COVID-19 morbidity and mortality by race, ethnicity and spoken language in Washington state

Washington State Department of Health

February 22, 2023

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Overview

The impacts of COVID-19 morbidity and mortality have not been felt equally by all populations in Washington state. The pandemic has exacerbated the underlying and persistent inequities among historically marginalized communities and those disproportionately impacted due to structural racism and other forms of systemic oppression. This report provides an overview of confirmed or probable COVID-19 case, hospitalization, and death rates by race and ethnicity at state and regional levels. It also provides counts and percentages of confirmed or probable cases and hospitalizations by primary language spoken. Throughout this report, the COVID-19 case definition includes both molecular testing and antigen testing. Molecular positive cases are considered confirmed cases and antigen positive cases are considered probable cases. All hospitalization, death, and testing data reported here are based on positive molecular or antigen test results.

All rates presented in this report are adjusted for age using the Washington state population distribution based on the Office of Financial Management's (OFM) April 1, 2020 population estimates by age, sex, race, and Hispanic origin. The rate calculations are for the population groups available from OFM for the Washington state population and follow Department of Health guidelines. Hispanic ethnicity was assigned first, regardless of race, and then racial groups were identified for those identifying as non-Hispanic. Based on this, the current report includes the following groups:

- Hispanic; and
- non-Hispanic race categorizations for white, Black, Native Hawaiian and Pacific Islander (NHPI), Asian, and American Indian/Alaska Native (AIAN), and multiracial, which includes individuals who reported two or more races.

While this allows assessment of data by race and ethnicity groups, this categorization is incomplete and does not reflect the diversity of people and experiences across the state. Additionally, there is a significant lack of race and ethnicity reporting for confirmed or probable COVID-19 cases and hospitalizations (about 30% missing). Primary language spoken is missing for about 78% of cases and hospitalizations. Age information is missing for a small percentage of confirmed or probable cases (about 0.1%), and these cases are not included in age-adjusted

rates. The lack of data limits our ability to draw firm conclusions; however, there are some concerning patterns reported below.

Cumulative age-adjusted confirmed or probable COVID-19 case, hospitalization, and death rates by race and ethnicity per 100,000 population

The table and figures below describe the counts and age-adjusted rates per 100,000 population in Washington by race and ethnicity for confirmed or probable cases, hospitalizations, and deaths for the entire time period from the start of the pandemic through 2023-02-11 based on the specimen collection date. 95% confidence intervals are included in the charts.

The data show that communities of color are disproportionately impacted by COVID-19 in significant ways, including the following.

COVID-19 confirmed or probable case rates
- NHPI and AIAN populations have the highest age-adjusted confirmed or probable case rates while Asian and multiracial populations have the lowest case rates.
- Confirmed or probable case rates for NHPI and AIAN populations are approximately three times higher than case rates for Asian and multiracial populations.
- Confirmed or probable case rates for Black populations are approximately two times higher than case rates among Asian and multiracial populations.

