

CANCER IN ALASKA NATIVE PEOPLE 1969–2018

The 50-Year Report



ALASKA NATIVE
TRIBAL HEALTH
CONSORTIUM

EPIDEMIOLOGY CENTER

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THE 50-YEAR REPORT



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Contents

<i>Addenda</i>	13
<i>Dedication</i>	15
<i>Acknowledgments</i>	17
<i>Suggested Citation</i>	19
Authors	19
Contributors	19
1 <i>Executive Summary</i>	21
1.1 Introduction	21
1.2 Data Summaries	22
2 <i>Leading Cancers</i>	27
2.1 Men and Women Combined	27
2.2 Men Only	52
2.3 Women Only	54
2.4 Percentages by Stage	56
2.5 Regional Comparisons	67
3 <i>Incidence by Cancer Site</i>	69
3.1 Men and Women Combined	69
3.2 Men Only	75
3.3 Women Only	79
4 <i>Incidence Trends by Cancer Site</i>	83
4.1 Men and Women Combined	83
4.2 Men Only	95
4.3 Women Only	106
5 <i>Cancer Mortality by Cause</i>	117
5.1 Men and Women Combined	117
5.2 Men Only	119
5.3 Women Only	121
6 <i>Cancer Mortality Trends by Cause</i>	123
6.1 Men and Women Combined	123

6.2	Men Only	130
6.3	Women Only	137
7	<i>Regional Information</i>	145
7.1	Trends	145
7.2	Fifteen-year Incidence	157
A	<i>Methods</i>	169
A.1	Equations	170
A.2	Additional Considerations	171
A.3	Software Resources	172
B	<i>Tribal Health Regions</i>	175
C	<i>SEER Site Recode Definitions</i>	179
	<i>References</i>	183

List of Tables

2.1	Incidence, top 10 sites, men and women, 2014–2018.	28
2.2	Incidence by age, all sites, men and women, 2014–2018.	29
2.3	Incidence by age, breast (women), women, 2014–2018.	30
2.4	Incidence by age, colon and rectum, men and women, 2014–2018.	31
2.5	Incidence by age, lung and bronchus, men and women, 2014–2018.	32
2.6	Incidence by age, prostate (men), men, 2014–2018.	33
2.7	Incidence by age, kidney and renal pelvis, men and women, 2014–2018.	34
2.8	Incidence by age, pancreas, men and women, 2014–2018.	35
2.9	Incidence by age, stomach, men and women, 2014–2018.	36
2.10	Incidence by age, thyroid, men and women, 2014–2018.	37
2.11	Incidence by age, urinary bladder, men and women, 2014–2018.	38
2.12	Incidence by age, corpus uteri (women), women, 2014–2018.	39
2.13	Incidence, top 10 sites, men and women, 1969–2018.	40
2.14	Incidence by age, all sites, men and women, 1969–2018.	41
2.15	Incidence by age, breast (women), women, 1969–2018.	42
2.16	Incidence by age, colon and rectum, men and women, 1969–2018.	43
2.17	Incidence by age, lung and bronchus, men and women, 1969–2018.	44
2.18	Incidence by age, prostate (men), men, 1969–2018.	45
2.19	Incidence by age, kidney and renal pelvis, men and women, 1969–2018.	46
2.20	Incidence by age, stomach, men and women, 1969–2018.	47
2.21	Incidence by age, pancreas, men and women, 1969–2018.	48
2.22	Incidence by age, cervix uteri (women), women, 1969–2018.	49
2.23	Incidence by age, corpus uteri (women), women, 1969–2018.	50
2.24	Incidence by age, urinary bladder, men and women, 1969–2018.	51
2.25	Incidence, top 10 sites, men, 2014–2018.	52
2.26	Incidence, top 10 sites, men, 1969–2018.	53
2.27	Incidence, top 10 sites, women, 2014–2018.	54
2.28	Incidence, top 10 sites, women, 1969–2018.	55
2.29	Stage at diagnosis, all sites, men and women, 2014–2018.	56

