

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: February 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

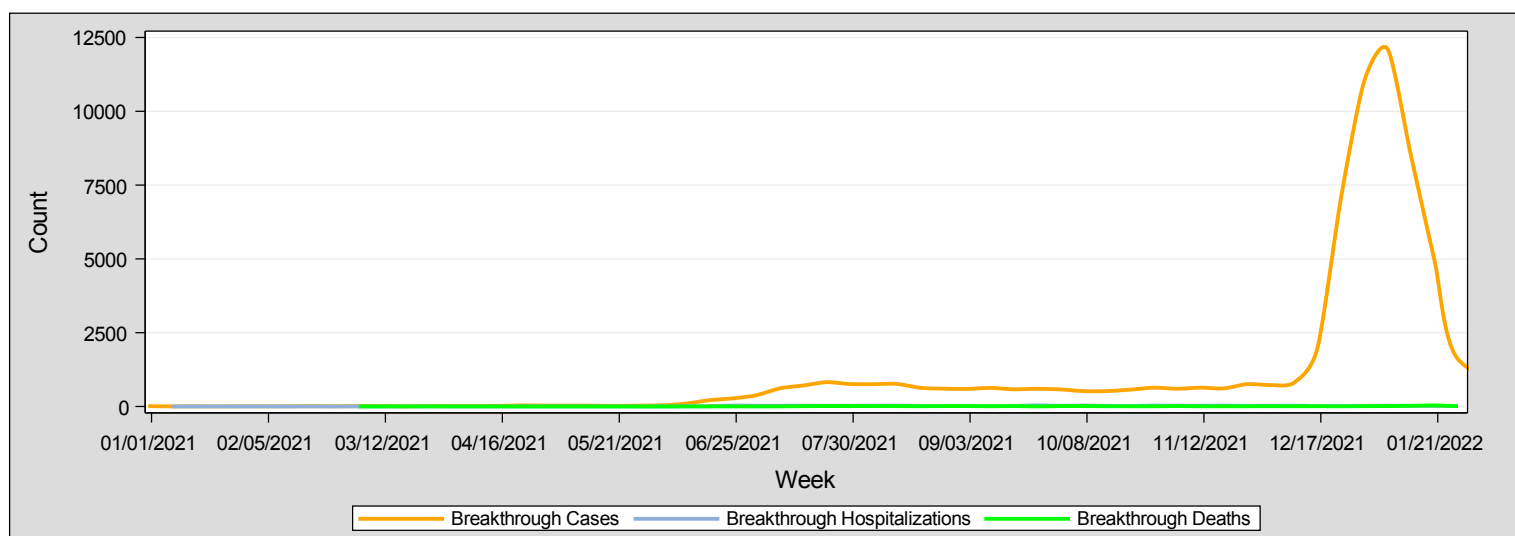


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

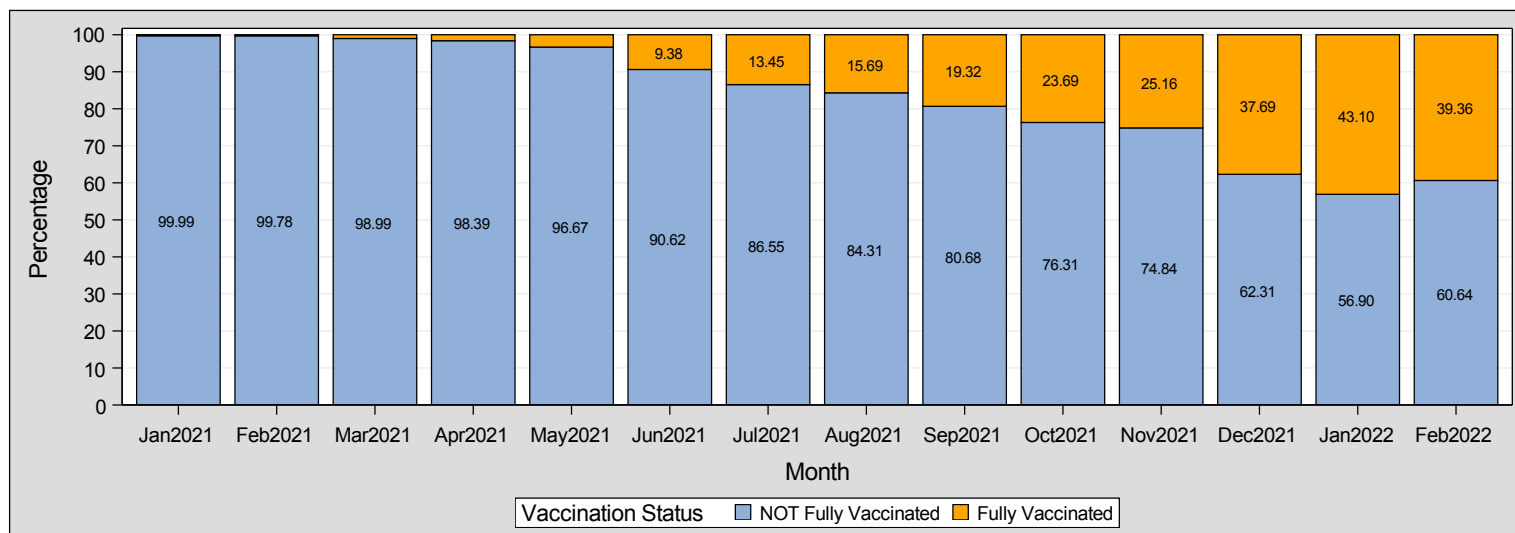


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	64234	100
Age (in years)		
5-17	4285	7
18-24	6383	10
25-49	29875	47
50-64	14276	22
65+	9415	15
Gender		
Male	27291	42
Female	36473	57
Unknown	470	1
Race/Ethnicity		
Hispanic	13197	21
White	19156	30
Black	4704	7
API	7968	12
AEA	43	0
Other	5780	9
Unknown	13386	21
Travel History		
Yes	1899	3
No	12163	19
Unknown	50172	78
Hospitalization		
Yes	1019	2
No	13691	21
Unknown	49524	77
Death		
Yes	356	1
No	3218	5
Unknown	60660	94
Vaccine Type		
Pfizer	45639	71
Unknown	467	1
Moderna	17850	28
Janssen	278	0
Underlying Conditions		
Yes	6088	9
No	58146	91

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
1251867	64234	1066307	414253	5131	38849

* 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>	1019	100
Age (in years)		
5-17	2	0
18-24	8	1
25-49	96	9
50-64	176	17
65+	737	72
Gender		
Male	570	56
Female	448	44
Unknown	1	0
Race/Ethnicity		
Hispanic	130	13
White	599	59
Black	110	11
API	87	9
AEA	3	0
Other	29	3
Unknown	61	6
Travel History		
Yes	48	5
No	544	53
Unknown	427	42
Death		
Yes	280	27
No	150	15
Unknown	589	58
Vaccine Type		
Pfizer	658	65
Unknown	24	2