COVID-19 hospitalization rates among confirmed or probable cases
- Hospitalization rates among confirmed or probable COVID-19 cases are the highest for NHPI populations and lowest for multiracial populations.
- NHPI hospitalization rates among confirmed or probable COVID-19 cases are approximately six times higher than white populations.
- Hispanic hospitalization rates among confirmed or probable COVID-19 cases are approximately two times higher than white populations.
- Hospitalization rates among confirmed or probable COVID-19 cases for Black and AIAN populations are approximately two times higher compared to white populations.
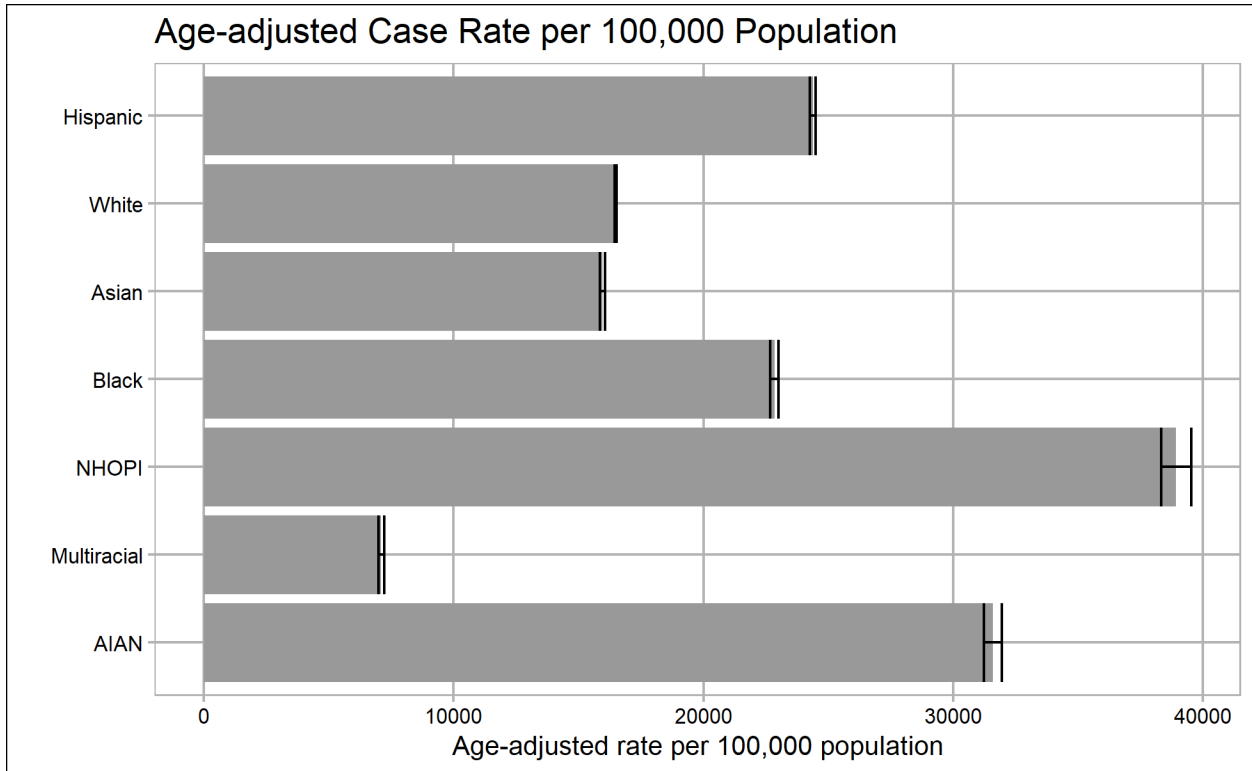
COVID-19 death rates among confirmed or probable cases
- Asian populations have the lowest death rates among confirmed or probable COVID-19 cases of all race/ethnicity groups.
- NHPI populations have death rates among confirmed or probable COVID-19 cases that are approximately five times higher than white and Asian populations.
- AIAN and Hispanic populations have death rates among confirmed or probable COVID-19 cases that are approximately three times higher than Asian populations.
- Black populations have death rates among confirmed or probable COVID-19 cases that are about twice as high as white populations.

Table 1. Confirmed or probable COVID-19 case, hospitalization, and death count and age-adjusted rates by race/ethnicity 2020-03-01 to 2023-02-11
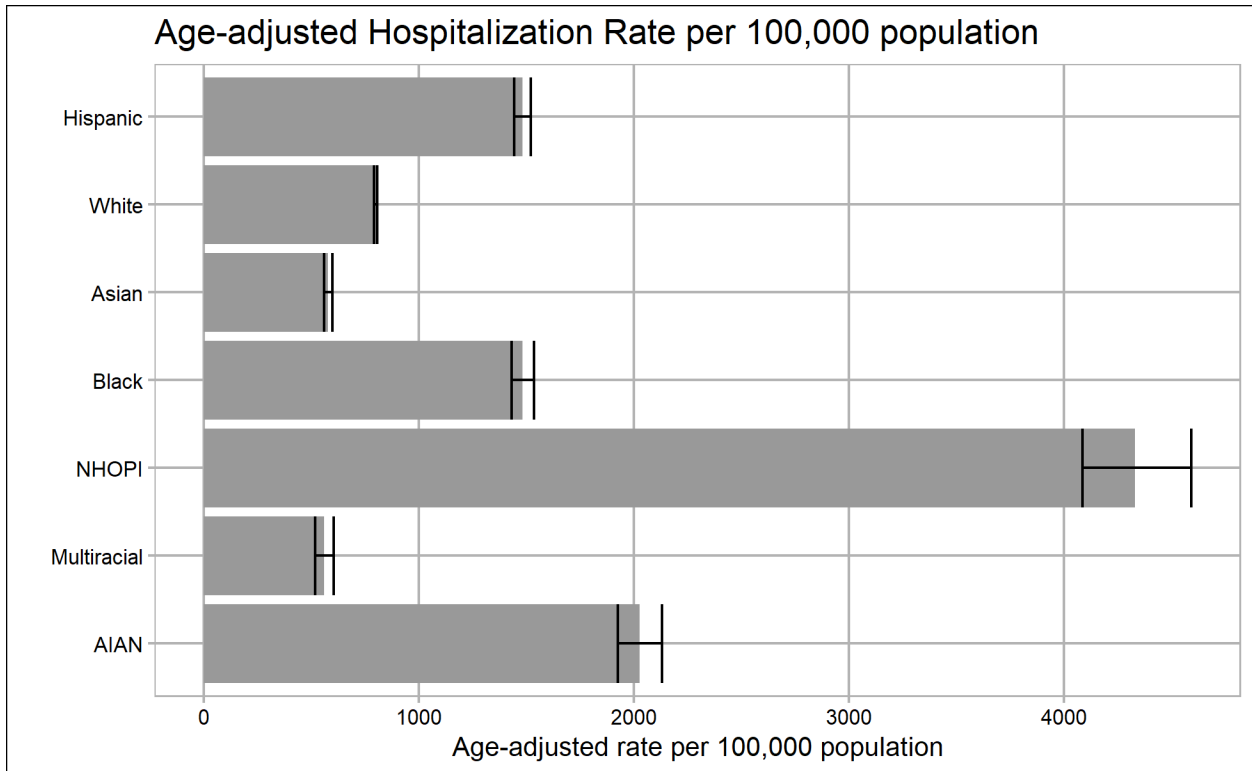
Race/Ethnicity	Case Count	Age-Adjusted Case Rate per 100,000	Hospitalization Count	Age-Adjusted Hospitalization Rate per 100,000	Death Count	Age-Adjusted Death Rate per 100,000
All Races	1,917,966	25051.1	80,826	1055.7	15,607	203.8
Unknown	578,426		13,708		101	
Hispanic	240,901	24392.0	8,060	1480.3	1,333	392.5
White	824,757	16490.0	47,460	798.2	11,964	185.7
Asian	118,695	15961.5	3,378	576.7	860	171.9
Black	71,284	22844.7	3,506	1481.0	539	298.9
NHPI	21,583	38940.0	1,587	4331.1	245	903.5
Multiracial	20,770	7102.0	818	558.6	213	177.2
AIAN	30,365	31591.8	1,660	2025.3	331	477.0
Other	11,185		649		0	

