

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: May 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

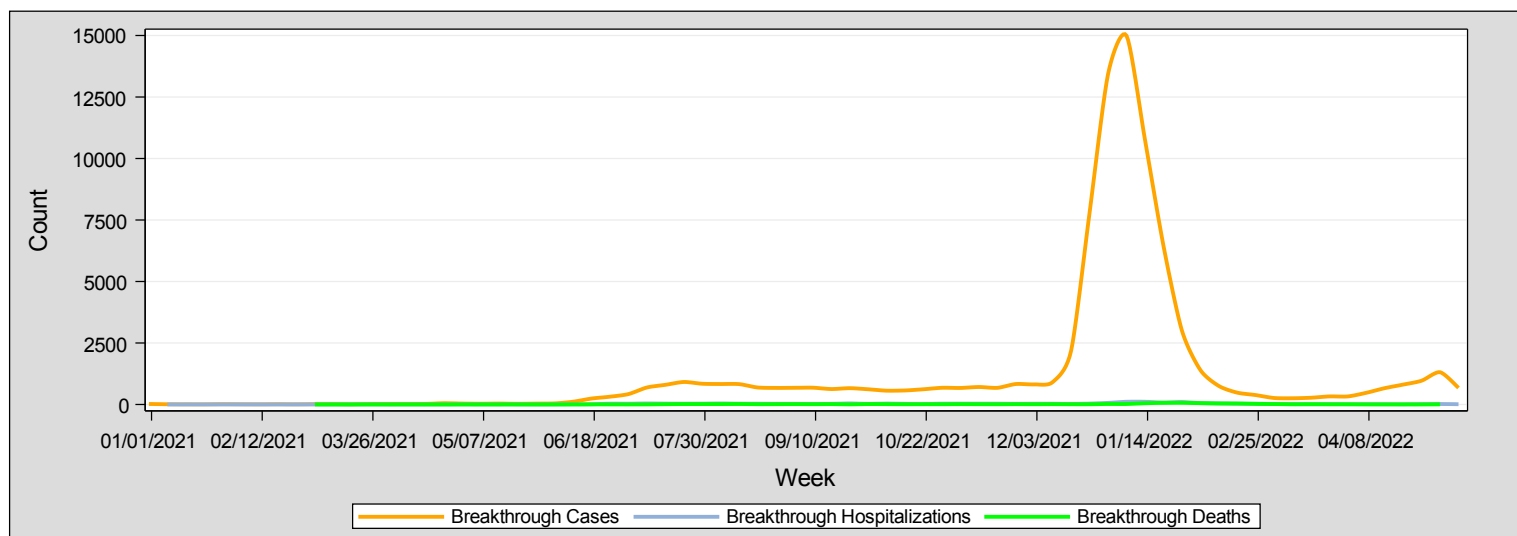


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

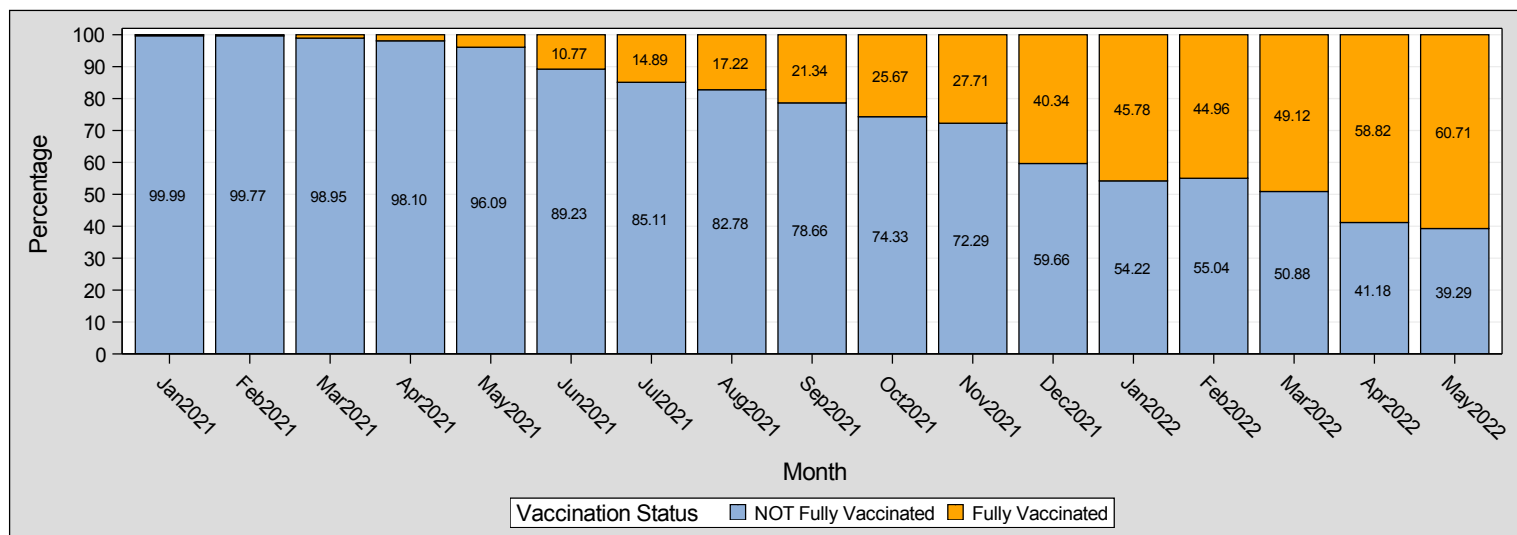


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	87171	100
Age (in years)		
5-11	940	1
12-17	4597	5
18-24	8140	9
25-49	40537	47
50-64	19872	23
65+	13085	15
Gender		
Male	38162	44
Female	48384	56
Unknown	625	1
Race/Ethnicity		
Hispanic	18745	22
White	26449	30
Black	6416	7
API	10607	12
AEA	73	0
Other	7164	8
Unknown	17717	20
Travel History		
Yes	2866	3
No	19632	23
Unknown	64673	74
Hospitalization		
Yes	1976	2
No	21992	25
Unknown	63203	73
Death		
Yes	802	1
No	5152	6
Unknown	81217	93
Vaccine Type		
Pfizer	57873	66
Unknown	658	1
Moderna	22830	26
Janssen	5810	7
Underlying Conditions		
Yes	10549	12
No	76622	88

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
1297056	87171	1021118	431640	6721	42271

* 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>	1976	100
Age (in years)		
5-11	3	0
12-17	11	1
18-24	16	1
25-49	210	11
50-64	345	17
65+	1391	70
Gender		
Male	1090	55
Female	883	45
Unknown	3	0
Race/Ethnicity		
Hispanic	269	14
White	1098	56
Black	226	11
API	190	10
AEA	5	0
Other	65	3
Unknown	123	6
Travel History		
Yes	70	4
No	962	49
Unknown	944	48
Death		
Yes	589	30
No	311	16
Unknown	1076	54
Vaccine Type		