2.30	Stage at diagnosis, breast (women), women, 2014–2018.	57
2.31	Stage at diagnosis, colon and rectum, men and women, 2014–2018.	58
2.32	Stage at diagnosis, lung and bronchus, men and women, 2014–2018.	59
2.33	Stage at diagnosis, prostate (men), men, 2014–2018.	60
2.34	Stage at diagnosis, kidney and renal pelvis, men and women, 2014–2018.	61
2.35	Stage at diagnosis, pancreas, men and women, 2014–2018.	62
2.36	Stage at diagnosis, stomach, men and women, 2014–2018.	63
2.37	Stage at diagnosis, thyroid, men and women, 2014–2018.	64
2.38	Stage at diagnosis, urinary bladder, men and women, 2014–2018. . . .	65
2.39	Stage at diagnosis, corpus uteri (women), women, 2014–2018.	66
3.1	Incidence by site, men and women, 2014–2018.	69
3.2	Incidence by site, men and women, 1969–2018.	72
3.3	Incidence by site, men, 2014–2018.	75
3.4	Incidence by site, men, 1969–2018.	77
3.5	Incidence by site, women, 2014–2018.	79
3.6	Incidence by site, women, 1969–2018.	81
4.1	Incidence trends, all sites, men and women, 1969–2018.	83
4.2	Incidence trends, breast (women), men and women, 1969–2018. . . .	85
4.3	Incidence trends, colon and rectum, men and women, 1969–2018. . .	86
4.4	Incidence trends, lung and bronchus, men and women, 1969–2018.	87
4.5	Incidence trends, prostate (men), men and women, 1969–2018. . . .	88
4.6	Incidence trends, kidney and renal pelvis, men and women, 1969–2018.	89
4.7	Incidence trends, stomach, men and women, 1969–2018.	90
4.8	Incidence trends, pancreas, men and women, 1969–2018.	91
4.9	Incidence trends, cervix uteri (women), men and women, 1969–2018.	92
4.10	Incidence trends, corpus uteri (women), men and women, 1969–2018.	93
4.11	Incidence trends, urinary bladder, men and women, 1969–2018. . . .	94
4.12	Incidence trends, all sites, men, 1969–2018.	95
4.13	Incidence trends, lung and bronchus, men, 1969–2018.	96
4.14	Incidence trends, colon and rectum, men, 1969–2018.	97
4.15	Incidence trends, prostate (men), men, 1969–2018.	98
4.16	Incidence trends, stomach, men, 1969–2018.	99
4.17	Incidence trends, kidney and renal pelvis, men, 1969–2018.	100
4.18	Incidence trends, urinary bladder, men, 1969–2018.	101
4.19	Incidence trends, pancreas, men, 1969–2018.	102

4.20	Incidence trends, liver, men, 1969–2018.	103
4.21	Incidence trends, esophagus, men, 1969–2018.	104
4.22	Incidence trends, nasopharynx, men, 1969–2018.	105
4.23	Incidence trends, all sites, women, 1969–2018.	106
4.24	Incidence trends, breast (women), women, 1969–2018.	107
4.25	Incidence trends, colon and rectum, women, 1969–2018.	108
4.26	Incidence trends, lung and bronchus, women, 1969–2018.	109
4.27	Incidence trends, kidney and renal pelvis, women, 1969–2018.	110
4.28	Incidence trends, cervix uteri (women), women, 1969–2018.	111
4.29	Incidence trends, pancreas, women, 1969–2018.	112
4.30	Incidence trends, stomach, women, 1969–2018.	113
4.31	Incidence trends, thyroid, women, 1969–2018.	114
4.32	Incidence trends, corpus uteri (women), women, 1969–2018.	115
4.33	Incidence trends, ovary (women), women, 1969–2018.	116
5.1	Mortality by cause, men and women, 2014–2018.	117
5.2	Mortality by cause, men and women, 1994–2018.	118
5.3	Mortality by cause, men, 2014–2018.	119
5.4	Mortality by cause, men, 1994–2018.	120
5.5	Mortality by cause, women, 2014–2018.	121
5.6	Mortality by cause, women, 1994–2018.	122
6.1	Mortality trends, all malignant cancers, men and women, 1994–2018.	124
6.2	Mortality trends, lung and bronchus, men and women, 1994–2018.	125
6.3	Mortality trends, colon and rectum, men and women, 1994–2018.	126
6.4	Mortality trends, breast (women), women, 1994–2018.	127
6.5	Mortality trends, prostate (men), men, 1994–2018.	128
6.6	Mortality trends, stomach, men and women, 1994–2018.	129
6.7	Mortality trends, all malignant cancers, men and women, 1994–2018.	131
6.8	Mortality trends, lung and bronchus, men and women, 1994–2018.	132
6.9	Mortality trends, colon and rectum, men and women, 1994–2018.	133
6.10	Mortality trends, stomach, men and women, 1994–2018.	134
6.11	Mortality trends, prostate (men), men, 1994–2018.	135
6.12	Mortality trends, pancreas, men and women, 1994–2018.	136
6.13	Mortality trends, all malignant cancers, men and women, 1994–2018.	138
6.14	Mortality trends, lung and bronchus, men and women, 1994–2018.	139
6.15	Mortality trends, colon and rectum, men and women, 1994–2018.	140
6.16	Mortality trends, breast (women), women, 1994–2018.	141

