

## COVID-19 Vaccination Demographic Data Analysis December 15, 2020 – May 27, 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	345,626	49%	---
Partially vaccinated	82,278	12%	---
<b>Total number of people initiating vaccination</b>	<b>427,904</b>	<b>61%</b>	<b>706,950</b>

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	225,943	64%	185,261	52.4%	40,682	11.5%	353,734
Male	200,708	57%	159,444	45.1%	41,264	11.7%	353,216
Unknown	1,253	---	921	---	332		---
<b>Total persons initiating vaccination</b>	<b>427,904</b>	<b>61%</b>	<b>345,626</b>	<b>48.9%</b>	<b>82,278</b>	<b>11.6%</b>	<b>706,950</b>

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	11,320	27%	17	0.0%	11303	26.6%	42,493
16 to 19	17,740	49%	11,384	31.4%	6356	17.6%	36,208
20 to 34	84,482	55%	64,359	42.2%	20123	13.2%	152,342
35 to 49	106,331	60%	85,853	48.6%	20478	11.6%	176,569
50 to 64	110,602	65%	94,150	55.5%	16452	9.7%	169,752
65+	97,429	75%	89,863	69.3%	7566	5.8%	129,586
<b>Total initiating vaccination</b>	<b>427,904</b>	<b>61%</b>	<b>345,626</b>	<b>48.9%</b>	<b>82278</b>	<b>11.6%</b>	<b>706,950</b>

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	3,931	51%	3,068	39.5%	863	11.1%	7,774
Asian	60,212	71%	48,490	57.0%	11,722	13.8%	85,065
Black	11,463	54%	8,529	40.4%	2,934	13.9%	21,087
Multiracial	501	2%	437	1.8%	64	0.3%	24,104
Native Hawaiian or Pacific Islander	3,154	81%	2,375	60.8%	779	20.0%	3,904
White	251,213	50%	208,153	41.7%	43,060	8.6%	499,180
Other, non-Hispanic	45,964	---	37,288	---	8,676	---	---
Hispanic - All race	28,672	44%	20,257	30.8%	8,415	12.8%	65,836
Unknown	22,794	---	17,029	---	5,765	---	---
<b>Total</b>	<b>427,904</b>	<b>61%</b>	<b>345,626</b>	<b>48.9%</b>	<b>82,278</b>	<b>11.6%</b>	<b>706,950</b>

