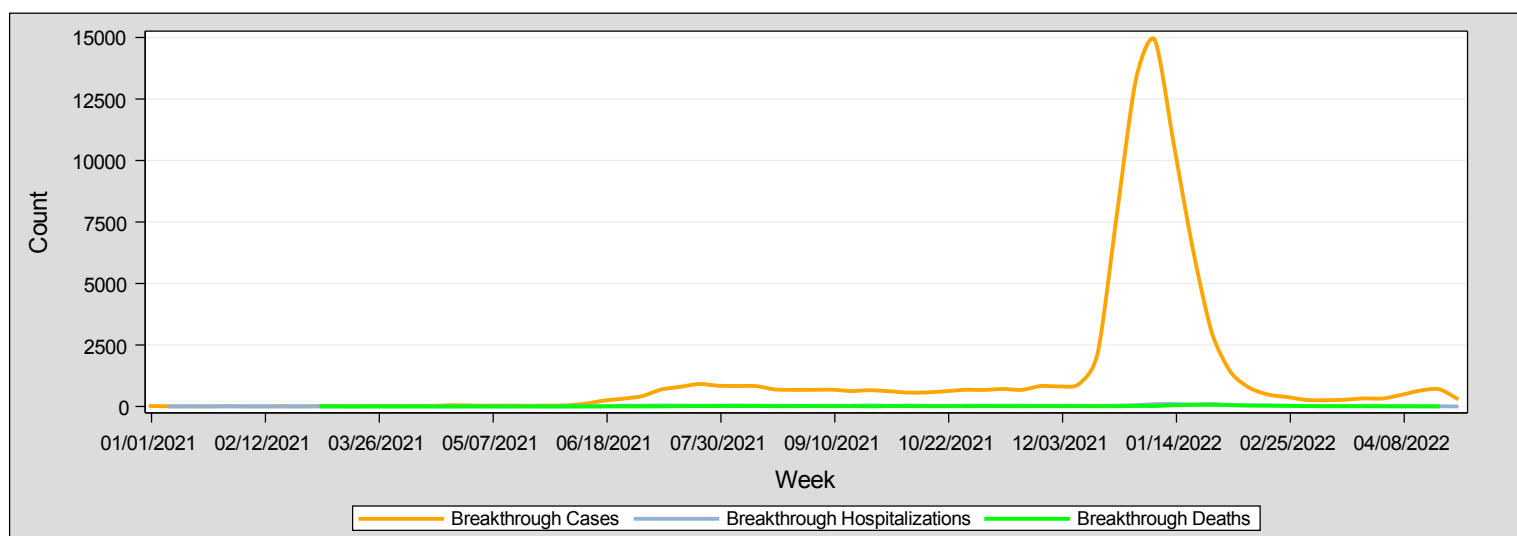


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

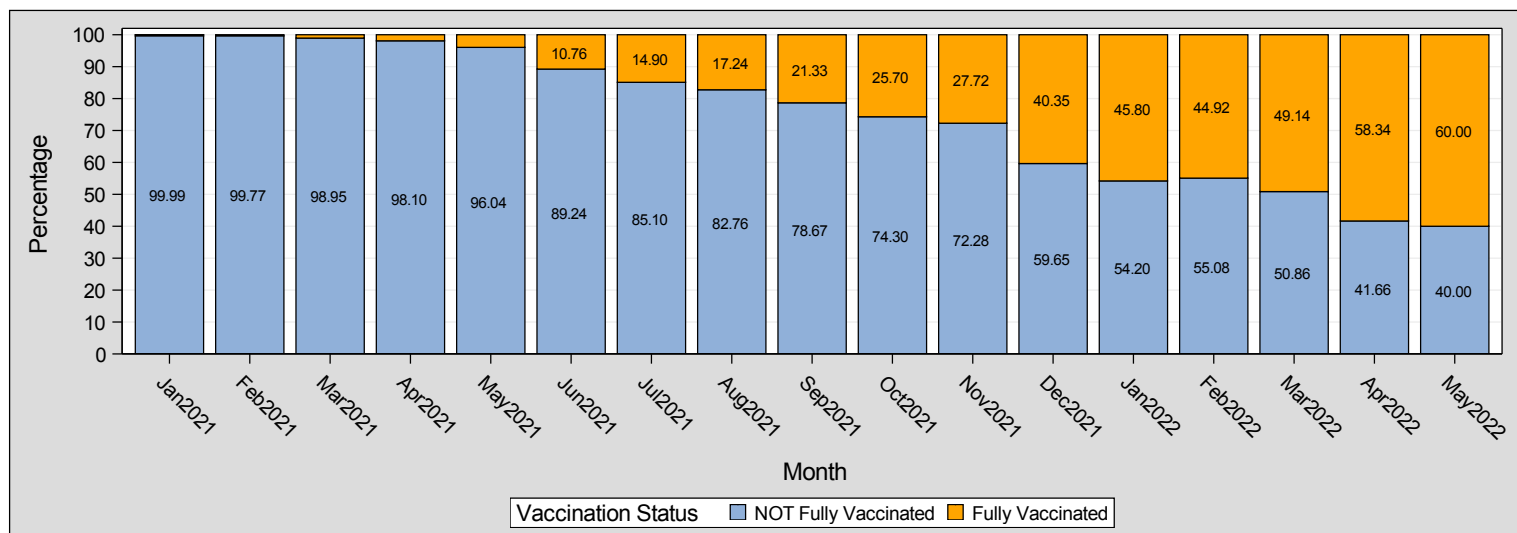


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	83877	100
Age (in years)		
5-11	871	1
12-17	4427	5
18-24	7915	9
25-49	39131	47
50-64	19048	23
65+	12485	15
Gender		
Male	36812	44
Female	46459	55
Unknown	606	1
Race/Ethnicity		
Hispanic	18178	22
White	25343	30
Black	6156	7
API	10101	12
AEA	68	0
Other	7035	8
Unknown	16996	20
Travel History		
Yes	2699	3
No	18553	22
Unknown	62625	75
Hospitalization		
Yes	1863	2
No	20742	25
Unknown	61272	73
Death		
Yes	792	1
No	4901	6
Unknown	78184	93
Vaccine Type		
Pfizer	55693	66
Unknown	632	1
Moderna	21833	26
Janssen	5719	7
Underlying Conditions		
Yes	9855	12
No	74022	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
1294023	83877	1024151	428834	6482	41872

* 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>	1863	100
Age (in years)		
5-11	2	0
12-17	10	1
18-24	16	1
25-49	199	11
50-64	326	17
65+	1310	70
Gender		
Male	1034	56
Female	825	44
Unknown	4	0
Race/Ethnicity		
Hispanic	253	14
White	1030	55
Black	218	12
API	184	10
AEA	5	0
Other	60	3
Unknown	113	6
Travel History		
Yes	69	4
No	909	49
Unknown	885	48
Death		
Yes	575	31
No	296	16
Unknown	992	53
Vaccine Type		
Pfizer	1074	58
Unknown	46	2
Moderna	568	30
Janssen	175	9