6.17	Mortality trends, pancreas, men and women, 1994–2018.	142
6.18	Mortality trends, stomach, men and women, 1994–2018.	143
7.1	Incidence trends, all sites, Aleutians and Pribilofs region, 1994–2018.	145
7.2	Incidence trends, all sites, Anchorage and Mat-Su region, 1994–2018.	146
7.3	Incidence trends, all sites, Arctic Slope region, 1994–2018.	147
7.4	Incidence trends, all sites, Bristol Bay region, 1994–2018.	148
7.5	Incidence trends, all sites, Copper River and Prince William Sound region, 1994–2018.	149
7.6	Incidence trends, all sites, Interior region, 1994–2018.	150
7.7	Incidence trends, all sites, Kenai Peninsula region, 1994–2018.	151
7.8	Incidence trends, all sites, Kodiak Area region, 1994–2018.	152
7.9	Incidence trends, all sites, Northwest Arctic region, 1994–2018.	153
7.10	Incidence trends, all sites, Norton Sound region, 1994–2018.	154
7.11	Incidence trends, all sites, Southeast region, 1994–2018.	155
7.12	Incidence trends, all sites, Yukon-Kuskokwim region, 1994–2018.	156
7.13	Incidence, top 5 sites, Aleutians and Pribilofs region, men and women, 2004–2018.	157
7.14	Incidence, top 5 sites, Anchorage and Mat-Su region, men and women, 2004–2018.	158
7.15	Incidence, top 5 sites, Arctic Slope region, men and women, 2004–2018.	159
7.16	Incidence, top 5 sites, Bristol Bay region, men and women, 2004–2018.	160
7.17	Incidence, top 5 sites, Copper River and Prince William Sound region, men and women, 2004–2018.	161
7.18	Incidence, top 5 sites, Interior region, men and women, 2004–2018.	162
7.19	Incidence, top 5 sites, Kenai Peninsula region, men and women, 2004–2018.	163
7.20	Incidence, top 5 sites, Kodiak Area region, men and women, 2004–2018.	164
7.21	Incidence, top 5 sites, Northwest Arctic region, men and women, 2004–2018.	165
7.22	Incidence, top 5 sites, Norton Sound region, men and women, 2004–2018.	166
7.23	Incidence, top 5 sites, Southeast region, men and women, 2004–2018.	167
7.24	Incidence, top 5 sites, Yukon-Kuskokwim region, men and women, 2004–2018.	168
B.1	Tribal Health Region definitions.	176