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

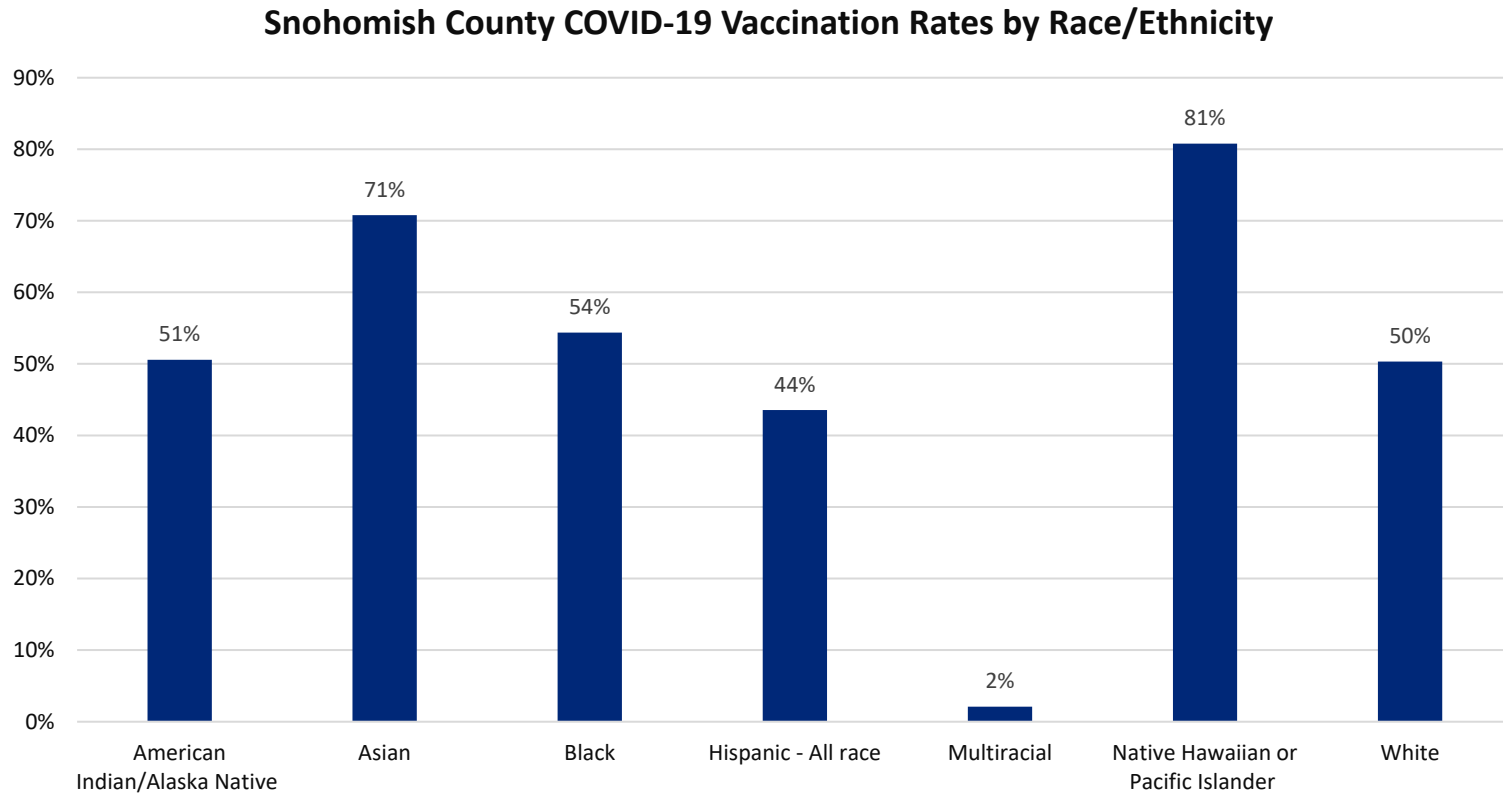


Figure 2: Percent of people who initiated COVID vaccination by race/ethnicity and reporting period