Underlying Conditions		
Yes	1295	70
No	568	30

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	792	100
Age (in years)		
25-49	28	4
50-64	108	14
65+	656	83
Gender		
Male	473	60
Female	314	40
Unknown	5	1
Race/Ethnicity		
Hispanic	97	12
White	503	64
Black	85	11
API	81	10
AEA	3	0
Other	7	1
Unknown	16	2
Hospitalization		
Yes	575	73
No	49	6
Unknown	168	21
Vaccine Type		
Pfizer	435	55
Unknown	19	2
Moderna	241	30
Janssen	97	12
Underlying Conditions		
Yes	447	56
No	345	44

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
1294023	792	1024151	7653	61	747

* 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	1295	70
	No	568	30
Hypertension	Yes	823	N/A
Immunocompromised	Yes	75	N/A
Chronic Heart Disease	Yes	394	N/A
Chronic Liver Disease	Yes	35	N/A
Chronic Kidney Disease	Yes	268	N/A
Diabetes	Yes	496	N/A
Neurologic/Neurodevelopmental	Yes	114	N/A
Chronic Lung Disease	Yes	352	N/A
Historically Healthy	Yes	163	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	447	56
	No	345	44
Hypertension	Yes	291	N/A
Immunocompromised	Yes	33	N/A
Chronic Heart Disease	Yes	164	N/A
Chronic Liver Disease	Yes	13	N/A
Chronic Kidney Disease	Yes	115	N/A
Diabetes	Yes	175	N/A
Neurologic/Neurodevelopmental	Yes	37	N/A
Chronic Lung Disease	Yes	125	N/A
Historically Healthy	Yes	19	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).