The following graph indicates the age-adjusted confirmed or probable COVID-19 case rate per 100,000 population by race/ethnicity during the time period 2020-03-01 to 2023-02-11

Age-adjusted Case Rate per 100,000 Population

Age-adjusted rate per 100,000 population

Source: Washington Disease Reporting System (WDRS)

The following graph indicates the age-adjusted hospitalization rate among confirmed or probable COVID-19 cases per 100,000 population by race/ethnicity during the time period 2020-03-01 to 2023-02-11

Age-adjusted Hospitalization Rate per 100,000 population
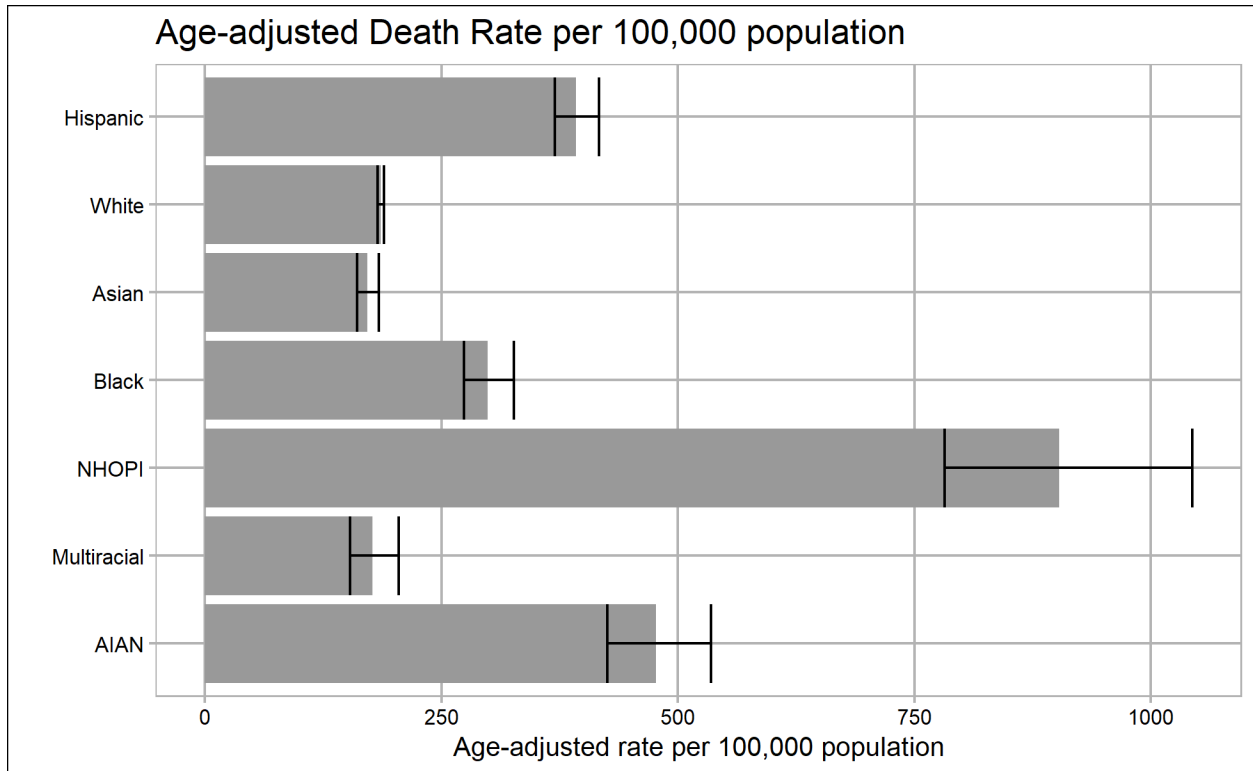

