

## COVID-19 Vaccination Demographic Data Analysis December 15, 2020 – June 26, 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	416,545	59%	---
Partially vaccinated	45,857	6%	---
<b>Total number of people initiating vaccination</b>	<b>462,402</b>	<b>65%</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	242,342	69%	219,197	62.0%	23,145	6.5%	353,734
Male	218,770	62%	196,237	55.6%	22,533	6.4%	353,216
Unknown	1,290	---	1,111	---	179		---
<b>Total persons initiating vaccination</b>	<b>462,402</b>	<b>65%</b>	<b>416,545</b>	<b>58.9%</b>	<b>45,857</b>	<b>6.5%</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	17,128	40%	12,478	29.4%	4,650	10.9%	42,493
16 to 19	20,802	57%	17,554	48.5%	3,248	9.0%	36,208
20 to 34	93,488	61%	81,815	53.7%	11,673	7.7%	152,342
35 to 49	114,612	65%	103,347	58.5%	11,265	6.4%	176,569
50 to 64	116,394	69%	107,138	63.1%	9,256	5.5%	169,752
65+	99,978	77%	94,213	72.7%	5,765	4.4%	129,586
<b>Total initiating vaccination</b>	<b>462,402</b>	<b>65%</b>	<b>416,545</b>	<b>58.9%</b>	<b>45,857</b>	<b>6.5%</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	4,332	56%	3,783	48.7%	549	7.1%	7,774
Asian	64,795	76%	58,691	69.0%	6,104	7.2%	85,065
Black	13,147	62%	11,269	53.4%	1,878	8.9%	21,087
Multiracial	552	2%	513	2.1%	39	0.2%	24,104
Native Hawaiian or Pacific Islander	3,587	92%	3,158	80.9%	429	11.0%	3,904
White	269,699	54%	247,158	49.5%	22,541	4.5%	499,180
Other, non-Hispanic	49,191	---	43,931	---	5,260	---	---
Hispanic - All race	33,282	51%	28,057	42.6%	5,225	7.9%	65,836
Unknown	23,817	---	19,985	---	3,832	---	---
<b>Total</b>	<b>462,402</b>	<b>65%</b>	<b>416,545</b>	<b>58.9%</b>	<b>45,857</b>	<b>6.5%</b>	<b>706,950</b>

