

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: February 17, 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

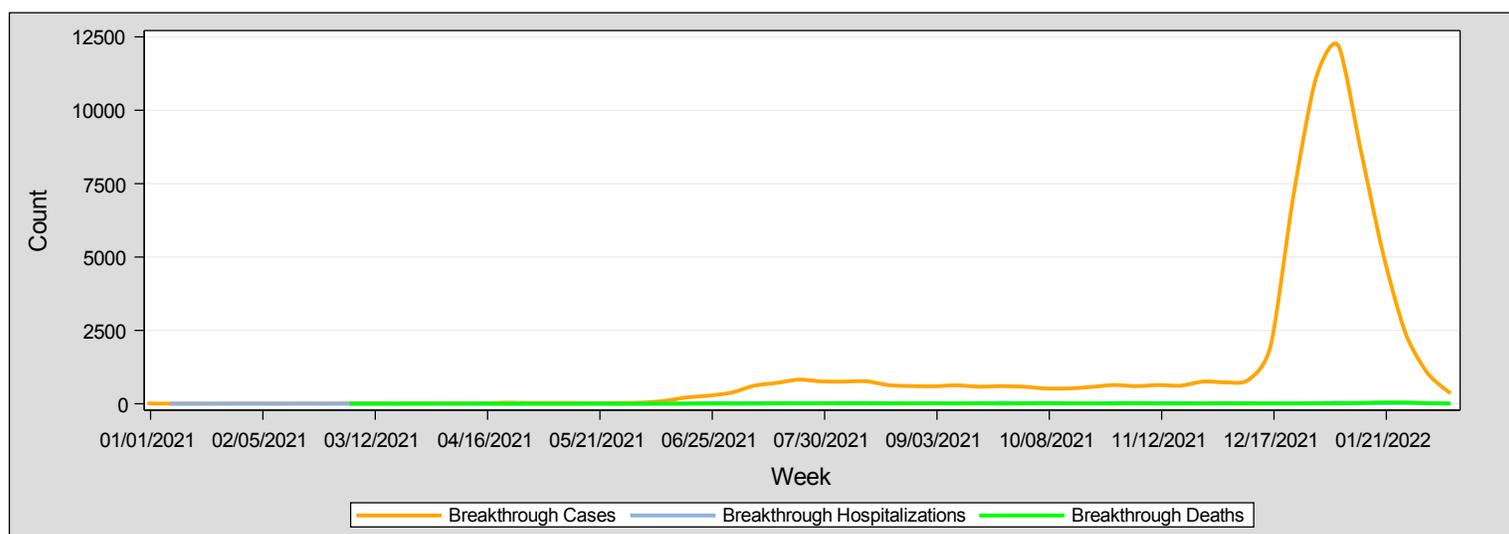


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

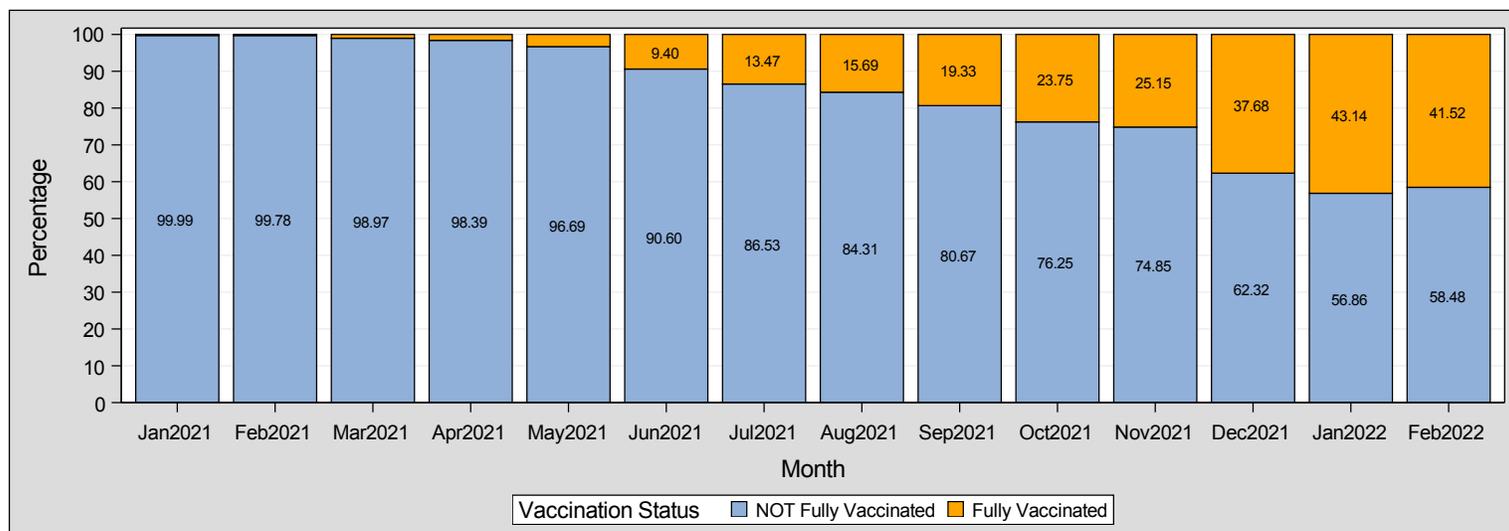


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	66981	100
Age (in years)		
5-17	4531	7
18-24	6602	10
25-49	30994	46
50-64	14881	22
65+	9973	15
Gender		
Male	28470	43
Female	38018	57
Unknown	493	1
Race/Ethnicity		
Hispanic	13800	21
White	20093	30
Black	4891	7
API	8353	12
AEA	46	0
Other	5902	9
Unknown	13896	21
Travel History		
Yes	2013	3
No	13351	20
Unknown	51617	77
Hospitalization		
Yes	1113	2
No	14936	22
Unknown	50932	76
Death		
Yes	427	1
No	3438	5
Unknown	63116	94
Vaccine Type		
Pfizer	47552	71
Unknown	513	1
Moderna	18608	28
Janssen	308	0
Underlying Conditions		
Yes	6621	10
No	60360	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
1269364	66981	1048810	418553	5277	39907

* 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>	1113	100
Age (in years)		
5-17	3	0
18-24	9	1
25-49	103	9
50-64	193	17
65+	805	72
Gender		
Male	623	56
Female	488	44
Unknown	2	0
Race/Ethnicity		
Hispanic	144	13
White	641	58
Black	123	11
API	102	9
AEA	3	0
Other	30	3
Unknown	70	6
Travel History		
Yes	49	4
No	595	53
Unknown	469	42
Death		
Yes	327	29
No	154	14
Unknown	632	57
Vaccine Type		
Pfizer	708	64
Unknown	30	3
