

Weekly COVID-19 Breakthrough Infections Report

Clark County, Nevada

Date: September 27, 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

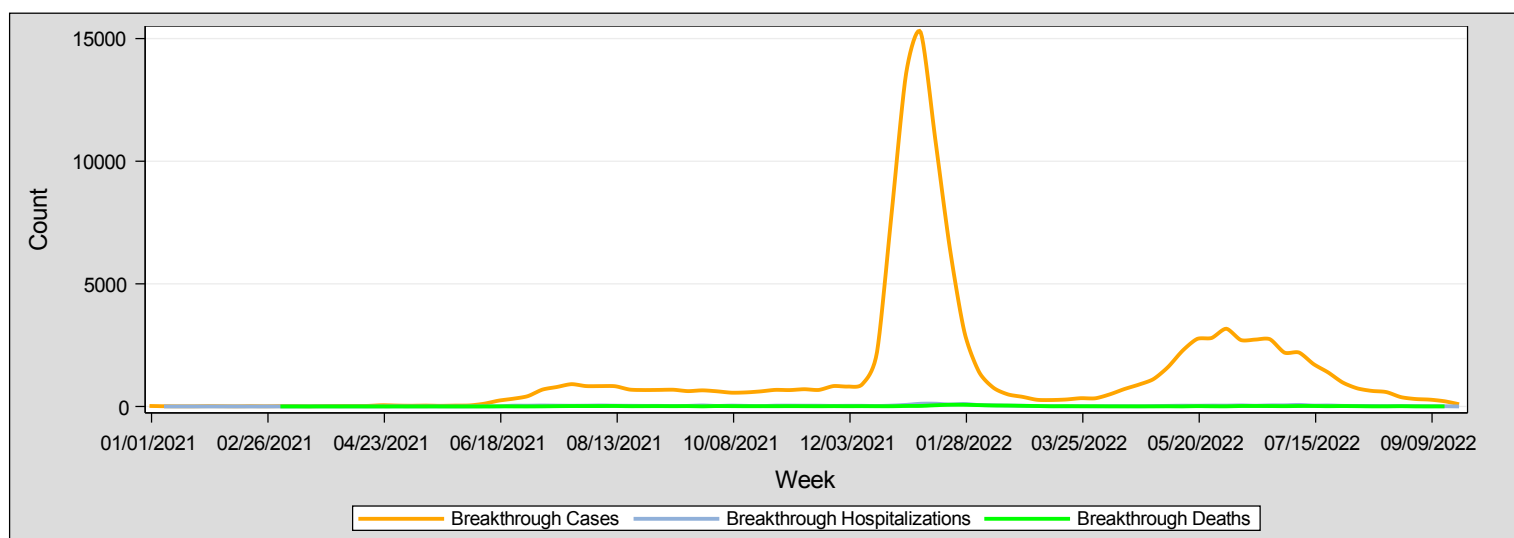


Figure 2: Percentage of Cases among 12 Years and Older By Vaccination Status

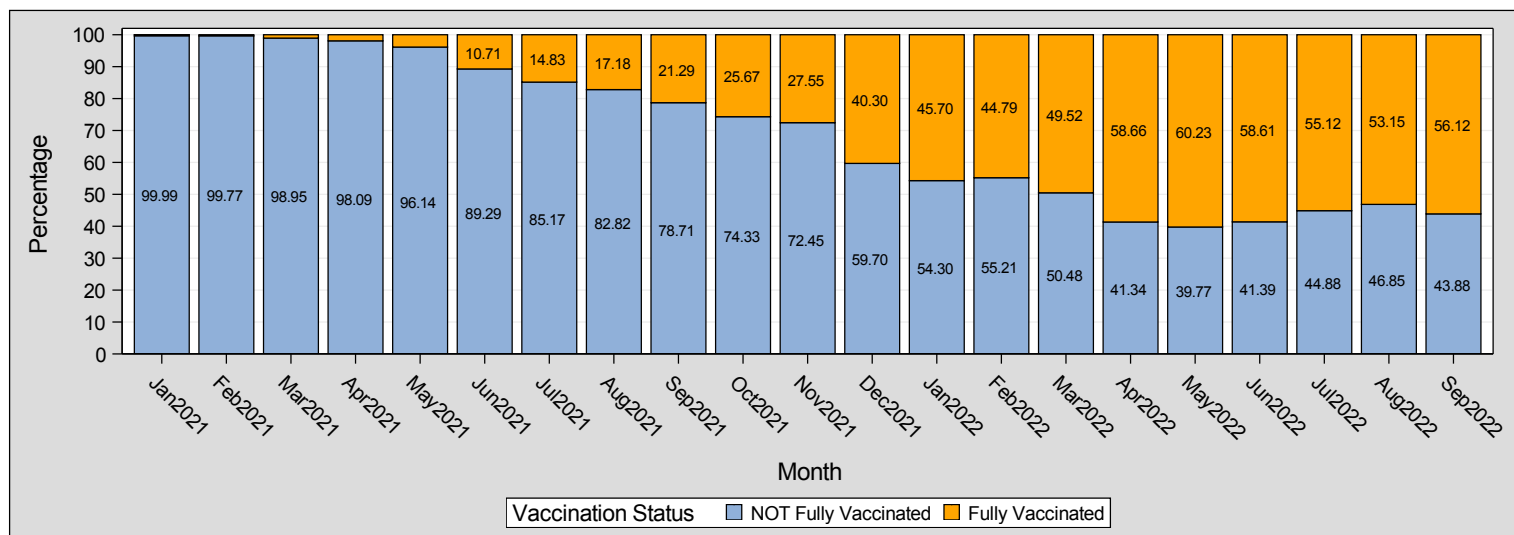


Table 1: Population Characteristics of COVID-19 Breakthrough Cases

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	119208	100
Age (in years)		
5-11	1447	1
12-17	5688	5
18-24	10421	9
25-49	53170	45
50-64	28239	24
65+	20243	17
Gender		
Male	51946	44
Female	66320	56
Unknown	942	1
Race/Ethnicity		
Hispanic	24291	20
White	36988	31
Black	9053	8
API	14990	13
AEA	408	0
Other	8840	7
Unknown	24638	21
Travel History		
Yes	4685	4
No	28652	24
Unknown	85871	72
Hospitalization		
Yes	2733	2
No	32490	27
Unknown	83985	70
Death		
Yes	1036	1
No	7838	7
Unknown	110334	93
Vaccine Type		
Pfizer	78964	66
Unknown	968	1
Moderna	32476	27
Janssen	6799	6
Emergen	1	0
Underlying Conditions		
Yes	15908	13
No	103300	87

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
1319105	119208	999069	458996	9037	45942

* 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>	2733	100
Age (in years)		
5-11	4	0
12-17	16	1
18-24	28	1
25-49	277	10
50-64	481	18
65+	1927	71
Gender		
Male	1471	54
Female	1258	46
Unknown	4	0
Race/Ethnicity		
Hispanic	343	13
White	1560	57
Black	320	12
API	269	10
AEA	12	0
Other	85	3
Unknown	144	5
Travel History		
Yes	111	4
No	1357	50
Unknown	1265	46
Death		
Yes	742	27
No	448	16
Unknown	1543	56
