



Alaska Vital Statistics 2015 Annual Report

Bill Walker
Governor
State of Alaska

Valerie Davidson
Commissioner
Department of Health and Social Services

Jay C. Butler, M.D.
Chief Medical Officer and Director
Division of Public Health



Department of Health and Social Services
Division of Public Health
Health Analytics and Vital Records Section
P.O. Box 110675
Juneau, AK 99811-0675
(907) 465-3391
www.vitalrecords.alaska.gov



PREFACE

PURPOSE OF THIS REPORT

The report summarizes data on births, deaths, adoptions, marriages, and divorces. The purpose of this report is to provide basic reference material and indicators for health and vital events in Alaska.

PREPARED BY

This report was prepared by the Health Analytics Unit of the Alaska Health Analytics and Vital Records Section.

Heidi Lengdorfer, M.P.H., Chief
Rebecca Topol, S.M., Research Analyst IV
Richard Raines, M.S., Research Analyst II

HOW TO OBTAIN A COPY

The 2015 Annual Report is available online at:

<http://dhss.alaska.gov/dph/VitalStats/Pages/data/>

We welcome any comments, questions, or concerns you may have about this report. You may contact us at:

Alaska Department of Health and Social Services
Division of Public Health
Health Analytics and Vital Records Section
P.O. Box 110675
Juneau, Alaska 99811-0675

Phone: (907) 465-8604
Fax: (907) 465-4689
Email: healthanalytics@alaska.gov

ADDITIONAL INFORMATION

Additional information, including how to obtain copies of vital event certificates, is available online at:

www.vitalrecords.alaska.gov

The Health Analytics Unit is also available for special information requests on vital statistics data. The fee for research is \$75/hour. For further assistance, please contact the Health Analytics Unit at:

Phone: (907) 465-8604
Fax: (907) 465-4689
Email: healthanalytics@alaska.gov

ACKNOWLEDGMENTS

Data and health indicators presented in this report are based upon information supplied by many people throughout the state. Birth mothers, doctors, midwives, other birth attendants, medical facilities, medical examiners, magistrates, funeral directors, and a host of other individuals complete information on vital records.

The Health Analytics and Vital Records Section staff extends our gratitude to each person who participates in our data gathering effort. Accurate data are essential to the Section's effort to report reliable vital event information, and contribute to public health efforts in Alaska. We appreciate the assistance of others in maintaining the integrity of our data.

Artwork Donated by:

Rie Munoz Gallery
2101 N. Jordan Avenue
Juneau, Alaska
(907) 789-7449
www.riemunoz.com
info@riemunoz.com

TABLE OF CONTENTS

EXECUTIVE SUMMARY 1
 SUMMARY OF POPULATION AND VITAL STATISTICS INFORMATION 1

INTRODUCTION. 2
 ABOUT ALASKA 2
 HOW VITAL STATISTICS ARE COLLECTED 2
 POPULATION ESTIMATES 3
 HOW CERTIFICATES ARE PROCESSED 3
 HOW THIS REPORT WAS PREPARED 3
 DETERMINATION OF RACE 4

BIRTHS 5
 BIRTH SUMMARY 6
 NUMBER OF BIRTHS BY RACE 6
 CRUDE BIRTH RATES BY RACE 6
 FERTILITY RATES BY RACE 6
 BIRTHS BY AGE GROUP 7
 AGE-SPECIFIC FERTILITY RATES BY RACE 7
 NUMBER OF TEEN (15-19) BIRTH BY RACE 7
 TEEN (15-19) BIRTH RATES BY RACE 7
 MEDICAL SERVICES UTILIZATION 8
 PERCENT RECEIVING FIRST TRIMESTER PRENATAL CARE BY RACE 8
 ADEQUACY OF PRENATAL CARE UTILIZATION BY RACE 8
 CESAREAN SECTION RATES BY RACE 8
 INFANT HEALTH CHARACTERISTICS 9
 LOW BIRTH WEIGHT PERCENTAGES BY RACE 9
 PRETERM BIRTH PERCENTAGES BY RACE 9
 FERTILITY RATES BY CENSUS AREA OR BOROUGH 10
 TEEN (15-19) BIRTH RATES BY CENSUS AREA OR BOROUGH 11
 FIRST TRIMESTER PRENATAL CARE BY CENSUS AREA OR BOROUGH. 12
 ADEQUACY OF PRENATAL CARE UTILIZATION BY CENSUS AREA OR BOROUGH 13
 CESAREAN SECTION PERCENTAGES BY CENSUS AREA OR BOROUGH 14
 LOW BIRTH WEIGHT PERCENTAGES BY CENSUS AREA OR BOROUGH 15
 PRETERM BIRTH PERCENTAGES BY CENSUS AREA OR BOROUGH 16

FETAL, INFANT, AND CHILD DEATHS. 17

FETAL AND INFANT DEATH SUMMARY 18

FETAL MORTALITY RATES BY RACE 18

NUMBER OF INFANT DEATHS BY RACE 18

INFANT MORTALITY RATES BY RACE 18

NEONATAL INFANT DEATHS. 19

NUMBER OF NEONATAL DEATHS BY RACE 19

NEONATAL INFANT MORTALITY RATES BY RACE 19

NUMBER OF NEONATAL DEATHS BY CAUSE 19

POSTNEONATAL INFANT DEATHS 20

NUMBER OF POSTNEONATAL DEATHS BY RACE 20

POSTNEONATAL INFANT MORTALITY RATES BY RACE 20

NUMBER OF POSTNEONATAL DEATHS BY CAUSE 20

CHILD MORTALITY SUMMARY 21

CHILD UNDER FIVE MORTALITY RATES BY RACE. 21

CHILD (5-14) MORTALITY RATES BY RACE 21

TEEN (15-19) MORTALITY RATES BY RACE 21

INFANT MORTALITY RATES BY CENSUS AREA OR BOROUGH 22

CHILD UNDER FIVE MORTALITY RATES BY CENSUS AREA OR BOROUGH. 23

DEATHS 24

DEATH SUMMARY 25

NUMBER OF DEATHS BY RACE 25

CRUDE DEATH RATES BY RACE 25

AGE-ADJUSTED DEATH RATES BY RACE 25

LEADING AND SELECT CAUSES OF DEATH SUMMARY 26

LEADING CAUSES OF DEATH 26

SELECT CAUSES OF DEATH 26

MALIGNANT NEOPLASM (CANCER) DEATHS 27

DISEASES OF THE HEART (HEART DISEASE) DEATHS 28

UNINTENTIONAL INJURY AND POISONING DEATHS 29

CHRONIC LOWER RESPIRATORY DISEASE
(CHRONIC OBSTRUCTIVE PULMONARY DISEASE) DEATHS 30

INTENTIONAL SELF-HARM (SUICIDE) DEATHS 31

CEREBROVASCULAR DISEASE (STROKE) DEATHS. 32

DIABETES MELLITUS DEATHS. 33

CHRONIC LIVER DISEASE AND CIRRHOSIS DEATHS. 34

ALZHEIMER’S DISEASE DEATHS. 35

ASSAULT (HOMICIDE) DEATHS 36

ALCOHOL-INDUCED DEATHS 37

DRUG-INDUCED DEATHS 38

FIREARM-RELATED DEATHS 39

CANCER DEATHS BY CENSUS AREA OR BOROUGH 40

HEART DISEASE DEATHS BY CENSUS AREA OR BOROUGH. 41

UNINTENTIONAL INJURY DEATHS BY CENSUS AREA OR BOROUGH 42

STROKE DEATHS BY CENSUS AREA OR BOROUGH 43

CHRONIC LOWER RESPIRATORY DISEASE DEATHS BY CENSUS AREA OR BOROUGH 44

SUICIDE DEATHS BY CENSUS AREA OR BOROUGH 45

ALCOHOL-INDUCED DEATHS BY CENSUS AREA OR BOROUGH. 46

FIREARM-RELATED DEATHS BY CENSUS AREA OR BOROUGH 47

ADOPTIONS 48
 ADOPTION SUMMARY 49
 NUMBER OF ADOPTIONS BY RACE 49
 ADOPTION RATES BY RACE 49
 NUMBER OF ADOPTIONS BY TYPE 49

MARRIAGES & DIVORCES 50
 MARRIAGE SUMMARY 51
 MARRIAGE RATES 51
 MARRIAGES BY RESIDENCY STATUS. 51
 MARRIAGES BY AGE GROUP 51
 DIVORCE SUMMARY 52
 DIVORCE RATES 52
 DIVORCES BY DECREE TYPE 52
 DIVORCES BY AGE GROUP 52

APPENDIX A: DEFINITION OF TERMS 53

APPENDIX B: TECHNICAL NOTES 55
 HOW TO USE VITAL STATISTICS 55
 VITAL STATISTICS FORMULAS. 56
 EXPECTATION OF LIFE 57

APPENDIX C: PRENATAL CARE 58
 APNCU INDEX 58

APPENDIX D: POPULATION OVERVIEW 59
 ESTIMATED POPULATION OF ALASKA BY AGE, SEX, AND RACE, 2015. 59
 ESTIMATED POPULATION OF ALASKA BY AGE, SEX, AND RACE, 2014. 60
 ESTIMATED POPULATION OF ALASKA BY AGE, SEX, AND RACE, 2013. 60
 ESTIMATED POPULATION DISTRIBUTION BY AGE GROUP AND SEX: THE U.S AND ALASKA, 2006 . . 61

APPENDIX E: MAPS 62
 ALASKA BOROUGH/CENSUS AREAS 62

LIST OF TABLES & FIGURES

TABLE 1	NUMBER OF BIRTHS BY RACE (2006-2015)	6
TABLE 2	CRUDE BIRTH RATES BY RACE (2006-2015)	6
TABLE 3	FERTILITY RATES BY RACE (2006-2015)	6
TABLE 4	AGE-SPECIFIC FERTILITY RATES (2006-2015)	7
TABLE 5	NUMBER OF TEEN (15-19) BIRTH BY RACE (2006-2015).	7
TABLE 6	TEEN (15-19) BIRTH RATES BY RACE (2006-2015)	7
TABLE 7	PERCENT RECIEVING FIRST TRIMESTER PRENATAL CARE BY RACE (2006-2015).	8
TABLE 8	ADEQUACY OF PRENATAL CARE UTILIZATION (2006-2015)	8
TABLE 9	CESAREAN SECTION RATES BY RACE (2006-2015)	8
TABLE 10	LOW BIRTH WEIGHT PERCENTAGES BY RACE (2006-2015).	9
TABLE 11	PRETERM BIRTH PERCENTAGES BY RACE (2006-2015).	9
TABLE 12	FETAL MORTALITY RATES BY RACE (2004-2015)	18
TABLE 13	NUMBER OF INFANT DEATHS BY RACE (2004-2015)	18
TABLE 14	INFANT MORTALITY RATES BY RACE (2004-2015).	18
TABLE 15	NUMBER OF NEONATAL DEATHS BY RACE (2004-2015)	19
TABLE 16	NEONATAL INFANT MORTALITY RATES BY RACE (2004-2015)	19
TABLE 17	NUMBER OF NEONATAL DEATHS BY CAUSE (2011-2015).	19
TABLE 18	NUMBER OF POSTNEONATAL DEATHS BY RACE (2004-2015)	20
TABLE 19	POSTNEONATAL INFANT MORTALITY RATES BY RACE (2004-2015)	20
TABLE 20	NUMBER OF POSTNEONATAL INFANT DEATHS BY CAUSE (2011-2015)	20
TABLE 21	CHILD UNDER FIVE MORTALITY RATES BY RACE (2004-2015)	21
TABLE 22	CHILD (5-14) MORTALITY RATES BY RACE (2004-2015).	21
TABLE 23	TEEN (15-19) MORTALITY RATES BY RACE (2004-2015).	21
TABLE 24	NUMBER OF DEATHS BY RACE (2006-2015)	25
TABLE 25	CRUDE DEATH RATES BY RACE (2006-2015)	25

TABLE 26	AGE-ADJUSTED DEATH RATES BY RACE (2006-2015)	25
TABLE 27	LEADING CAUSES OF DEATH (2015)	26
TABLE 28	SELECT CAUSES OF DEATH (2015)	26
TABLE 29	NUMBER OF DEATHS DUE TO CANCER (2006-2015)	27
TABLE 30	CRUDE RATES OF DEATHS DUE TO CANCER (2006-2015).	27
TABLE 31	AGE-ADJUSTED RATES OF DEATHS DUE TO CANCER (2006-2015).	27
TABLE 32	NUMBER OF DEATHS DUE TO HEART DISEASE (2006-2015)	28
TABLE 33	CRUDE RATES OF DEATHS DUE TO HEART DISEASE (2006-2015)	28
TABLE 34	AGE-ADJUSTED RATES OF DEATHS DUE TO HEART DISEASE (2006-2015)	28
TABLE 35	NUMBER OF DEATHS DUE TO UNINTENTIONAL INJURIES (2006-2015)	29
TABLE 36	CRUDE RATES OF DEATHS DUE TO UNINTENTIONAL INJURIES (2006-2015)	29
TABLE 37	AGE-ADJUSTED RATES OF DEATHS DUE TO UNINTENTIONAL INJURIES (2006-2015)	29
TABLE 38	NUMBER OF DEATHS DUE TO CLRD (2006-2015)	30
TABLE 39	CRUDE RATES OF DEATHS DUE TO CLRD (2006-2015)	30
TABLE 40	AGE-ADJUSTED RATES OF DEATHS DUE TO CLRD (2006-2015)	30
TABLE 41	NUMBER OF DEATHS DUE TO SUICIDE (2006-2015)	31
TABLE 42	CRUDE RATES OF DEATHS DUE TO SUICIDE (2006-2015).	31
TABLE 43	AGE ADJUSTED RATES OF DEATHS DUE TO SUICIDE (2006-2015).	31
TABLE 44	NUMBER OF DEATHS DUE TO STROKE (2006-2015)	32
TABLE 45	CRUDE RATES OF DEATHS DUE TO STROKE (2006-2015)	32
TABLE 46	AGE-ADJUSTED RATES OF DEATHS DUE TO STROKE (2006-2015).	32
TABLE 47	NUMBER OF DEATHS DUE TO DIABETES (2006-2015)	33
TABLE 48	CRUDE RATES OF DEATH DUE TO DIABETES (2006-2015)	33
TABLE 49	AGE ADJUSTED RATES OF DEATH DUE TO DIABETES (2006-2015)	33
TABLE 50	NUMBER OF DEATHS DUE TO CHRONIC LIVER DISEASE & CIRRHOSIS (2006-2015)	34

TABLE 51	CRUDE RATES OF DEATHS DUE TO CHRONIC LIVER DISEASE & CIRRHOSIS (2006-2015)	34
TABLE 52	AGE-ADJUSTED RATES OF DEATH DUE TO CHRONIC LIVER DISEASE & CIRRHOSIS (2006-2015)	34
TABLE 53	NUMBER OF DEATHS DUE TO ALZHEIMER’S DISEASE (2006-2015)	35
TABLE 54	CRUDE RATES OF DEATHS DUE TO ALZHEIMER’S DISEASE (2006-2015).	35
TABLE 55	AGE-ADJUSTED RATES OF DEATH DUE TO ALZHEIMER’S DISEASE (2006-2015)	35
TABLE 56	NUMBER OF DEATHS DUE TO ASSAULT (HOMICIDE) (2006-2015)	36
TABLE 57	CRUDE RATES OF DEATH DUE TO ASSAULT (HOMICIDE) (2006-2015)	36
TABLE 58	AGE-ADJUSTED RATES OF DEATH DUE TO ASSAULT (HOMICIDE) (2006-2015)	36
TABLE 59	NUMBER OF ALCOHOL-INDUCED DEATHS (2006-2015)	37
TABLE 60	CRUDE RATES OF ALCOHOL-INDUCED DEATHS (2006-2015)	37
TABLE 61	AGE-ADJUSTED RATES OF ALCOHOL-INDUCED DEATHS (2006-2015)	37
TABLE 62	NUMBER OF DRUG-INDUCED DEATHS (2006-2015)	38
TABLE 63	CRUDE RATES OF DRUG-INDUCED DEATHS (2006-2015)	38
TABLE 64	AGE-ADJUSTED RATES OF DRUG-INDUCED DEATHS (2006-2015)	38
TABLE 65	NUMBER OF FIREARM-RELATED DEATHS (2006-2015)	39
TABLE 66	CRUDE RATES OF FIREARM-RELATED DEATHS (2006-2015)	39
TABLE 67	AGE-ADJUSTED RATES OF FIREARM-RELATED DEATHS (2006-2015)	39
TABLE 68	NUMBER OF ADOPTIONS BY RACE (2006-2015)	49
TABLE 69	ADOPTION RATES BY RACE (2006-2015)	49
TABLE 70	NUMBER OF ADOPTIONS BY TYPE (2006-2015)	49
TABLE 71	MARRIAGE RATES (2006-2015).	51
TABLE 72	MARRIAGES BY RESIDENCY STATUS (2006-2015)	51
TABLE 73	MARRIAGES BY AGE GROUP (2006-2015).	51
TABLE 74	DIVORCE RATES (2006-2015)	52
TABLE 75	DIVORCES BY DECREE TYPE (2006-2015)	52

TABLE 76	DIVORCES BY AGE GROUP (2006-2015)	52
TABLE A.1	U.S. YEAR 2000 STANDARD POPULATION AND WEIGHTS	54
TABLE B.1	EXPECTATION OF LIFE FOR ALL ALASKANS (2011-2015)	57
TABLE C.1	ADEQUACY OF PRENATAL CARE INDEX MATRIX	58
TABLE D.1	ESTIMATED POPULATION OF ALASKA BY AGE GROUP, SEX, AND RACE (2015)	59
TABLE D.2	ESTIMATED POPULATION OF ALASKA BY AGE GROUP, SEX, AND RACE (2014)	60
TABLE D.3	ESTIMATED POPULATION OF ALASKA BY AGE GROUP, SEX, AND RACE (2013)	60
FIGURE D.1	POPULATION DISTRIBUTION BY AGE GROUP, SEX: ALASKA AND THE U.S. (2015)	61

LIST OF MAPS

FERTILITY RATES BY CENSUS AREA OR BOROUGH (2011-2015).	10
TEEN (15-19) BIRTH RATES BY CENSUS AREA OR BOROUGH (2011-2015)	11
FIRST TRIMESTER PRENATAL CARE BY CENSUS AREA OR BOROUGH (2011-2015)	12
ADEQUACY OF PRENATAL CARE UTILIZATION BY CENSUS AREA OR BOROUGH (2011-2015)	13
CESAREAN SECTION PERCENTAGES BY CENSUS AREA OR BOROUGH (2011-2015)	14
LOW BIRTH WEIGHT PERCENTAGES BY CENSUS AREA OR BOROUGH (2011-2015)	15
PRETERM BIRTH PERCENTAGES BY CENSUS AREA OR BOROUGH (2011-2015)	16
INFANT MORTALITY RATES BY CENSUS AREA OR BOROUGH (2011-2015)	22
UNDER FIVE MORTALITY RATES BY CENSUS AREA OR BOROUGH (2011-2015).	23
CANCER DEATHS BY CENSUS AREA OR BOROUGH (2011-2015).	40
HEART DISEASE DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	41
UNINTENTIONAL INJURY DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	42
STROKE DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	43
CHRONIC LOWER RESPIRATORY DISEASE DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	44
SUICIDE DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	45
ALCOHOL-INDUCED DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	46
FIREARM-RELATED DEATHS BY CENSUS AREA OR BOROUGH (2011-2015)	47
ALASKA BOROUGH/CENSUS AREAS	62

EXECUTIVE SUMMARY

SUMMARY OF POPULATION AND VITAL STATISTICS INFORMATION, 2015

Alaska's Population¹

Total Population	737,625
White	516,146
American Indian/Alaska Native	124,500
Black	36,262
Asian/Pacific Islander	60,717
Male	382,127
Female	355,498
Natural Increase	6,967 ²
Natural Increase Rate	9.4 ³

Deaths

Total Resident Deaths	4,324
Crude Death Rate	586.2 ⁴
Age-Adjusted Death Rate	736 ⁵
Male Age-Adjusted Death Rate	851.1
Female Age-Adjusted Death Rate	625.3
Age-Adjusted Cancer Death Rate	152.9
Age-Adjusted Heart Disease Death Rate	149.4
Age-Adjusted Unintentional Injury Death Rate	57.2
Age-Adjusted Suicide Death Rate	27.1
Infant Mortality Rate	6.4 ⁶
White Infant Mortality Rate	4.6
American Indian/Alaska Native Infant Mortality Rate	13.1
Black Infant Mortality Rate	9.4*
Asian/PI Infant Mortality Rate	2.7*

Births

Total Births	11,291
Crude Birth Rate	15.3 ³
White Crude Birth Rate	13.6
American Indian/Alaska Native Crude Birth Rate	19.1
Black Crude Birth Rate	13
Asian/Pacific Islander Crude Birth Rate	16.3
Teen Birth Rate	28.9 ⁷
Fertility Rate	77.1 ⁸
White Fertility Rate	70.9
American Indian/Alaska Native Fertility Rate	91.6
Black Fertility Rate	64.1
Asian/Pacific Islander Fertility Rate	70
Low Birth Weight Percentage	5.8 ⁹
White Low Birth Weight Percentage	5.4
American Indian/Alaska Native Low Birth Weight Percentage	6.6
Black Low Birth Weight Percentage	8
Asian/Pacific Islander Low Birth Weight Percentage	6.1

Other Vital Statistics

Fetal Deaths	57
Fetal Death Rate	5.4 ⁶
Adoptions	639
Crude Adoption Rate	0.9 ³
Marriages	5,478
Crude Marriage Rate	7.4 ³
Divorces	3,080
Crude Divorce Rate	4.2 ³

¹ Population estimates are from the Alaska Department of Labor, Administrative Services, Research and Analysis Section, Demographics Unit.

