

COVID-19 Vaccination Demographic Data Analysis

December 15, 2020 – July 25, 2021

Table 1: COVID-19 vaccination status among Snohomish County residents having initiated vaccination

Vaccine status	People initiating vaccination	Percent of eligible population	Snohomish County eligible population (≥12 years)
Fully vaccinated	440,087	62%	---
Partially vaccinated	39,651	6%	---
Total number of people initiating vaccination	479,738	68%	706,950

Table 2: COVID-19 vaccine initiation by sex at birth, Snohomish County

Sex at birth	People initiating vaccination	Percent of people initiating vaccination	People fully vaccinated	Percent fully vaccinated	People partially vaccinated	Percent partially vaccinated	Eligible population (≥12 years)
Female	250,647	71%	230,635	65.2%	20,012	5.7%	353,734
Male	227,776	64%	208,310	59.0%	19,466	5.5%	353,216
Unknown	1,315	---	1,142	---	173		---
Total persons initiating vaccination	479,738	68%	440,087	62.3%	39,651	5.6%	706,950

Table 3: COVID-19 vaccine initiation by age group, Snohomish County

Age group in years	People initiating vaccination	Percent of people initiating vaccination	People fully vaccinated	Percent fully vaccinated	People partially vaccinated	Percent partially vaccinated	Eligible population (≥12 years)
12 to 15	19,284	45%	16,010	37.7%	3,274	7.7%	42,493
16 to 19	22,448	62%	19,765	54.6%	2,683	7.4%	36,208
20 to 34	98,055	64%	87,847	57.7%	10,208	6.7%	152,342
35 to 49	118,749	67%	109,026	61.7%	9,723	5.5%	176,569
50 to 64	119,481	70%	111,207	65.5%	8,274	4.9%	169,752
65+	101,721	78%	96,232	74.3%	5,489	4.2%	129,586
Total initiating vaccination	479,738	68%	440,087	62.3%	39,651	5.6%	706,950

Table 4: COVID-19 vaccine initiation by race and ethnicity, Snohomish County

Race/Ethnicity	People initiating vaccination	Percent of people initiating vaccination	People fully vaccinated	Percent fully vaccinated	People partially vaccinated	Percent partially vaccinated	Eligible population (≥12 years)
American Indian/Alaska Native	4,533	58%	4,064	52.3%	469	6.0%	7,774
Asian	66,998	79%	61,960	72.8%	5,038	5.9%	85,065
Black	14,118	67%	12,446	59.0%	1,672	7.9%	21,087
Multiracial	579	2%	539	2.2%	40	0.2%	24,104
Native Hawaiian or Pacific Islander	3,831	98%	3,439	88.1%	392	10.0%	3,904
White	278,986	56%	259,417	52.0%	19,569	3.9%	499,180
Other, non-Hispanic	50,955	---	46,290	---	4,665	---	---
Hispanic - All race	35,759	54%	31,300	47.5%	4,459	6.8%	65,836
Unknown	23,979	---	20,632	---	3,347	---	---
Total	479,738	68%	440,087	62.3%	39,651	5.6%	706,950

Figure 1: COVID-19 vaccine initiation rates by race and ethnicity, Snohomish County