Age-adjusted rate per 100,000 population

Source: Washington Disease Reporting System (WDRS)

The following graph indicates the age-adjusted death rate among confirmed or probable COVID-19 cases per 100,000 population by race/ethnicity during the time period 2020-03-01 to 2023-02-11
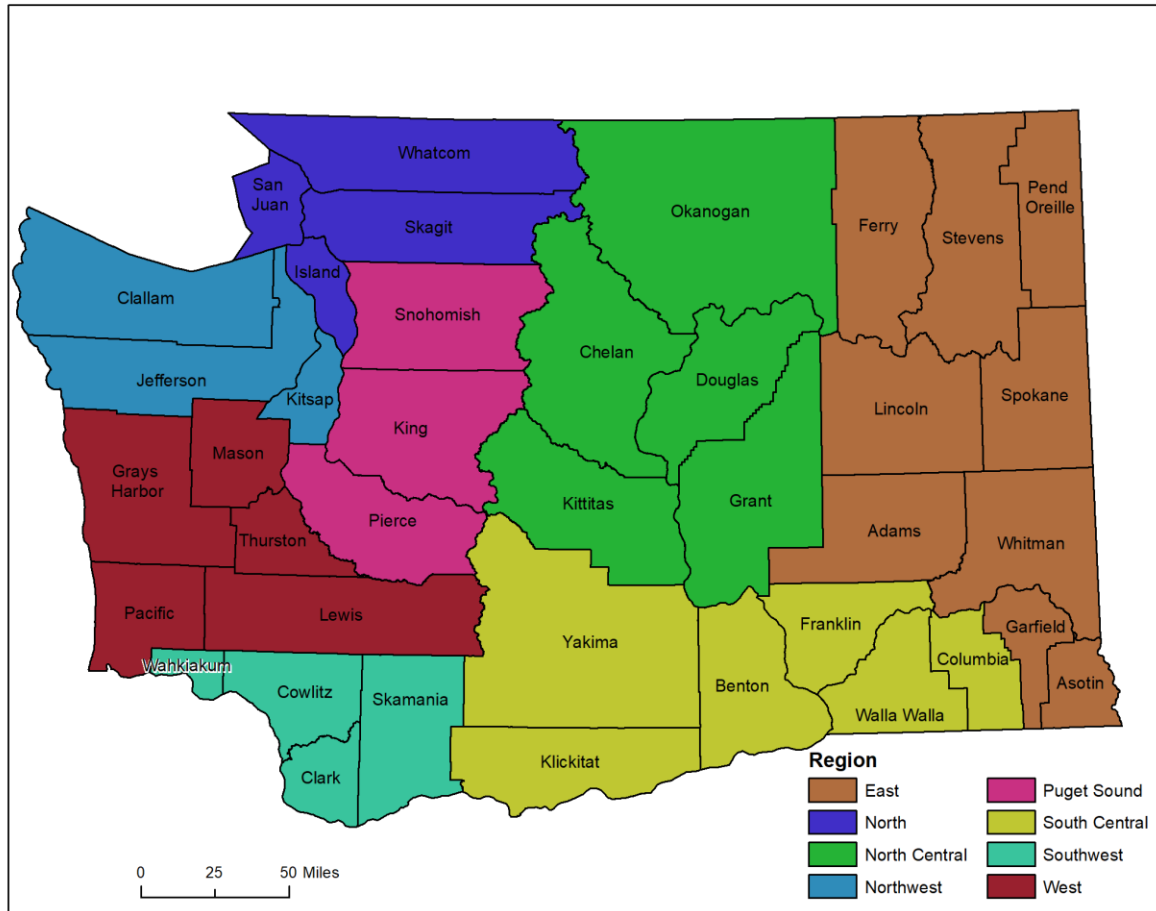

Source: Electronic Death Registration System (EDRS) and Washington Health and Life Events System (WHALES)

Analysis of confirmed or probable COVID-19 cases, hospitalizations, and deaths by geographic region

Regional groupings of Washington state counties

Some counties may not have sufficient case counts to analyze trends by race and ethnicity. In order to incorporate data from counties of all sizes, counties were assigned into one of 8 analytic regions (see Map of Washington Counties and Analysis Regions below). The regions presented were developed by the Washington State Department of Health in order to better understand geographic differences in disease spread and how disease spread may be changing over time. While infection rates may not be the same within any given region, this regional grouping allows for more specific geographic analyses without excluding any counties or communities due to concerns about smaller numbers.