8 THE 50-YEAR REPORT

C.1 Site recode ICD-O-3/WHO 2008 definition. 179

List of Figures

2.1	Incidence, top 10 sites, men and women, 2014–2018.	27
2.2	Incidence by age, all sites, men and women, 2014–2018.	29
2.3	Incidence by age, breast (women), women, 2014–2018.	30
2.4	Incidence by age, colon and rectum, men and women, 2014–2018.	31
2.5	Incidence by age, lung and bronchus, men and women, 2014–2018.	32
2.6	Incidence by age, prostate (men), men, 2014–2018.	33
2.7	Incidence by age, kidney and renal pelvis, men and women, 2014–2018.	34
2.8	Incidence by age, pancreas, men and women, 2014–2018.	35
2.9	Incidence by age, stomach, men and women, 2014–2018.	36
2.10	Incidence by age, thyroid, men and women, 2014–2018.	37
2.11	Incidence by age, urinary bladder, men and women, 2014–2018.	38
2.12	Incidence by age, corpus uteri (women), women, 2014–2018.	39
2.13	Incidence, top 10 sites, men and women, 1969–2018.	40
2.14	Incidence by age, all sites, men and women, 1969–2018.	41
2.15	Incidence by age, breast (women), women, 1969–2018.	42
2.16	Incidence by age, colon and rectum, men and women, 1969–2018.	43
2.17	Incidence by age, lung and bronchus, men and women, 1969–2018.	44
2.18	Incidence by age, prostate (men), men, 1969–2018.	45
2.19	Incidence by age, kidney and renal pelvis, men and women, 1969–2018.	46
2.20	Incidence by age, stomach, men and women, 1969–2018.	47
2.21	Incidence by age, pancreas, men and women, 1969–2018.	48
2.22	Incidence by age, cervix uteri (women), women, 1969–2018.	49
2.23	Incidence by age, corpus uteri (women), women, 1969–2018.	50
2.24	Incidence by age, urinary bladder, men and women, 1969–2018.	51
2.25	Incidence, top 10 sites, men, 2014–2018.	52
2.26	Incidence, top 10 sites, men, 1969–2018.	53
2.27	Incidence, top 10 sites, women, 2014–2018.	54
2.28	Incidence, top 10 sites, women, 1969–2018.	55
2.29	Stage at diagnosis, all sites, men and women, 2014–2018.	56

2.30	Stage at diagnosis, breast (women), women, 2014–2018.	57
2.31	Stage at diagnosis, colon and rectum, men and women, 2014–2018.	58
2.32	Stage at diagnosis, lung and bronchus, men and women, 2014–2018.	59
2.33	Stage at diagnosis, prostate (men), men, 2014–2018.	60
2.34	Stage at diagnosis, kidney and renal pelvis, men and women, 2014–2018.	61
2.35	Stage at diagnosis, pancreas, men and women, 2014–2018.	62
2.36	Stage at diagnosis, stomach, men and women, 2014–2018.	63
2.37	Stage at diagnosis, thyroid, men and women, 2014–2018.	64
2.38	Stage at diagnosis, urinary bladder, men and women, 2014–2018.	65
2.39	Stage at diagnosis, corpus uteri (women), women, 2014–2018.	66
2.40	Regional incidence, breast (women), women, 2014–2018.	67
2.41	Regional incidence, colon and rectum, men and women, 2014–2018.	67
2.42	Regional incidence, kidney and renal pelvis, men and women, 2014–2018.	68
2.43	Regional incidence, lung and bronchus, men and women, 2014–2018.	68
2.44	Regional incidence, prostate (men), men, 2014–2018.	68
4.1	Incidence trends, all sites, men and women, 1969–2018.	83
4.2	Incidence trends, breast (women), women, 1969–2018.	85
4.3	Incidence trends, colon and rectum, men and women, 1969–2018.	86
4.4	Incidence trends, lung and bronchus, men and women, 1969–2018.	87
4.5	Incidence trends, prostate (men), men, 1969–2018.	88
4.6	Incidence trends, kidney and renal pelvis, men and women, 1969–2018.	89
4.7	Incidence trends, stomach, men and women, 1969–2018.	90
4.8	Incidence trends, pancreas, men and women, 1969–2018.	91
4.9	Incidence trends, cervix uteri (women), women, 1969–2018.	92
4.10	Incidence trends, corpus uteri (women), women, 1969–2018.	93
4.11	Incidence trends, urinary bladder, men and women, 1969–2018.	94
4.12	Incidence trends, all sites, men and women, 1969–2018.	95
4.13	Incidence trends, lung and bronchus, men and women, 1969–2018.	96
4.14	Incidence trends, colon and rectum, men and women, 1969–2018.	97
4.15	Incidence trends, prostate (men), men, 1969–2018.	98
4.16	Incidence trends, stomach, men and women, 1969–2018.	99
4.17	Incidence trends, kidney and renal pelvis, men and women, 1969–2018.	100
4.18	Incidence trends, urinary bladder, men and women, 1969–2018.	101