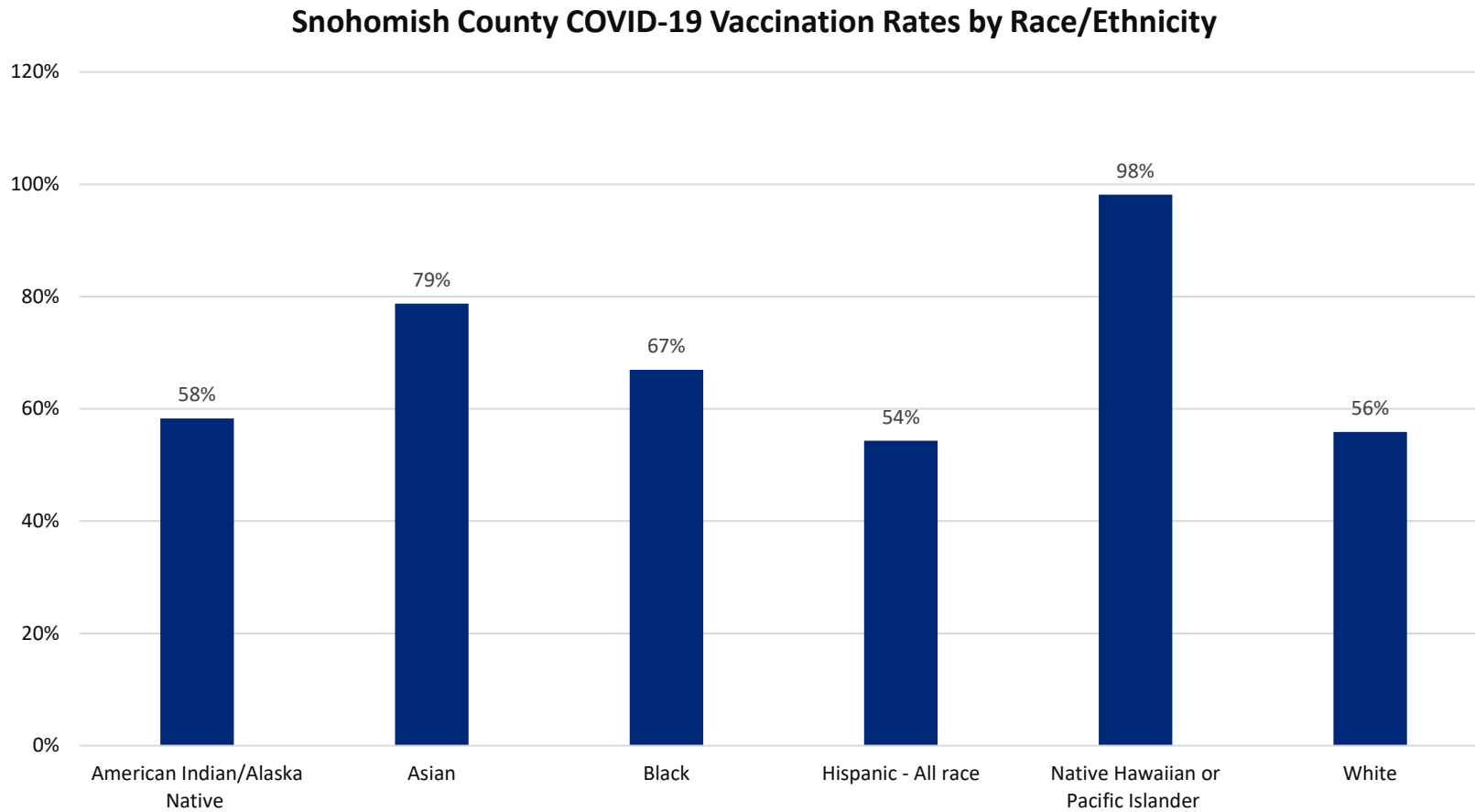


Figure 2: Percent of people who initiated COVID vaccination by race/ethnicity and reporting period

Percent Initiated Vaccination by Race/Ethnicity and Reporting Period Snohomish County