Map of Washington counties by DOH analysis regions

Missing race/ethnicity data by region

The North and Southwest regions have the highest percentage of missing race/ethnicity data among confirmed or probable COVID-19 cases and the North Central and East regions have the lowest percentage of missing data on race/ethnicity, as indicated in the following table. The total number of confirmed or probable cases, and the number and percentage of confirmed or probable cases with missing data are shown in Table 2.

Table 2. Counts and percentage of confirmed or probable COVID-19 cases with unknown race/ethnicity by DOH analytic region 2020-03-01 to 2023-02-11.

Region	Case Count	Cases with Unknown Race/Ethnicity	% Cases with Unknown Race/Ethnicity
East	192,637	50,738	26%
North	93,394	36,687	39%

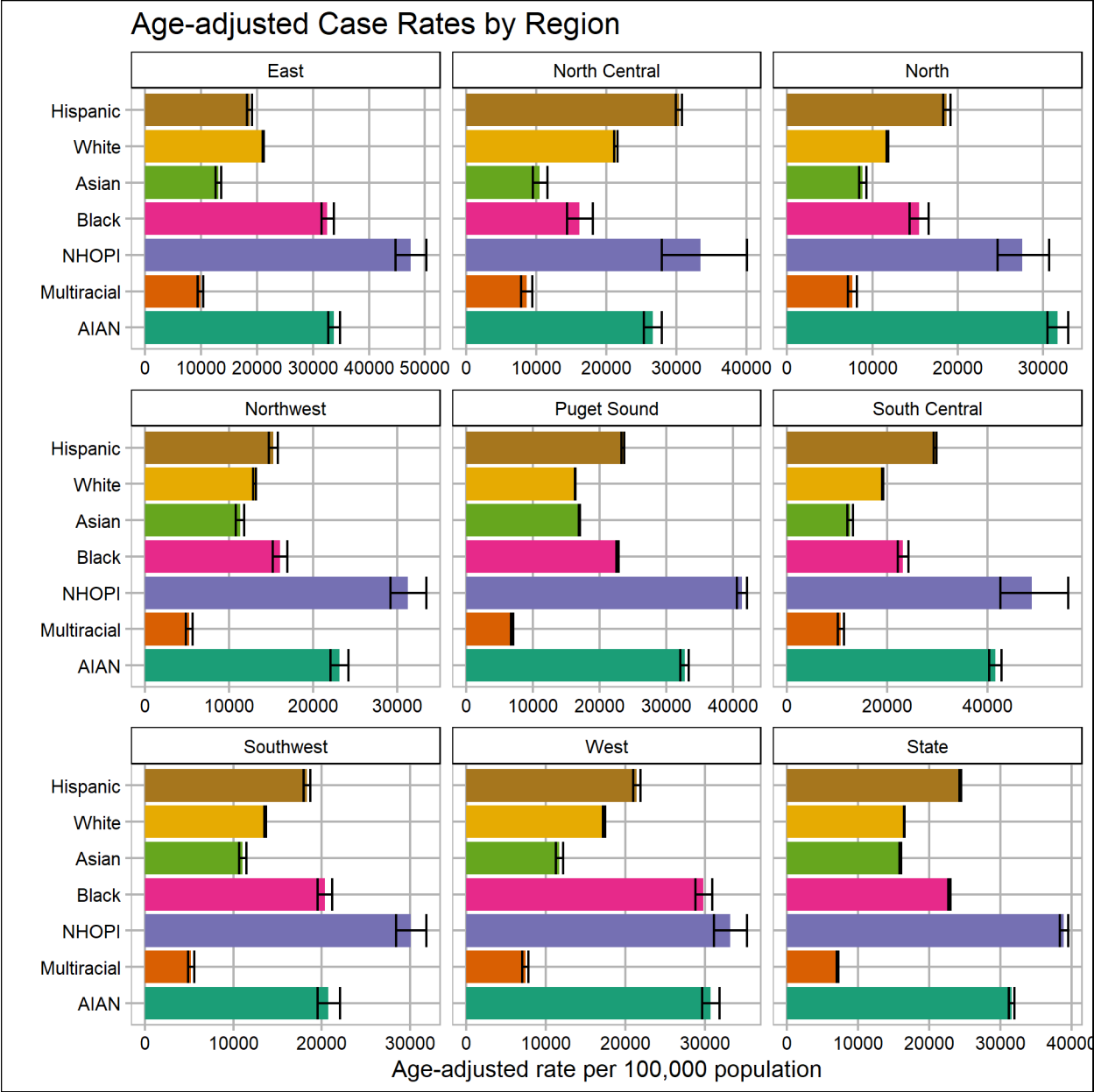| Region	Case Count	Cases with Unknown Race/Ethnicity	% Cases with Unknown Race/Ethnicity
North Central	89,649	20,114	22%
Northwest	72,852	26,381	36%
Puget Sound	995,567	291,268	29%
South Central	205,918	61,948	30%
Southwest	141,207	55,656	39%
West	124,588	34,087	27%
Unknown	3,289	2,234	68%