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

### Snohomish County COVID-19 Vaccination Rates by Race/Ethnicity

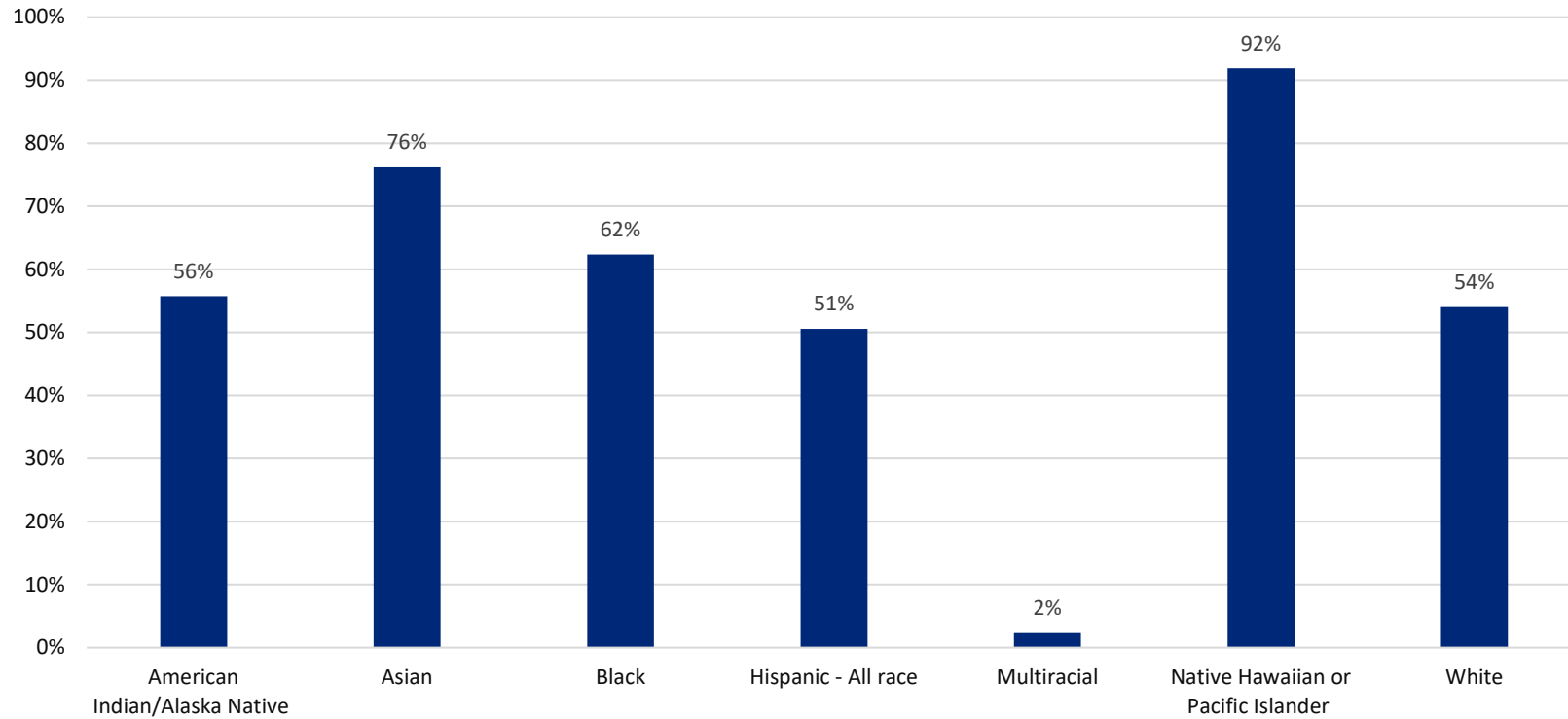


Figure 2: Percent of people who initiated COVID vaccination by race/ethnicity and reporting period