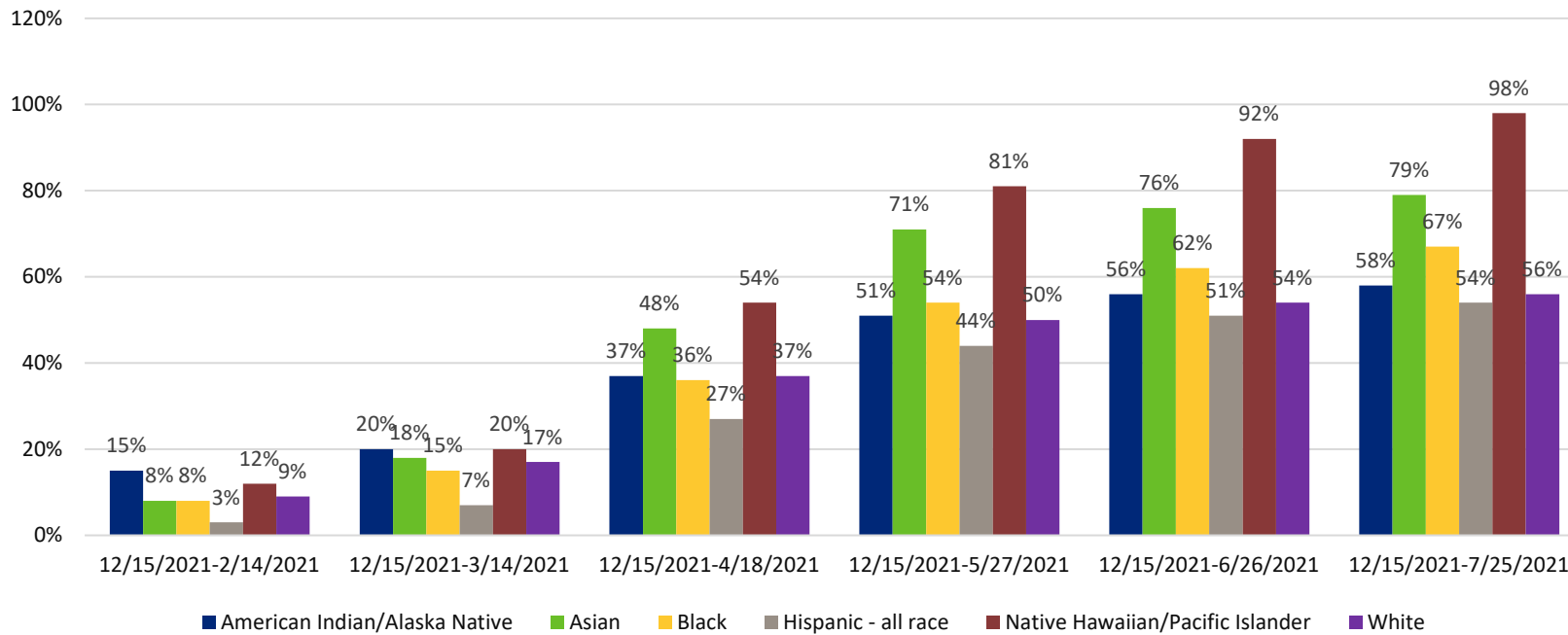


Table 5: COVID-19 vaccine initiation by race and ethnicity relative-risk compared to non-Hispanic White

Race non-Hispanic	People initiating vaccination	Eligible population (≥12 years)	Percent of people initiating vaccination	Relative Risk	95% CI Lower	CI Upper
American Indian/Alaska Native	4,533	7,774	58%	1.0	1.01	1.07
Asian	66,998	85,065	79%	1.4	1.40	1.42
Black	14,118	21,087	67%	1.2	1.18	1.22
Multiracial	579	24,104	2%	0.0	0.04	0.05
Native Hawaiian or Pacific Islander	3,831	3,904	98%	1.8	1.70	1.81
White	278,986	499,180	56%	1.0		
Other, non-Hispanic	50,955	---	---	---	---	---
Hispanic	35,759	65,836	54%	1.0	0.96	0.98
Unknown	23,979	---	---	---	---	---
Total persons initiating vaccination	479,738	706,950	68%	---	---	---

Table 6: COVID-19 vaccine recipients by city of residency, Snohomish County, December 15, 2020 – July 25, 2021

