

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: March 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

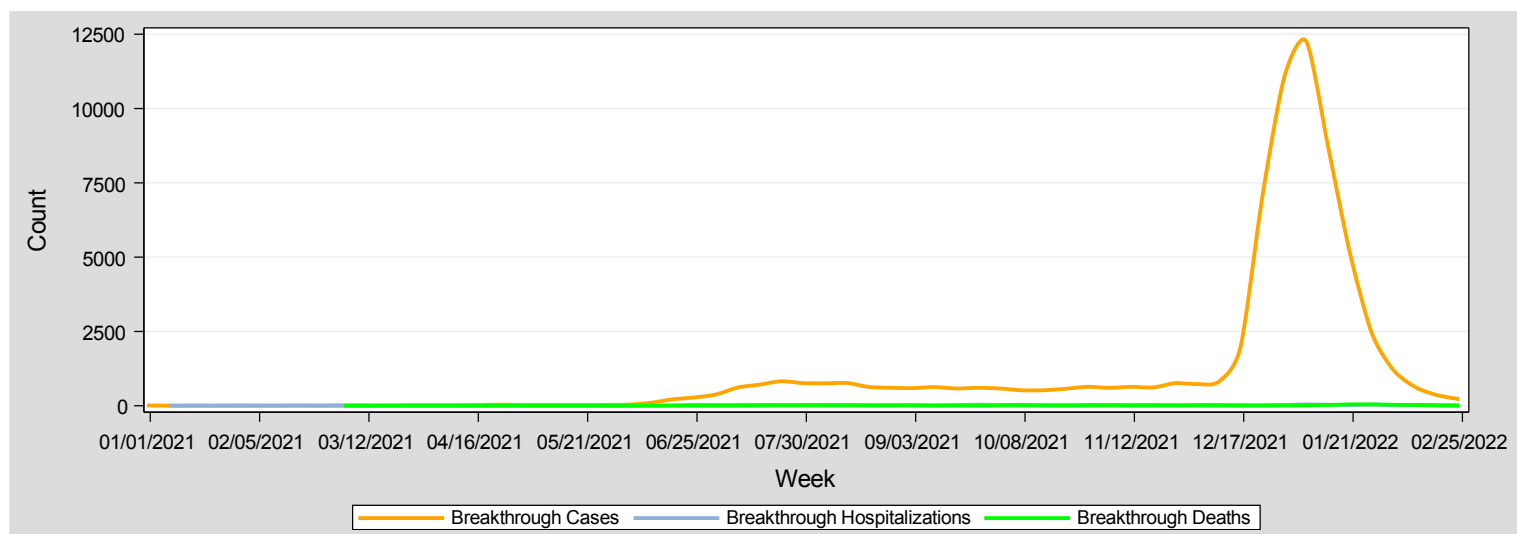


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

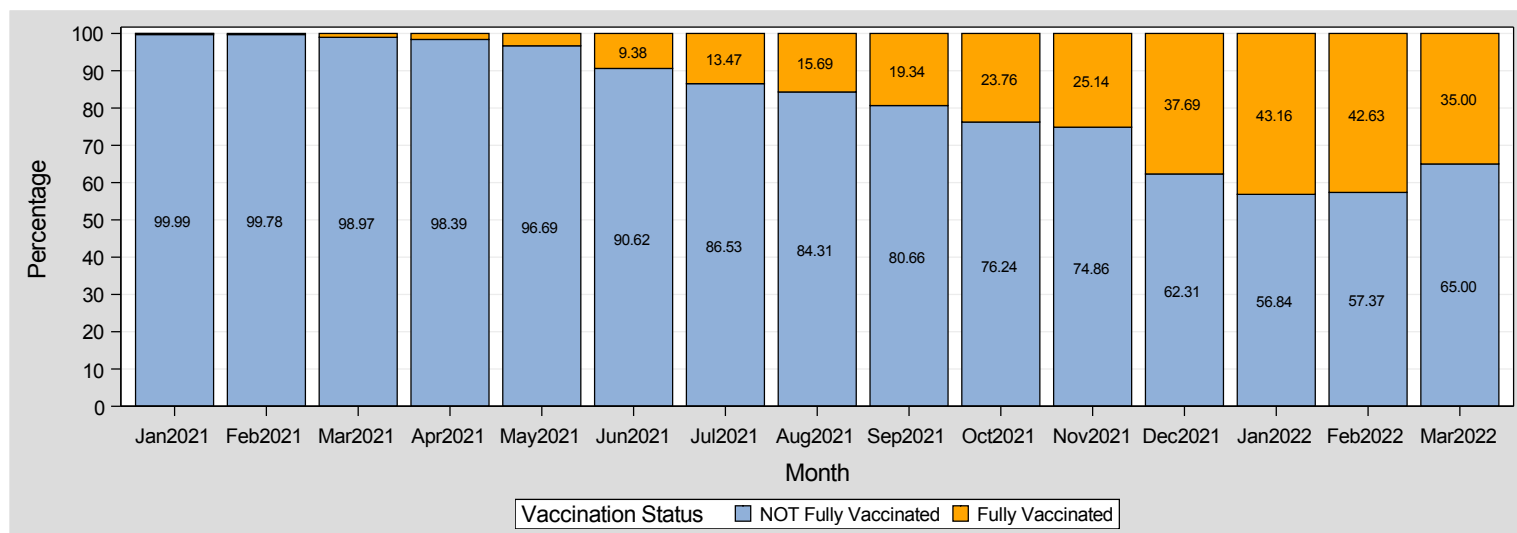


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	68232	100
Age (in years)		
5-17	4649	7
18-24	6694	10
25-49	31475	46
50-64	15149	22
65+	10265	15
Gender		
Male	29039	43
Female	38669	57
Unknown	524	1
Race/Ethnicity		
Hispanic	14088	21
White	20594	30
Black	4993	7
API	8539	13
AEA	49	0
Other	5952	9
Unknown	14017	21
Travel History		
Yes	2086	3
No	14160	21
Unknown	51986	76
Hospitalization		
Yes	1234	2
No	15765	23
Unknown	51233	75
Death		
Yes	483	1
No	3635	5
Unknown	64114	94
Vaccine Type		
Pfizer	48409	71
Unknown	543	1
Moderna	18961	28
Janssen	319	0
Underlying Conditions		
Yes	7013	10
No	61219	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
1280970	68232	1037204	420356	5327	40528

* 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>	1234	100
Age (in years)		
5-17	6	0
18-24	10	1
25-49	113	9
50-64	209	17
65+	896	73
Gender		
Male	694	56
Female	539	44
Unknown	1	0
Race/Ethnicity		
Hispanic	175	14
White	700	57
Black	134	11
API	114	9
AEA	3	0
Other	36	3
Unknown	72	6
Travel History		
Yes	51	4
No	660	53
Unknown	523	42
Death		
Yes	386	31
No	166	13
Unknown	682	55
Vaccine Type		
Pfizer	783	63
Unknown	35	3
Moderna	411	33