² Natural increase is the difference between live births and deaths. Natural increase does not include migration.

³ Natural increase, birth, marriage, divorce, and adoption rates are events per 1,000 population.

⁴ Crude death rates are deaths per 100,000 population.

⁵ Age-adjusted death rates are adjusted to the U.S. 2000 standard population.

⁶ Infant mortality and fetal death rates are 3-year averages (2013–2015) per 1,000 live births. Infant death rates are calculated using the death cohort method. See Appendix A.

⁷ Teen birth rate is the number of births to teens per 1,000 females 15–19 years of age.

⁸ Fertility rates are births per 1,000 females 15–44 years of age.

⁹ Low birth weight percentages are infants born weighing less than 2,500 grams per 100 live births.

*Rate is based on fewer than 20 occurrences, and may be statistically unreliable. Use with caution.

INTRODUCTION

ABOUT ALASKA

Alaska is the largest of the 50 states and contains approximately 16 percent of the country's landmass. Because of its size, Alaska has widely diverse geographic, climatic, and demographic characteristics, all of which affect public health.

Alaska contains roughly 586,412 square miles of land. The state population in 2015 was 737,625, or slightly more than one person per square mile. Alaska also claims the most northern, western and eastern points of land in the United States. It also contains more miles of coastline than all of the contiguous 48 states combined (6,640 miles not including islands), as well as more than 5,000 glaciers, 3 million fresh water lakes, and 3,000 rivers (of which the Yukon is the third longest river in the United States). Much of the coastline and fresh water areas are used as transportation corridors, as well as fishing grounds. Remote lands are used for hunting and recreational activities.

Unique climatic conditions affect Alaska's people. Temperatures can range from as high as 100°F, to lows that approach -80°F. Alaska experiences extremes in precipitation as well. Some areas of the state may receive up to 200 inches of precipitation annually, while other areas receive as little as 12 inches.

With diverse cultures, sparse population, severe temperatures, vast coastline, and outdoor lifestyles, the state experiences many unique health care challenges. One such challenge is assisting residents who live in remote areas of the state. A combination of Alaska Native Regional Corporations, the State of Alaska, and private health care entities provide health care in these areas through funding for public health facilities and workers.

The Health Analytics and Vital Records Section (HAVRS) Annual Report report focuses on public health indicators in the state of Alaska. Some comparisons are made between Alaska health status indicators and national indicators. Although many similarities exist between Alaska and the rest of the United States, there are also many important differences. By reporting these indicators, our hope is

to assist others in evaluating the status of public health in Alaska. The events and vital statistics discussed throughout this report can provide a useful starting point for health care planners, providers, research professionals, policy makers, or others interested in Alaska public health.

HOW VITAL STATISTICS ARE COLLECTED

The Alaska Vital Statistics Act (Alaska Statute (AS) 18.50) requires the Department of Health and Social Services to install, maintain, and operate a system of vital records. These records contain birth, death, fetal death, divorce, marriage, and adoption information.

When a birth occurs in Alaska, there is a legal process for recording that birth (AS 18.50.160). Generally, a physician, midwife, and/or hospital medical records staff person enters birth information into the Electronic Vital Records System (EVRS) database using information provided by the birth parent(s) and the delivery attendant.

Death certificates are typically entered by a funeral home staff member, and then certified by the attending physician or medical examiner. Death certificates should be filed within three days of the date of death (AS 18.50.230). After the data have been entered, it is then reviewed and registered by the Section's Registration Unit in Juneau.

Alaska participates in the State and Territorial Exchange of Vital Events system. This cooperative arrangement facilitates exchanges of vital records data between states and other jurisdictions. This insures that vital events, such as births or deaths of Alaska residents that occur out of state, are received and recorded. Conversely, records of births or deaths of non-residents that occur in Alaska are also forwarded to their respective state's registrar.

Under the Section's oversight, the Alaska Court System issues a marriage license and files a certificate for each marriage performed in the state. The certificate is filed with the local recording office of the Court System within seven days of the marriage (AS 18.50.270). The local recording office then forwards the certificate to HAVRS for registration

and permanent retention. Since 1997, the Section has been issuing marriage licenses in Juneau, Anchorage, and Fairbanks, as well as registering and providing permanent retention of documents. Marriage licenses in other parts of the state continue to be issued by the Court System under the Sections's oversight.

HAVRS began issuing marriage licenses to same-sex couples beginning October 13th, 2014. Marriage licenses are issued regardless of sexual orientation, or gender identity.

Divorce, dissolution, and annulment certificates are prepared by a clerk of the court from information provided by the petitioner, plaintiff, and (possibly) court documents. The completed certificate is then forwarded to HAVRS for final registration (AS 18.50.280).

For each adoption granted in Alaska, a report of adoption is prepared and registered with HAVRS (AS 18.50.210).

POPULATION ESTIMATES

Population estimates used in this report were obtained from the Alaska Department of Labor and Workforce Development, Division of Administrative Services, Research and Analysis Section, Demographics Unit. Totals are made by race, age, and geographic area. The 2015 Alaskan census population was 737,625 persons, with 382,127 males and 355,498 females. In 2015 there were 107.5 males for every 100 females in Alaska.

Population estimates are updated annually. The estimate of total population is revised each year to correspond to the United States Census Bureau's estimated state total. Using the decennial census as a base, birth, death, Internal Revenue Service, Alaska Permanent Fund and education statistics are used to produce annual population estimates for geographic areas.

Residents of the Anchorage census area comprised 40.5 percent of the state's population in 2015. About 82.3 percent of Alaska's population was concentrated in six census areas: Anchorage, Fairbanks, Juneau, Kenai, Bethel, and Matanuska-Susitna.

The age of a population is important when interpreting vital statistics, because behaviors and health risks of younger populations differ from those exhibited by older populations. Age, race, and sex distributions within a population are also important. The median age for Alaskan males during 2015 was 32.8 years; for females it was 33.9 years; for all Alaskans it was 33.3 years. The median age for males in the United States was 36.5 years; for females it was 39.1 years; for all United States citizens it was 37.8 years.¹ For an example of the disparity of the age distribution of Alaska versus that of the United States, please refer to Appendix E. For further information about interpretation of vital statistics, refer to "How to Use Vital Statistics" within Appendix B.

HOW CERTIFICATES ARE PROCESSED

In 2013, HAVRS instituted an updated Electronic Vital Records System (EVRS). This replaces the previous database system (Lightspeed), and enables hospital and clinical staff, birth attendants, physicians, medical examiners, funeral home directors, and other qualified birth/death certifiers to record vital statistics information directly into the system.

As information is entered for each individual certificate, the system checks for invalid or improbable data. Missing or out-of-range information is returned to the facility or birth attendant for verification and/or correction. When the final certificate data have been entered into EVRS, the data are certified, recorded, and filed by HAVRS.

A physician or medical examiner determines causes of death, and narrative descriptions are entered on the death certificate. The narrative, or literal, causes of death are forwarded to the National Center for Health Statistics (NCHS), who code causes of death according to International Classification of Diseases Version 10 (ICD-10) standards. This coding is then returned to the HAVRS, and uploaded into the corresponding EVRS record.

After vital records have been registered in EVRS, analysts perform additional quality assurance checks before the data are forwarded to the NCHS.

¹ See: U.S. Census Bureau, 2015 American Community Survey 1-Year Estimates.

Waiting for all data to arrive and eliminating duplicate entries are both important steps for ensuring the most accurate report possible. Once the data are both accurate and complete, the Section's Health Analytics Unit generates statistical analyses from which the tables, charts, and narrative of this report are based.

There are a number of ways to report vital events including the numbers of observations, rates based on total populations, or rates based on specific populations. For a discussion of the use of vital statistics, and a comparison of different populations, see Appendix B.

DETERMINATION OF RACE

The NCHS issues guidelines for determining the race of a child at birth. With few exceptions, the child's race on the birth certificate is the same as the mother's stated race. These guidelines became effective in 2003.

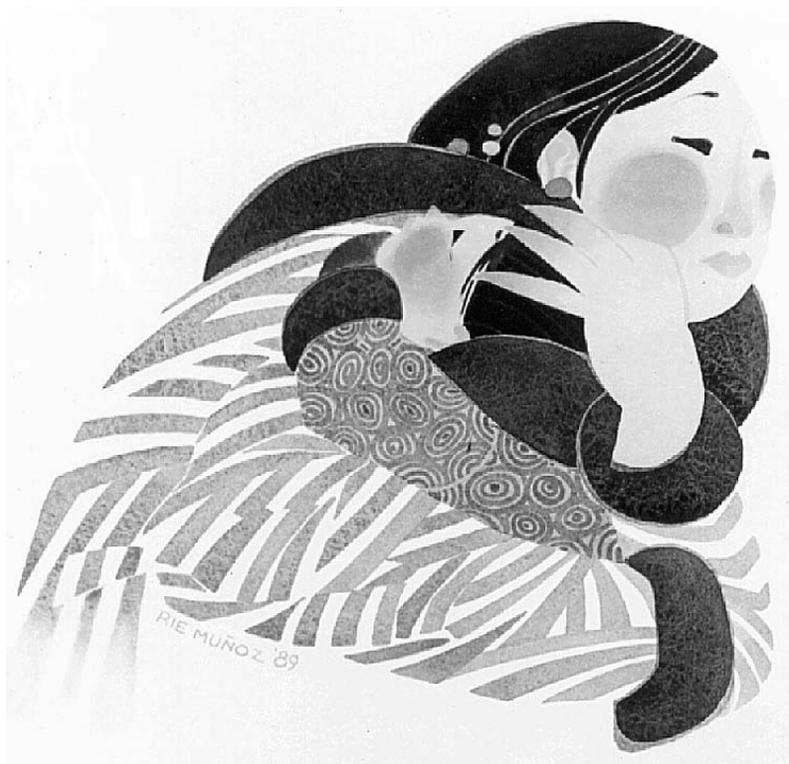
Sometimes race will be recorded differently on an individual's death certificate. This can distort death rates, particularly in the case of infant mortality, where a child's race may be reported as white on the birth certificate because the mother is white, and Alaska Native on the death certificate because the father is Alaska Native. Unless otherwise noted, the race of the deceased is based on the race provided on the death certificate.

In order to permit estimation and comparison of data collected using different sets of racial categories, HAVRS employs a race "bridging" methodology developed by the NCHS.² This allows comparison of different racial categories used over time, or where multiple races have been specified.

Racial categories used in this report are as follows: American Indian or Alaska Native (AI/AN), Asian, Black or African American (Black), Native Hawaiian or Other Pacific Islander (NHOPI), and White. Due to low numbers of Asian and NHOPI Alaskans, these two categories are further consolidated to a single category, Asian/PI.

² See: United States Census 2000 Population with Bridged Race Categories, National Center for Health Statistics, Vital Health Stat 2(135), 2003".

BIRTHS



"The Embrace"
Copyright Rie Munoz, Ltd.

In 2015...

- Alaska mothers gave birth to 11,291 babies.
- July had the most births (1,021), while November had the fewest births (881).
- The median age of mothers was 28 years old and the median age of fathers was 30 years old
- The youngest mother was 13 years old, and the youngest father was also 13 years old.
- The oldest mother was 49 years old and the oldest father was 80 years old.
- Olivia was the most popular girl's name and Liam was the most popular boy's name.

Birth Summary

The number of live births to Alaska residents has declined slightly over the previous year, decreasing 0.9 percent. However the overall number of births has still risen 2.7 percent since 2006. Births to American Indian/Alaska Native mothers and white mothers continue to comprise the majority of Alaska's births.

Crude birth rates, which measure how many births occur per 1,000 population, have returned to a 10-

year low of about 15 births per 1,000 population, the same rate as 2012. Fertility rates measure how many births occur per 1,000 female population between the ages 15 and 44. As this measure only takes into account the portion of the population that typically bears children, fertility rates are a more meaningful measure of birth patterns. The overall fertility rate of Alaska mothers has increased 0.1 percent since 2006.

Table 1: Number of Births by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	872	844	943	941	1,041	1,028	1,111	953	1,019	991
Black	428	451	423	466	461	513	417	510	510	473
AI/AN	2,698	2,774	2,889	2,954	2,890	2,831	2,805	2,456	2,429	2,381
White	6,782	6,743	7,059	6,810	6,975	6,941	6,681	7,273	7,040	7,012
Alaska	10,996	11,052	11,439	11,316	11,469	11,439	11,166	11,453	11,398	11,291

Table 2: Crude Birth Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	20.6	19.2	20.7	19.3	20.4	19.2	20.0	16.6	17.3	16.3
Black	14.3	14.7	13.5	14.8	14.7	15.6	11.9	14.2	14.2	13.0
AI/AN	23.5	24.0	24.9	25.0	24.0	23.2	22.9	19.9	19.6	19.1
White	13.9	13.8	14.3	13.6	13.7	13.5	12.9	14.0	13.6	13.6
Alaska	16.3	16.2	16.7	16.2	16.1	15.8	15.3	15.5	15.5	15.3

Table 3: Fertility Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	85.0	80.1	87.2	82.2	87.8	83.3	86.5	71.5	74.0	69.9
Black	66.6	69.3	64.5	72.0	72.7	76.6	58.1	69.5	69.8	64.0
AI/AN	106.8	110.2	115.4	116.9	113.1	110.6	108.8	94.9	93.6	91.5
White	67.1	67.3	70.9	68.2	69.9	69.1	66.1	71.9	70.2	70.8
Alaska	76.9	77.6	80.6	79.1	79.8	78.8	76.0	77.6	77.4	77.0

Births by Age Group

Fertility rates by age group, or age-specific fertility rates, vary substantially. Alaska mothers between the ages of 20 and 29 continue to have the highest fertility rates by age group.

Since 2006, the overall teen mother (15-19) birth rate has declined 28.8 percent, with the black teen mother birth rate seeing the largest decrease.

As the two predominant races in Alaska, births to American Indian/Alaska Native and white teens mothers comprised the majority of teenaged births.

American Indian/Alaska Native teen mother birth rates remain approximately three times higher than white teen mother birth rates. In 2015, the teen birth rate for AI/AN teens was 55 per 1,000 population, compared to 29 per 1,000 for white teens.

Table 4: Age-Specific Fertility Rates (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
15-19	40.6	41.4	42.9	42.6	38.2	36.3	34.8	30.1	27.8	28.9
20-24	137.9	135.7	137.2	127.5	133.6	129.0	115.9	118.0	119.6	113.3
25-29	151.5	153.0	150.8	140.9	131.6	128.1	122.9	129.5	128.5	127.3
30-34	93.5	94.0	98.7	100.7	107.4	101.1	102.0	103.5	105.4	105.7
35-39	50.9	46.3	48.1	49.9	45.9	52.1	50.3	52.9	49.5	53.3
40-44	10.4	10.6	11.6	10.5	12.0	11.6	12.7	12.3	11.3	10.9
Total	76.9	77.6	80.6	79.1	79.8	78.8	76.0	77.6	77.4	77.0

Table 5: Number of Teen (15-19) Births by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	90	82	84	105	105	81	87	72	59	66
Black	61	70	53	54	53	49	49	45	40	35
AI/AN	470	454	497	473	421	390	350	263	234	280
White	464	482	486	464	371	353	330	308	294	257
Alaska	1,099	1,115	1,130	1,104	954	880	823	707	645	662

Table 6: Teen (15-19) Birth Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	49.0	42.8	43.2	51.0	50.1	39.3	41.5	33.9	26.9	29.3
Black	44.8	50.5	37.2	39.1	40.3	36.3	34.4	31.1	28.2	25.1
AI/AN	73.3	72.0	82.2	80.9	75.4	72.7	68.0	51.2	46.0	54.5
White	26.5	27.9	28.8	27.9	23.2	22.8	22.0	20.9	20.3	18.2
Alaska	40.6	41.4	42.9	42.6	38.2	36.3	34.8	30.1	27.8	28.9

Medical Services Utilization

In 2015, the overall level of mothers receiving first trimester care increased from 74.7 to 76.8 percent. Asian/Pacific Islander mothers remain the least likely to initiate prenatal care during the first trimester of pregnancy.

The adequacy of prenatal care utilization index compares the number of prenatal visits with the expected number of visits for the period when care

began and the delivery date (see Appendix C). Since 2006, this index in Alaska has increased 1.4 percent.¹

Since 2006, the percentage of births by Cesarean section have dropped slightly, by 0.9 percent. Black mothers were most likely to have a Cesarean section birth, while American Indian/Alaska Native mothers were least likely.

Table 7: Percent Receiving First Trimester Prenatal Care by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	72.9	69.8	65.6	62.9	60.8	59.4	59.4	60.9	65.0	64.1
Black	81.8	77.6	73.3	67.4	70.9	66.5	67.6	73.3	72.7	75.3
AI/AN	70.8	68.0	66.0	70.6	70.6	72.1	70.6	73.1	72.9	73.2
White	82.9	83.0	82.0	76.8	75.5	77.4	76.0	77.2	77.3	79.9
Alaska	79.0	77.7	76.2	73.3	72.6	73.8	72.5	74.8	74.7	76.8

Table 8: Adequacy of Prenatal Care Utilization by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	51.4	51.9	46.7	45.4	46.9	47.8	50.2	45.8	51.1	52.1
Black	59.1	53.7	44.0	38.8	47.3	51.1	54.9	54.1	54.5	61.7
AI/AN	43.8	38.9	38.9	42.4	45.0	43.7	49.8	51.8	50.9	52.2
White	63.6	63.3	58.5	53.9	57.7	59.5	61.5	57.3	59.8	61.4
Alaska	57.6	55.6	52.0	49.2	52.9	53.9	57.1	54.9	56.6	58.4

Table 9: Cesarean Section Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	25.1	23.7	28.7	24.7	24.9	25.3	26.5	25.8	28.1	23.7
Black	27.1	26.8	27.9	30.5	29.7	25.1	32.9	27.6	33.1	31.7
AI/AN	12.6	11.3	13.0	13.8	13.4	12.8	13.3	13.7	14.1	13.9
White	26.5	26.6	25.3	27.0	24.6	23.3	26.4	26.6	25.5	25.2
Alaska	23.1	22.6	22.6	23.5	22.0	21.0	23.3	24.0	23.7	22.9

¹ Calculations for first trimester care and APNCU percentages include unknown/missing responses and therefore may not accurately reflect the level of prenatal care that Alaska women receive. The number of birth records with missing or unknown prenatal care visits and timing has decreased since 2006.

Infant Health Characteristics

A low birth weight birth is one in which the infant weighs less than 2,500 grams (approximately 5.5 pounds). Since 2006, the overall percentage of low birth weight births has remained within a narrow range. In 2015, black mothers had the highest percentage of low weight births, at 8 percent.

percentage has decreased 8 percent. White mothers continue to have the lowest overall preterm birth rate, while Asian/Pacific Islander mothers and American Indian/Alaska Native mothers have the highest.