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

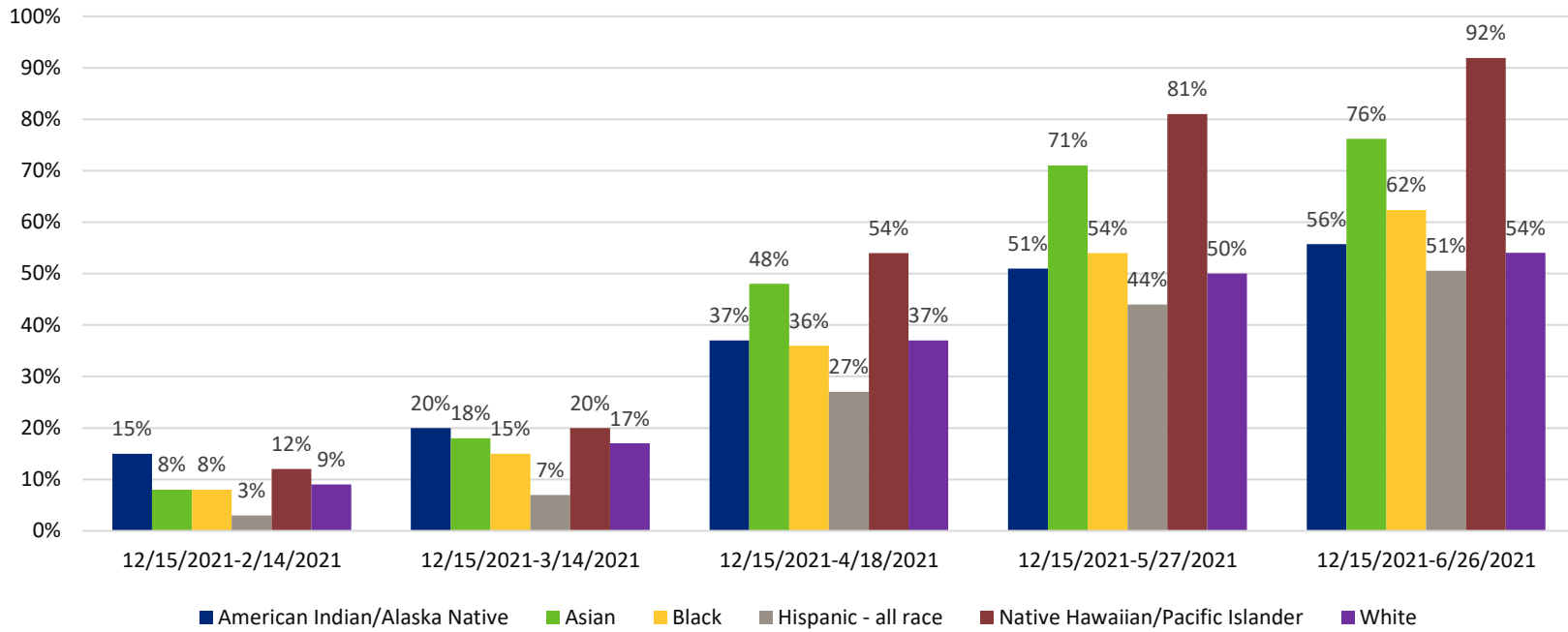


Table 5: COVID-19 vaccine initiation by race and ethnicity relative-risk compared to non-Hispanic White

<b>Race non-Hispanic</b>	<b>People initiating vaccination</b>	<b>Eligible population (≥12 years)</b>	<b>Percent of people initiating vaccination</b>	<b>Relative Risk</b>	<b>95% CI Lower</b>	<b>CI Upper</b>
American Indian/Alaska Native	4,332	7,774	56%	1.0	1.00	1.06
Asian	64,795	85,065	76%	1.4	1.40	1.42
Black	13,147	21,087	62%	1.2	1.13	1.17
Multiracial	552	24,104	2%	0.0	0.04	0.05
Native Hawaiian or Pacific Islander	3,587	3,904	92%	1.7	1.65	1.76
White	269,699	499,180	54%	1.0		
Other, non-Hispanic	49,191	---	---	---	---	---
Hispanic	33,282	65,836	51%	0.9	0.93	0.95
Unknown	23,817	---	---	---	---	---
<b>Total persons initiating vaccination</b>	<b>462,402</b>	<b>706,950</b>	<b>65%</b>	<b>---</b>	<b>---</b>	<b>---</b>

Table 6: COVID-19 vaccine recipients by city of residency, Snohomish County, December 15, 2020 – June 27, 2020

City	Zip	People initiating vaccination	Percent of residents initiating vaccination	Total population
Bothell/Mill Creek	98012	47,465	74%	64,417
Edmonds	98020	14,709	72%	20,322
Bothell	98021	23,008	75%	30,753
Edmonds	98026	25,267	69%	36,729
Lynnwood	98036	26,264	66%	39,766
Lynnwood	98037	18,833	64%	29,402
Mountlake Terrace	98043	13,579	64%	21,126
Woodinville	98072	58	0%	38,364
Lynnwood	98087	23,770	61%	39,221
Everett	98201	16,473	56%	29,484
Everett	98203	19,995	56%	35,603
Everett	98204	21,340	50%	42,882
Everett	98208	34,067	59%	57,306
Arlington	98223	20,040	47%	42,880
Darrington	98241	854	44%	1,921
Gold Bar	98251	1,891	49%	3,846
Granite Falls	98252	4,467	47%	9,603
Lake Stevens	98258	25,704	78%	32,959
Marysville	98270	26,077	51%	50,972
Marysville	98271	15,072	53%	28,585
Monroe	98272	15,225	48%	31,416
Mukilteo	98275	15,050	71%	21,264
Snohomish	98290	19,319	54%	35,990
Stanwood	98292	12,161	54%	22,547
Sultan	98294	3,194	45%	7,127
Snohomish	98296	16,332	54%	30,373
<b>Total</b>	---	<b>460,214</b>	<b>55%</b>	<b>830,500</b>

\*NOTES: 1. Data for this table is from the WAIS repository dataset 6/27/2021. 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.