4.19	Incidence trends, pancreas, men and women, 1969–2018.	102
4.20	Incidence trends, liver, men and women, 1969–2018.	103
4.21	Incidence trends, esophagus, men and women, 1969–2018.	104
4.22	Incidence trends, nasopharynx, men and women, 1969–2018.	105
4.23	Incidence trends, all sites, men and women, 1969–2018.	106
4.24	Incidence trends, breast (women), women, 1969–2018.	107
4.25	Incidence trends, colon and rectum, men and women, 1969–2018. . .	108
4.26	Incidence trends, lung and bronchus, men and women, 1969–2018.	109
4.27	Incidence trends, kidney and renal pelvis, men and women, 1969–2018.	110
4.28	Incidence trends, cervix uteri (women), women, 1969–2018.	111
4.29	Incidence trends, pancreas, men and women, 1969–2018.	112
4.30	Incidence trends, stomach, men and women, 1969–2018.	113
4.31	Incidence trends, thyroid, men and women, 1969–2018.	114
4.32	Incidence trends, corpus uteri (women), women, 1969–2018.	115
4.33	Incidence trends, ovary (women), women, 1969–2018.	116
6.1	Mortality trends, all malignant cancers, men and women, 1994–2018.	123
6.2	Mortality trends, lung and bronchus, men and women, 1994–2018.	125
6.3	Mortality trends, colon and rectum, men and women, 1994–2018. . .	126
6.4	Mortality trends, breast (women), men and women, 1994–2018. . . .	127
6.5	Mortality trends, prostate (men), men and women, 1994–2018.	128
6.6	Mortality trends, stomach, men and women, 1994–2018.	129
6.7	Mortality trends, all malignant cancers, men, 1994–2018.	130
6.8	Mortality trends, lung and bronchus, men, 1994–2018.	132
6.9	Mortality trends, colon and rectum, men, 1994–2018.	133
6.10	Mortality trends, stomach, men, 1994–2018.	134
6.11	Mortality trends, prostate (men), men, 1994–2018.	135
6.12	Mortality trends, pancreas, men, 1994–2018.	136
6.13	Mortality trends, all malignant cancers, women, 1994–2018.	137
6.14	Mortality trends, lung and bronchus, women, 1994–2018.	139
6.15	Mortality trends, colon and rectum, women, 1994–2018.	140
6.16	Mortality trends, breast (women), women, 1994–2018.	141
6.17	Mortality trends, pancreas, women, 1994–2018.	142
6.18	Mortality trends, stomach, women, 1994–2018.	143
7.1	Incidence trends, all sites, Aleutians and Pribilofs region, 1994–2018.	145
7.2	Incidence trends, all sites, Anchorage and Mat-Su region, 1994–2018.	146
7.3	Incidence trends, all sites, Arctic Slope region, 1994–2018.	147

7.4	Incidence trends, all sites, Bristol Bay region, 1994–2018.	148
7.5	Incidence trends, all sites, Copper River and Prince William Sound region, 1994–2018.	149
7.6	Incidence trends, all sites, Interior region, 1994–2018.	150
7.7	Incidence trends, all sites, Kenai Peninsula region, 1994–2018.	151
7.8	Incidence trends, all sites, Kodiak Area region, 1994–2018.	152
7.9	Incidence trends, all sites, Northwest Arctic region, 1994–2018.	153
7.10	Incidence trends, all sites, Norton Sound region, 1994–2018.	154
7.11	Incidence trends, all sites, Southeast region, 1994–2018.	155
7.12	Incidence trends, all sites, Yukon-Kuskokwim region, 1994–2018.	156
7.13	Incidence, top 5 sites, Aleutians and Pribilofs region, men and women, 2004–2018.	157
7.14	Incidence, top 5 sites, Anchorage and Mat-Su region, men and women, 2004–2018.	158
7.15	Incidence, top 5 sites, Arctic Slope region, men and women, 2004–2018.	159
7.16	Incidence, top 5 sites, Bristol Bay region, men and women, 2004–2018.	160
7.17	Incidence, top 5 sites, Copper River and Prince William Sound region, men and women, 2004–2018.	161
7.18	Incidence, top 5 sites, Interior region, men and women, 2004–2018.	162
7.19	Incidence, top 5 sites, Kenai Peninsula region, men and women, 2004–2018.	163
7.20	Incidence, top 5 sites, Kodiak Area region, men and women, 2004–2018.	164
7.21	Incidence, top 5 sites, Northwest Arctic region, men and women, 2004–2018.	165
7.22	Incidence, top 5 sites, Norton Sound region, men and women, 2004–2018.	166
7.23	Incidence, top 5 sites, Southeast region, men and women, 2004–2018.	167
7.24	Incidence, top 5 sites, Yukon-Kuskokwim region, men and women, 2004–2018.	168

Addenda

The following changes have occurred since initial publication.