A preterm birth is one in which the delivery occurs before 37 weeks of gestation. Since 2006, this

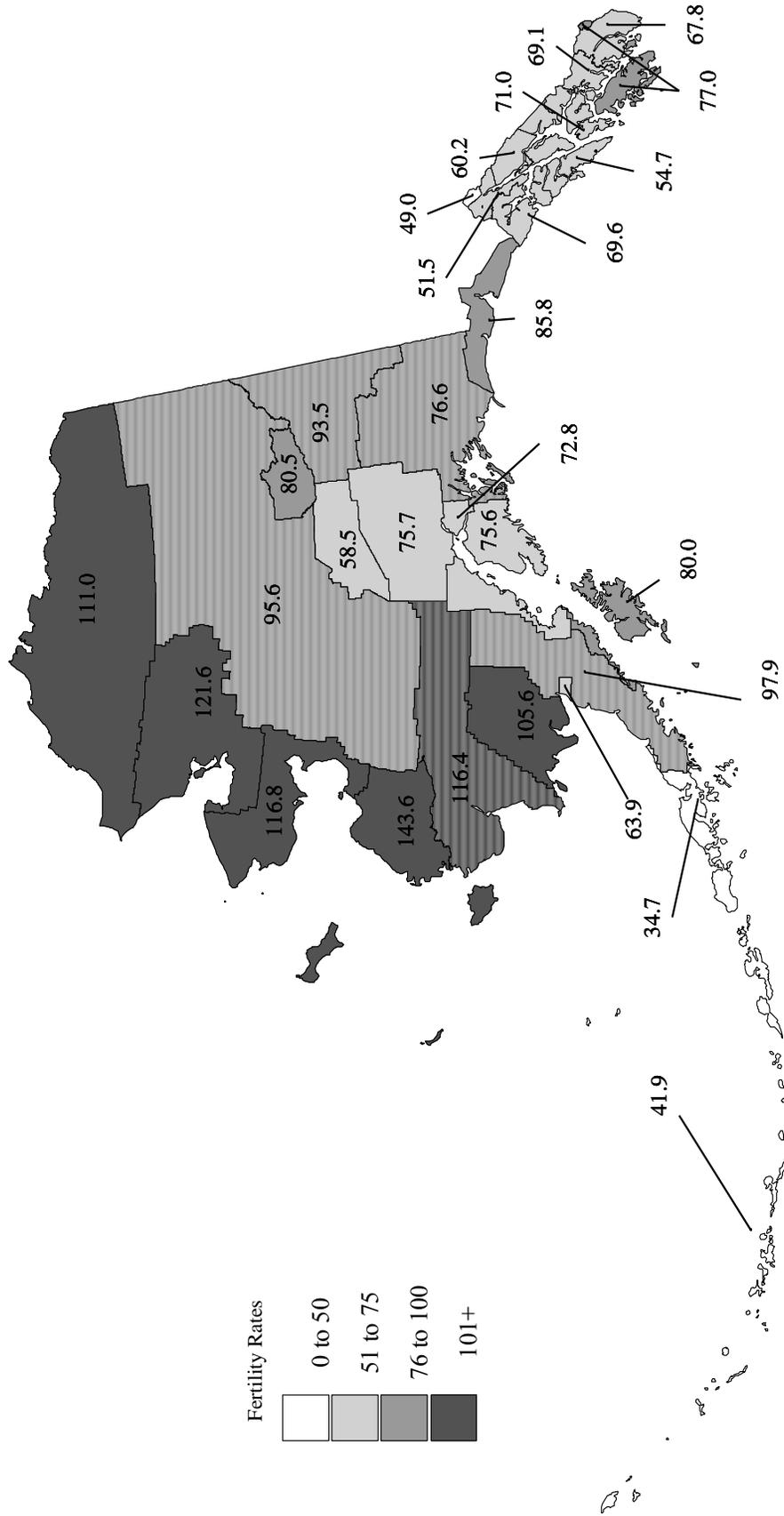
Table 10: Low Birth Weight Percentages by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	6.7	5.3	6.7	5.7	5.8	9.0	6.4	6.5	7.4	6.1
Black	9.1	11.1	11.8	13.1	11.3	8.6	10.8	6.9	10.0	8.0
AI/AN	5.0	4.8	6.5	6.3	6.2	6.0	6.8	5.6	6.7	6.6
White	5.9	5.6	5.3	5.2	5.1	5.3	4.7	5.6	5.2	5.4
Alaska	5.9	5.6	6.0	5.9	5.7	6.0	5.6	5.7	5.9	5.8

Table 11: Preterm Birth Percentages by Race (2006-2015)

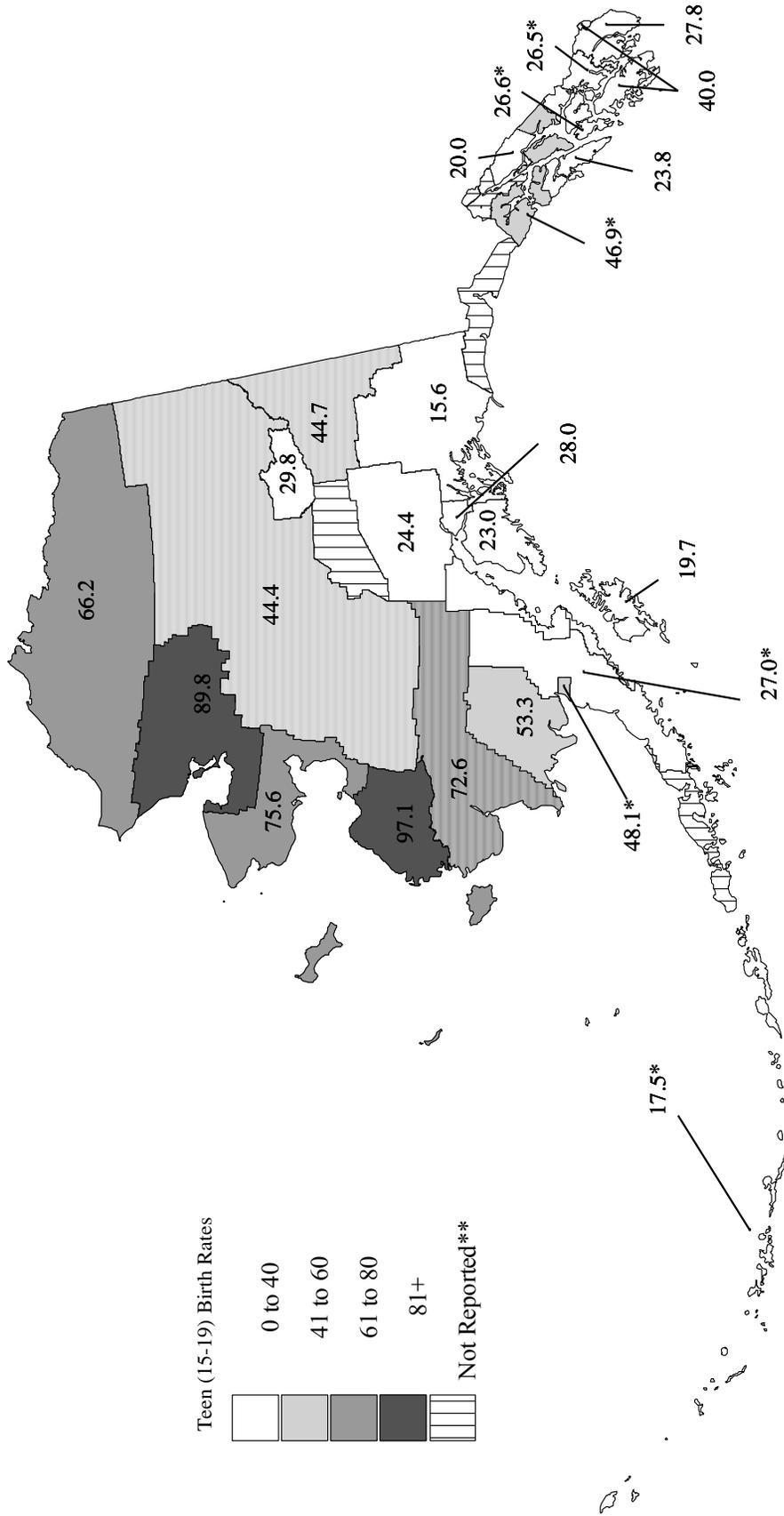
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	13.0	12.2	12.1	11.9	11.0	13.1	11.2	13.1	13.2	14.2
Black	12.6	14.0	13.7	18.2	14.3	11.9	12.5	9.2	12.4	11.2
AI/AN	11.9	11.7	13.0	13.8	11.6	12.5	11.5	12.9	13.1	14.1
White	10.4	9.4	8.9	9.1	8.5	8.9	7.7	8.8	8.6	8.7
Alaska	11.2	10.4	10.3	11.0	9.7	10.4	9.2	10.0	10.2	10.3

Fertility Rates by Census Area or Borough 2011-2015



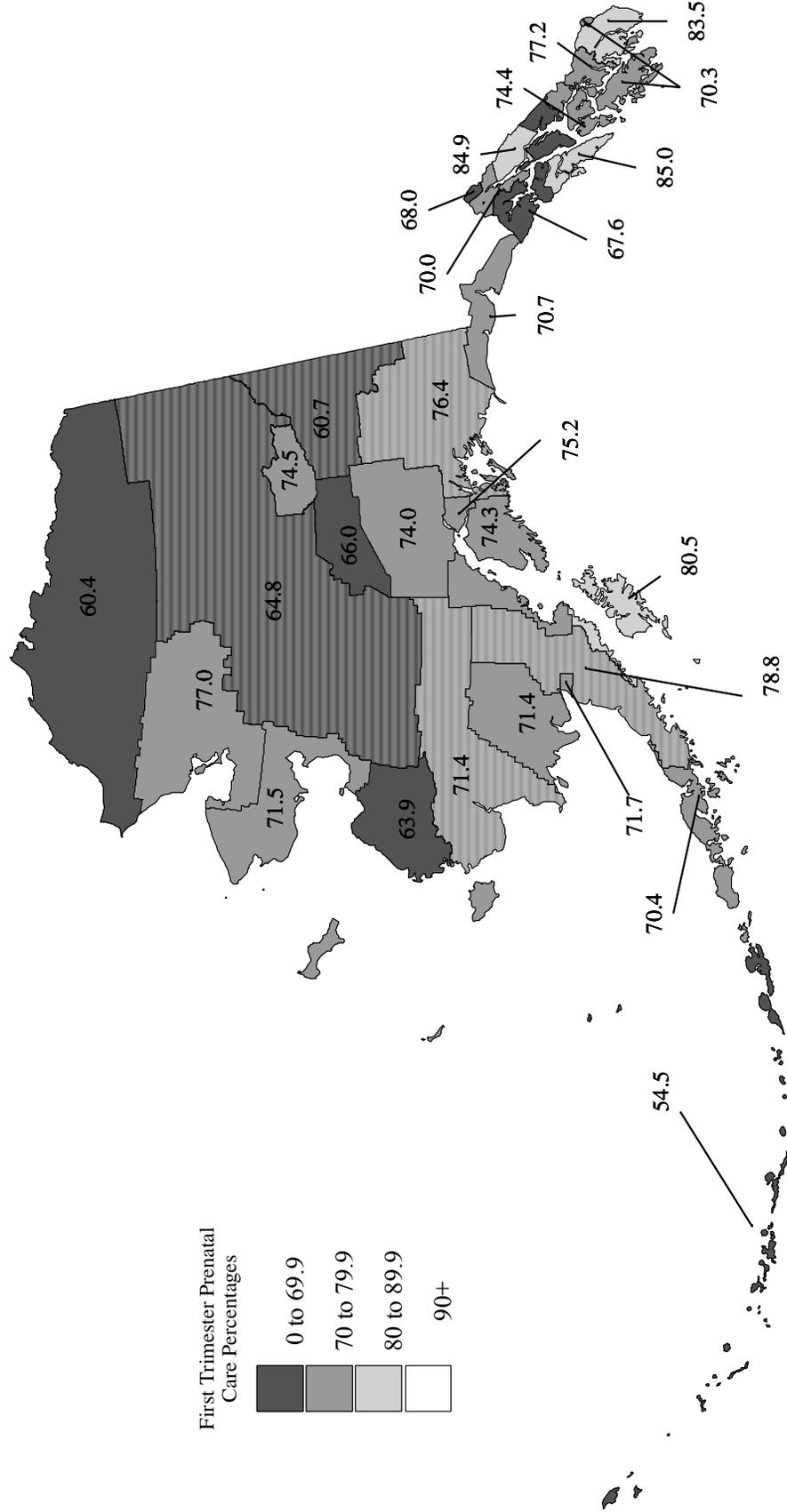
*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
**Rates based on fewer than 6 occurrences are not reported.

Teen (15-19) Birth Rates by Census Area or Borough 2011-2015

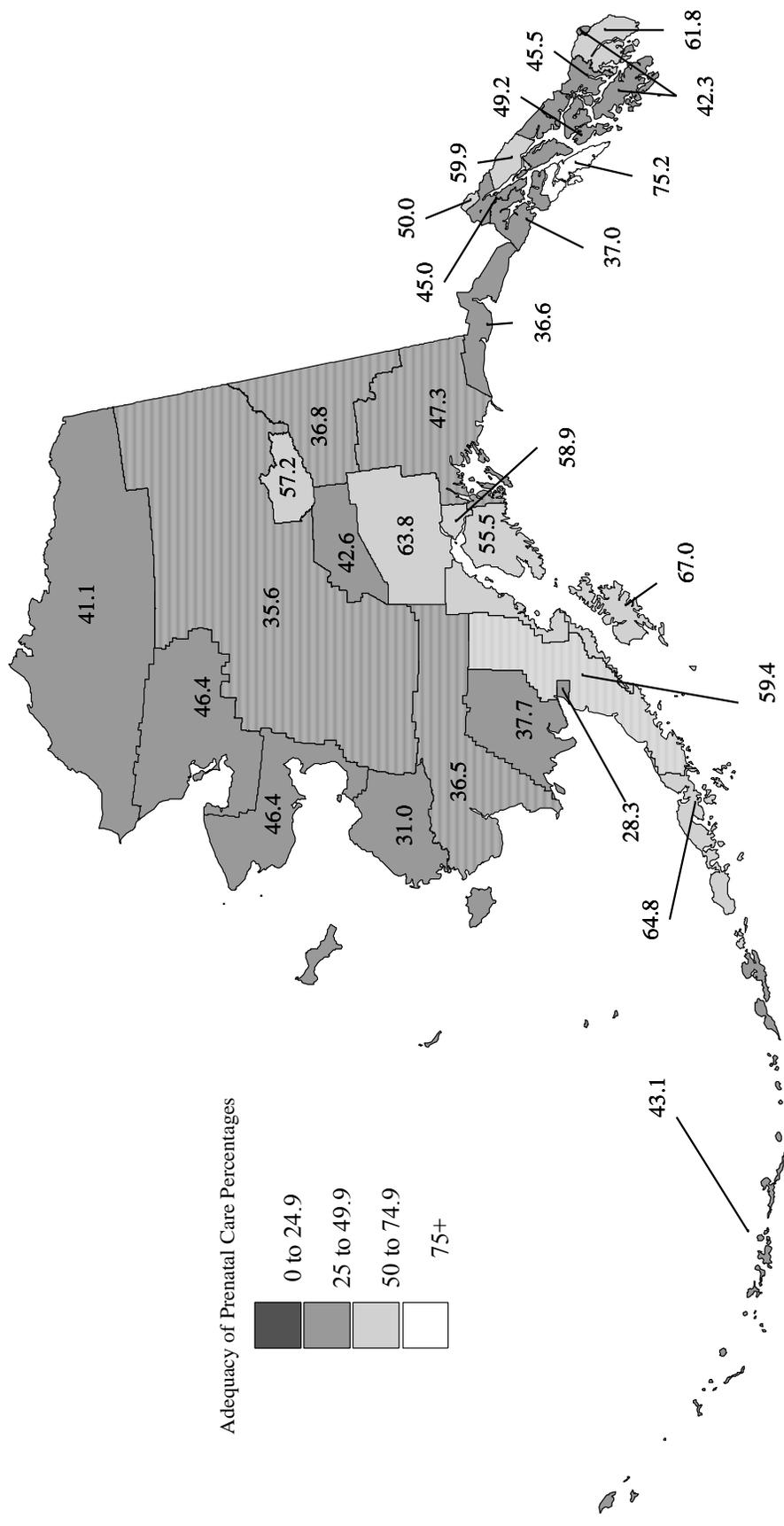


*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
 **Rates based on fewer than 6 occurrences are not reported.

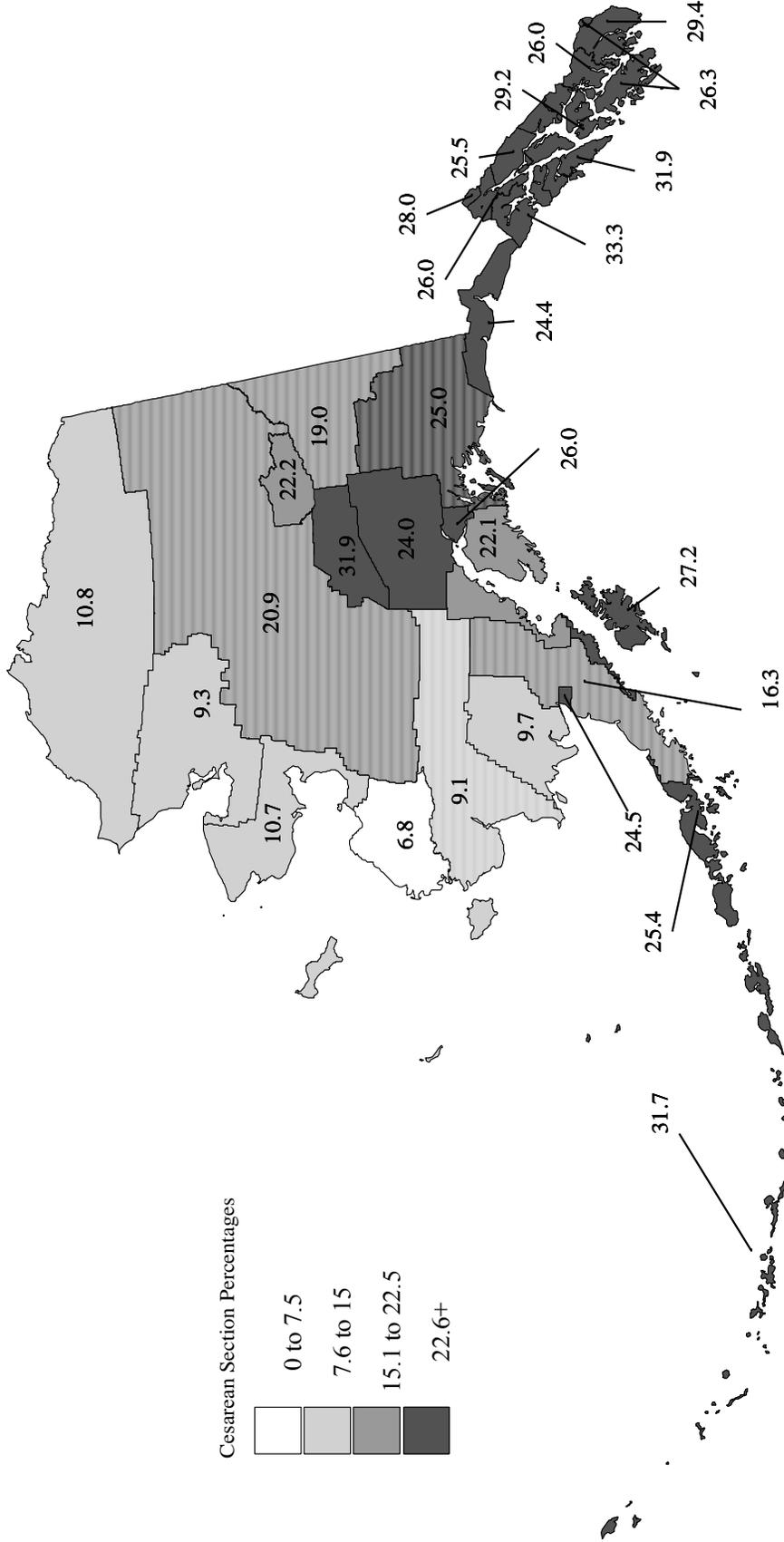
First Trimester Prenatal Care by Census Area or Borough 2011-2015



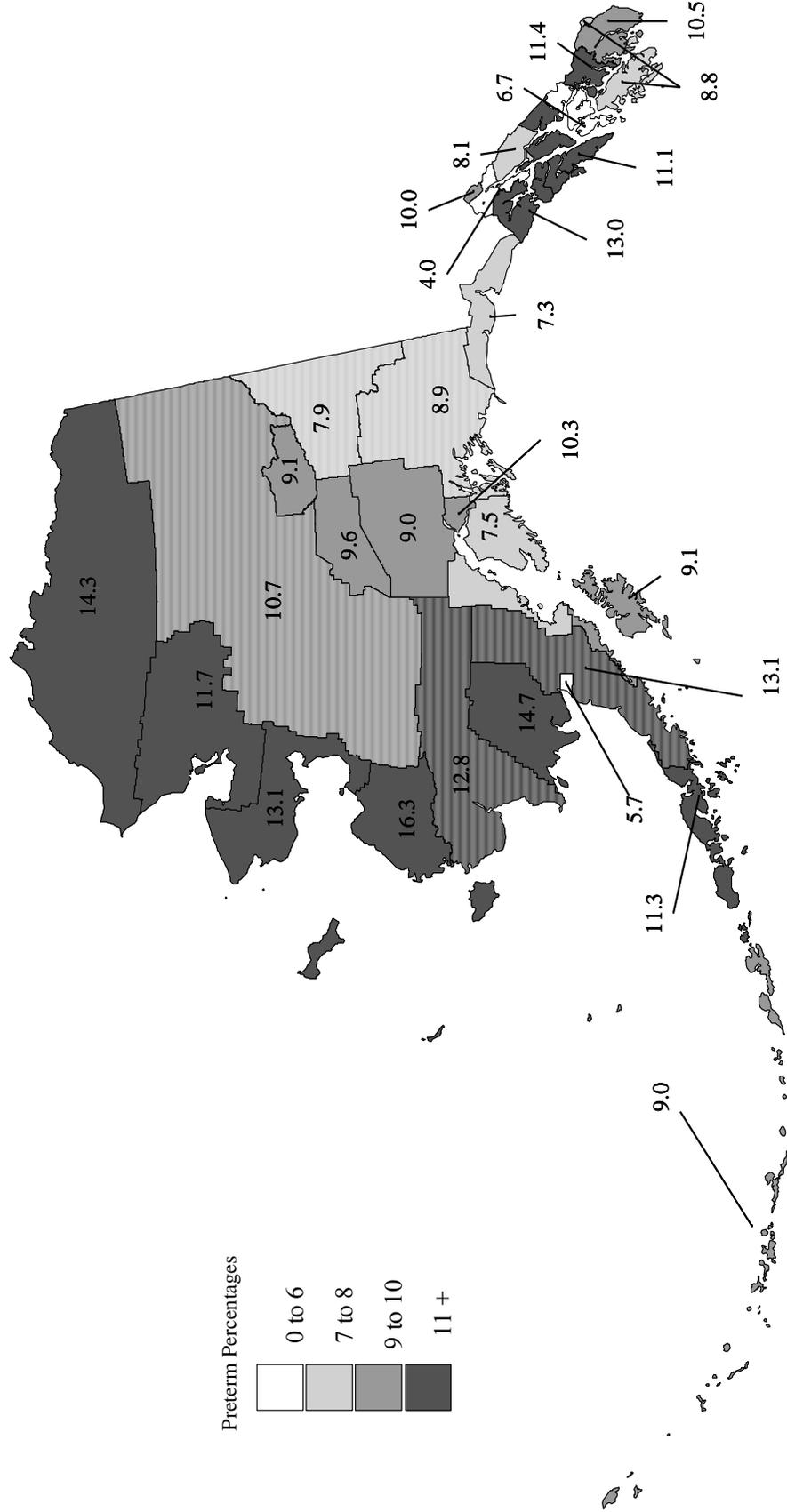
Adequacy of Prenatal Care Utilization by Census Area or Borough 2011-2015



Cesarean Section Percentages by Census Area or Borough 2011-2015



Preterm Birth Percentages by Census Area or Borough 2011-2015



FETAL, INFANT, AND CHILD DEATHS



"Priest, Yukon River"
Copyright Rie Munoz, Ltd.

