

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: May 10, 2022**

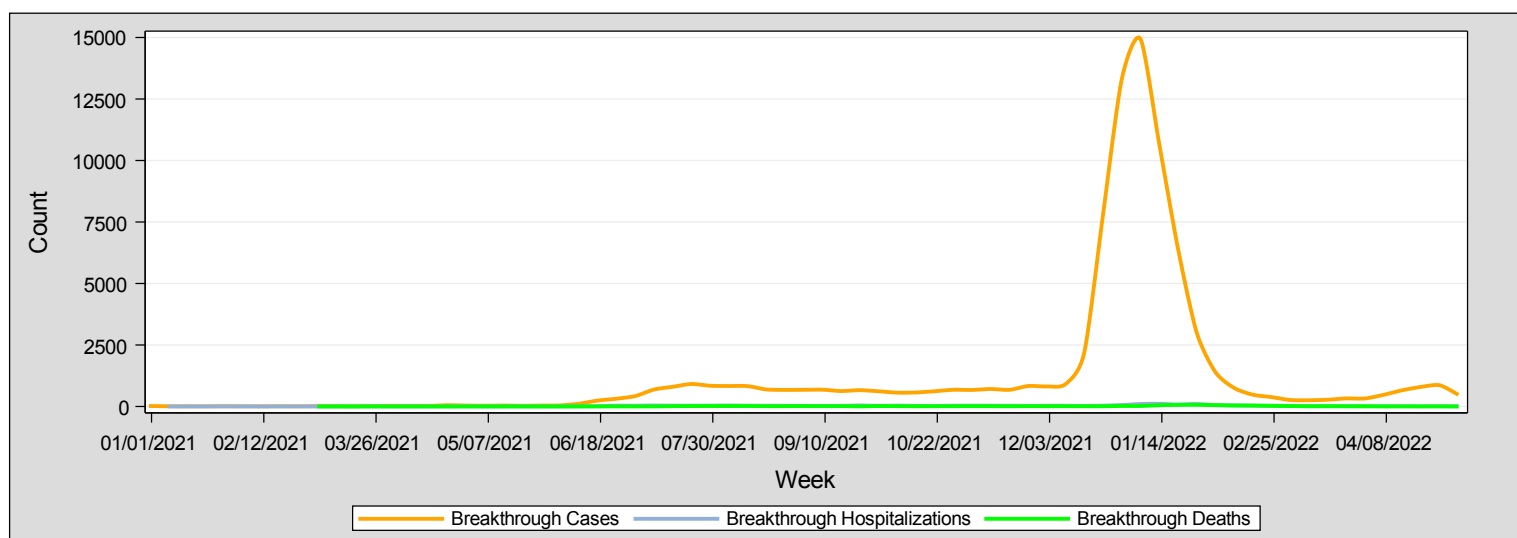
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or 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.