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

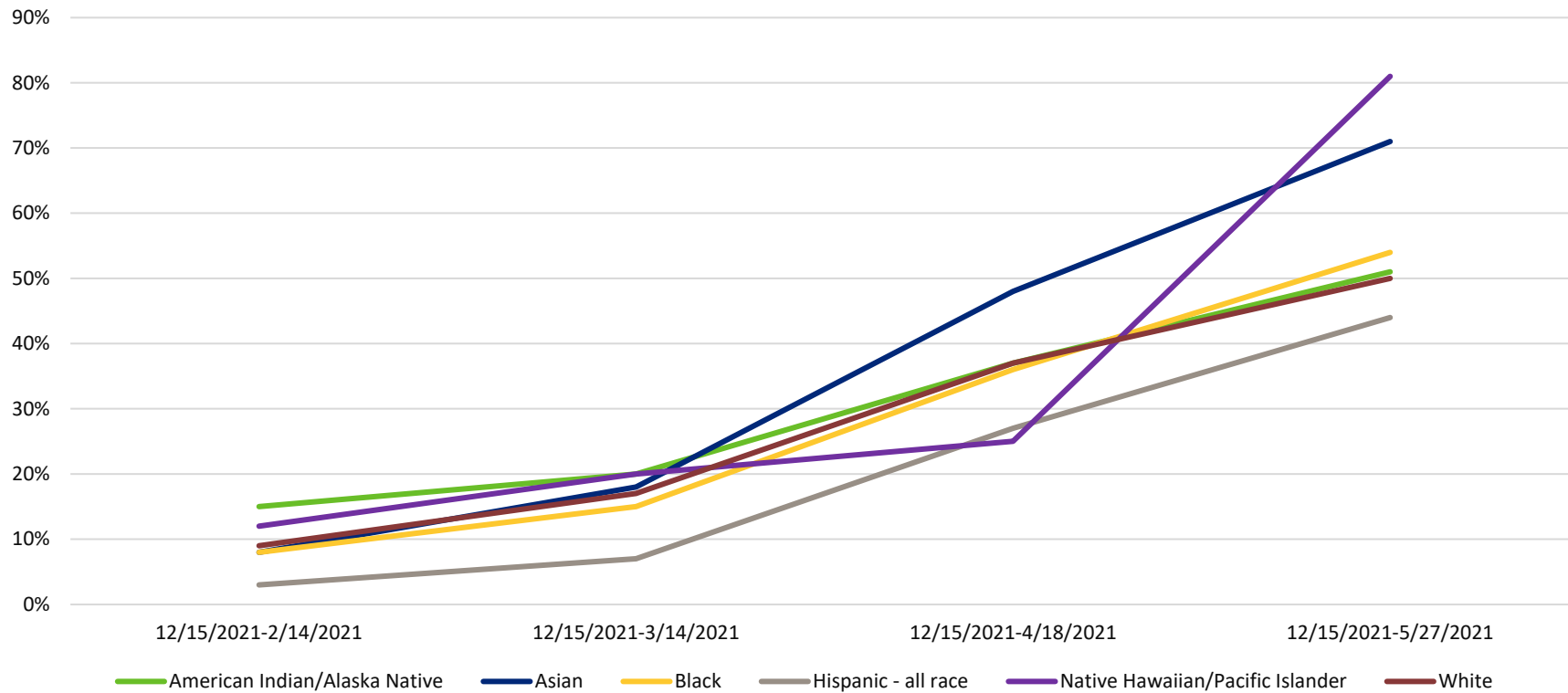


Table 5: COVID-19 vaccine initiation by race and ethnicity relative-risk compared to non-Hispanic White

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	3,931	7,774	51%	1.0	0.97	1.04
Asian	60,212	85,065	71%	1.4	1.40	1.42
Black	11,463	21,087	54%	1.1	1.06	1.10
Multiracial	501	24,104	2%	0.0	0.04	0.05
Native Hawaiian or Pacific Islander	3,154	3,904	81%	1.6	1.55	1.66
White	251,213	499,180	50%	1.0		
Other, non-Hispanic	45,964	---	---	---	---	---
Hispanic	28,672	65,836	44%	0.9	0.86	0.88
Unknown	22,794	---	---	---	---	---
<b>Total persons initiating vaccination</b>	<b>427,904</b>	<b>706,950</b>	<b>61%</b>	<b>---</b>	<b>---</b>	<b>---</b>

Table 6: COVID-19 vaccine recipients by city of residency, Snohomish County, December 15, 2020 – May 23, 2020

City	Zip	People initiating vaccination	Percent of residents initiating vaccination	Total population
Bothell/Mill Creek	98012	43,193	67%	64,417
Edmonds	98020	14,038	69%	20,322
Bothell	98021	21,205	69%	30,753
Edmonds	98026	23,554	64%	36,729
Lynnwood	98036	24,060	61%	39,766
Lynnwood	98037	17,164	58%	29,402
Mountlake Terrace	98043	12,442	59%	21,126
Woodinville	98072	11	0%	38,364
Lynnwood	98087	21,373	54%	39,221
Everett	98201	14,727	50%	29,484
Everett	98203	17,834	50%	35,603
Everett	98204	18,162	42%	42,882
Everett	98208	30,667	54%	57,306
Arlington	98223	18,188	42%	42,880
Darrington	98241	782	41%	1,921
Gold Bar	98251	1,647	43%	3,846
Granite Falls	98252	3,922	41%	9,603
Lake Stevens	98258	22,775	69%	32,959
Marysville	98270	23,040	45%	50,972
Marysville	98271	13,495	47%	28,585
Monroe	98272	13,473	43%	31,416
Mukilteo	98275	13,914	65%	21,264
Snohomish	98290	17,784	49%	35,990
Stanwood	98292	11,225	50%	22,547
Sultan	98294	2,711	38%	7,127
Snohomish	98296	15,029	49%	30,373
<b>Total</b>	---	<b>416,415</b>	<b>50%</b>	<b>830,500</b>

\*NOTES: 1. Data for this table is from the WAIS repository dataset 5/23/2021. 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 vac 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.