In 2015...

- 57 fetal deaths occurred to Alaska mothers. From 2013-2015, the Alaska fetal death rate averaged 5.4 deaths per 1,000 births and fetal deaths.
- 79 infant deaths occurred to Alaska residents. From 2013-2015 the Alaska infant death rate averaged 6.4 infant deaths per 1,000 births.
- 44 infants died during the neonatal period. The leading cause of neonatal infant death was due to congenital malformations, deformations, and chromosomal abnormalities.
- 35 infants died during the postneonatal period. The leading cause of postneonatal infant death was unintentional injuries.
- 78 children between the ages of one and nineteen died. The leading cause of death among children was due to intentional self-harm (suicide).

Fetal and Infant Death Summary

A fetal death is defined as death before the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy. The number of fetal deaths between 2013-2015 decreased to 184, down from 194 between 2012-2014. The fetal mortality rate is the number of fetal deaths, per 1,000 live births and fetal deaths. From 2013-2015, the fetal mortality rate averaged 5.4 deaths per 1,000 live births and fetal deaths.

The number of infant deaths between 2013-2015 increased to 219, up from 201 between 2012-2014. The infant mortality rate is the number of infant deaths per 1,000 live births for a given calendar year. From 2013-2015, the infant mortality rate averaged 6.4 deaths per 1,000 live births.

Table 12: Fetal Mortality Rates by Race (2004-2015)^{1, 2, 3}

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	5.2	6.8	6.7	5.1	3.5	3.2	4.8	4.7	5.6	5.6
White	3.8	3.5	3.4	3.6	3.6	4.3	4.7	4.7	4.4	3.8
Alaska	4.9	5.1	4.8	4.5	4.1	4.7	5.3	5.3	5.7	5.4

Table 13: Number of Infant Deaths by Race (2004-2015)^{1, 2}

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	82	83	95	91	76	61	54	66	81	95
White	95	93	87	91	79	74	67	77	90	99
Alaska	206	206	213	212	186	162	147	169	201	219

Table 14: Infant Mortality Rates by Race (2004-2015)^{1, 2}

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	10.3	10.1	11.4	10.6	8.7	7.0	6.3	8.2	10.5	13.1
White	4.8	4.7	4.2	4.4	3.8	3.6	3.3	3.7	4.3	4.6
Alaska	6.5	6.3	6.4	6.3	5.4	4.7	4.3	5.0	5.9	6.4

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

² Due to the low number of fetal, infant, and child deaths in Alaska, relatively small changes in the number of deaths can cause large fluctuations in rates from one year to the next. Therefore, Alaska's fetal death rate, infant mortality rates, and child death rates use a three-year sum/moving average in order to provide a more reasonable basis for comparison.

³ Alaska Statute 18.50.240 requires the filing of a fetal death certificate for each death that occurs where the pregnancy has lasted at least twenty weeks. This table only includes information in which the estimated gestation is at least twenty weeks.

Neonatal Infant Deaths

Neonatal deaths are deaths of infants under 28 days of age. These deaths are frequently associated with circumstances related to pregnancy and delivery. The number of neonatal infant deaths increased from 34 in 2014, to 44 in 2015.

The neonatal infant mortality rate is the number of neonatal infant deaths, per 1,000 live births for a given calendar year. From 2013-2015, the neonatal infant mortality rate averaged 3.2 deaths per 1,000

live births. During this period, American Indian/Alaska Native infants were over twice as likely to die during the neonatal period than white infants.

In 2015, congenital malformations, deformations, and chromosomal abnormalities was the leading cause of neonatal death.

Table 15: Number of Neonatal Deaths by Race (2004-2015)^{1,2}

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	36	33	33	31	25	21	23	26	33	37
White	55	53	47	40	34	37	43	47	48	54
Alaska	109	106	100	89	78	77	82	90	100	108

Table 16: Neonatal Infant Mortality Rates by Race (2004-2015)^{1,2}

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	4.5	4.0	3.9	3.6	2.9	2.4	2.7	3.2	4.3	5.1
White	2.8	2.7	2.3	1.9	1.6	1.8	2.1	2.2	2.3	2.5
Alaska	3.4	3.3	3.0	2.6	2.3	2.2	2.4	2.6	2.9	3.2

Table 17: Number of Neonatal Deaths by Cause (2011-2015)

	2011	2012	2013	2014	2015
Congenital malformations, deformations, and chromosomal abnormalities	7	8	9	6	12
Disorders related to short gestation and low birth weight, not elsewhere classified	1	2	3	2	8
Newborn affected by maternal complications of pregnancy	1	1	2	7	2
Newborn affected by complications of placenta, cord, and membranes	0	6	1	1	1
Other	15	19	15	18	21
Total	24	36	30	34	44

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

² Due to the low number of fetal, infant, and child deaths in Alaska, relatively small changes in the number of deaths can cause large fluctuations in rates from one year to the next. Therefore, Alaska's fetal death rate, infant mortality rates, and child death rates use a three-year sum/moving average in order to provide a more reasonable basis for comparison.

Postneonatal Infant Deaths^{1,2}

Postneonatal deaths are deaths of infants between 28 and 364 days of age. These deaths are frequently associated with living conditions. The number of postneonatal deaths decreased from 41 in 2014, to 35 in 2015.

The postneonatal infant mortality rate is the number of postneonatal infant deaths, per 1,000 live births for a given calendar year. From 2013-2015, the postneonatal

infant mortality rate averaged 3.3 deaths per 1,000 live births. During this period, American Indian/Alaska Native infants were more than three times as likely to die during the postneonatal period than white infants.

In 2015, Sudden infant death syndrome and unintentional injuries were the leading cause of postneonatal death.

Table 18: Number of Postneonatal Deaths by Race (2004-2015)

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	46	50	62	60	51	40	31	40	48	58
White	40	40	40	51	45	37	24	30	42	45
Alaska	97	100	113	123	108	85	65	79	101	111

Table 19: Postneonatal Infant Mortality Rates by Race (2004-2015)

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	5.8	6.1	7.4	7.0	5.8	4.6	3.6	4.9	6.2	8.0
White	2.0	2.0	1.9	2.5	2.2	1.8	1.2	1.4	2.0	2.1
Alaska	3.1	3.1	3.4	3.6	3.2	2.5	1.9	2.3	3.0	3.3

Table 20: Number of Postneonatal Infant Deaths by Cause (2011-2015)

	2011	2012	2013	2014	2015
Congenital malformations, deformations, and chromosomal abnormalities	1	2	5	2	2
Sudden infant death syndrome	2	2	4	13	8
Unintentional injuries	2	4	6	5	8
Other	14	17	20	21	17
Total	19	25	35	41	35

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

² Due to the low number of fetal, infant, and child deaths in Alaska, relatively small changes in the number of deaths can cause large fluctuations in rates from one year to the next. Therefore, Alaska's fetal death rate, infant mortality rates, and child death rates use a three-year sum/moving average in order to provide a more reasonable basis for comparison.

Child Mortality Summary^{1,2}

The under five mortality rate is the number of deaths that occur before age five (age 0-4), per 1,000 live births for a given calendar year. From 2013-2015, the under five mortality rate averaged 8.1 deaths per 1,000 live births. American Indian/Alaska Native children are nearly three times as likely to die before their fifth birthday than white children.

Mortality rates for children and teenagers age 5-19 are calculated on an age-specific basis. On average, from 2013-2015, approximately 17 Alaska children (age 5-14), and 71 teenagers (age 15-19) died per 100,000 population. American Indian/Native Alaska children (age 5-14) are three times as likely to die than white children, while American Indian/Native teenagers (age 15-19) are more than two and one-half times as likely to die than white teenagers.

Table 21: Child Under Five Mortality Rates by Race (2004-2015)

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	12.0	11.9	13.4	13.0	11.7	9.7	9.0	10.6	13.5	16.9
White	5.7	5.2	5.2	5.5	4.9	4.5	4.2	4.6	5.1	5.8
Alaska	7.7	7.3	7.6	7.6	6.9	6.0	5.7	6.3	7.3	8.1

Table 22: Child (5-14) Mortality Rates by Race (2004-2015)

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	49.8	52.3	54.6	44.7	44.6	41.3	40.9	37.6	33.0	32.8
White	26.3	24.3	20.5	15.5	13.5	16.0	12.8	13.8	8.1	11.7
Alaska	30.3	30.1	28.1	22.3	20.2	20.3	18.8	18.6	14.3	17.1

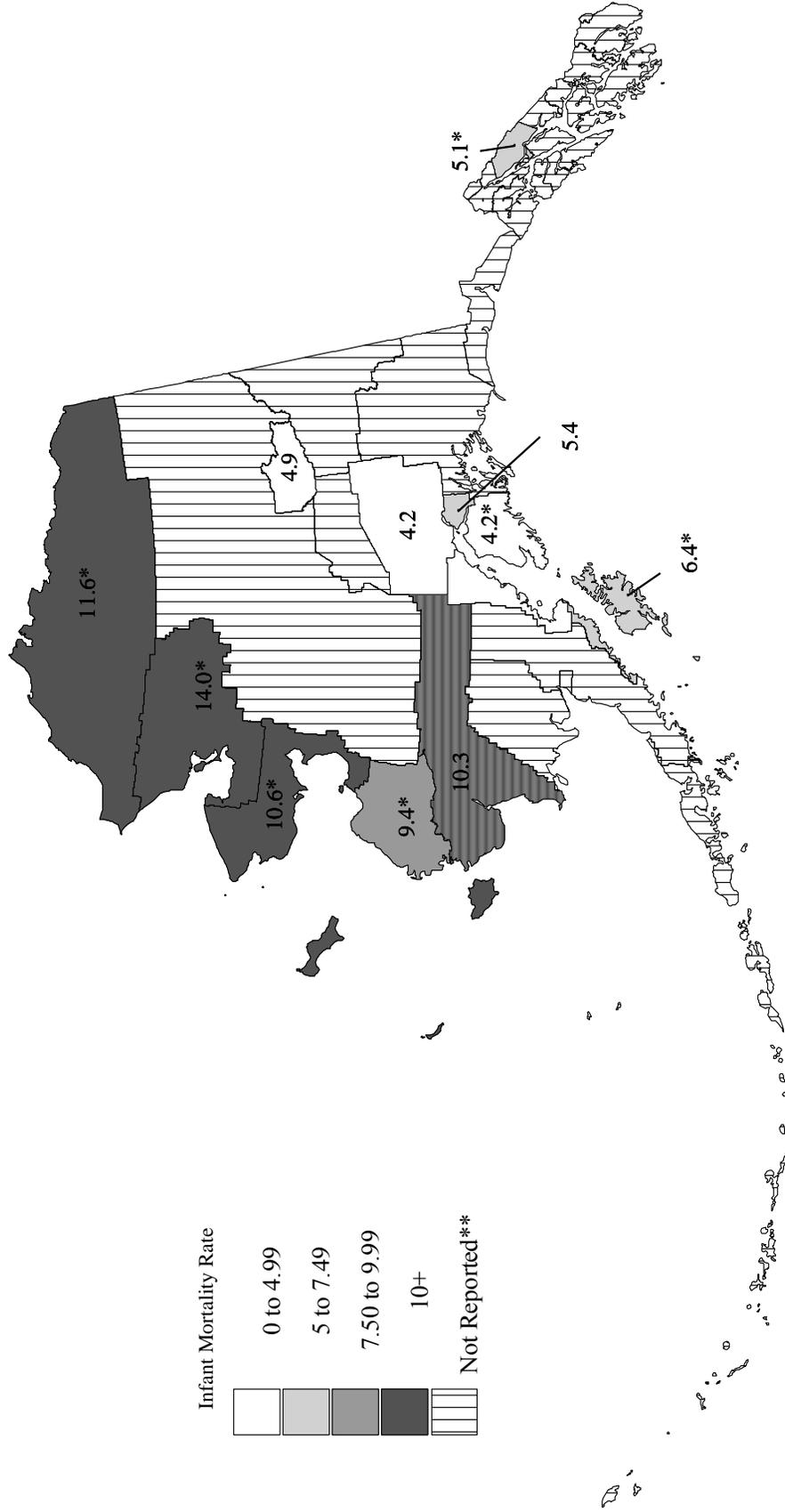
Table 23: Teen (15-19) Mortality Rates by Race (2004-2015)

	04-06	05-07	06-08	07-09	08-10	09-11	10-12	11-13	12-14	13-15
AI/AN	198.7	187.1	178.6	177.2	185.7	193.0	176.6	150.7	134.2	143.6
White	64.2	58.3	61.8	65.7	60.8	56.6	48.2	50.5	53.8	53.8
Alaska	98.0	90.8	89.6	88.9	84.0	82.4	72.8	68.9	67.9	71.4

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

² Due to the low number of fetal, infant, and child deaths in Alaska, relatively small changes in the number of deaths can cause large fluctuations in rates from one year to the next. Therefore, Alaska's fetal death rate, infant mortality rates, and child death rates use a three-year sum/moving average in order to provide a more reasonable basis for comparison.

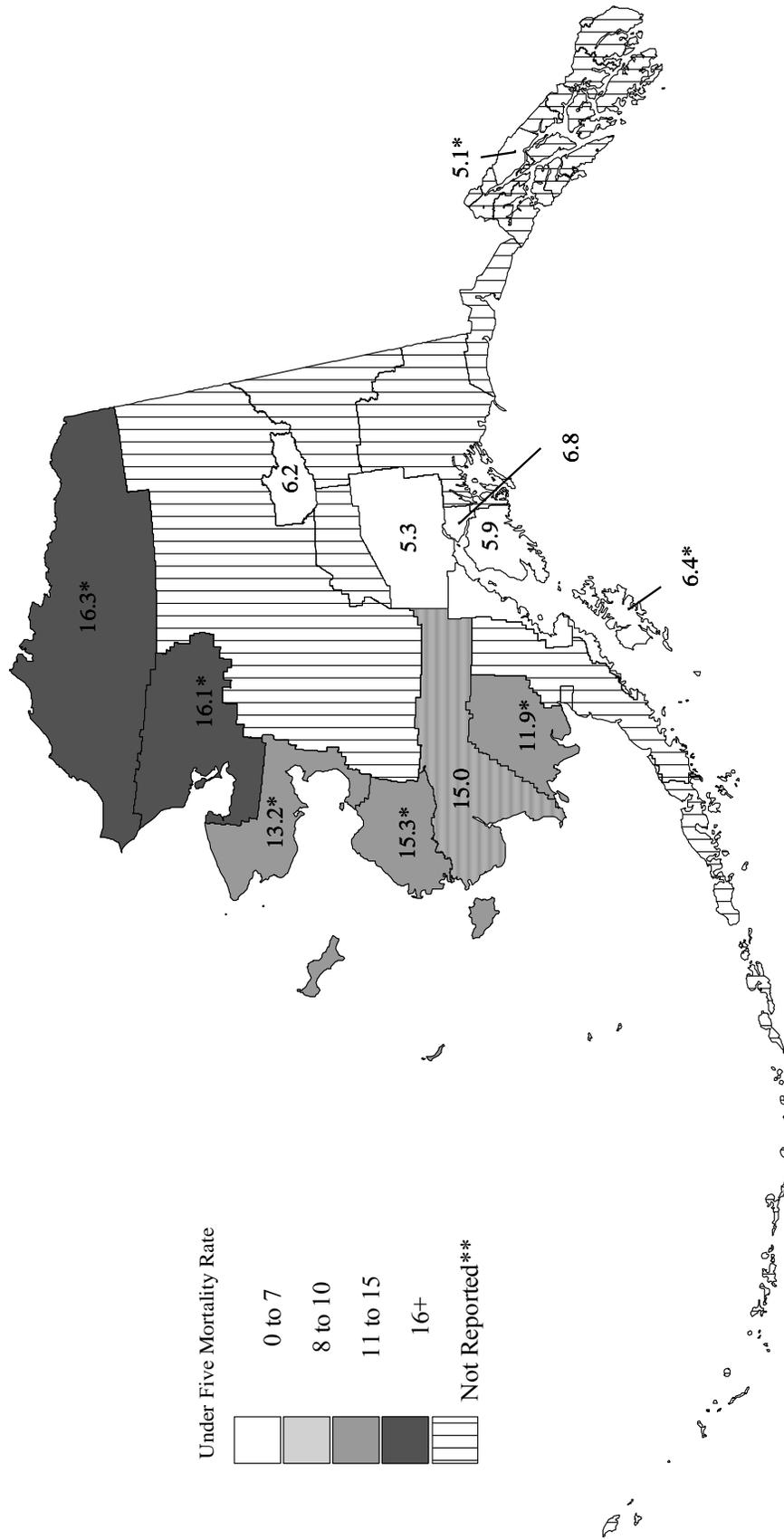
Infant Mortality Rates by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

**Rates based on fewer than 6 occurrences are not reported.

Under Five Mortality Rates by Census Area or Borough 2011-2015



Under Five Mortality Rate

- 0 to 7
- 8 to 10
- 11 to 15
- 16+
- Not Reported**

*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
 **Rates based on fewer than 6 occurrences are not reported.

DEATHS



"Seabirds, St. George"
Copyright Rie Munoz, Ltd.

In 2015...

- There were 4,324 deaths to Alaska residents.
- More Alaskans died in May (393) than any other month. The fewest deaths occurred in April (336).
- The oldest female decedent was 107 years old, while the oldest male decedent was also 107 years old.
- The median female age at death was 72. The median male age at death was 66.
- The median age of Alaskans at death was 68 years old.
- The median age at death of white people was 70 years, while the median age at death of American Indian/Alaska Native people was 61 years.

Death Summary

In 2015, 4,324 Alaskans died. As the two most predominant races in Alaska, American Indian/Alaska Native and white Alaskans comprise the majority of deaths.

Crude death rates measure how many Alaskans died per 100,000 population. Since 2006, Alaska's crude death rates have increased 17.9 percent. Crude death rates for American Indian/Alaska Native people were 44.2 percent higher than for white people .

When comparing death rates between different populations, age-adjusted death rates should be used. This is because populations with a higher proportion of older people will tend to have higher crude death rates. In 2015, Alaska's age-adjusted death rate was 736 deaths per 100,000 U.S. year 2000 standard population. Age-adjusted rates for American Indian/Alaska Native people are about 79.6 percent higher than for white people.

Table 24: Number of Deaths by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	121	112	111	135	131	154	160	170	175	176
Black	77	97	102	90	100	103	124	128	119	140
AI/AN	760	814	805	857	863	898	892	920	931	1,020
White	2,367	2,423	2,452	2,511	2,597	2,680	2,718	2,756	2,865	2,933
Alaska	3,353	3,470	3,499	3,611	3,732	3,860	3,921	4,000	4,128	4,324

Table 25: Crude Death Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	285.4	255.0	243.5	277.6	257.2	287.5	287.6	296.0	296.4	289.9
Black	257.3	317.0	324.5	285.4	318.5	312.2	354.3	357.1	330.8	386.1
AI/AN	661.0	705.2	694.2	726.4	716.6	735.2	726.8	744.5	750.2	819.3
White	485.8	494.3	496.5	502.5	511.8	521.0	524.4	530.2	552.8	568.3
Alaska	497.0	510.2	509.5	517.5	525.5	533.8	535.9	543.0	559.8	586.2

Table 26: Age-Adjusted Death Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	510.8	435.2	409.5	493.1	443.5	484.5	485.2	482.6	466.2	451.1
Black	682.2	790.7	830.8	654.6	731.6	652.8	691.8	631.2	608.6	697.3
AI/AN	1149.5	1194.3	1116.9	1208.7	1164.0	1162.0	1144.4	1165.6	1151.4	1193.7
White	745.8	727.7	721.3	709.2	713.1	685.7	663.7	650.3	660.8	664.5
Alaska	796.6	785.4	768.6	769.5	771.6	745.4	723.1	712.9	721.8	736.0

Leading and Select Causes of Death Summary

In 2015, the top ten leading causes of death claimed the lives of 3,146 Alaskans, comprising 72.8% of all deaths. Cancer continues to be the number one leading cause of death. In 2015, assault (homicide) replaced influenza and pneumonia as the tenth leading cause of death.

