

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: February 14, 2023

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

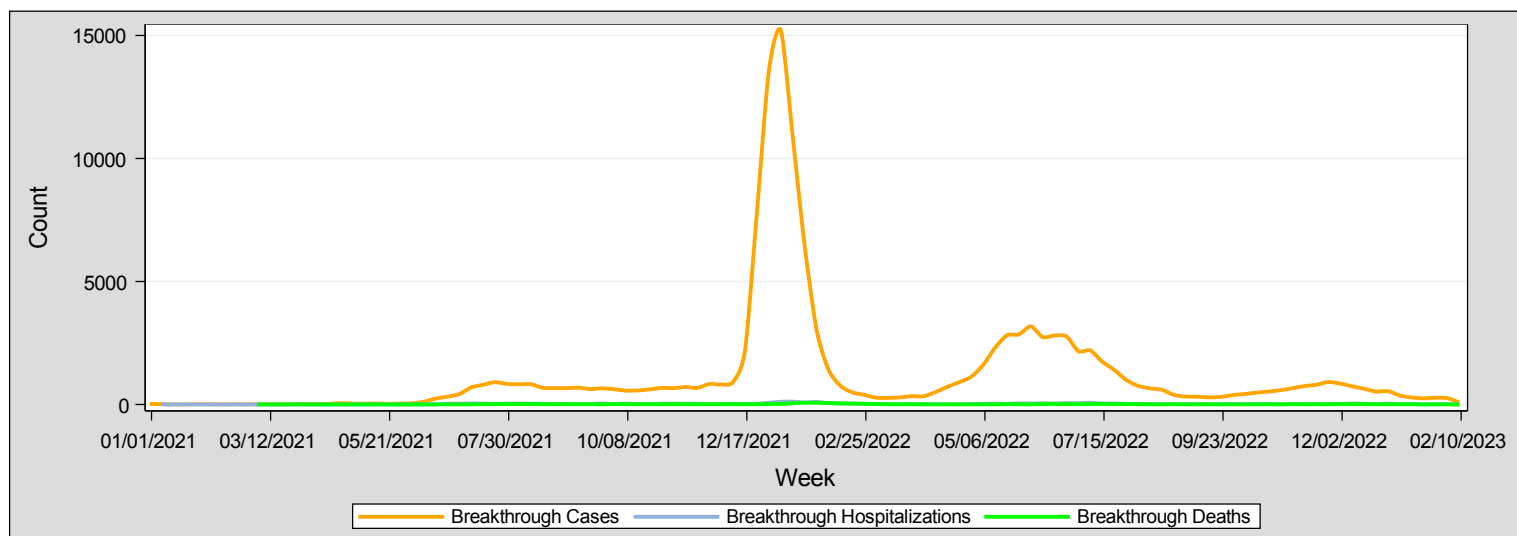


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

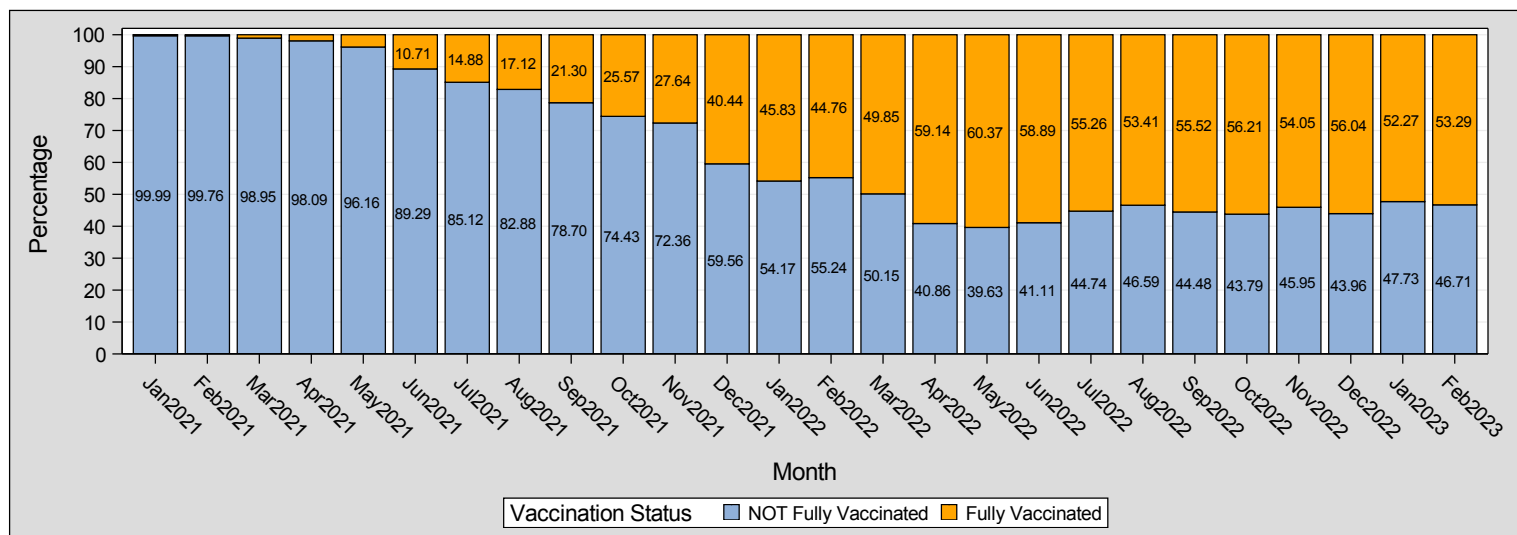


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	130322	100
Age (in years)		
0-4	10	0
5-11	1570	1
12-17	5983	5
18-24	11110	9
25-49	56822	44
50-64	31059	24
65+	23768	18
Gender		
Male	56825	44
Female	72533	56
Unknown	964	1
Race/Ethnicity		
Hispanic	26954	21
White	41660	32
Black	10275	8
API	16718	13
AEA	454	0
Other	9213	7
Unknown	25048	19
Travel History		
Yes	5720	4
No	36308	28
Unknown	88294	68
Hospitalization		
Yes	3403	3
No	41019	31
Unknown	85900	66
Death		
Yes	1214	1
No	10155	8
Unknown	118953	91
Vaccine Type		
Pfizer	87117	67
Novavax	5	0
Unknown	1123	1
Moderna	35019	27
Janssen	7057	5
Emergen	1	0
Underlying Conditions		
Yes	20129	15
No	110193	85

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
880094	130322	1438080	468462	14808	32576

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3403	100
Age (in years)		
5-11	5	0
12-17	20	1
18-24	34	1
25-49	344	10
50-64	591	17
65+	2409	71
Gender		
Male	1850	54
Female	1549	46
Unknown	4	0
Race/Ethnicity		
Hispanic	423	12
White	1986	58
Black	380	11
API	335	10
AEA	15	0
Other	103	3
Unknown	161	5
Travel History		
Yes	144	4
No	1743	51
Unknown	1516	45
Death		
Yes	860	25
No	613	18
Unknown	1930	57
Vaccine Type		
Pfizer	1977	58
Unknown	87	3
Moderna	1088	32