Source: Washington Disease Reporting System (WDRS)
Includes data from 2020-03-01 to 2023-02-11

Cumulative age-adjusted confirmed or probable COVID-19 case rates by race, ethnicity, and analytic region

The following figures describe the age-adjusted confirmed or probable COVID-19 case rates per 100,000 population by race/ethnicity and region. They were calculated using the confirmed or probable cases with known race/ethnicity (about 70% of all reported cases).

It is important to note that the numeric scale differs across regions, so use caution when comparing two or more regions, as their scales may differ. The last figure (lower right corner) presents the age-adjusted confirmed or probable COVID-19 case rates for the whole state.

These data indicate that COVID-19 is found in significant numbers across racial and ethnic groups throughout the state, and it is not confined to certain areas, such as rural, urban, or suburban regions. Population centers in Puget Sound contribute substantially to the counts. However less populated regions, like South Central Washington, show larger rate differences by race/ethnicity, although they have smaller populations of racial and ethnic minorities. Further, while extreme disparities exist, people of all races and ethnicities are impacted.

Age-adjusted Case Rates by Region

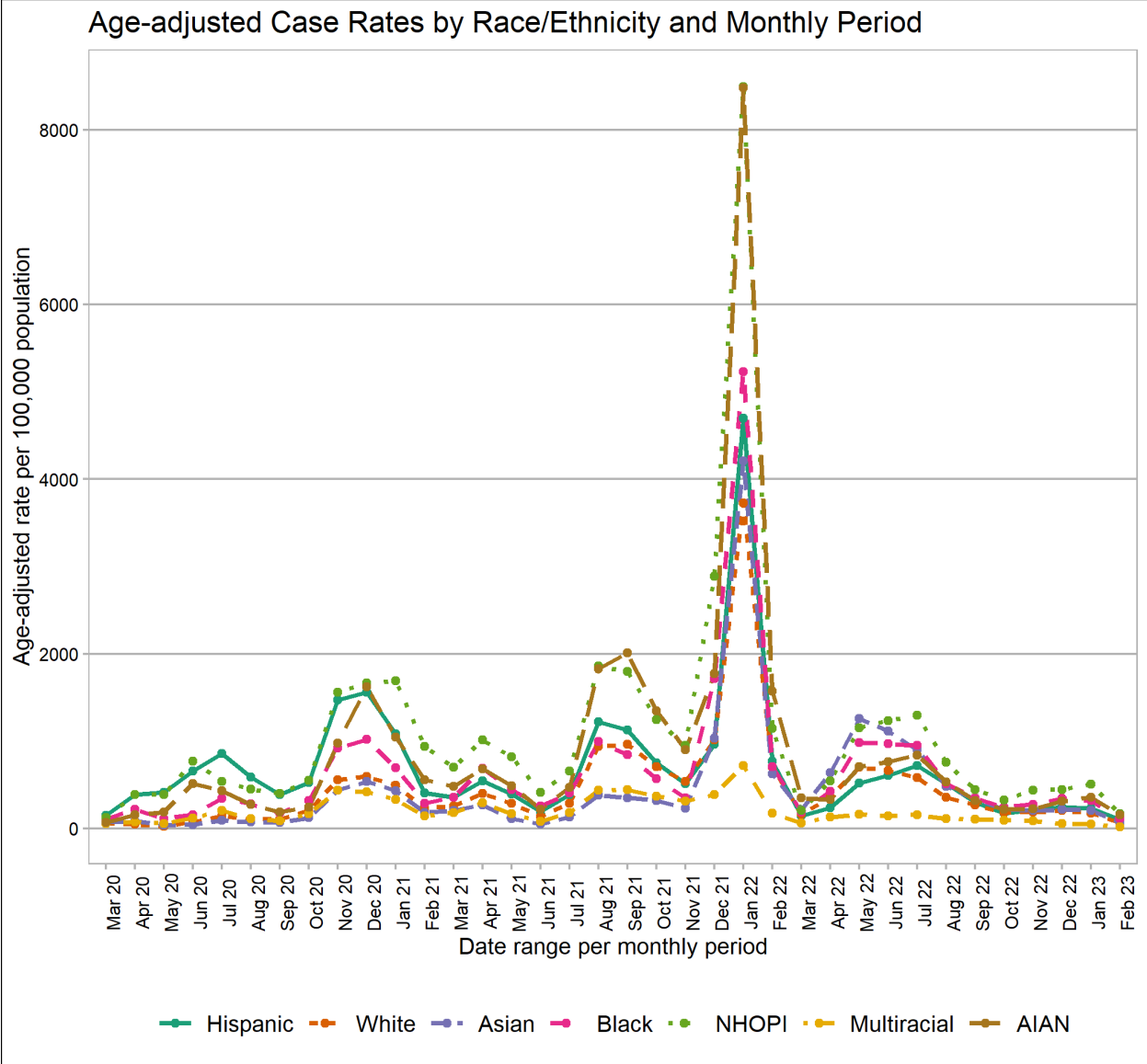*Source: Washington Disease Reporting System (WDRS)*
Includes data from 2020-03-01 to 2023-02-11