Years of potential life lost is defined as the difference between the assumed life span of a “typical” person, and the actual age of death. Assuming that a typical

person’s lifespan is 75 years, the top ten leading causes of death were responsible for a total 43,792 years of potential life lost in 2015.

In addition to the top ten leading causes of death, data on three select causes of death are also presented. Select causes are composite categories of special interest. Because these categories can contain deaths that may fall into more than one leading cause, they are not ranked.

Table 27: Leading Causes of Death (2015)

Rank	Leading Cause of Death	Deaths	Rates		Years of Potential Life Lost (YPLL)		
			Crude Rate	Age-Adjusted Rate	YPLL	YPLL Rank	YPLL Average
1	Malignant neoplasms (cancer)	962	130.4	152.9	9,214	2	9.6
2	Heart disease	835	113.2	149.4	7,383	4	8.8
3	Unintentional injuries	385	52.2	57.2	11,151	1	29.0
4	Chronic lower respiratory diseases	204	27.7	36.9	1,263	10	6.2
5	Intentional self-harm (suicide)	200	27.1	27.1	7,510	3	37.5
6	Cerebrovascular diseases (stroke)	178	24.1	35.3	1,307	9	7.3
7	Diabetes mellitus	140	19.0	22.9	1,236	11	8.8
8	Chronic liver disease & cirrhosis	113	15.3	14.8	2,112	6	18.7
9	Alzheimer's disease	67	9.1	16.5	27	31	0.4
10	Assault (homicide)	62	8.4	8.1	2,589	5	41.8

Table 28: Select Causes of Death (2015)

Select Causes of Death	Deaths	Rates		Years of Potential Life Lost (YPLL)	
		Crude Rate	Age-Adjusted Rate	YPLL	YPLL Average
Alcohol-induced death	160	21.7	20.4	3,740	23.4
Drug-induced death	126	17.1	16.8	4,301	34.1
Firearm related death	176	23.9	23.6	6,798	38.6

Malignant Neoplasm (Cancer) Deaths

ICD-10: C00–C97

Malignant neoplasms, or cancer, is the number one leading cause of death in Alaska. In 2015, cancer claimed the lives of 962 Alaskans. More Alaskans died from cancer of the trachea, bronchus, and lung than any other type of cancer; 145 males and 112 females.

Among the leading causes of death in Alaska, cancer ranked second in total years of potential life lost with

9,214 years lost. On average, 9.6 years of life were lost prematurely for each cancer death.

Since 2006, the crude death rate for cancer has increased 12.6 percent. During this same time period, the age-adjusted death rate for cancer has decreased 14.4 percent.

Table 29: Number of Deaths Due to Cancer (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	25	29	33	36	33	47	39	49	40	41
Black	12	25	28	10	28	20	28	32	24	26
AI/AN	159	180	154	173	178	177	181	213	170	190
White	581	599	635	671	631	685	672	710	728	696
Alaska	781	837	856	891	880	935	923	1,012	968	962

Table 30: Crude Rates of Deaths Due to Cancer (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	138.3	156.0	132.8	146.6	147.8	144.9	147.5	172.4	137.0	152.6
White	119.2	122.2	128.6	134.3	124.3	133.2	129.7	136.6	140.5	134.8
Alaska	115.8	123.1	124.6	127.7	123.9	129.3	126.2	137.4	131.3	130.4

Table 31: Age-Adjusted Rates of Deaths Due to Cancer (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	243.7	274.6	223.2	251.2	238.9	240.7	242.3	275.3	213.1	235.9
White	173.2	170.1	175.4	181.3	165.7	165.3	154.6	150.8	154.0	142.9
Alaska	178.7	184.0	180.9	184.5	176.1	174.0	163.4	167.5	158.8	152.9

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Heart Disease Deaths

ICD-10: I00-I09, I11, I20-I51

Heart disease is the second leading cause of death in Alaska. In 2015, heart disease claimed the lives of 835 Alaskans.

Among the leading causes of death in Alaska, heart disease ranked fourth in total years of potential life lost with 7,383 years lost. On average, 8.8 years of life were lost prematurely for each heart disease death.

Since 2006, the crude death rate for heart disease has increased 21.1 percent. During this same time period the age-adjusted death rate has decreased 11.6 percent.

Table 32: Number of Deaths Due to Heart Disease (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	24	17	21	28	32	28	24	30	31	32
Black	15	16	19	32	14	18	20	22	17	30
AI/AN	111	106	114	144	155	146	131	156	158	174
White	478	467	470	501	501	540	528	494	564	589
Alaska	631	609	626	710	707	735	706	705	779	835

Table 33: Crude Rates of Deaths Due to Heart Disease (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	96.5	91.8	98.3	122.1	128.7	119.5	106.7	126.2	127.3	139.8
White	98.1	95.3	95.2	100.3	98.7	105.0	101.9	95.0	108.8	114.1
Alaska	93.5	89.5	91.1	101.7	99.5	101.6	96.5	95.7	105.6	113.2

Table 34: Age-Adjusted Rates of Deaths Due to Heart Disease (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	194.9	191.9	171.2	219.3	223.8	206.9	182.5	217.1	206.4	225.6
White	168.2	151.3	148.5	148.4	141.1	142.4	130.7	122.2	136.7	138.0
Alaska	169.0	153.6	149.4	159.2	151.3	147.8	134.2	132.2	142.7	149.4

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Unintentional Injury and Poisoning Deaths

ICD-10: V01-X59, Y85-Y86

Unintentional injuries (including unintentional poisonings) are the third leading cause of death in Alaska. In 2015, unintentional injuries claimed the lives of 385 Alaskans. More Alaskans died due to unintentional poisoning than any other type of unintentional injury; 85 males and 49 females.

Among the leading causes of death in Alaska, unintentional injuries ranked first in total years of potential life lost with 11,151 years lost. On average,

29 years of life were lost prematurely for each unintentional injury death.

Since 2006, the crude rate for unintentional injuries has increased 12.5 percent. During this same time period, the age-adjusted rate has increased 9.6 percent.

Table 35: Number of Deaths Due to Unintentional Injuries (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	5	11	4	4	3	8	9	12	10	4
Black	4	9	4	2	10	6	12	9	11	12
AI/AN	96	116	101	123	104	111	117	104	112	141
White	205	217	219	208	242	258	225	225	243	216
Alaska	313	355	331	338	366	384	366	354	378	385

Table 36: Crude Rates of Deaths Due to Unintentional Injuries (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	83.5	100.5	87.1	104.3	86.4	90.9	95.3	84.2	90.2	113.3
White	42.1	44.3	44.3	41.6	47.7	50.2	43.4	43.3	46.9	41.8
Alaska	46.4	52.2	48.2	48.4	51.5	53.1	50.0	48.1	51.3	52.2

Table 37: Age-Adjusted Rates of Deaths Due to Unintentional Injuries (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	101.8	111.4	103.9	130.5	100.4	100.3	118.4	99.6	110.9	130.4
White	45.5	47.9	48.7	43.5	53.5	53.2	44.7	45.6	47.4	45.5
Alaska	52.2	56.6	54.0	53.2	58.5	57.1	53.8	52.4	54.5	57.2

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Chronic Lower Respiratory Disease (Chronic Obstructive Pulmonary Disease) Deaths

ICD-10: J40-J47

Chronic lower respiratory disease (CLRD), or chronic obstructive pulmonary disease, is the fourth leading cause of death in Alaska. In 2015 CLRD claimed the lives of 204 Alaskans.

Since 2006, the overall crude death rate for CLRD has increased 34.5 percent. During this same time period, the age-adjusted rate has decreased 3.1 percent.

Among the leading causes of death in Alaska, CLRD ranked tenth in total years of potential life lost with 1,263 years lost. On average, 6.2 years of life were lost prematurely for each CLRD death.

Table 38: Number of Deaths Due to CLRD (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	6	3	4	4	3	4	7	3	4	10
Black	2	1	2	4	2	5	5	2	4	5
AI/AN	31	33	44	41	44	46	48	41	47	47
White	99	135	131	146	126	138	128	151	135	141
Alaska	139	173	182	195	176	193	189	197	192	204

Table 39: Crude Rates of Deaths Due to CLRD (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	27.0	28.6	37.9	34.8	36.5	37.7	39.1	33.2	37.9	37.8
White	20.3	27.5	26.5	29.2	24.8	26.8	24.7	29.1	26.1	27.3
Alaska	20.6	25.4	26.5	27.9	24.8	26.7	25.8	26.7	26.0	27.7

Table 40: Age-Adjusted Rates of Deaths Due to CLRD (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	59.9	55.8	76.5	77.7	76.9	69.2	72.5	61.5	70.6	67.9
White	34.6	46.4	42.3	47.3	38.1	38.9	36.1	36.1	34.4	32.7
Alaska	38.1	45.4	45.4	49.9	41.5	41.4	40.2	37.0	37.8	36.9

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Intentional Self-Harm (Suicide) Deaths

ICD-10: U03, X60-X84, Y87.0

Intentional self-harm, or suicide, is the fifth leading cause of death in Alaska. In 2015, suicide claimed the lives of 200 Alaskans. Firearms were the leading mechanism of death by suicide, making up 61 percent of all suicide deaths; 98 males and 24 females.

Since 2006, the crude death rate for suicides has increased 38.3 percent. During this same time period, the age-adjusted rate has increased 38.3 percent.

Among the leading causes of death in Alaska, suicide ranked third in total years of potential life lost with 7,510 years lost. On average 37.5 years of life were lost prematurely for each suicide death.

Table 41: Number of Deaths Due to Suicide (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	3	3	3	5	5	2	4	2	4	5
Black	1	5	2	2	5	7	7	5	7	5
AI/AN	45	46	52	44	50	46	54	57	38	64
White	80	95	110	89	102	85	99	105	115	120
Alaska	132	149	167	140	163	142	167	172	167	200

Table 42: Crude Rates of Deaths Due to Suicide (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	39.1	39.9	44.8	37.3	41.5	37.7	44.0	46.1	30.6	51.4
White	16.4	19.4	22.3	17.8	20.1	16.5	19.1	20.2	22.2	23.2
Alaska	19.6	21.9	24.3	20.1	23.0	19.6	22.8	23.4	22.6	27.1

Table 43: Age-Adjusted Rates of Deaths Due to Suicide (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	36.3	38.9	43.8	34.8	40.0	37.0	44.2	46.8	29.4	50.4
White	16.4	20.2	21.2	17.1	19.1	16.3	18.9	20.3	21.8	22.7
Alaska	19.6	22.6	24.0	19.6	22.6	20.0	23.0	23.5	22.3	27.1

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Cerebrovascular Disease (Stroke) Deaths

ICD-10: I60-I69

Cerebrovascular disease, or stroke, is the sixth leading cause of death in Alaska. In 2015, stroke claimed the lives of 178 Alaskans.

Among the leading causes of death in Alaska, cerebrovascular disease ranked ninth in years of potential life lost with 1,307 years lost. On average, 7.3 years of life were lost prematurely for each stroke death.

Since 2006, the overall crude death rate for stroke has decreased 6.6 percent. During this same time period, the age-adjusted rate has decreased 26.2 percent.

Table 44: Number of Deaths Due to Stroke (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	12	9	12	11	12	10	11	12	9	18
Black	6	5	12	5	3	4	4	5	2	3
AI/AN	33	26	32	41	30	31	35	42	36	36
White	121	113	111	105	119	124	137	128	107	121
Alaska	174	156	169	162	167	169	187	188	157	178

Table 45: Crude Rates of Deaths Due to Stroke (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	28.7	22.5	27.6	34.8	24.9	25.4	28.5	34.0	29.0	28.9
White	24.8	23.1	22.5	21.0	23.4	24.1	26.4	24.6	20.6	23.4
Alaska	25.8	22.9	24.6	23.2	23.5	23.4	25.6	25.5	21.3	24.1

Table 46: Age-Adjusted Rates of Deaths Due to Stroke (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	62.5	56.6	58.6	76.2	54.1	52.3	64.3	66.7	49.5	48.6
White	43.5	43.9	39.4	36.2	37.7	38.0	39.1	36.1	28.8	32.8
Alaska	47.8	46.7	44.2	42.1	40.8	39.4	41.7	39.9	31.6	35.3

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Diabetes Mellitus Deaths

ICD-10: E10-E14

Diabetes is the seventh leading cause of death in Alaska. In 2015, diabetes claimed the lives of 140 Alaskans; 91 males and 49 females.

Among the leading causes of death in Alaska, diabetes ranked eleventh in terms of potential life lost with 1,236 years lost. On average, 8.8 years of life were lost prematurely for each diabetes death.

Since 2006, the crude rate of deaths due to Diabetes Mellitus has increased 17.3 percent. During this same time period, the age-adjusted rate has decreased 12.9 percent.

Table 47: Number of Deaths Due to Diabetes (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	7	8	8	5	6	14	11	13	12	12
Black	3	4	3	1	4	7	3	8	7	8
AI/AN	16	6	10	13	12	21	21	11	17	24
White	83	86	72	64	64	63	71	80	76	96
Alaska	109	104	93	84	86	106	106	112	113	140

Table 48: Crude Rates of Deaths Due to Diabetes (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	13.9*	5.2*	8.6*	11.0*	10.0*	17.2	17.1	8.9*	13.7*	19.3
White	17.0	17.5	14.6	12.8	12.6	12.2	13.7	15.4	14.7	18.6
Alaska	16.2	15.3	13.5	12.0	12.1	14.7	14.5	15.2	15.3	19.0

Table 49: Age-Adjusted Rates of Deaths Due to Diabetes (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	26.7*	10.9*	16.5*	23.5*	19.0*	33.2	25.2	15.7*	22.7*	28.0
White	25.7	26.1	23.4	17.6	18.8	15.2	16.3	17.5	15.8	19.9
Alaska	26.3	23.9	22.5	18.2	19.6	20.2	18.4	19.6	18.8	22.9

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

* Rates based on fewer than 20 occurrences are statistically unreliable, and should be used with caution.

Chronic Liver Disease & Cirrhosis Deaths

ICD-10: K70, K73-K74

Chronic liver disease and cirrhosis is the eighth leading cause of death in Alaska. In 2015, chronic liver disease and cirrhosis claimed the lives of 113 Alaskans; 57 males and 56 females.

Among the leading causes of death in Alaska, chronic liver disease and cirrhosis ranked sixth in years of potential life lost with 2,112 years lost. On average, 18.7 years of life were lost prematurely for each chronic liver disease and cirrhosis death.

Since 2006, the overall crude death rate for chronic liver disease and cirrhosis has increased 135.4 percent. During this same time period, the age-adjusted rate has increased 117.6 percent.

This is the single largest crude or age-adjusted rate increase of any leading cause of death in Alaska.

Table 50: Number of Deaths Due to Chronic Liver Disease & Cirrhosis (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	0	0	2	1	0	0	0	1	0	1
Black	1	0	0	1	0	2	1	2	2	6
AI/AN	9	26	17	21	21	25	31	25	26	36
White	33	44	40	70	46	70	57	54	56	68
Alaska	44	70	59	94	70	98	89	82	84	113

Table 51: Crude Rates of Deaths Due to Chronic Liver Disease & Cirrhosis (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	7.8*	22.5	14.7*	17.8	17.4	20.5	25.3	20.2	21.0	28.9
White	6.8	9.0	8.1	14.0	9.1	13.6	11.0	10.4	10.8	13.2
Alaska	6.5	10.3	8.6	13.5	9.9	13.6	12.2	11.1	11.4	15.3

Table 52: Age-Adjusted Rates of Deaths Due to Liver Disease & Cirrhosis (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	9.7*	26.3	17.8*	21.1	22.4	25.4	32.0	24.4	25.7	36.8
White	6.5	10.2	8.4	13.4	8.0	11.7	10.2	9.3	8.5	11.5
Alaska	6.8	11.4	9.2	13.9	9.8	12.9	12.4	11.0	10.3	14.8

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

* Rates based on fewer than 20 occurrences are statistically unreliable, and should be used with caution.

Alzheimer's Disease Deaths

ICD-10: G30

Alzheimer's disease is the ninth leading cause of death in Alaska. In 2015, Alzheimer's claimed the lives of 67 Alaskans; 18 males and 49 females.

Among the leading causes of death in Alaska, Alzheimer's disease ranked thirty-first in terms of potential life lost with 27 years lost. On average, 0.4 years of life were lost prematurely for each Alzheimer's disease death.

Since 2006, the crude death rate for Alzheimer's disease has decreased 15.7 percent. During this same time period, the age-adjusted rate has decreased 37.5 percent.

Table 53: Number of Deaths Due to Alzheimer's Disease (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	1	0	4	2	2	0	2	1	1	2
Black	3	1	0	2	2	3	1	2	1	4
AI/AN	8	8	11	4	11	12	6	8	9	10
White	60	56	64	59	69	57	93	60	57	51
Alaska	73	65	79	67	85	72	102	71	68	67

Table 54: Crude Rates of Deaths Due to Alzheimer's Disease (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	7.0*	6.9*	9.5*	**	9.1*	9.8*	4.9*	6.5*	7.3*	8.0*
White	12.3	11.4	13.0	11.8	13.6	11.1	17.9	11.5	11.0	9.9
Alaska	10.8	9.6	11.5	9.6	12.0	10.0	13.9	9.6	9.2	9.1

Table 55: Age-Adjusted Rates of Deaths Due to Alzheimer's Disease (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	20.2*	19.3*	27.6*	**	21.2*	24.0*	12.4*	15.9*	18.8*	19.7*
White	27.6	24.5	27.2	24.1	27.0	20.7	30.9	20.0	18.1	15.9
Alaska	26.4	22.3	26.6	21.6	25.9	20.4	26.7	18.5	17.0	16.5

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

* Rates based on fewer than 20 occurrences are statistically unreliable, and should be used with caution.

** Rates based on fewer than 6 occurrences are not reported.

Assault (Homicide) Deaths

ICD-10: U01-U02, X85-Y09, Y87.1

Assault (homicide) is the tenth leading cause of death in Alaska. In 2015, assault (homicide) claimed the lives of 62 Alaskans.

Among the leading causes of death in Alaska, assault (homicide) ranked fifth in years of potential life lost with 2,589 years lost. On average, 41.8 years of life were lost prematurely for each assault (homicide) death.

Since 2006, the overall crude death rate for assault (homicide) has increased 31.3 percent. During this same time period, the age-adjusted rate has increased 30.6 percent.

Table 56: Number of Deaths Due to Assault (Homicide) (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	8	1	0	3	6	4	6	3	1	3
Black	3	3	3	2	1	3	3	2	5	10
AI/AN	14	14	12	9	19	12	11	17	14	28
White	18	31	13	12	17	18	17	21	16	21
Alaska	43	50	28	26	44	37	38	43	36	62

Table 57: Crude Rates of Deaths Due to Assault (Homicide) (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	12.2*	12.1*	10.3*	7.6*	15.8*	9.8*	9.0*	13.8*	11.3*	22.5
White	3.7*	6.3	2.6*	2.4*	3.3*	3.5*	3.3*	4.0	3.1*	4.1
Alaska	6.4	7.4	4.1	3.7	6.2	5.1	5.2	5.8	4.9	8.4

Table 58: Age-Adjusted Rates of Deaths Due to Assault (Homicide) (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	14.7*	14.0*	12.6*	7.5*	15.5*	10.4*	9.5*	14.7*	11.5*	24.1
White	3.4*	5.9	2.6*	2.3*	3.3*	3.2*	3.2*	3.7	3.0*	4.1
Alaska	6.2	7.2	4.2	3.9	6.1	4.9	5.0	5.7	4.6	8.1

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

* Rates based on fewer than 20 occurrences are statistically unreliable, and should be used with caution.

Alcohol-Induced Deaths

ICD-10: E24.4, F10, G31.2, G62.1, G72.1, I42.6, K29.2, K70, K85.2, K86.0, R78.0, X45, X65, Y15

Alcohol-induced mortality is a composite that includes deaths due to alcohol psychoses, alcohol dependence syndrome, non-dependent abuse of alcohol, alcohol-induced chronic liver disease and cirrhosis, and alcohol poisoning. It does not include deaths due to traumatic injury such as motor vehicle accidents.

alcohol-induced deaths has increased 3.8%. During this same time period, the age-adjusted rate has decreased 3.3%.

There were 3,740 years of potential life lost due to alcohol-induced deaths, with 23.4 years lost prematurely for each death, on average.

