

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: February 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

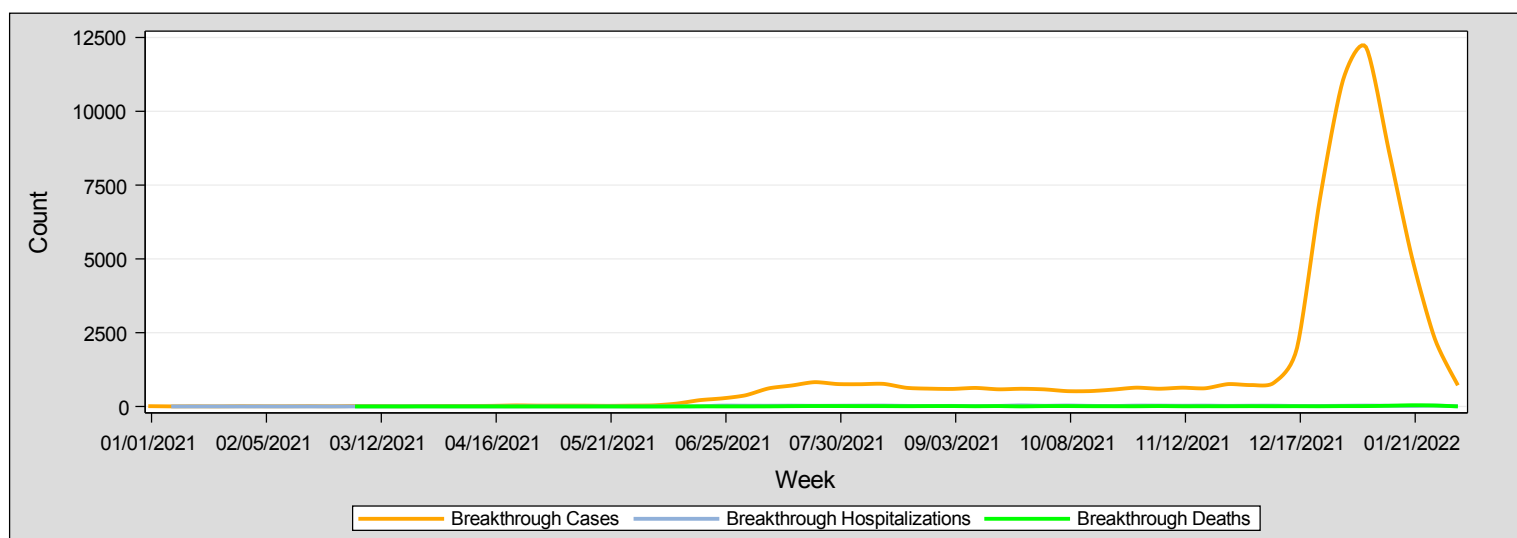


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

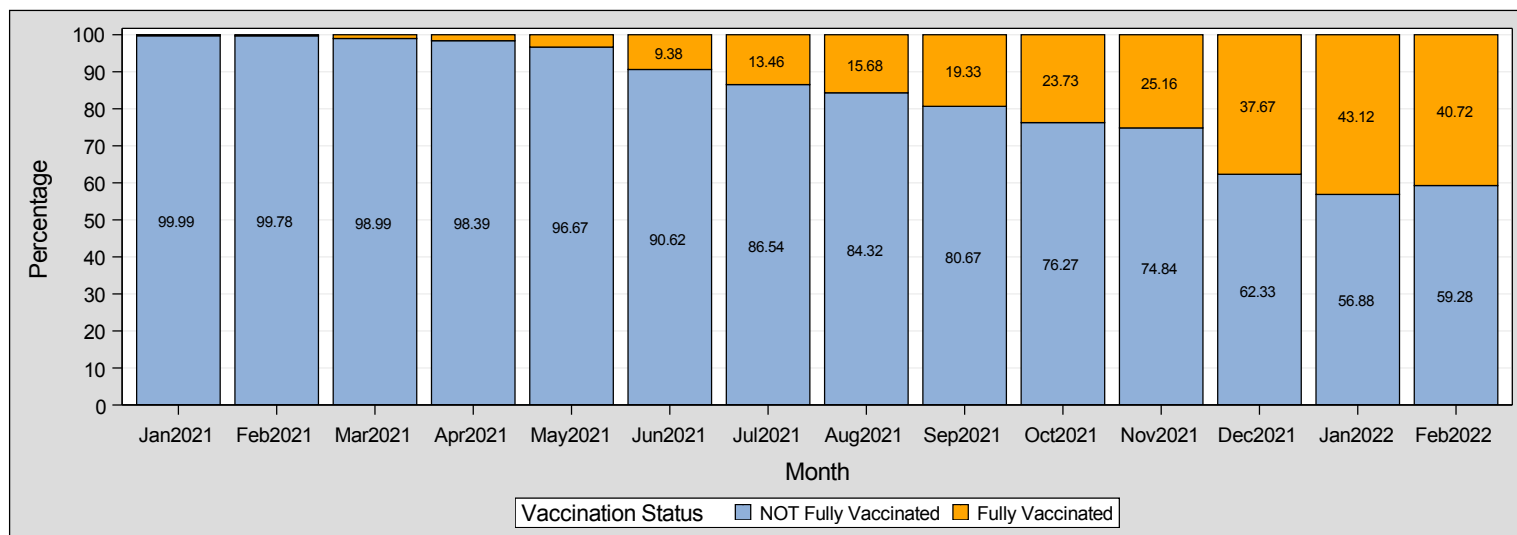


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	66068	100
Age (in years)		
5-17	4458	7
18-24	6532	10
25-49	30629	46
50-64	14674	22
65+	9775	15
Gender		
Male	28068	42
Female	37518	57
Unknown	482	1
Race/Ethnicity		
Hispanic	13590	21
White	19757	30
Black	4822	7
API	8215	12
AEA	45	0
Other	5864	9
Unknown	13775	21
Travel History		
Yes	1960	3
No	12794	19
Unknown	51314	78
Hospitalization		
Yes	1061	2
No	14368	22
Unknown	50639	77
Death		
Yes	392	1
No	3321	5
Unknown	62355	94
Vaccine Type		
Pfizer	46932	71
Unknown	487	1
Moderna	18353	28
Janssen	296	0
Underlying Conditions		
Yes	6378	10
No	59690	90

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
1261868	66068	1056306	417203	5236	39496

* 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>	1061	100
Age (in years)		
5-17	2	0
18-24	9	1
25-49	101	10
50-64	181	17
65+	768	72
Gender		
Male	589	56
Female	469	44
Unknown	3	0
Race/Ethnicity		
Hispanic	135	13
White	616	58
Black	117	11
API	95	9
AEA	3	0
Other	29	3
Unknown	66	6
Travel History		
Yes	48	5
No	563	53
Unknown	450	42
Death		
Yes	303	29
No	151	14
Unknown	607	57
Vaccine Type		
Pfizer	683	64
Unknown	26	2
Moderna	348	33