Moderna	371	33
Janssen	4	0
Underlying Conditions		
Yes	727	65
No	386	35

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	427	100
Age (in years)		
25-49	12	3
50-64	54	13
65+	361	85
Gender		
Male	272	64
Female	154	36
Unknown	1	0
Race/Ethnicity		
Hispanic	53	12
White	268	63
Black	42	10
API	44	10
AEA	2	0
Other	6	1
Unknown	12	3
Variant of concern (VOC)		
Epsilon	1	0
Delta	15	4
Alpha	1	0
Unknown	410	96
Hospitalization		
Yes	327	77
No	19	4
Unknown	81	19
Vaccine Type		
Pfizer	275	64
Unknown	13	3
Moderna	137	32
Janssen	2	0
Underlying Conditions		
Yes	197	46
No	230	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
1269364	427	1048810	6892	34	657

* 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	727	65
	No	386	35
Hypertension	Yes	453	N/A
Immunocompromised	Yes	47	N/A
Chronic Heart Disease	Yes	238	N/A
Chronic Liver Disease	Yes	23	N/A
Chronic Kidney Disease	Yes	143	N/A
Diabetes	Yes	288	N/A
Neurologic/Neurodevelopmental	Yes	73	N/A
Chronic Lung Disease	Yes	208	N/A
Historically Healthy	Yes	103	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	197	46
	No	230	54
Hypertension	Yes	134	N/A
Immunocompromised	Yes	17	N/A
Chronic Heart Disease	Yes	75	N/A
Chronic Liver Disease	Yes	4	N/A
Chronic Kidney Disease	Yes	48	N/A
Diabetes	Yes	84	N/A
Neurologic/Neurodevelopmental	Yes	19	N/A
Chronic Lung Disease	Yes	61	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).