In 2015, alcohol-induced deaths claimed the lives of 160 Alaskans. Since 2006, the crude death rate for

Table 59: Number of Alcohol-Induced Deaths (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	0	3	1	1	0	0	0	0	0	1
Black	2	0	2	1	0	1	1	1	3	4
AI/AN	51	69	66	62	62	61	63	58	62	79
White	87	72	75	83	58	67	56	67	73	74
Alaska	141	144	147	148	122	130	122	126	139	160

Table 60: Crude Rates of Alcohol-Induced Deaths (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	44.4	59.8	56.9	52.6	51.5	49.9	51.3	46.9	50.0	63.5
White	17.9	14.7	15.2	16.6	11.4	13.0	10.8	12.9	14.1	14.3
Alaska	20.9	21.2	21.4	21.2	17.2	18.0	16.7	17.1	18.9	21.7

Table 61: Age-Adjusted Rates of Alcohol-Induced Deaths (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	52.5	72.8	68.7	63.5	61.2	58.3	61.9	52.9	60.8	71.4
White	17.4	13.1	14.5	16.1	9.6	11.4	9.2	11.4	11.3	12.1
Alaska	21.1	20.6	21.7	21.8	16.3	17.2	15.7	16.3	17.7	20.4

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

* Rates based on fewer than 20 occurrences are statistically unreliable, and should be used with caution.

Drug-Induced Deaths

ICD-10: D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2, J70.3, J70.4, L10.5, L27.0, L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R50.2, R78.1, R78.2, R78.3, R78.4, R78.5, X40-X44, X60-X64, X85, Y10-Y14

Drug-induced mortality is a composite that includes deaths due to dependent and non-dependent use of drugs (legal and illegal use), and due to poisoning from medically prescribed, or other drugs. It excludes injury, homicides, other causes indirectly related to drug use, and newborn deaths due to the mother's drug use.

In 2015, drug-induced deaths claimed the lives of 126 Alaskans. Since 2006, the crude death rate for drug-induced deaths has increased 39%. During this same time period, the age-adjusted rate has increased 36.6%.

There were 4,301 years of potential life lost due to drug-induced deaths, with 34.1 years lost prematurely for each death, on average.

Table 62: Number of Drug-Induced Deaths (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	0	0	1	2	1	1	2	4	3	1
Black	1	2	4	2	5	1	5	3	5	4
AI/AN	13	11	30	28	12	16	28	22	27	39
White	68	62	96	100	63	89	95	81	91	79
Alaska	83	75	132	132	84	107	131	110	127	126

Table 63: Crude Rates of Drug-Induced Deaths (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	11.3*	9.5*	25.9	23.7	10.0*	13.1*	22.8	17.8	21.8	31.3
White	14.0	12.6	19.4	20.0	12.4	17.3	18.3	15.6	17.6	15.3
Alaska	12.3	11.0	19.2	18.9	11.8	14.8	17.9	14.9	17.2	17.1

Table 64: Age-Adjusted Rates of Drug-Induced Deaths (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	15.4*	10.6*	28.5	27.4	11.4*	14.3*	25.2	21.1	25.8	34.2
White	13.0	11.7	18.5	18.3	12.0	15.9	17.8	15.0	16.6	14.7
Alaska	12.3	10.5	19.0	18.0	11.8	14.2	17.7	14.8	17.0	16.8

¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

* Rates based on fewer than 20 occurrences are statistically unreliable, and should be used with caution.

Firearm-Related Deaths

ICD-10: W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0

Firearm-related mortality is a composite that includes deaths due to unintentional discharge of a firearm, and deaths due to intentional discharge (suicide or homicide.)

There were 6,798 years of potential life lost due to firearm-related deaths, with 38.6 years lost prematurely for each death, on average.

In 2015, firearm-related deaths claimed the lives of 176 Alaskans. Since 2006, the crude death rate for firearm-induced deaths has increased 47.5%. During this same time period, the age-adjusted rate has increased 39.6%.

Table 65: Number of Firearm-Related Deaths (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	6	2	3	6	7	2	7	2	3	4
Black	4	5	5	2	4	5	7	5	9	13
AI/AN	28	30	37	33	41	39	31	42	32	46
White	70	83	96	63	91	78	85	94	97	111
Alaska	109	120	141	104	143	126	132	144	144	176

Table 66: Crude Rates of Firearm-Related Deaths (2006-2015)¹

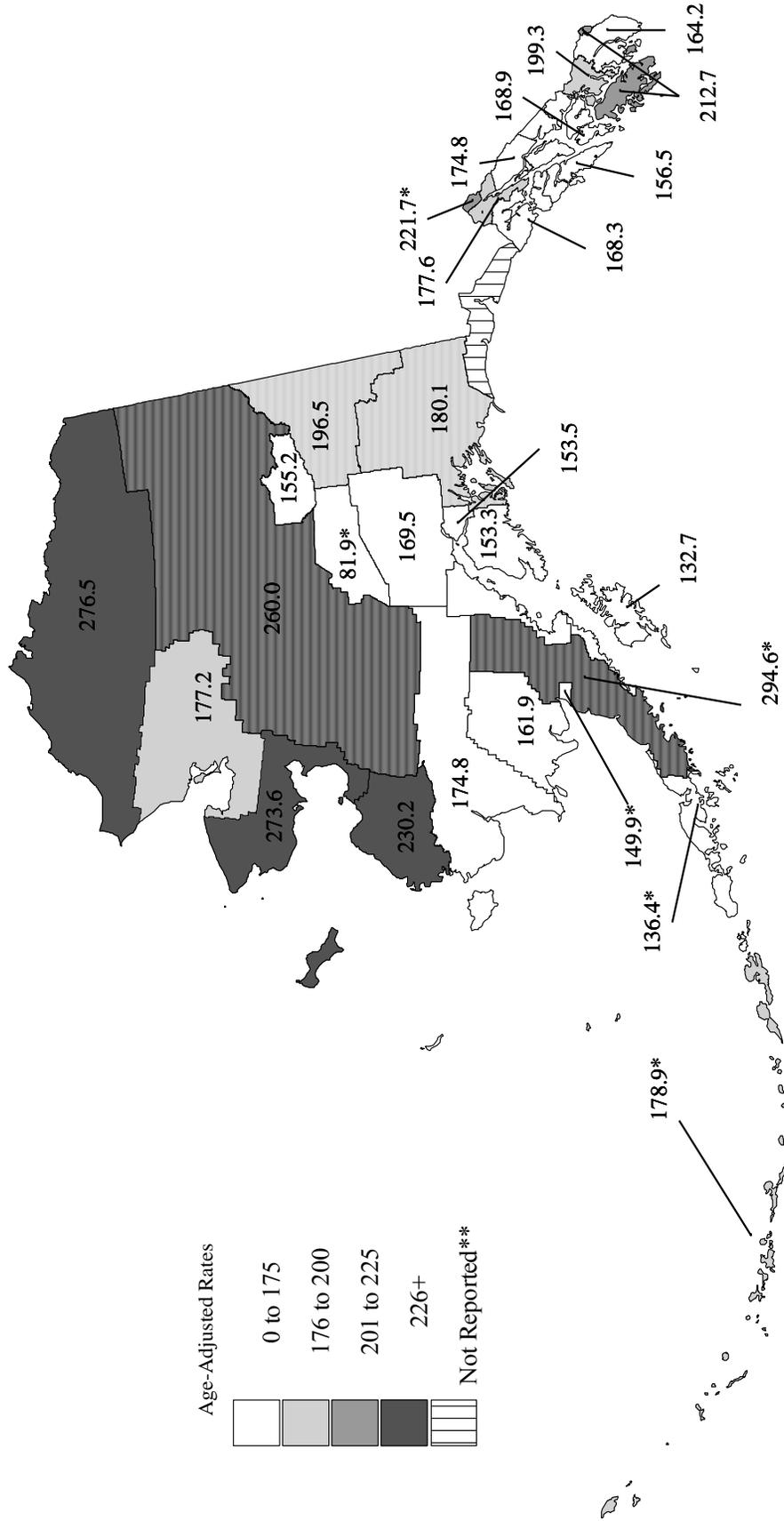
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	24.4	26.0	31.9	28.0	34.0	31.9	25.3	34.0	25.8	36.9
White	14.4	16.9	19.4	12.6	17.9	15.2	16.4	18.1	18.7	21.5
Alaska	16.2	17.6	20.5	14.9	20.1	17.4	18.0	19.5	19.5	23.9

Table 67: Age-Adjusted Rates of Firearm-Related Deaths (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
AI/AN	24.7	24.3	31.1	27.1	32.4	31.4	25.2	33.7	26.2	35.4
White	15.1	17.5	19.3	12.1	17.7	14.9	16.0	18.4	18.4	21.1
Alaska	16.9	18.2	20.7	14.9	20.2	17.5	17.8	20.0	19.2	23.6

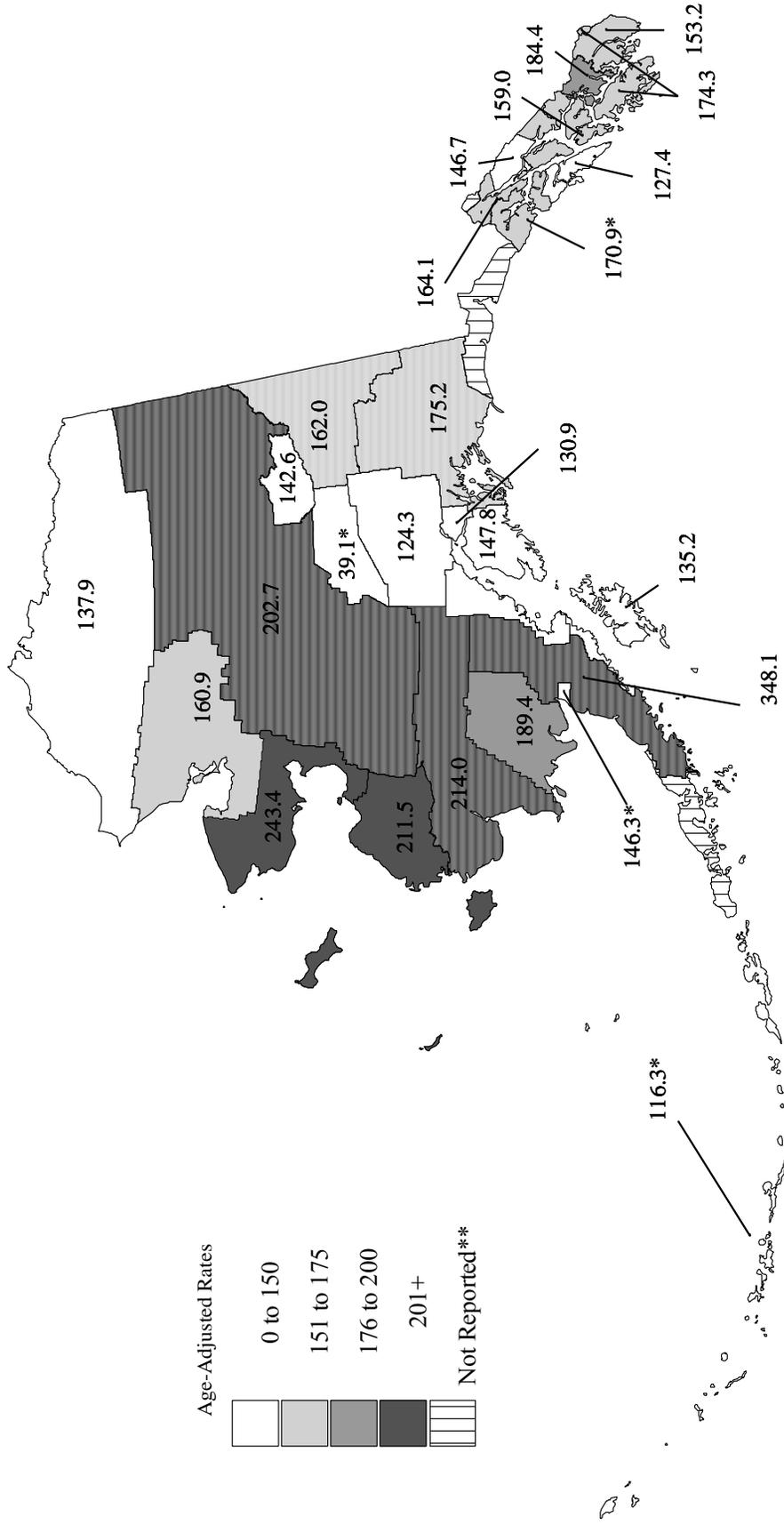
¹ Due to the low number of reportable events in the Asian/PI and black populations, only the two predominant races in Alaska (American Indian/Alaska Native and white) are reported.

Cancer Deaths by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
 **Rates based on fewer than 6 occurrences are not reported.

Heart Disease Deaths by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
 **Rates based on fewer than 6 occurrences are not reported.

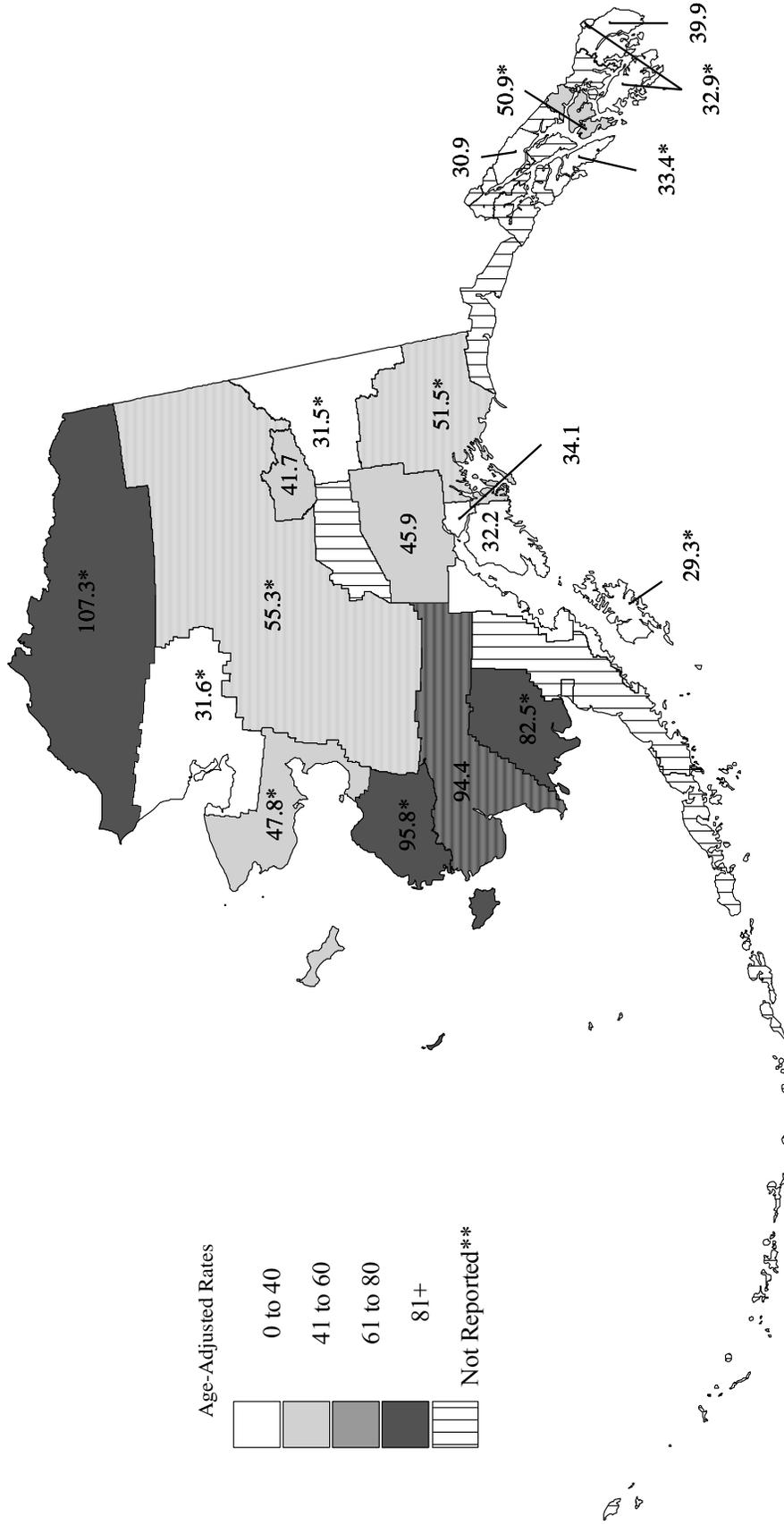
Unintentional Injury Deaths by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

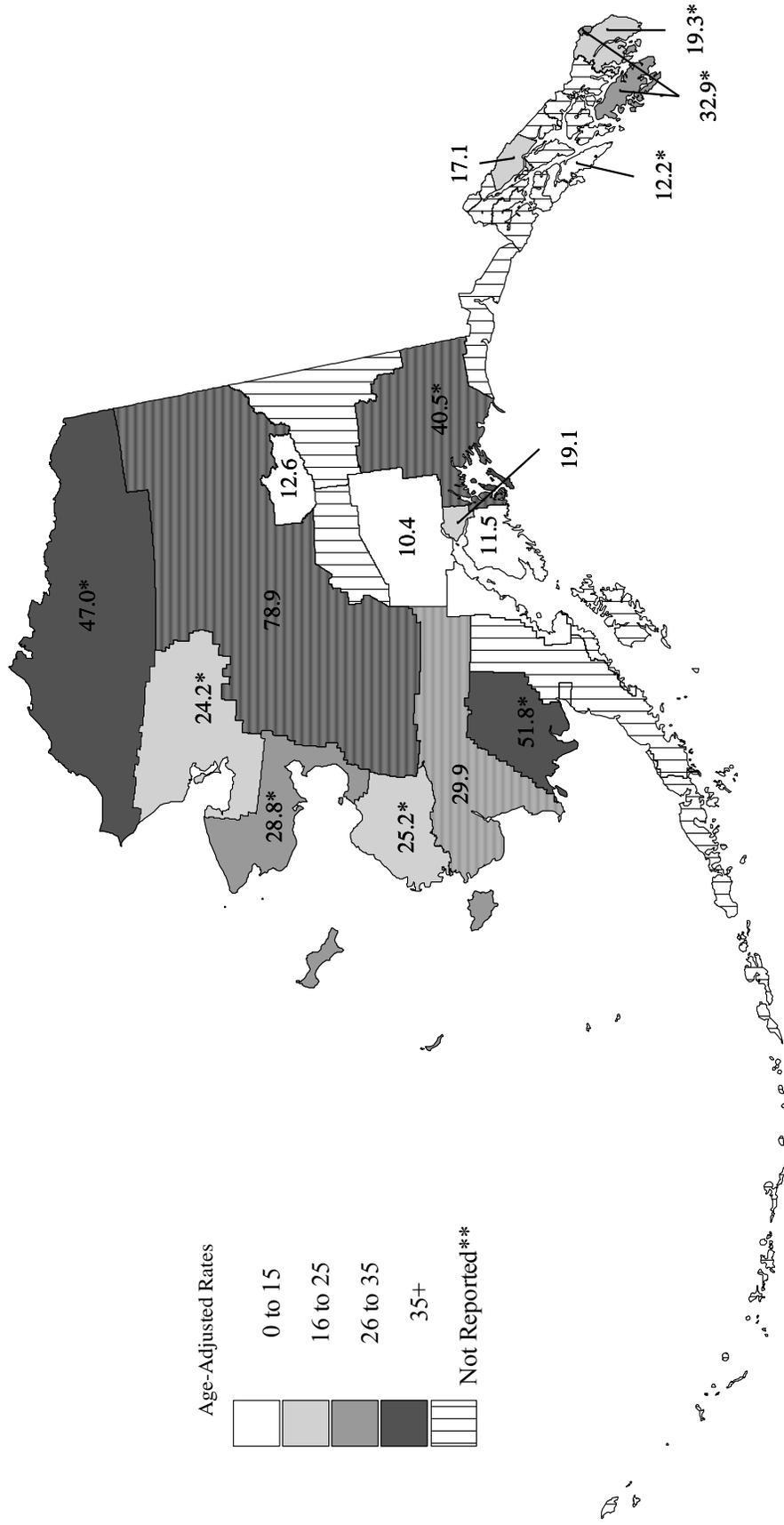
**Rates based on fewer than 6 occurrences are not reported.

Chronic Lower Respiratory Disease Deaths by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
 **Rates based on fewer than 6 occurrences are not reported.

