

# Weekly COVID-19 Breakthrough Infections Report

## Clark County, Nevada

**Date: June 1, 2022**

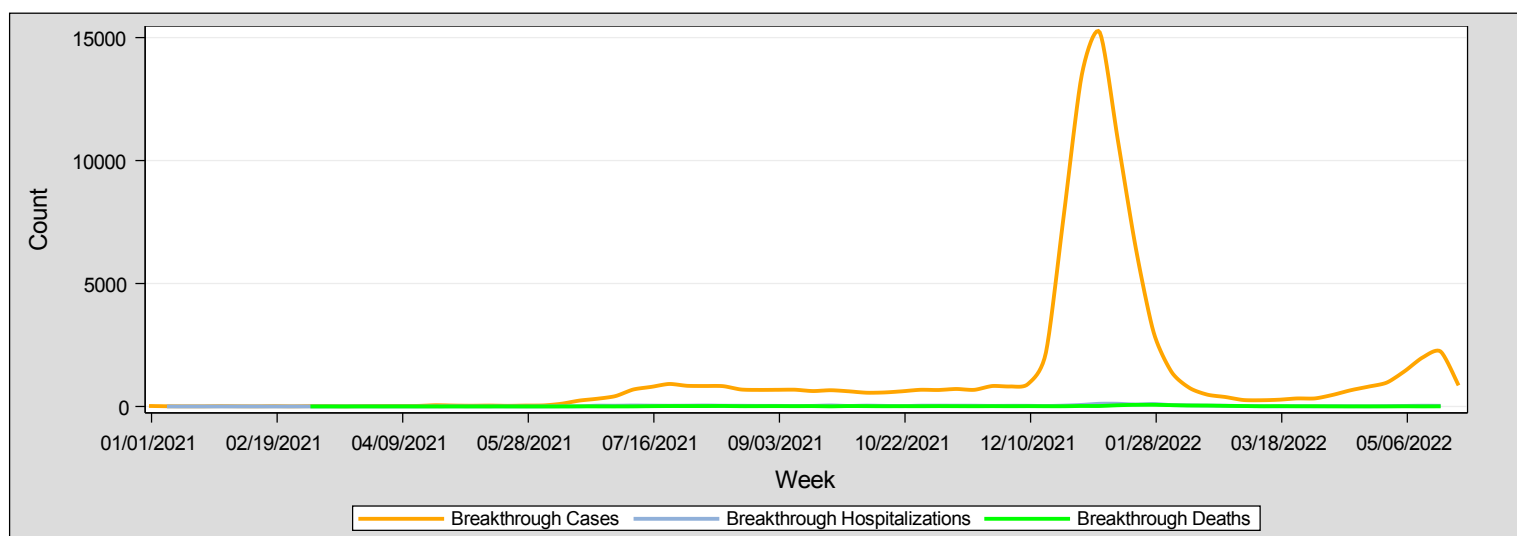
Breakthrough cases are U.S. residents with a SARS-CoV2 RNA or antigen detected on respiratory specimen collected greater than or equal to 14 days after completing the primary series of an FDA authorized COVID-19 vaccine (i.e., complete vaccination). Complete vaccination is two doses of the Pfizer or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

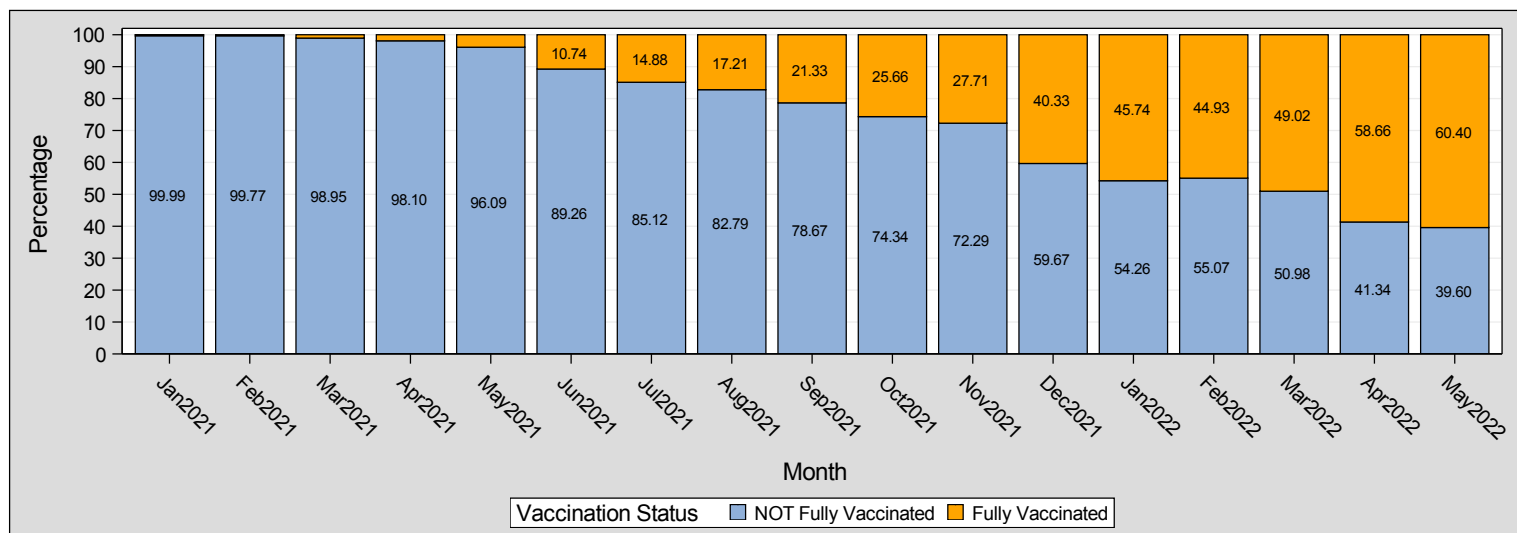
Given the large number of people being vaccinated in the United States and the high level of ongoing SARS-CoV-2 circulation, thousands of symptomatic vaccine breakthrough cases are expected, even if the vaccines remain as effective as demonstrated during the clinical trials.

