

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: January 10, 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

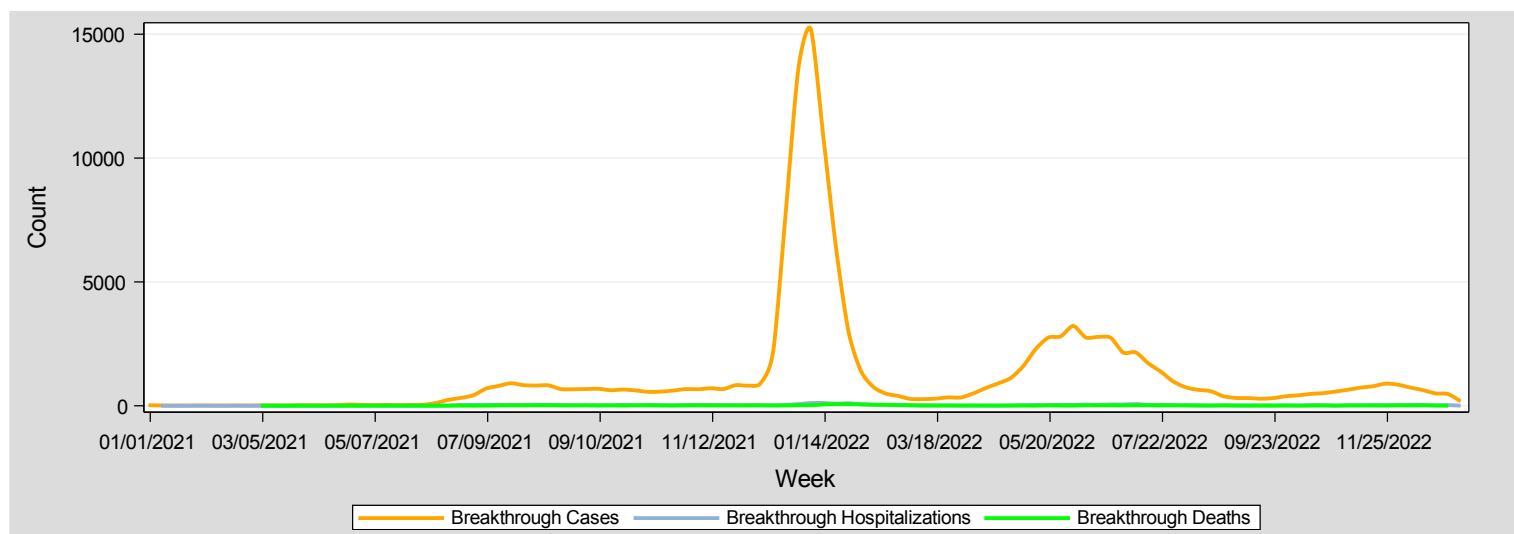


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

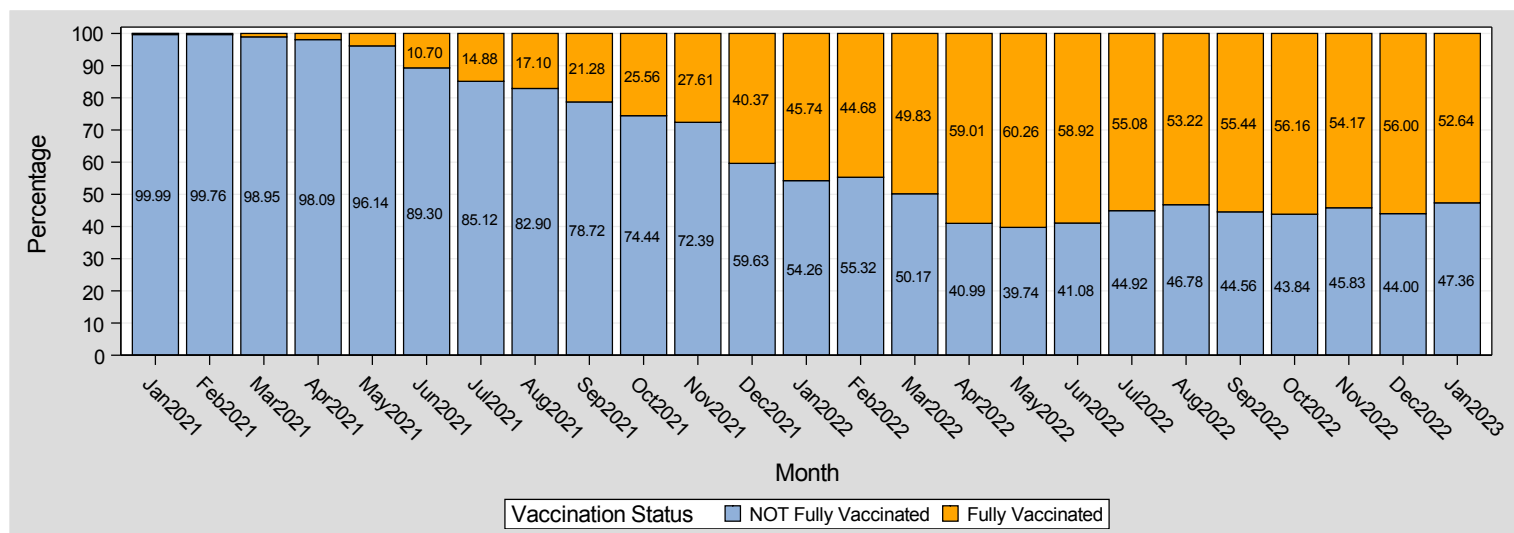


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	128383	100
Age (in years)		
<i>0-4</i>	4	0
<i>5-11</i>	1548	1
<i>12-17</i>	5928	5
<i>18-24</i>	10996	9
<i>25-49</i>	56165	44
<i>50-64</i>	30551	24
<i>65+</i>	23191	18
Gender		
<i>Male</i>	55942	44
<i>Female</i>	71473	56
<i>Unknown</i>	968	1
Race/Ethnicity		
<i>Hispanic</i>	26357	21
<i>White</i>	40733	32
<i>Black</i>	10033	8
<i>API</i>	16343	13
<i>AEA</i>	443	0
<i>Other</i>	9189	7
<i>Unknown</i>	25285	20
Travel History		
<i>Yes</i>	5492	4
<i>No</i>	34457	27
<i>Unknown</i>	88434	69
Hospitalization		
<i>Yes</i>	3243	3
<i>No</i>	38866	30
<i>Unknown</i>	86274	67
Death		
<i>Yes</i>	1174	1
<i>No</i>	9632	8
<i>Unknown</i>	117577	92
Vaccine Type		
<i>Pfizer</i>	85841	67
<i>Novavax</i>	5	0
<i>Unknown</i>	1090	1
<i>Moderna</i>	34446	27
<i>Janssen</i>	7000	5
<i>Emergen</i>	1	0
Underlying Conditions		
<i>Yes</i>	19116	15
<i>No</i>	109267	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
860057	128383	1458117	467002	14927	32028

Table 3: Population Characteristics of COVID-19 Breakthrough Hospitalizations

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	3243	100
Age (in years)		
5-11	5	0
12-17	18	1
18-24	31	1
25-49	333	10
50-64	563	17
65+	2293	71
Gender		
Male	1760	54
Female	1479	46
Unknown	4	0
Race/Ethnicity		
Hispanic	402	12
White	1884	58
Black	367	11
API	319	10
AEA	15	0
Other	99	3
Unknown	157	5