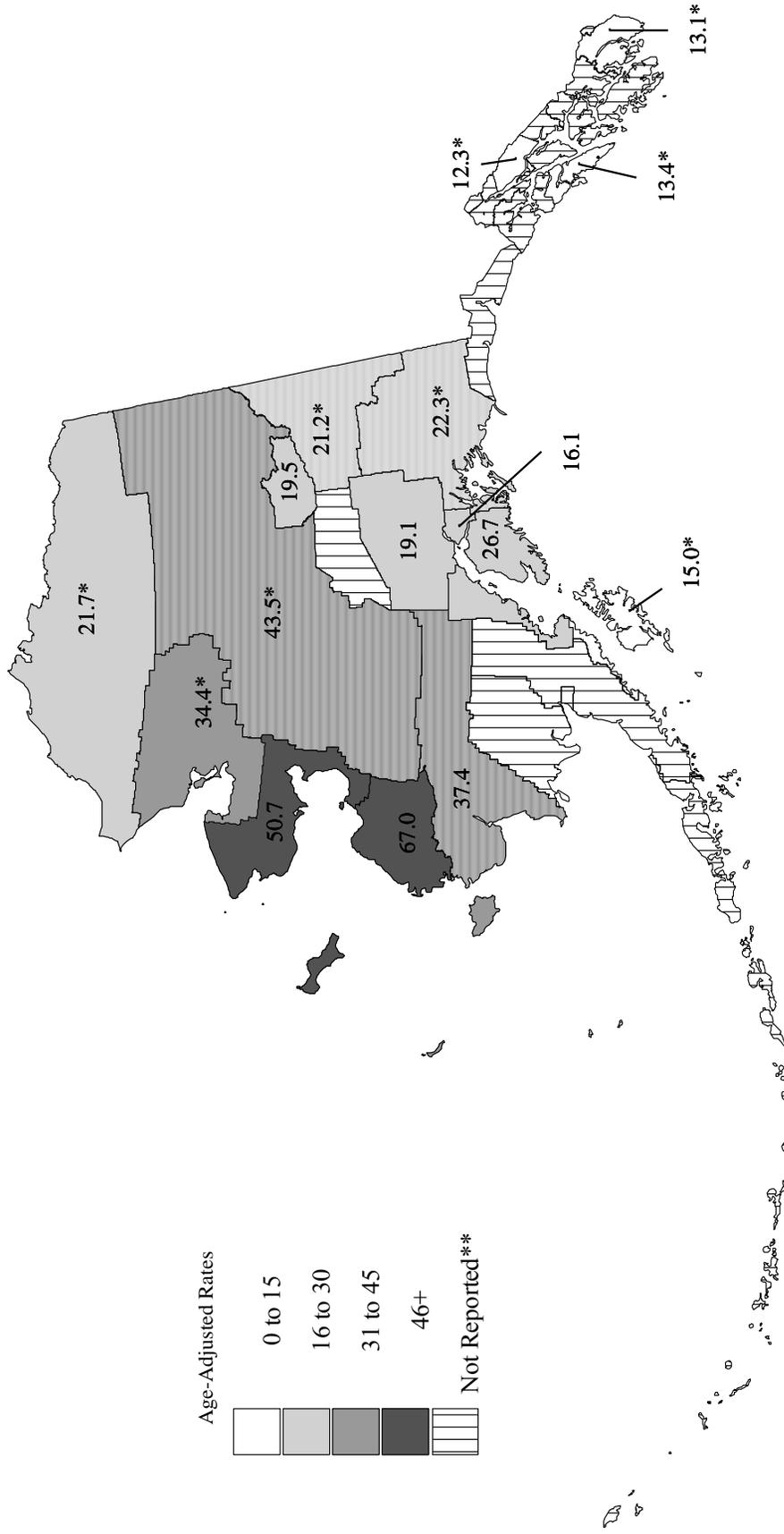
Alcohol-Induced Deaths by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.

**Rates based on fewer than 6 occurrences are not reported.

Firearm-Related Deaths by Census Area or Borough 2011-2015



*Rates based on fewer than 20 occurrences are statistically unreliable and should be used with caution.
 **Rates based on fewer than 6 occurrences are not reported.

ADOPTIONS



"Picking Blueberries"
Copyright Rie Munoz, Ltd.

In 2015...

- There were 639 adoptions recorded in Alaska.
- 467 adoptions took place through the Alaska state court system.
- The median age at adoption was 5 years old.
- The oldest age at adoption was 34 years old.

Adoption Summary

The total number of registered adoptions has fallen 8.3 percent since 2006. In 2015, more American Indian/Alaska Native children were adopted than any other racial category.

Adoption rates measure the number of adoptions per 1,000 population. Adoption rates of American Indian/Alaska Native children are more than five times that of white children.

Most adoptions occur through the Alaska State Court or Alaska Native Tribal Court Systems. In 2015, 73.1 percent of adoptions took place State Courts (Courts), while 2.3% were through the Alaska Native Tribal Courts (Tribal). Adoptions of Alaska Native children to at least one Alaska Native adoptive parent (Cultural), made up 24.5% of adoptions in 2015.

Table 68: Number of Adoptions by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	16	6	19	14	21	25	28	20	18	18
Black	17	22	23	18	15	18	14	23	18	19
AI/AN	394	362	414	406	441	447	454	416	406	324
White	261	252	263	276	280	273	261	309	294	265
Alaska	697	657	731	733	766	773	767	783	744	639

Table 69: Adoption Rates by Race (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Asian/PI	0.4	0.1	0.4	0.3	0.4	0.5	0.5	0.3	0.3	0.3
Black	0.6	0.7	0.7	0.6	0.5	0.5	0.4	0.6	0.5	0.5
AI/AN	3.4	3.1	3.6	3.4	3.7	3.7	3.7	3.4	3.3	2.6
White	0.5	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.6	0.5
Alaska	1.0	1.0	1.1	1.1	1.1	1.1	1.0	1.1	1.0	0.9

Table 70: Number of Adoptions by Type (2006-2015)¹

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Courts	459	464	503	514	539	557	528	580	549	467
Cultural	226	186	216	211	218	200	201	185	132	150
Tribal	12	7	12	8	9	16	38	18	63	22
Total	697	657	731	733	766	773	767	783	744	639

¹ Court Adoptions of Alaska-born children to out of state adoptive parents are also included under Courts. Adoptions of out of state-born children to Alaska adoptive parents are registered in the state of occurrence, and are not included. Annual Reports published prior to 2015 include adoptions of foreign-born children to Alaska adoptive parents. This report includes only adoptions of Alaska-born children.

MARRIAGES AND DIVORCES



"Tenakee Wedding"
Copyright Rie Munoz, Ltd.

In 2015...

- There were 5,478 total marriages performed in Alaska.
- There were 87 same-sex marriages performed in Alaska.
- More marriages occurred in July (750) than any other month.
- The median age at marriage was 29 years old.
- There were 1,590 divorces in Alaska.
- The median age at divorce was 37.5 years old.

Marriage Summary

Marriage rates are a measure of how many marriages occur per 1,000 population. Since 2006, Alaska's marriage rate has decreased 9.8 percent. In 2015, for every 1,000 Alaskans, there were approximately 7 marriages.

There were 444 marriages in Alaska where neither partner was a resident of Alaska.

Table 71: Marriage Rates (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	8.2	8.6	8.5	7.8	8.0	7.8	7.3	7.3	7.5	7.4

Table 72: Marriages By Residency Status (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Two Residents	4,516	4,742	4,722	4,620	4,873	4,840	4,530	4,641	4,813	4,706
One Non-Resident	440	482	490	358	411	390	380	353	330	328
Two Non-Residents	594	603	592	472	400	394	414	402	421	444
Total	5,550	5,827	5,804	5,450	5,684	5,624	5,324	5,396	5,564	5,478

Table 73: Marriages By Age Group (2006-2015)

		Party A Age Group										
		<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55+	Total
Party B Age Group	<15	0	1	0	2	0	0	0	0	0	0	3
	15-19	0	1,201	2,758	362	80	22	11	4	6	4	4,448
	20-24	0	580	8,639	4,505	1,158	368	123	74	29	28	15,504
	25-29	1	59	1,771	5,681	3,157	1,166	387	190	80	63	12,555
	30-34	0	8	323	1,425	2,631	1,594	737	315	150	85	7,268
	35-39	0	4	97	378	802	1,345	911	520	261	159	4,477
	40-44	0	4	44	93	267	521	979	813	463	293	3,477
	45-49	0	0	17	28	87	179	486	886	732	646	3,061
	50-54	0	0	2	12	23	55	153	380	722	981	2,328
	55+	0	0	4	6	4	18	56	162	349	1,973	2,572
Total		1	1,857	13,655	12,492	8,209	5,268	3,843	3,344	2,792	4,232	55,693

Divorce Summary

There are three administrative procedures for terminating a marriage in Alaska: divorce, dissolution, and annulment.¹ In 2015, there was a total of 3,080 marriages terminated.

Divorce rates are a measure of how many marriage terminations occur per 1,000 population. Since 2006, Alaska's divorce rate decreased 2.2 percent. In 2015, for every 1,000 Alaskans there were approximately 4 divorces.

Table 74: Divorce Rates (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	4.3	4.5	4.6	4.6	4.8	4.9	4.6	4.5	4.1	4.2

Table 75: Divorces By Decree Type (2006-2015)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Dissolution	1,648	1,653	1,661	1,746	1,815	1,655	1,643	1,574	1,438	1,478
Divorce	1,243	1,364	1,478	1,440	1,590	1,842	1,721	1,734	1,602	1,590
Annulment	6	6	5	4	10	13	12	5	4	12
Not Specified	17	10	5	6	4	2	1	1	0	0
Total	2,914	3,033	3,149	3,196	3,419	3,512	3,377	3,314	3,044	3,080

Table 76: Divorces By Age Group (2006-2015)

Party A Age Group

	<15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55+	Total
<15	0	0	0	3	1	0	0	0	0	0	4
15-19	0	39	228	21	6	1	3	0	0	0	298
20-24	0	35	2,368	1,503	280	70	31	11	5	10	4,313
25-29	0	3	454	2,737	1,627	464	198	63	30	33	5,609
30-34	5	1	73	544	2,002	1,294	491	179	86	56	4,731
35-39	1	0	18	113	534	1,611	1,190	505	163	120	4,255
40-44	1	0	6	49	151	532	1,425	1,041	465	246	3,916
45-49	0	0	2	12	49	152	544	1,182	849	569	3,359
50-54	0	0	1	7	13	68	135	392	898	927	2,441
55+	1	1	1	1	9	24	54	165	377	1,846	2,479
Total	8	79	3,151	4,990	4,672	4,216	4,071	3,538	2,873	3,807	31,405

¹ Divorces with no recorded decree type are counted as "Not Specified".

APPENDIX A: DEFINITION OF TERMS

Age-Adjusted Death Rate: A summary of age-specific death rates standardized to one age distribution (such as the 2000 standard population). This summary allows comparisons to be made between populations with different age distributions (see Appendix B for specific instructions on calculating age-adjusted rates).

Age-Specific Rate: The number of events (live births or deaths) for a specific age group divided by the population for the same age group, multiplied by a constant of proportionality (usually 1,000).

Cause of Death: The cause of death reported is the underlying cause of death and is based on information contained on the death certificate, defined by the World Health Organization's International Classification of Diseases - Tenth Revision as the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the injury or violence which produced the fatality.

Constant of Proportionality: A constant number (often 1,000 or 100,000) which is used for calculating a rate so that comparisons are possible and more understandable. (It is easier to compare 21.7 to 21.3 than it is to compare 0.0217 to 0.0213.)

Crude Rate: The number of events (live births, deaths, divorces, marriages, or adoptions) divided by the estimated population, multiplied by a constant of proportionality (usually 1,000 or 100,000 for deaths).

Infant Mortality Rate: The number of infant deaths divided by the number of live births, multiplied by a constant of proportionality (usually 1,000). The IMR in this report is calculated using the "death cohort" method. The death cohort method is determined by dividing the number of infant deaths by the number of live births in a calendar year. For example, to calculate the death cohort infant mortality rate for 2015, divide the number of infant deaths that occurred in 2015 by the number of live births that occurred during 2015, and multiply the result by a constant of proportionality (usually 1,000). By using the death cohort infant mortality method, some infant deaths will be counted in 2015 when the infant was actually born in 2014. Other deaths to infants born in 2015

who died before their first birthday in 2015 will not be counted.

Fertility Rate: The total number of live births divided by the number of women in the estimated population between ages 15 and 44, multiplied by a constant of proportionality (usually 1,000).

Gestation: The period beginning with the first day of the last normal menstrual period and ending with the day of birth. Births occurring between 37 and 41 weeks gestational age are considered full-term.

ICD-10: International Classification of Diseases - Tenth Revision. The official classification system which codifies all diseases and injuries. ICD-10 was first introduced in 1999. All deaths between 1978 and 1998 were coded using ICD-9.

Live Birth: A birth where the baby exhibits signs of life after delivery. These signs include breathing, beating of the heart, pulsation of the umbilical cord and movement of voluntary muscles.

Location of Occurrence: The place or location where a vital event occurred.

Location of Residence: Most tables report Alaska resident information and are based upon or are categorized by location of actual residence. The location of actual residence; i.e., census area, is not necessarily the same as a person's "legal residence". The location of residence during a tour of military duty or while attending college is considered actual residence.

Low Birth Weight: An infant born weighing less than 2,500 grams (approximately 5.5 pounds).

Natural Increase: Population change that results when the number of births exceed the number of deaths. Natural increase does not include population changes as a result of migration in and out of Alaska.

Neonatal Infant Mortality Rate: The number of deaths to infants less than 28 days of age divided by the number of live births, multiplied by a constant of proportionality (usually 1,000).

Postneonatal Infant Mortality Rate: The number of deaths to infants from 28 days up to one year old divided by the number of live births, multiplied by a constant of proportionality (usually 1,000).

Race of Child: The reported race of the mother is considered the race of the child. Prior to 1989, races of both parents were taken into consideration when determining the race of the child using a look-up table. Beginning in 1989, the National Centers for Health Statistics (NCHS) recommended that all states adopt the same standard for determining the race of the child at birth.

Standard Population: Age-adjusted rates are calculated using year 2000 standard population population weights (see Table A.1). This weighting convention is based on a longstanding coordinated agreement among federal and state agencies to use a uniform standard for age adjustment of mortality data.¹

Teen Birth Rate: The number of births to females ages 15–19 divided by the estimated population of females ages 15–19, multiplied by a constant of proportionality (usually 1,000).

Years of Potential Life Lost: The difference between a constant, representing the assumed life span in years of an individual (typically 75), and the actual age of death. (See Appendix B for calculation of years of life lost.)

Table A.1: U.S. Year 2000 Standard Population and Weights

Age	2000 US Standard Population Million	Weight
0–4 years	69,135	0.069135
5–14 years	145,565	0.145565
15–24 years	138,646	0.138646
25–34 years	135,573	0.135573
35–44 years	162,613	0.162613
45–54 years	134,834	0.134834
55–64 years	87,247	0.087247
65–74 years	66,037	0.066037
75–84 years	44,842	0.044842
>85 years	15,508	0.015508
TOTAL	1,000,000	1.0000000

¹ See: Age Adjustment Using the 2000 Projected U.S. Population, National Center for Health Statistics, Healthy People Statistical Notes (20), 2001.

APPENDIX B: TECHNICAL NOTES

HOW TO USE VITAL STATISTICS

VITAL EVENTS

Vital events are registered with the Health Analytics and Vital Records Section, and include live births, fetal deaths (after at least 20 weeks gestation), deaths, adoptions, marriages, and divorces. Information on each of these events is provided on standard forms.

RELIABILITY OF THE DATA

The reliability of vital records may vary depending on the data collection method. For instance, some information on birth and death certificates is collected and provided by health facilities or medical professionals (birth weight, complications of labor and delivery, cause of death, etc.), while other information is self-reported or reported by relatives (smoking during pregnancy, marital status of deceased, etc.). The Section makes every effort to complete, verify, and correct information which is missing, invalid, or inconsistent. Ultimately, the reliability of the data depends on everyone who is involved in data collection, storage and retrieval: Section staff, medical professionals, magistrates, funeral directors, marriage commissioners, judges, and each individual involved in, or witness to, a vital event.

COMPARING DIFFERENT POPULATIONS

Please note that all of the numbers in the following examples are hypothetical for purposes of illustration.

Comparing the number of events in two separate locations may not be meaningful. We can guess that Anchorage will have more births than Juneau because Anchorage has a larger population. A more meaningful question is, what is the number of births compared to the size of the population? To make this comparison, we calculate a rate or a ratio by dividing the number of events by the population for which that event could have occurred. For instance, if there were 4,200 births in Anchorage and a population of 280,000 people, then the ratio of births to population

would be $4,200/280,000$ or 0.015 births for every person living in Anchorage. If there were 500 births in Juneau and a population of 30,000 then the ratio of births to population in Juneau would be $500/30,000$ or 0.016666 births for every person living in Juneau.

Since small decimal numbers are difficult to interpret, we change the ratio to a rate by multiplying it by a constant of proportionality. This constant of proportionality can be any number, as long as the same number is used in calculating every rate. To calculate birth rates, we usually use a constant of proportionality of 1,000. Using this method, the birth rate for Anchorage would be $0.015 \times 1,000$ or 15.0 births per 1,000 population. The birth rate for Juneau would be $0.016666 \times 1,000$ or 16.7 births per 1,000 population. This number is usually rounded to the nearest tenth. We can see that while there are fewer births in Juneau in this example, the rate per 1,000 population is greater.

The birth rates described in the prior paragraph are crude birth rates because they compare events to the total population. A more meaningful comparison would use only the female population of childbearing ages (15–44 years of age). Let's assume that the number of women ages 15–44 in Anchorage is 60,000 and in Juneau is 7,300. The Anchorage fertility rate would be $(4,200/60,000) \times 1,000$ or 70.0 births for every 1,000 women of childbearing age. The Juneau fertility rate would be $(500/7,300) \times 1,000$ or 68.5 births for every 1,000 women of childbearing age. While Anchorage would have a lower crude birth rate than Juneau in this example, the Anchorage fertility rate would be higher than for Juneau. This is because the ratio of women of childbearing age to the total population in Anchorage ($60,000/280,000$ or 0.2143) is lower than in Juneau ($7,300/30,000$ or 0.2433).

CONSTANT OF PROPORTIONALITY

In calculating crude birth rates and fertility rates, we use a constant of proportionality of 1,000. Vital statistics may be reported with different constants of proportionality. Readers may familiarize themselves with how rates are calculated so that validity is

maintained when comparing rates. Unless rates are calculated with the same constant of proportionality, comparisons will lead to incorrect conclusions. For instance, in this report we calculate death rates per 100,000 population. If the another publication reported deaths per 1,000 population, you would need to convert the rates in this report (by dividing by 100) or the death rates in the other report (by multiplying by 100) in order to make a valid comparison.

SMALL POPULATIONS & FEW EVENTS

Data based on small populations and few events require particular care in data analysis. In Alaska, variability is expected when looking at small groups within the population. Precautions are taken to avoid drawing false conclusions from random or unusual events. A method that is used in this report to provide greater reliability is moving averages. (For an explanation of moving averages, see “Vital Statistics Formulas” below.)

VITAL STATISTICS FORMULAS

AGE-ADJUSTED RATES

Age-adjusted rates are calculated so comparisons can be made between populations that have different age distributions. For example, a population with a high proportion of young people, generally will have a lower crude death rate than a population with a high percentage of elderly persons. Age-adjusted rates are more appropriate than crude rates when comparing health indicators for populations that have different age distributions. The age-adjusted rates in this report were calculated using the standard population based on the decennial U.S. Census of 2000 (see the Standard Population in Appendix A).

$$\text{Age-Adjusted Death Rate} = \sum m_a (p_a / p)$$

Σ is sum

m_a is the age-specific death rate

p_a is the standard population for the age group

p is the total standard population

MOVING AVERAGES

Calculations of 3-year, 5-year, and 10-year moving averages are performed when single-year rates are not reliable due to a small number of observations. When calculations are based on small numbers, moving averages can help to smooth out rates which would vary widely from one year to another, or otherwise be below standard reporting thresholds.

In Alaska, single-year infant mortality rates are seldom good indicators for the state of health within populations because rates can fluctuate dramatically from year to year. In Alaska, 132 infants died during 1988 and 108 infants died during 1989. The single-year infant mortality rates during 1988 and 1989 were 11.7 and 9.3, respectively. The 3-year moving average infant mortality rate (using 1986, 1987, and 1988 data) was 11.0 and (using 1987, 1988, and 1989) 10.4 infant deaths per 1,000 live births.

YEARS OF POTENTIAL LIFE LOST

Years of potential life lost (YPLL) is the difference between a constant, representing the expected natural lifespan of an individual, and the age of a decedent who dies before that age. The value used in the calculation is ultimately arbitrary, but 75 is a common choice given that this is close to the median natural lifespan expected in many developed countries. This is the value used in this report. For the purposes of calculation, deaths are assumed to occur at the midpoint of a ten-year age interval; i.e. a 41-year-old decedent is assumed to be 39.5 years or halfway between 35 and 44. A person dying at age 41 would be said to have 35.5 years of life lost (75–39.5). YPLL emphasizes mortality in younger populations and is used in this report to measure the impact of specific causes of death. For a specific decedent group, YPLL is calculated as follows:

$$\text{YPLL} = \Sigma (75 - mp)$$

YPLL is years of potential life lost

Σ is sum of all decedents' YPLL

75 constant that represents years of potential life

mp is the mid-point of the decedent's 10-year age group

EXPECTATION OF LIFE

Expectation of life is the number of years that infants born in a specific year can expect to live if they experience the same age-specific death rates for all

persons who died during their birth year. Table B.1 illustrates the calculation of life expectancy for all Alaskans based on data from the five year period, 2011–2015.