Vaccine Type		
Pfizer	1591	58
Unknown	60	2
Moderna	856	31
Janssen	226	8
Underlying Conditions		
Yes	1950	71
No	783	29

Table 4: Population Characteristics of COVID-19 Breakthrough Deaths

	<i>Overall</i>	
	<i>N</i>	<i>%</i>
<i>All</i>	1036	100
Age (in years)		
25-49	32	3
50-64	128	12
65+	876	85
Gender		
Male	611	59
Female	425	41
Race/Ethnicity		
Hispanic	117	11
White	687	66
Black	111	11
API	103	10
AEA	6	1
Other	9	1
Unknown	3	0
Hospitalization		
Yes	742	72
No	67	6
Unknown	227	22
Vaccine Type		
Pfizer	565	55
Unknown	24	2
Moderna	334	32
Janssen	113	11
Underlying Conditions		
Yes	607	59
No	429	41

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
1319105	1036	999069	7945	79	795

* 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	1950	71
	No	783	29
Hypertension	Yes	1253	N/A
Immunocompromised	Yes	114	N/A
Chronic Heart Disease	Yes	586	N/A
Chronic Liver Disease	Yes	48	N/A
Chronic Kidney Disease	Yes	397	N/A
Diabetes	Yes	728	N/A
Neurologic/Neurodevelopmental	Yes	174	N/A
Chronic Lung Disease	Yes	524	N/A
Historically Healthy	Yes	231	N/A

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

Variable	Outcome	N	%
Underlying Medical Condition	Yes	607	59
	No	429	41
Hypertension	Yes	392	N/A
Immunocompromised	Yes	48	N/A
Chronic Heart Disease	Yes	219	N/A
Chronic Liver Disease	Yes	19	N/A
Chronic Kidney Disease	Yes	165	N/A
Diabetes	Yes	235	N/A
Neurologic/Neurodevelopmental	Yes	52	N/A
Chronic Lung Disease	Yes	180	N/A
Historically Healthy	Yes	23	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).