Pfizer	1146	58
Unknown	49	2
Moderna	602	30
Janssen	179	9
Underlying Conditions		
Yes	1388	70
No	588	30

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	802	100
Age (in years)		
25-49	28	3
50-64	109	14
65+	665	83
Gender		
Male	480	60
Female	317	40
Unknown	5	1
Race/Ethnicity		
Hispanic	99	12
White	516	64
Black	86	11
API	80	10
AEA	3	0
Other	7	1
Unknown	11	1
Hospitalization		
Yes	589	73
No	52	6
Unknown	161	20
Vaccine Type		
Pfizer	441	55
Unknown	19	2
Moderna	243	30
Janssen	99	12
Underlying Conditions		
Yes	466	58
No	336	42

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
1297056	802	1021118	7679	62	752

* 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	1388	70
	No	588	30
Hypertension	Yes	882	N/A
Immunocompromised	Yes	80	N/A
Chronic Heart Disease	Yes	425	N/A
Chronic Liver Disease	Yes	38	N/A
Chronic Kidney Disease	Yes	283	N/A
Diabetes	Yes	521	N/A
Neurologic/Neurodevelopmental	Yes	124	N/A
Chronic Lung Disease	Yes	378	N/A
Historically Healthy	Yes	173	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	466	58
	No	336	42
Hypertension	Yes	298	N/A
Immunocompromised	Yes	34	N/A
Chronic Heart Disease	Yes	174	N/A
Chronic Liver Disease	Yes	16	N/A
Chronic Kidney Disease	Yes	121	N/A
Diabetes	Yes	181	N/A
Neurologic/Neurodevelopmental	Yes	37	N/A
Chronic Lung Disease	Yes	130	N/A
Historically Healthy	Yes	20	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).