Table B.1: Expectation of Life For All Alaskans (2011-2015)

	A	B	C	D	E	F	G	H	I	J
Age at Death	Deaths	Population	Ratio	Proportion Dying in Age Group	Proportion living in Age Group	# Living at Beginning of Age Group	Number Dying in Age Group	# Living In Age Group	Cumulative Population	Years Left at Beginning of Age Group
<1	323	54,049	0.005976059	0.005958255	0.994041745	100,000	596	99,493	7,655,353	76.6
1-4	86	216,733	0.000396802	0.001585633	0.998414367	99,404	158	397,221	7,555,860	76
5-9	40	266,311	0.0001502	0.00075072	0.99924928	99,246	75	496,043	7,158,639	72.1
10-14	50	256,618	0.000194842	0.000973736	0.999026264	99,171	97	495,613	6,662,596	67.2
15-19	172	246,078	0.000698965	0.003488731	0.996511269	99,074	346	494,505	6,166,983	62.2
20-24	395	273,344	0.001445066	0.007199319	0.992800681	98,728	711	491,863	5,672,478	57.5
25-29	436	288,283	0.001512403	0.007533529	0.992466471	98,017	738	488,240	5,180,615	52.9
30-34	415	270,183	0.001535996	0.007650602	0.992349398	97,279	744	484,535	4,692,375	48.2
35-39	426	230,531	0.001847908	0.00919705	0.99080295	96,535	888	480,455	4,207,840	43.6
40-44	538	229,817	0.002340993	0.011636861	0.988363139	95,647	1,113	475,453	3,727,385	39
45-49	879	242,125	0.003630356	0.017988519	0.982011481	94,534	1,701	468,418	3,251,932	34.4
50-54	1337	276,201	0.004840678	0.023913988	0.976086012	92,833	2,220	458,615	2,783,514	30
55-59	1853	266,299	0.006958344	0.034196836	0.965803164	90,613	3,099	445,318	2,324,899	25.7
60-64	1976	213,299	0.009263991	0.045271468	0.954728532	87,514	3,962	427,665	1,879,581	21.5
65-69	1904	139,286	0.013669716	0.066089999	0.933910001	83,552	5,522	403,955	1,451,916	17.4
70-74	1867	84,026	0.022219313	0.105250103	0.894749897	78,030	8,213	369,618	1,047,961	13.4
75-79	1889	51,421	0.036735964	0.168229626	0.831770374	69,817	11,745	319,723	678,343	9.7
80-84	2051	33,584	0.061070748	0.264908361	0.735091639	58,072	15,384	251,900	358,620	6.2
85+	3590	28,170	0.12744054	0.483241351	0.516758649	42,688	42,688	106,720	106,720	2.5

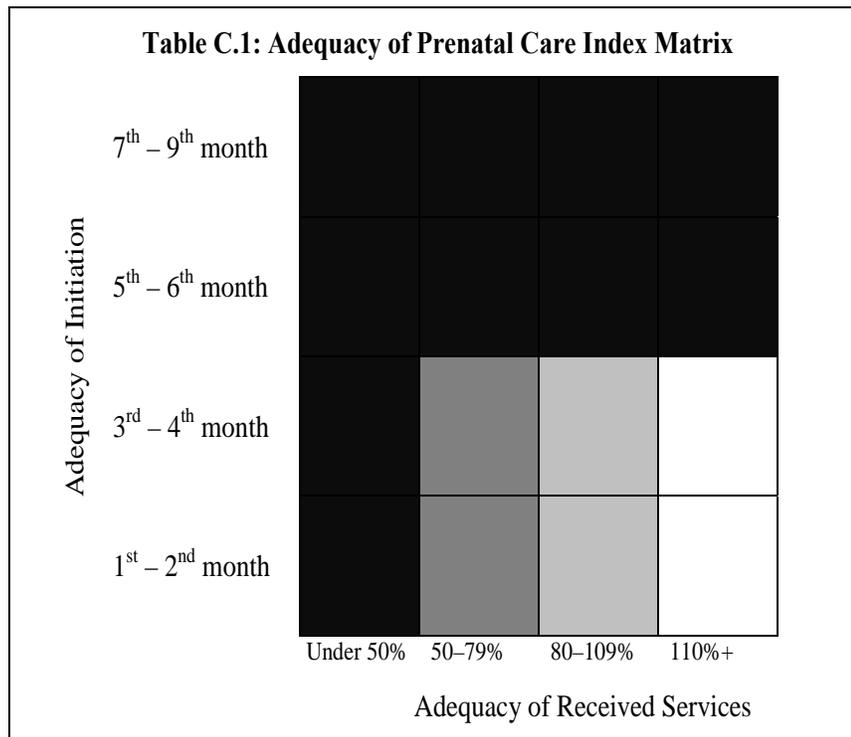
- Column A:** Total deaths during five years
- Column B:** Sum of population for each of the five years
- Column C:** Ratio (A/B)
- Column D:** Proportion dying in the age group
For less than 1 year: $(2 * C) / (2 + C)$;
for 1–4: years: $(2 * 4 * C) / (2 + 4 * (1.25 * C))$;
all others $(2 * 5 * C) / (2 + 5 * C)$
- Column E:** Proportion living in age group (1-D)
- Column F:** Number living at beginning of age
For less than 1 year: 100,000; all others:
 $E * F$ (both from next younger age group)

- Column G:** Number dying in the age group
 F (this age group)- F (next older age group)
- Column H:** Number living in the age group
For less than one year: $F - (.85 * G)$; for 1–4 years: $4 * F - (2.5 * G)$; all others: $(5 * F) - (2.5 * G)$
- Column I:** Cumulative population Sum of H for this and all older age groups
- Column J:** Years left at beginning of age (I/F)

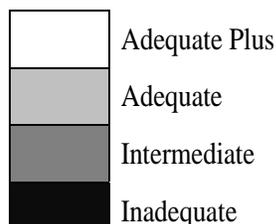
APPENDIX C: PRENATAL CARE

ADEQUACY OF PRENATAL CARE

The Adequacy of Prenatal Care Utilization (APNCU)¹ index makes use of two types of prenatal care information obtained from birth certificate data: when prenatal care began (adequacy of initiation) and the number of prenatal visits from when prenatal care began until delivery (adequacy of received services). The APNCU index classifies the adequacy of initiation as follows: pregnancy months 1 and 2, months 3 and 4, months 5 and 6, and months 7 to 9. To classify the adequacy of received services, the number of prenatal visits is compared to the expected number of visits for the period between when care began and the delivery date. The expected number of visits is based on the American College of Obstetricians and Gynecologists prenatal care standards for uncomplicated pregnancies and is adjusted for the gestational age when care began and for the gestational age at delivery. A ratio of observed to expected visits is calculated and grouped into four categories—Inadequate (received less than 50% of expected visits), Intermediate (50%–79%), Adequate (80%–109%), and Adequate Plus (110%). The final APNCU index measure combines these two dimensions into a single summary score. The chart below summarizes the two dimensions of the APNCU index.



Summary Index



¹ Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. American Journal of Public Health, 1994;84:1414-1420.

APPENDIX D: POPULATION OVERVIEW

ALASKA'S POPULATION

Population estimates used in this report are provided by the Alaska Department of Labor and Workforce Development, Research and Analysis Section, Demographics Unit.

Table D.1: Estimated Population of Alaska by Age Group, Sex, and Race (2015)

Age Group	Alaska			White			AI/AN		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
00-04	53,054	27,081	25,973	32,941	16,751	16,190	12,274	6,255	6,019
05-09	54,164	28,051	26,113	33,700	17,431	16,269	12,238	6,384	5,854
10-14	50,898	26,105	24,793	31,478	16,273	15,205	11,230	5,733	5,497
15-19	48,085	25,214	22,871	29,679	15,593	14,086	10,770	5,631	5,139
20-24	52,925	28,839	24,086	34,806	19,281	15,525	9,657	4,830	4,827
25-29	58,223	30,541	27,682	39,762	21,078	18,684	10,092	5,067	5,025
30-34	56,971	29,569	27,402	40,589	21,368	19,221	8,792	4,445	4,347
35-39	47,843	24,748	23,095	34,239	17,933	16,306	7,183	3,640	3,543
40-44	43,986	22,743	21,243	31,570	16,540	15,030	6,356	3,251	3,105
45-49	45,308	23,355	21,953	32,885	17,134	15,751	6,620	3,369	3,251
50-54	52,602	27,398	25,204	39,076	20,606	18,470	7,573	3,793	3,780
55-59	53,122	27,400	25,722	41,081	21,483	19,598	6,788	3,269	3,519
60-64	45,591	23,807	21,784	35,751	19,076	16,675	5,479	2,690	2,789
65-69	31,492	16,620	14,872	24,829	13,483	11,346	3,817	1,824	1,993
70-74	19,100	9,751	9,349	15,034	7,889	7,145	2,403	1,138	1,265
75-79	11,165	5,492	5,673	8,562	4,373	4,189	1,514	693	821
80-84	7,012	3,148	3,864	5,344	2,523	2,821	993	385	608
85+	6,084	2,265	3,819	4,820	1,823	2,997	721	267	454
Total	737,625	382,127	355,498	516,146	270,638	245,508	124,500	62,664	61,836

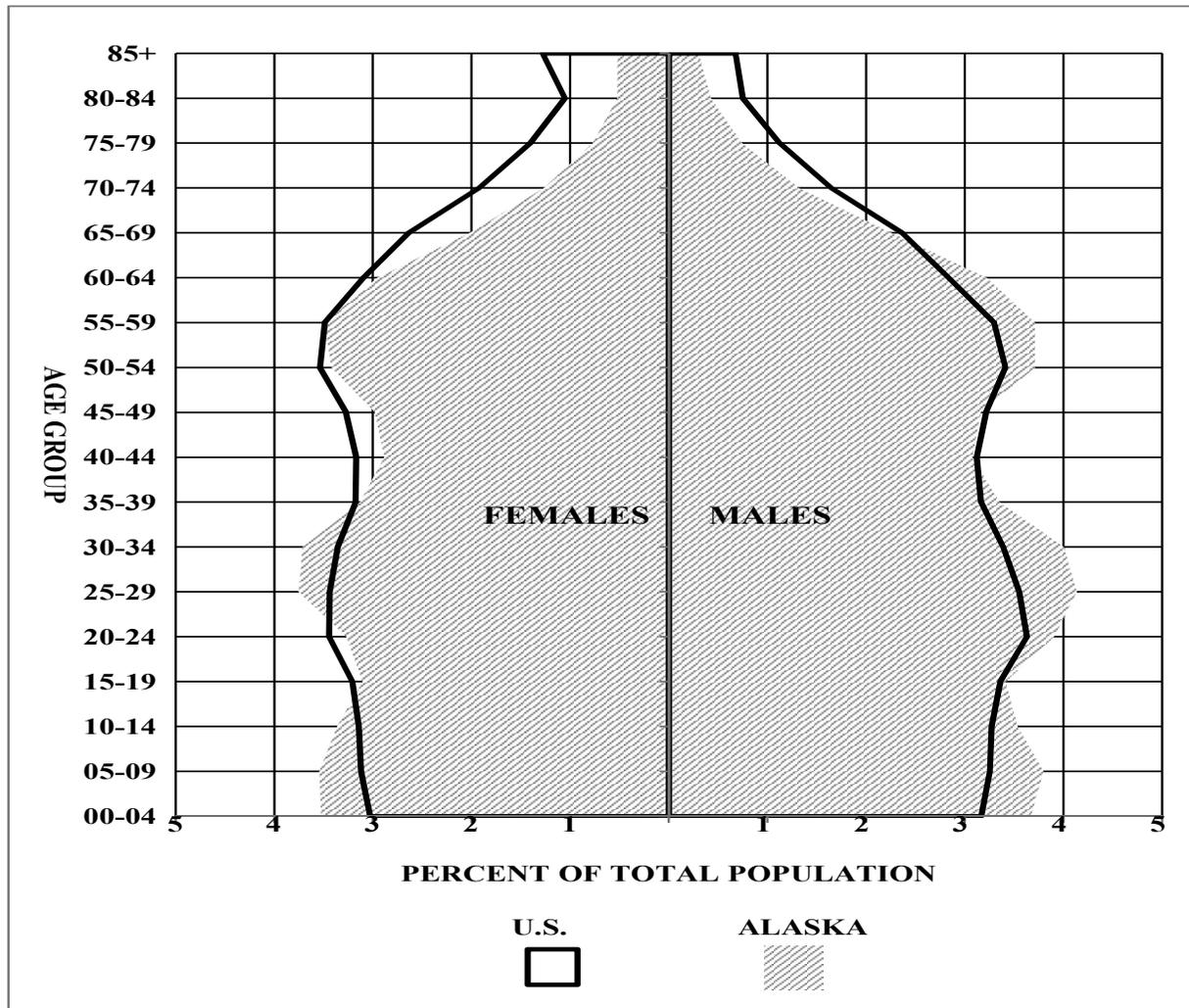
Table D.2: Estimated Population of Alaska by Age Group, Sex, and Race (2014)

Age Group	Alaska			White			AI/AN		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
00-04	53,432	27,253	26,179	33,046	16,791	16,255	12,615	6,410	6,205
05-09	54,011	28,032	25,979	33,851	17,544	16,307	12,126	6,359	5,767
10-14	51,250	26,319	24,931	31,826	16,474	15,352	11,253	5,712	5,541
15-19	48,511	25,349	23,162	30,376	15,907	14,469	10,607	5,521	5,086
20-24	54,502	29,575	24,927	35,771	19,744	16,027	10,196	5,088	5,108
25-29	57,749	30,218	27,531	39,977	21,112	18,865	9,788	4,929	4,859
30-34	55,951	28,966	26,985	40,111	21,075	19,036	8,573	4,277	4,296
35-39	46,633	24,110	22,523	33,453	17,489	15,964	6,969	3,540	3,429
40-44	45,192	23,361	21,831	32,841	17,171	15,670	6,357	3,235	3,122
45-49	46,349	23,952	22,397	33,667	17,597	16,070	6,935	3,525	3,410
50-54	54,581	28,385	26,196	40,954	21,562	19,392	7,628	3,798	3,830
55-59	53,651	27,557	26,094	41,742	21,718	20,024	6,701	3,253	3,448
60-64	44,302	23,318	20,984	34,855	18,753	16,102	5,291	2,600	2,691
65-69	29,677	15,669	14,008	23,412	12,757	10,655	3,582	1,678	1,904
70-74	18,038	9,211	8,827	14,257	7,470	6,787	2,288	1,104	1,184
75-79	10,765	5,268	5,497	8,177	4,171	4,006	1,508	691	817
80-84	6,885	3,078	3,807	5,206	2,451	2,755	1,025	403	622
85+	5,875	2,168	3,707	4,703	1,739	2,964	662	261	401
Total	737,354	381,789	355,565	518,225	271,525	246,700	124,104	62,384	61,720

Table D.3: Estimated Population of Alaska by Age Group, Sex, and Race (2013)

Age Group	Alaska			White			AI/AN		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
00-04	54,232	27,977	26,255	33,389	17,131	16,258	13,061	6,712	6,349
05-09	53,852	27,624	26,228	33,884	17,403	16,481	11,956	6,205	5,751
10-14	51,828	26,708	25,120	32,351	16,784	15,567	11,371	5,817	5,554
15-19	49,052	25,597	23,455	30,957	16,214	14,743	10,662	5,521	5,141
20-24	54,939	29,500	25,439	36,267	19,849	16,418	10,354	5,088	5,266
25-29	57,186	29,783	27,403	39,989	21,053	18,936	9,549	4,804	4,745
30-34	54,289	28,103	26,186	39,025	20,368	18,657	8,215	4,137	4,078
35-39	45,857	23,668	22,189	32,979	17,268	15,711	6,791	3,384	3,407
40-44	46,515	23,934	22,581	34,175	17,799	16,376	6,396	3,202	3,194
45-49	47,916	24,718	23,198	34,883	18,150	16,733	7,305	3,743	3,562
50-54	56,015	29,017	26,998	42,501	22,295	20,206	7,629	3,747	3,882
55-59	54,109	27,872	26,237	42,331	22,100	20,231	6,586	3,205	3,381
60-64	43,047	22,790	20,257	33,929	18,437	15,492	5,146	2,516	2,630
65-69	28,057	14,815	13,242	22,266	12,122	10,144	3,341	1,563	1,778
70-74	16,920	8,654	8,266	13,306	6,966	6,340	2,131	1,049	1,082
75-79	10,395	5,055	5,340	7,888	4,021	3,867	1,475	647	828
80-84	6,763	2,993	3,770	5,136	2,390	2,746	977	388	589
85+	5,644	2,050	3,594	4,514	1,645	2,869	630	242	388
Total	736,616	380,858	355,758	519,770	271,995	247,775	123,575	61,970	61,605

Figure D.1: Population Distribution by Age Group, and Sex: Alaska¹ and the U.S.² (2015)

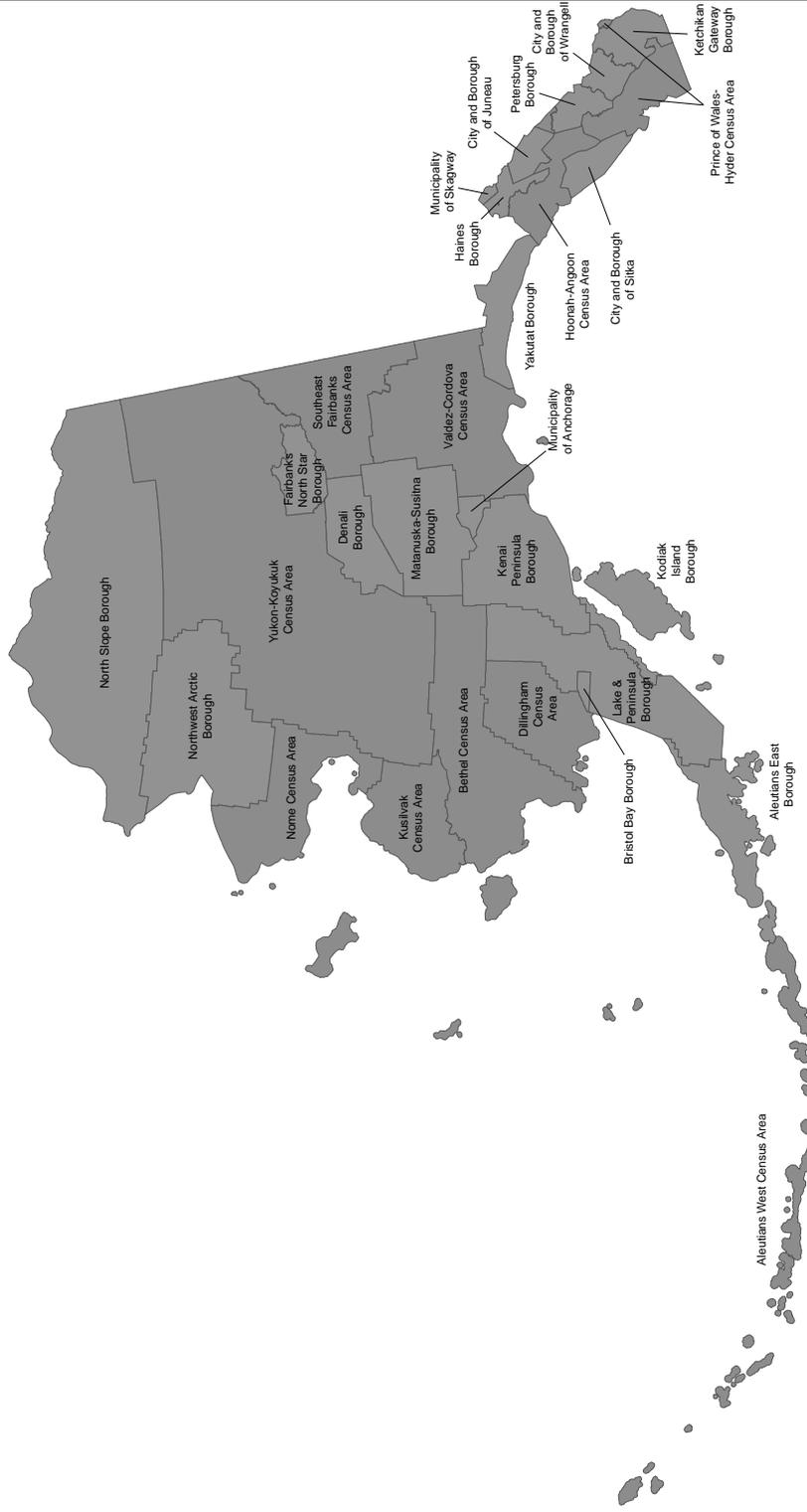


¹Alaska Department of Labor and Workforce Development, Research and Analysis Section.

²United States Census Bureau, Population Division.

APPENDIX E: MAPS

Alaska Borough/Census Areas



Note: Based on 2013 Geography
Source: Alaska Department of Labor and Workforce Development, Research and Analysis Section

Borough and Census Area Map of Alaska