Janssen	5	0
Underlying Conditions		
Yes	802	65
No	432	35

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	483	100
Age (in years)		
25-49	12	2
50-64	64	13
65+	407	84
Gender		
Male	302	63
Female	181	37
Race/Ethnicity		
Hispanic	65	13
White	301	62
Black	52	11
API	50	10
AEA	2	0
Other	5	1
Unknown	8	2
Variant of concern (VOC)		
Epsilon	1	0
Delta	16	3
Alpha	1	0
Unknown	465	96
Hospitalization		
Yes	386	80
No	23	5
Unknown	74	15
Vaccine Type		
Pfizer	305	63
Unknown	15	3
Moderna	160	33
Janssen	3	1
Underlying Conditions		
Yes	231	48
No	252	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
1280970	483	1037204	7055	38	680

* 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	802	65
	No	432	35
Hypertension	Yes	494	N/A
Immunocompromised	Yes	49	N/A
Chronic Heart Disease	Yes	265	N/A
Chronic Liver Disease	Yes	25	N/A
Chronic Kidney Disease	Yes	158	N/A
Diabetes	Yes	309	N/A
Neurologic/Neurodevelopmental	Yes	78	N/A
Chronic Lung Disease	Yes	222	N/A
Historically Healthy	Yes	113	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	231	48
	No	252	52
Hypertension	Yes	153	N/A
Immunocompromised	Yes	20	N/A
Chronic Heart Disease	Yes	92	N/A
Chronic Liver Disease	Yes	5	N/A
Chronic Kidney Disease	Yes	57	N/A
Diabetes	Yes	95	N/A
Neurologic/Neurodevelopmental	Yes	22	N/A
Chronic Lung Disease	Yes	67	N/A
Historically Healthy	Yes	8	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).