Travel History		
Yes	140	4
No	1678	52
Unknown	1425	44
Death		
Yes	822	25
No	578	18
Unknown	1843	57
Vaccine Type		
Pfizer	1890	58
Unknown	80	2
Moderna	1032	32
Janssen	241	7
Underlying Conditions		
Yes	2343	72
No	900	28

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1174	100
Age (in years)		
<i>25-49</i>	37	3
<i>50-64</i>	140	12
<i>65+</i>	997	85
Gender		
<i>Male</i>	707	60
<i>Female</i>	467	40
Race/Ethnicity		
<i>Hispanic</i>	130	11
<i>White</i>	790	67
<i>Black</i>	121	10
<i>API</i>	113	10
<i>AEA</i>	6	1
<i>Other</i>	10	1
<i>Unknown</i>	4	0
Hospitalization		
<i>Yes</i>	822	70
<i>No</i>	76	6
<i>Unknown</i>	276	24
Vaccine Type		
<i>Pfizer</i>	647	55
<i>Unknown</i>	27	2
<i>Moderna</i>	380	32
<i>Janssen</i>	120	10
Underlying Conditions		
<i>Yes</i>	672	57
<i>No</i>	502	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
860057	1174	1458117	8065	137	553

* 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	2343	72
	No	900	28
Hypertension	Yes	1497	N/A
Immunocompromised	Yes	131	N/A
Chronic Heart Disease	Yes	710	N/A
Chronic Liver Disease	Yes	62	N/A
Chronic Kidney Disease	Yes	466	N/A
Diabetes	Yes	876	N/A
Neurologic/Neurodevelopmental	Yes	197	N/A
Chronic Lung Disease	Yes	618	N/A
Historically Healthy	Yes	285	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	672	57
	No	502	43
Hypertension	Yes	432	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	242	N/A
Chronic Liver Disease	Yes	24	N/A
Chronic Kidney Disease	Yes	187	N/A
Diabetes	Yes	256	N/A
Neurologic/Neurodevelopmental	Yes	59	N/A
Chronic Lung Disease	Yes	195	N/A
Historically Healthy	Yes	27	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).