Janssen	4	0
Underlying Conditions		
Yes	691	65
No	370	35

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	392	100
Age (in years)		
25-49	12	3
50-64	48	12
65+	332	85
Gender		
Male	250	64
Female	140	36
Unknown	2	1
Race/Ethnicity		
Hispanic	49	13
White	251	64
Black	37	9
API	33	8
AEA	2	1
Other	5	1
Unknown	15	4
Variant of concern (VOC)		
Epsilon	1	0
Delta	15	4
Alpha	1	0
Unknown	375	96
Hospitalization		
Yes	303	77
No	14	4
Unknown	75	19
Vaccine Type		
Pfizer	259	66
Unknown	12	3
Moderna	119	30
Janssen	2	1
Underlying Conditions		
Yes	181	46
No	211	54

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
1261868	392	1056306	6786	31	642

* 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	691	65
	No	370	35
Hypertension	Yes	433	N/A
Immunocompromised	Yes	42	N/A
Chronic Heart Disease	Yes	226	N/A
Chronic Liver Disease	Yes	22	N/A
Chronic Kidney Disease	Yes	135	N/A
Diabetes	Yes	275	N/A
Neurologic/Neurodevelopmental	Yes	66	N/A
Chronic Lung Disease	Yes	199	N/A
Historically Healthy	Yes	98	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	181	46
	No	211	54
Hypertension	Yes	124	N/A
Immunocompromised	Yes	16	N/A
Chronic Heart Disease	Yes	66	N/A
Chronic Liver Disease	Yes	4	N/A
Chronic Kidney Disease	Yes	44	N/A
Diabetes	Yes	76	N/A
Neurologic/Neurodevelopmental	Yes	16	N/A
Chronic Lung Disease	Yes	57	N/A
Historically Healthy	Yes	6	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).