

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% | --- |
| Total number of people initiating vaccination | 427,904 | 61% | 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 | 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 | | --- |
| Total persons initiating vaccination | 427,904 | 61% | 345,626 | 48.9% | 82,278 | 11.6% | 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 | 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 |
| Total initiating vaccination | 427,904 | 61% | 345,626 | 48.9% | 82278 | 11.6% | 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 | 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 | --- | --- |
| Total | 427,904 | 61% | 345,626 | 48.9% | 82,278 | 11.6% | 706,950 |

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

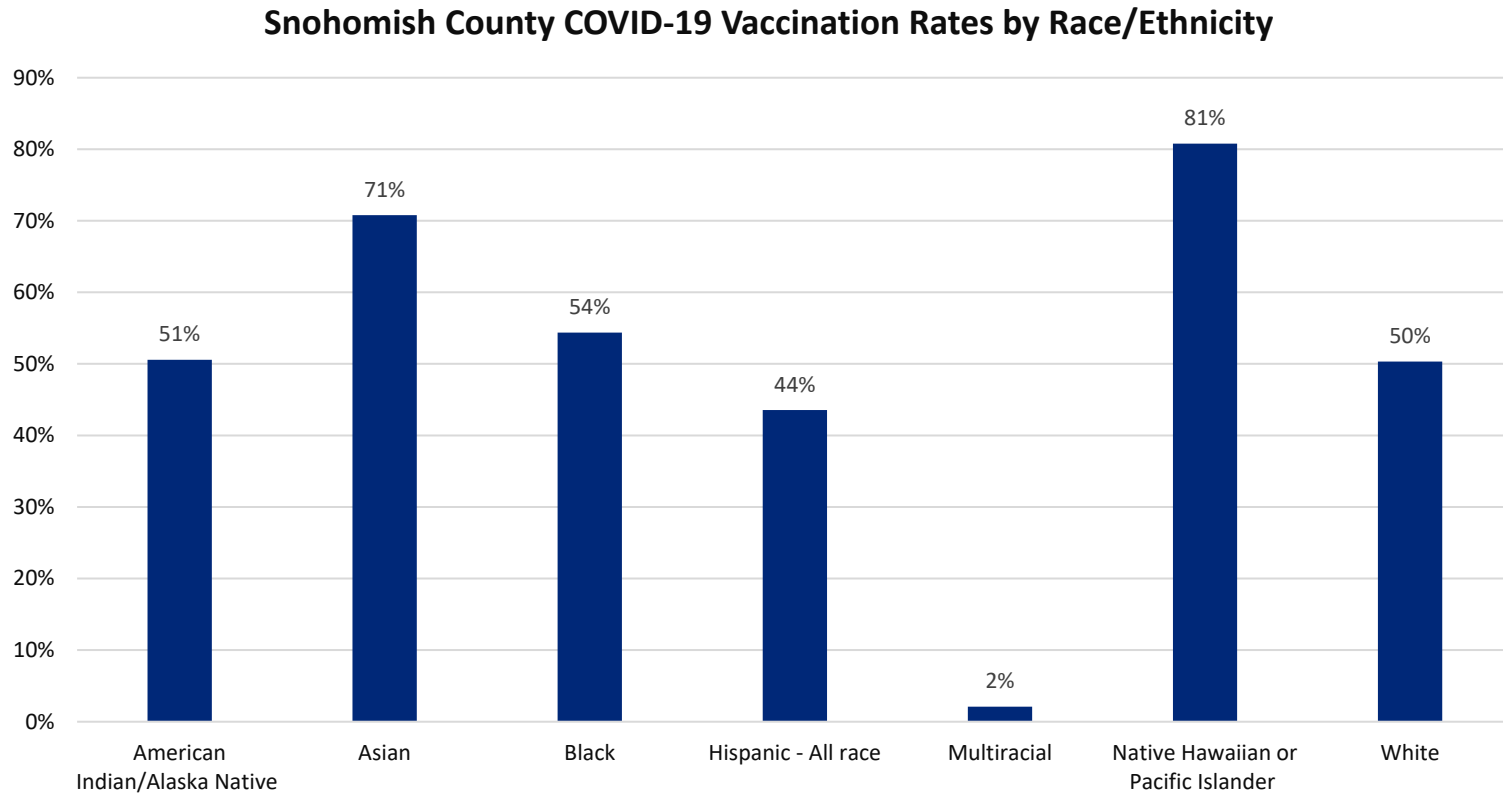


Figure 2: Percent of people who initiated COVID vaccination by race/ethnicity and reporting period