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>	92201	100
<b>Age (in years)</b>		
5-11	1036	1
12-17	4826	5
18-24	8536	9
25-49	42652	46
50-64	21152	23
65+	13999	15
<b>Gender</b>		
Male	40180	44
Female	51375	56
Unknown	646	1
<b>Race/Ethnicity</b>		
Hispanic	19675	21
White	28071	30
Black	6785	7
API	11319	12
AEA	76	0
Other	7370	8
Unknown	18905	21
<b>Travel History</b>		
Yes	3080	3
No	20925	23
Unknown	68196	74
<b>Hospitalization</b>		
Yes	2036	2
No	23386	25
Unknown	66779	72
<b>Death</b>		
Yes	816	1
No	5526	6
Unknown	85859	93
<b>Vaccine Type</b>		
Pfizer	61206	66
Unknown	688	1
Moderna	24318	26
Janssen	5989	6
<b>Underlying Conditions</b>		
Yes	11290	12
No	80911	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
1298942	92201	1019232	435714	7098	42749

\* 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>	2036	100
<b>Age (in years)</b>		
5-11	3	0
12-17	11	1
18-24	19	1
25-49	219	11
50-64	356	17
65+	1428	70
<b>Gender</b>		
Male	1124	55
Female	910	45
Unknown	2	0
<b>Race/Ethnicity</b>		
Hispanic	277	14
White	1135	56
Black	231	11
API	198	10
AEA	5	0
Other	68	3
Unknown	122	6
<b>Travel History</b>		
Yes	70	3
No	995	49
Unknown	971	48
<b>Death</b>		
Yes	597	29
No	341	17
Unknown	1098	54
<b>Vaccine Type</b>		
Pfizer	1173	58
Unknown	49	2
Moderna	628	31
Janssen	186	9
<b>Underlying Conditions</b>		
Yes	1435	70
No	601	30

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

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	816	100
<b>Age (in years)</b>		
25-49	29	4
50-64	110	13
65+	677	83
<b>Gender</b>		
Male	490	60
Female	326	40
<b>Race/Ethnicity</b>		
Hispanic	102	13
White	532	65
Black	88	11
API	82	10
AEA	3	0
Other	6	1
Unknown	3	0
<b>Hospitalization</b>		
Yes	597	73
No	53	6
Unknown	166	20
<b>Vaccine Type</b>		
Pfizer	448	55
Unknown	18	2
Moderna	250	31
Janssen	100	12
<b>Underlying Conditions</b>		
Yes	475	58
No	341	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
1298942	816	1019232	7697	63	755

\* 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	1435	70
	No	601	30
Hypertension	Yes	911	N/A
Immunocompromised	Yes	84	N/A
Chronic Heart Disease	Yes	443	N/A
Chronic Liver Disease	Yes	39	N/A
Chronic Kidney Disease	Yes	295	N/A
Diabetes	Yes	537	N/A
Neurologic/Neurodevelopmental	Yes	127	N/A
Chronic Lung Disease	Yes	387	N/A
Historically Healthy	Yes	176	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	475	58
	No	341	42
Hypertension	Yes	302	N/A
Immunocompromised	Yes	34	N/A
Chronic Heart Disease	Yes	176	N/A
Chronic Liver Disease	Yes	16	N/A
Chronic Kidney Disease	Yes	124	N/A
Diabetes	Yes	185	N/A
Neurologic/Neurodevelopmental	Yes	39	N/A
Chronic Lung Disease	Yes	131	N/A
Historically Healthy	Yes	20	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).