Moderna	333	33
Janssen	4	0
Underlying Conditions		
Yes	669	66
No	350	34

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	356	100
Age (in years)		
25-49	11	3
50-64	41	12
65+	304	85
Gender		
Male	230	65
Female	126	35
Race/Ethnicity		
Hispanic	43	12
White	239	67
Black	33	9
API	26	7
AEA	2	1
Other	3	1
Unknown	10	3
Variant of concern (VOC)		
Epsilon	1	0
Delta	15	4
Alpha	1	0
Unknown	339	95
Hospitalization		
Yes	280	79
No	10	3
Unknown	66	19
Vaccine Type		
Pfizer	239	67
Unknown	10	3
Moderna	105	29
Janssen	2	1
Underlying Conditions		
Yes	170	48
No	186	52

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
1251867	356	1066307	6637	28	622

* 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	669	66
	No	350	34
Hypertension	Yes	417	N/A
Immunocompromised	Yes	41	N/A
Chronic Heart Disease	Yes	218	N/A
Chronic Liver Disease	Yes	21	N/A
Chronic Kidney Disease	Yes	128	N/A
Diabetes	Yes	267	N/A
Neurologic/Neurodevelopmental	Yes	66	N/A
Chronic Lung Disease	Yes	194	N/A
Historically Healthy	Yes	96	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	170	48
	No	186	52
Hypertension	Yes	118	N/A
Immunocompromised	Yes	16	N/A
Chronic Heart Disease	Yes	61	N/A
Chronic Liver Disease	Yes	3	N/A
Chronic Kidney Disease	Yes	43	N/A
Diabetes	Yes	70	N/A
Neurologic/Neurodevelopmental	Yes	16	N/A
Chronic Lung Disease	Yes	55	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).