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

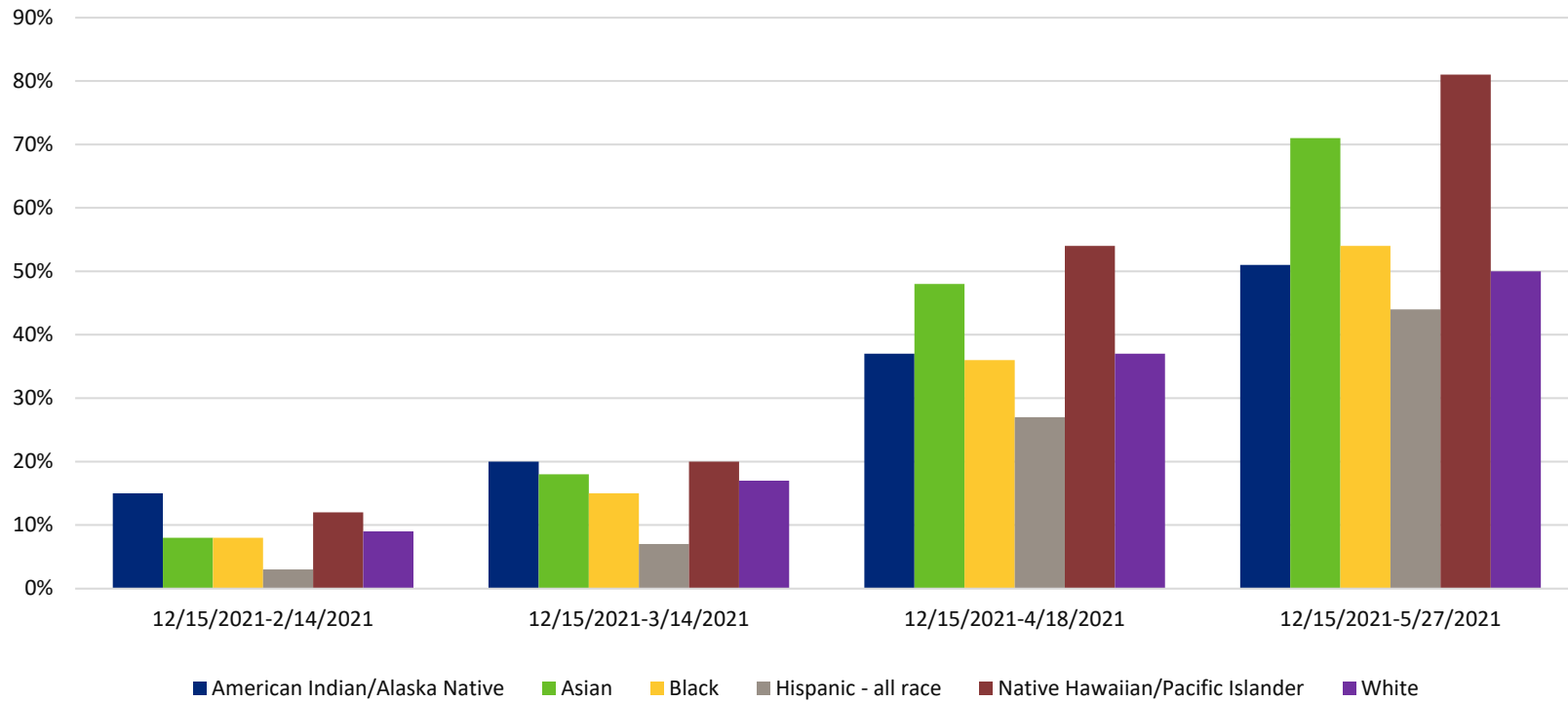


Table 5: COVID-19 vaccine initiation by race and ethnicity relative-risk compared to non-Hispanic White

| 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 | 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 | --- | --- | --- | --- | --- |
| Total persons initiating vaccination | 427,904 | 706,950 | 61% | --- | --- | --- |

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 |
| Total | --- | 416,415 | 50% | 830,500 |

*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.