Age-adjusted confirmed or probable COVID-19 case rates by race and ethnicity per monthly period (Mar 2020-Feb 2023*)

*February 2023 data include all confirmed or probable cases with a specimen collection date through 2023-02-11 to include the most recent, complete monthly period of data collection.

Age-adjusted Case Rates by Race/Ethnicity and Monthly Period

Legend: Hispanic, White, Asian, Black, NHOPI, Multiracial, AIAN

X-axis: Date range per monthly period (Mar 20 – Feb 23)

Y-axis: Age-adjusted rate per 100,000 population

Confirmed or probable COVID-19 case rates, adjusted for age by race and ethnicity, were calculated to better understand how race- and ethnicity-specific patterns may be changing over time by two-week period. Race/ethnicity-specific counts and age-adjusted rates increased for all race/ethnicity groups through July and early August 2020. All groups declined from early August to mid/late-August and flattened through September 2020. All race/ethnicity-age-adjusted rates began to rapidly increase in mid-October through the end of November. Rates of confirmed or probable cases remain highest for Hispanic and NHPI population, and higher Black and AIAN populations in comparison to white, Asian, and multiracial populations.

Table 3. Age-adjusted confirmed or probable COVID-19 case rates by race and ethnicity per two-week period (January 15, 2023 - February 11, 2023)

Race/Ethnicity	Two-Week Period	Case Count	Age-Adjusted Case Rate per 100,000	Lower 95% Confidence Interval	Upper 95% Confidence Interval
Hispanic	Jan 15, 23-Jan 28, 23	993	104.9	97.0	113.4
	Jan 29, 23-Feb 11, 23	1,094	128.7	119.3	138.8
White	Jan 15, 23-Jan 28, 23	3,962	74.5	72.2	76.9
	Jan 29, 23-Feb 11, 23	4,588	85.0	82.6	87.6
Asian	Jan 15, 23-Jan 28, 23	580	83.5	76.8	90.8
	Jan 29, 23-Feb 11, 23	594	84.6	77.9	91.9
Black	Jan 15, 23-Jan 28, 23	383	133.2	119.8	148.2
	Jan 29, 23-Feb 11, 23	423	148.2	134.0	164.0
NHPI	Jan 15, 23-Jan 28, 23	120	247.8	200.8	305.7
	Jan 29, 23-Feb 11, 23	116	219.8	178.7	270.3
Multiracial	Jan 15, 23-Jan 28, 23	59	22.5	16.3	31.0
	Jan 29, 23-Feb 11, 23	54	19.3	13.7	27.1
AIAN	Jan 15, 23-Jan 28, 23	143	151.6	128.0	179.4
	Jan 29, 23-Feb 11, 23	191	208.4	179.8	241.5

Source: Washington Disease Reporting System (WDRS)

Cumulative crude confirmed or probable case counts and percentages by language spoken

Analysis of language spoken provides another important method to understand health disparities and communities impacted by COVID-19. Use of one method alone may mask health disparities and community-specific impacts. Almost half of reported confirmed or probable cases are missing information on primary language. Despite missing data, there are some important observations.

The following table presents counts and percentages of confirmed or probable cases, by primary language spoken. The percentage of the Washington state population 5 years and over with limited English proficiency that speak each language are also included to provide context. The information on the percentage of the Washington state population with limited English proficiency come from the Office of Financial Management 2016 estimates. Findings should be interpreted with caution due to the high proportion of missing data (78%).