2021-05-04

- Chapter 6 Cancer Mortality Trends by Cause (pg. 123)
 - Renamed Section 6.1 *Twenty-five-year Cancer Mortality Trends* to Section 6.1 *Men and Women Combined* (pg. 123)
 - Added Section 6.2 Men Only (pg. 130)
 - Added Section 6.3 Women Only (pg. 137)

Dedication

The fifty-year report on cancer among Alaska Native people: 1969–2018 is dedicated to our late friend and colleague Anne P. Lanier, MD, MPH. Throughout her career, Dr. Lanier worked tirelessly to reduce the burden of cancer among Alaska Native people. In 1974, she established the Alaska Native Tumor Registry in collaboration with the Centers for Disease Control and Prevention and the National Cancer Institute.

Over a 40+ year career, Dr. Lanier contributed to over 200 peer reviewed publications, and shared her work with a variety of audiences through presentations and reports. She was instrumental in establishing the Alaska Education and Research Towards Health (EARTH) study, which investigated risk factors for chronic diseases including cancer and diabetes, among Alaska Native people. Her work greatly advanced our understanding of the burden of cancer among Alaska Native people, and she continued to be a champion for Alaska Native health and wellness until her passing in 2017.

This report is also dedicated to the Alaska Native people, whose cancer stories we tell through the Alaska Native Tumor Registry and its data.



Acknowledgments

The authors wish to thank the many tumor registrars, medical records staff, and hospital information technology staff who work in collaboration with the Alaska Native Tumor Registry to collect the data presented herein. The collaboration of our Tribal Health and non-Native facilities throughout Alaska and beyond ensures that we are able to maintain the highest data quality standards established by the Surveillance, Epidemiology, and End Results (SEER) program year after year. We are also deeply grateful for the continued support of the Alaska Cancer Registry, the New Mexico Tumor Registry, and the Washington Cancer Registry.

The Alaska Native Tumor Registry is supported by a subcontract with the Regents of the University of New Mexico under the National Cancer Institute's Surveillance, Epidemiology, and End Results program under contract HHSN261201300101, Task Order HHSN26100005.

Suggested Citation

Zimpelman, G.L., Miller, K.N., Carlo, D.D., Schade, T.L., Provost, E.M., Britton, C.L., Nash S.H. *Cancer in Alaska Native People: 1969–2018, The 50-year Report*. Anchorage, AK: Alaska Native Tumor Registry, Alaska Native Epidemiology Center, Alaska Native Tribal Health Consortium 2021.

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1

Executive Summary

1.1 Introduction

This report summarizes fifty years of data on cancer among Alaska Native (AN) people. Cancer is the leading cause of death among AN people, accounting for over a fifth of all deaths.¹ AN people also experience a different burden of cancer than other US populations, with lower rates of some cancers but much higher rates of others.² In 1974, the Alaska Native Tumor Registry (ANTR) was established to investigate the unique pattern of cancer among AN people. Since 1999, the ANTR has been a full member special population registry under the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. Today, the ANTR continues to serve AN people as a SEER-supported program at the Alaska Native Tribal Health Consortium. We collect cancer information for all Alaska Native and American Indian (ANAI) people living in Alaska at the time of their cancer diagnosis, and use this information to further our understanding of the burden of cancer among this population. Data collected by the ANTR have been used for a variety of purposes, including to support research; provide information to regional Tribal Health Organizations for cancer planning; and support clinical policy decision making. Every five years, the ANTR publishes a report on cancer among Alaska Native people, and this edition of the report also celebrates fifty years of cancer surveillance to benefit Alaska Native people.

1.1.1 Data Censoring

For patient privacy, no cell sizes <5 are presented in this report. Furthermore, no rate information is given where <5 cases were diagnosed, due to lack of numbers required to calculate statistically stable rates. Where necessary (e.g., for regional and mortality information), we have calculated frequencies and rates for longer time-periods, in an attempt to present as much of the available data as possible. Alternatively, in some chapters, we only present data on the leading cancers, for which there were enough available data without censoring.