City	Zip	People initiating vaccination	Percent of residents initiating vaccination	Total population
Bothell/Mill Creek	98012	48,769	76%	64,417
Edmonds	98020	15,036	74%	20,322
Bothell	98021	23,607	77%	30,753
Edmonds	98026	25,952	71%	36,729
Lynnwood	98036	27,195	68%	39,766
Lynnwood	98037	19,501	66%	29,402
Mountlake Terrace	98043	14,017	66%	21,126
Woodinville	98072	82	0%	38,364
Lynnwood	98087	24,667	63%	39,221
Everett	98201	17,269	59%	29,484
Everett	98203	20,795	58%	35,603
Everett	98204	22,552	53%	42,882
Everett	98208	35,324	62%	57,306
Arlington	98223	20,821	49%	42,880
Darrington	98241	883	46%	1,921
Gold Bar	98251	2,012	52%	3,846
Granite Falls	98252	4,678	49%	9,603
Lake Stevens	98258	26,819	81%	32,959
Marysville	98270	27,251	53%	50,972
Marysville	98271	15,701	55%	28,585
Monroe	98272	15,876	51%	31,416
Mukilteo	98275	15,419	73%	21,264
Snohomish	98290	20,005	56%	35,990
Stanwood	98292	12,594	56%	22,547
Sultan	98294	3,365	47%	7,127
Snohomish	98296	16,828	55%	30,373
Total	---	477,018	57%	830,500

*NOTES: 1. Data for this table is from the WAIS repository dataset 7/25/2021. Population data per zip code is from the 2018 data.census.gov. 2. Due to limitations in the data set, vaccine coverage figures may not be accurate. These data provide a rough estimate of coverage with respect to geography. For further details, see item 4 under “Data Assumptions/Caveats” in the Appendix.

Appendix A: Data cleaning and assumptions

1. All data is from the Washington State Department of Health Internal Data Dashboard, except for table 6.
2. Table 6 data is from the Washington State Immunization Information System repository dataset.

Data cleaning steps for table 6:

1. Final export is 1 row per RecipientID (unique person ID in repository) using last reported address data by vaccine administration date.
2. Remove known fake records.
3. Remove any records where vaccine was refused.
4. Remove duplicates and records where difference in days between vaccine administration dates is <6. Will need to run through a couple times to account for people who have >1 pair of records that meet these criteria.
 - a) remove exact duplicates on person, vaccine date, vaccine type
 - b) remove remaining records where difference in days between vaccine administration dates is <6. Keep most recently entered.
5. Deduplicate so that only 1 record per RecipientID remains, keeping the most recent record by vax administration date.
6. Recode unincorporated/PO box zip codes to the incorporated/parent zip code.
7. Keep zip codes of interest, exclude the rest. Exclude Woodinville (98072) where county is King (53033). This step excludes by person, not by record.
8. Export dataset with variables RecipientID, city, and zip code.
9. Export frequency table of records by zip code.

Data Assumptions/caveats:

1. Dataset is a snapshot of the WAIS backend/repository data. If an existing/historic record is updated in WAIS, updates will not be reflected in subsequent datasets on that exact row. Updated records may be reported as duplicates in the repository. General cleaning step 4 addresses this issue. This cleaning process is an attempt to mimic:
 - 1.1. the WAIS deduplication process (i.e., general step 4 to keep most recent record when vaccines administered within 5 days of each other)
 - 1.2. what may be shown in the final WAIS dataset of "true" vaccine doses administered
2. RecipientID is the variable used by DOH for unique identifier per person but is known to have some issues/inconsistencies. To be consistent with DOH, we use this unique identifier as well.
3. County code is based on zip code. There are known data quality issues with incorrect zip codes entered, resulting in incorrect county code. Also, several misspelled cities and occasional non-character cities. Addresses are not geocoded and have not been verified to be true locations or residence. Some cities/zip codes may be mismatched or misspelled.
4. Very few (<20) records of fake data are known to exist in the dataset. Those known to exist have been removed.