Table 4. Confirmed or probable COVID-19 case count and percentage of cases by primary language spoken 2020-03-01 to 2023-02-11.

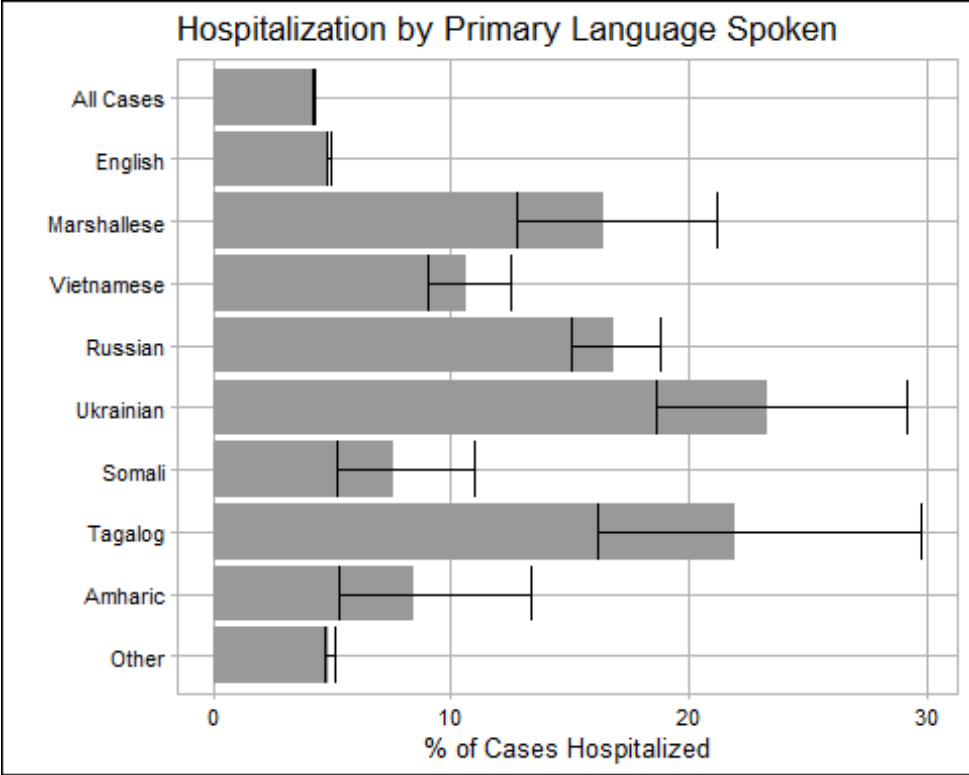| Language	Case Count	% of Cases	% of WA Population with Limited English Proficiency*
All Cases	1,924,418	100.0%	
Unknown Language	1,504,403	78.2%	
Known Language	420,015	21.8%	
English	368,201	87.7*%	
Marshallese	359	0.1*%	0.1
Vietnamese	1,375	0.3*%	0.5
Russian	1,802	0.4*%	0.3
Chinese (all)	16	0.0*%	0.3
Ukrainian	326	0.1*%	0.2
Somali	370	0.1*%	0.1
Tagalog	187	0.0*%	0.1
Amharic	214	0.1*%	0.1
Other	47,165	11.2*%	

*For more information on the selected WA populations by primary language reported here, please see the WA OFM methodology, https://ofm.wa.gov/sites/default/files/public/legacy/pop/subject/ofm_pop_limited_english_proficiency_methodology.pdf

Cumulative hospitalization percentages among confirmed or probable COVID-19 cases by language spoken

The following table and graph present the percentages of confirmed or probable cases who were hospitalized, by primary language spoken. The high rates of hospitalizations among confirmed or probable cases whose primary language was other than English or Spanish suggests that increased exposures and/or barriers to care may contribute to more severe disease in these populations. Languages with less than 10 individuals hospitalized were removed from this analysis to protect patient confidentiality. Findings should be interpreted with caution due to the high proportion of missing data (78%).

Table 5: Percentages of confirmed or probable COVID-19 cases hospitalized by primary language spoken 2020-03-01 to 2023-02-11.

Language	Case Count	Hospitalization Count	% language specific cases hospitalized
All Cases	1,924,418	81,372	4.2%
English	368,201	17,953	4.9%
Marshallese	359	59	16.4%
Vietnamese	1,375	146	10.6%
Russian	1,802	303	16.8%
Ukrainian	326	76	23.3%
Somali	370	28	7.6%
Tagalog	187	41	21.9%
Amharic	214	18	8.4%
Other	47,165	2,305	4.9%

Hospitalization by Primary Language Spoken