1.1.2 US White Data

Incidence data for US White (USW) people come from the SEER 9 database,³ which includes data from the following cancer registries: Connecticut, Detroit, Georgia, San Francisco-Oakland, Hawaii, Iowa, New Mexico, Seattle-Puget Sound, and Utah. Data from these registries are only available for the years 1975–2017. Therefore, in five-year data, data for USW include only the years 2014–2017. For longer term trends, data for USW include the years 1975–2017.

1.1.3 Childhood Cancers

In this report the term “men” includes boys (younger than adults) and the term “women” includes girls (younger than adults). Cancer is predominantly an adult disease; however, we do acknowledge that children are also diagnosed with cancers and are not excluded from the data.

1.2 Data Summaries

1.2.1 Leading Cancers

The leading cancers among Alaska Native people are presented in Chapter 2 (pg. 27) of this report. During the five-year period 2014–2018, there were 2,401 cases of invasive cancer diagnosed among AN people, which was an increase compared to the 2,123 diagnosed during the previous five-year period 2009–2013. From 2014–2018, the most commonly diagnosed cancers were female breast (340 cases, 14% of all cancers), colorectal (405 cases, 17% of all cancers), lung and bronchus (373 cases, 16% of all cancers), prostate (126 cases, 5% of all cancers), and kidney and renal pelvis (150 cases, 6% of all cancers). This pattern is identical to the previous five-year period (2009–2013) as well as the fifty-year period 1969–2018.

Among AN men only during 2014–2018, there were 1,135 cases of invasive cancer diagnosed, compared to 957 during the previous five-year period 2009–2013. From 2014–2018, the most commonly diagnosed cancers in men were lung and bronchus (187 cases, 16% of all cancers), colorectal (198 cases, 17% of all cancers), prostate (126 cases, 11% of all cancers), kidney and renal pelvis (94 cases, 8% of all cancers), and stomach (51 cases, 4% of all cancers). Leading cancers for the fifty-year period 1969–2018 were identical.

Among AN women, there were 1,266 cases of invasive cancer diagnosed, compared to 1,166 during the previous five-year period 2009–2013. From 2014–2018, the most commonly diagnosed cancers in women were breast (340 cases, 27% of all cancers), colorectal (213 cases, 17% of all cancers), lung and bronchus (186 cases, 15% of all cancers), thyroid (60 cases, 5% of all cancers), and kidney and renal pelvis (56 cases, 4% of all cancers). While leading cancers for the fifty-year period 1969–2018 were very similar, in the fifty-year incidence we observed cervical cancer as the fourth leading cancer, while thyroid was the ninth most common cancer diagnosed.

Chapter 2 (pg. 27) also gives incidence of leading cancers by age. Incidence of

cancer (all sites) increased with age; this pattern was generally consistent across all cancer sites. There were some exceptions to this pattern. Breast (women), kidney and renal pelvis, stomach, thyroid, and corpus uteri (women) cancer rates were highest in those aged 60–79 years.

1.2.2 *Frequency of Diagnosis by Site, Age, and Stage*

Stage information is given in Section 2.4 (pg. 56) of this report. We examined stage at diagnosis for all sites and the ten most common cancers. The majority of cancers (40%) were diagnosed at local stage, with 24% diagnosed at regional stage, and 30% at distant stage. However, the pattern varied by cancer site. For female breast cancer, almost two thirds (64%) of cases were diagnosed at local stage, with 27% at regional stage and 9% at distant stage. The pattern was somewhat similar among prostate (men) cancers, with 57% diagnosed at local stage, 12% at regional stage, and 21% at distant stage. Among colorectal cancers, 39% were diagnosed at local stage, 35% at regional stage, and 24% at distant stage. Among the leading cancers, lung, pancreatic and stomach cancers had the largest proportion of cases diagnosed at distant stage. For lung cancers, 61% were diagnosed at distant stage, with 22% at regional stage and 19% local stage. For pancreatic cancers, 54% were diagnosed at distant stage, with 24% at regional stage and 14% local stage. Finally, among stomach cancers, 60% were diagnosed at distant stage, with 16% at regional stage and 22% local stage. A very small proportion of thyroid cancers were diagnosed at distant stage (1.2%), with 36% diagnosed at regional stage, and 63% at local stage.