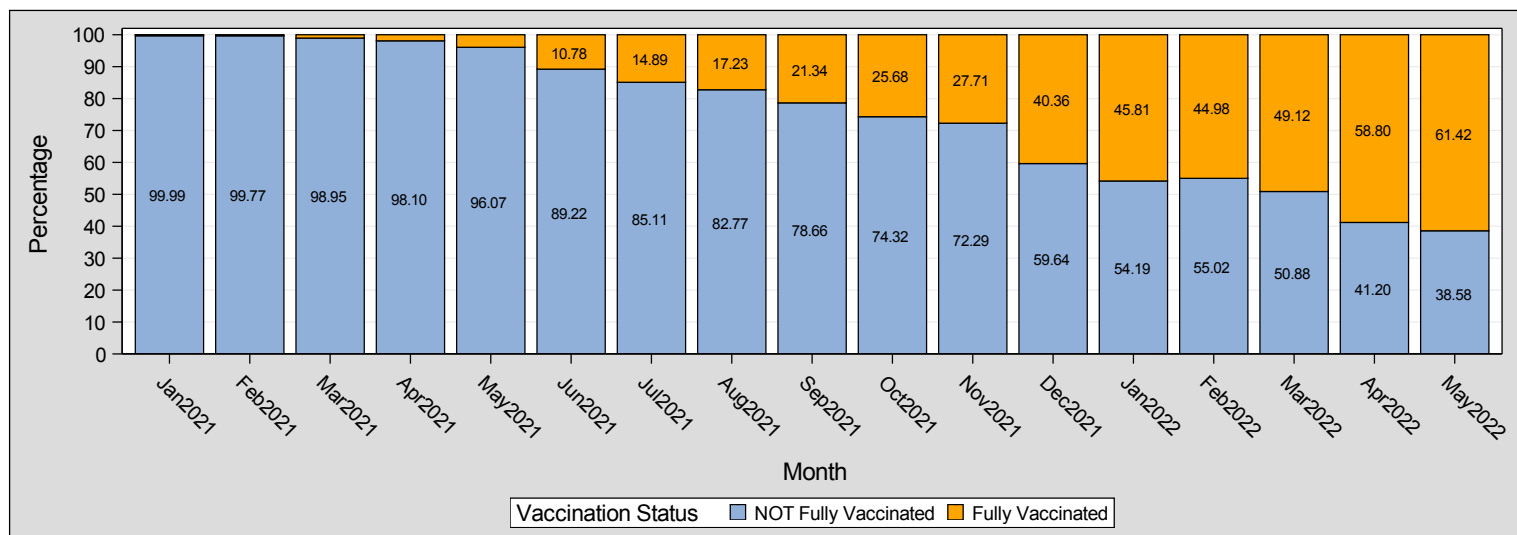
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	85209	100
<b>Age (in years)</b>		
5-11	900	1
12-17	4484	5
18-24	8017	9
25-49	39742	47
50-64	19349	23
65+	12717	15
<b>Gender</b>		
Male	37395	44
Female	47199	55
Unknown	615	1
<b>Race/Ethnicity</b>		
Hispanic	18414	22
White	25815	30
Black	6272	7
API	10298	12
AEA	71	0
Other	7081	8
Unknown	17258	20
<b>Travel History</b>		
Yes	2791	3
No	19068	22
Unknown	63350	74
<b>Hospitalization</b>		
Yes	1915	2
No	21361	25
Unknown	61933	73
<b>Death</b>		
Yes	795	1
No	5010	6
Unknown	79404	93
<b>Vaccine Type</b>		
Pfizer	56562	66
Unknown	638	1
Moderna	22247	26
Janssen	5762	7
<b>Underlying Conditions</b>		
Yes	10223	12
No	74986	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
1296066	85209	1022108	429835	6574	42054

\* 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>	1915	100
<b>Age (in years)</b>		
5-11	3	0
12-17	10	1
18-24	16	1
25-49	203	11
50-64	334	17
65+	1349	70
<b>Gender</b>		
Male	1059	55
Female	853	45
Unknown	3	0
<b>Race/Ethnicity</b>		
Hispanic	260	14
White	1066	56
Black	222	12
API	185	10
AEA	5	0
Other	61	3
Unknown	116	6
<b>Travel History</b>		
Yes	70	4
No	938	49
Unknown	907	47
<b>Death</b>		
Yes	582	30
No	304	16
Unknown	1029	54
<b>Vaccine Type</b>		
Pfizer	1109	58
Unknown	47	2
Moderna	581	30
Janssen	178	9
<b>Underlying Conditions</b>		
Yes	1341	70
No	574	30

**Table 4: Population Characteristics of COVID-19 Breakthrough Deaths**

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	795	100
<b>Age (in years)</b>		
25-49	28	4
50-64	108	14
65+	659	83
<b>Gender</b>		
Male	475	60
Female	315	40
Unknown	5	1
<b>Race/Ethnicity</b>		
Hispanic	98	12
White	505	64
Black	87	11
API	81	10
AEA	3	0
Other	8	1
Unknown	13	2
<b>Hospitalization</b>		
Yes	582	73
No	49	6
Unknown	164	21
<b>Vaccine Type</b>		
Pfizer	437	55
Unknown	19	2
Moderna	241	30
Janssen	98	12
<b>Underlying Conditions</b>		
Yes	457	57
No	338	43

**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
1296066	795	1022108	7663	61	750

\* 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	1341	70
	No	574	30
Hypertension	Yes	847	N/A
Immunocompromised	Yes	77	N/A
Chronic Heart Disease	Yes	407	N/A
Chronic Liver Disease	Yes	37	N/A
Chronic Kidney Disease	Yes	278	N/A
Diabetes	Yes	507	N/A
Neurologic/Neurodevelopmental	Yes	121	N/A
Chronic Lung Disease	Yes	366	N/A
Historically Healthy	Yes	166	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	457	57
	No	338	43
Hypertension	Yes	293	N/A
Immunocompromised	Yes	34	N/A
Chronic Heart Disease	Yes	168	N/A
Chronic Liver Disease	Yes	15	N/A
Chronic Kidney Disease	Yes	119	N/A
Diabetes	Yes	175	N/A
Neurologic/Neurodevelopmental	Yes	37	N/A
Chronic Lung Disease	Yes	128	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).