Janssen	251	7
Underlying Conditions		
Yes	2455	72
No	948	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1214	100
Age (in years)		
<i>25-49</i>	37	3
<i>50-64</i>	146	12
<i>65+</i>	1031	85
Gender		
<i>Male</i>	732	60
<i>Female</i>	482	40
Race/Ethnicity		
<i>Hispanic</i>	132	11
<i>White</i>	818	67
<i>Black</i>	127	10
<i>API</i>	115	9
<i>AEA</i>	6	0
<i>Other</i>	10	1
<i>Unknown</i>	6	0
Hospitalization		
<i>Yes</i>	860	71
<i>No</i>	77	6
<i>Unknown</i>	277	23
Vaccine Type		
<i>Pfizer</i>	665	55
<i>Unknown</i>	29	2
<i>Moderna</i>	398	33
<i>Janssen</i>	122	10
Underlying Conditions		
<i>Yes</i>	695	57
<i>No</i>	519	43

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
880094	1214	1438080	8087	138	562

* 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	2455	72
	No	948	28
Hypertension	Yes	1565	N/A
Immunocompromised	Yes	137	N/A
Chronic Heart Disease	Yes	734	N/A
Chronic Liver Disease	Yes	63	N/A
Chronic Kidney Disease	Yes	481	N/A
Diabetes	Yes	915	N/A
Neurologic/Neurodevelopmental	Yes	205	N/A
Chronic Lung Disease	Yes	647	N/A
Historically Healthy	Yes	294	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	695	57
	No	519	43
Hypertension	Yes	447	N/A
Immunocompromised	Yes	50	N/A
Chronic Heart Disease	Yes	251	N/A
Chronic Liver Disease	Yes	25	N/A
Chronic Kidney Disease	Yes	189	N/A
Diabetes	Yes	267	N/A
Neurologic/Neurodevelopmental	Yes	61	N/A
Chronic Lung Disease	Yes	198	N/A
Historically Healthy	Yes	26	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).