1.2.3 *Incidence*

Incidence by cancer site is given in Chapter 3 (pg. 69) of this report. During the most recent five-year period, the cancers with the highest incidence among AN people were cancers of the colon and rectum (Incidence Rate (IR): 404/100,000), lung cancers (IR: 360/100,000), and breast cancer (women only; IR: 346/100,000). This pattern of leading cancers is identical to that presented in our prior 45-year report.

Where data were available, we also compared average annual age-adjusted cancer incidence rates among AN people to those among USW for the same time-periods. Such comparisons help us to describe similarities and differences in cancer patterns, which in turn can help identify areas of strength, and opportunities for improvement. Overall, the incidence of cancer (all sites) was similar among AN people and USW (Rate Ratio (RR): 1.1) during the last five years. We were unable to make comparisons with the fifty-year data, as we only have data for USW going back to 1975.

Several leading cancers were more common among AN people than among USW, including colorectal (RR: 2.4); lung and bronchus (RR: 1.6), and kidney and renal pelvis cancers (RR: 1.8). We also observed differences in other, less common cancers. The greatest difference we observed was for cancers of the nasopharynx. While these cancers are diagnosed relatively infrequently (there were 28 diagnosed

2014–2018), the incidence rate was 15.2 times higher among AN people compared to USW. Other cancers that were more common among AN people include penis (RR: 4.4); Kaposi sarcoma (RR: 3.9); stomach (RR: 3.0); esophageal (RR: 2.1); gallbladder (RR: 2.1); and cervix uteri (RR: 1.9).

There were also several cancers that were less common among AN people than among USW, including cancers of the prostate (RR: 0.6); urinary bladder (RR: 0.6); eye and orbit (RR: 0.6); brain (RR: 0.5); Hodgkin lymphoma (RR: 0.5 extranodal, 0.6 nodal); non-Hodgkin lymphoma (RR: 0.6); and melanoma of the skin (RR: 0.2).

1.2.4 Incidence Trends

While comparisons to other populations, such as USW, can be helpful, it is also very informative to look at how rates vary just among AN people. Examining trends in cancer incidence over time can show us whether and how we are making progress; where we are being successful in our efforts to decrease cancer burden among AN people; and where we still have room to improve. Having fifty years of surveillance data for AN people allows us to examine long-term trends. Here we discuss trends in cancer (all sites), as well as the ten leading cancer sites:

Cancer (all sites) Age-adjusted incidence rates of all cancers (men and women combined) increased slightly from the 1970s to the late 1990s. Since that time, rates have been fairly stable, although there have been some random variations, as is expected.

Breast cancer (women) During the 1970s and 1980s, AN women experienced increasing breast cancer rates. However, since the mid 1990s rates have remained generally stable, and similar to those seen among USW women. The five-year average annual age-adjusted rate is slightly lower than in our previous five-year report.

Colorectal cancer (CRC) rates have remained relatively constant over the fifty years of surveillance. In contrast, USW have seen declines in their CRC rates, meaning that the difference in rates has been increasing over time. AN people experience among the highest rates of CRC in the world. Rates have not substantially changed since our last five-year report.

Lung cancer rates appeared to consistently increase between the 1970s and the late 1990s, after which time they have been relatively stable, perhaps trending towards a decline. Rates have not substantially changed since our last five-year report, and remain higher than those observed among USW.

Prostate cancer (men) rates have remained relatively stable among AN men since the last five-year report, and are lower than those observed among USW men. In both AN and USW men, there was an increase in rates in the 1990s; this increase (and subsequent decrease) was more pronounced among USW men than AN men.

Kidney and renal pelvis cancer rates have slowly and slightly increased from the 1970s to present. Throughout the period of surveillance, rates have remained higher among AN people than among USW.

Stomach cancer rates have been substantially higher among AN people than USW for the fifty years of surveillance; in the most recent five-year period rates slightly decreased relative to the the prior five-year period (2009–2013), but they remained higher than among USW.

Pancreatic cancer has shown small but steady increases over the fifty-year period of surveillance. There was a non-significant increase in rates in the most recent five-year period. Pancreatic cancer rates are now slightly higher among AN people than USW.

Cervical cancer (women) rates were very high among AN women during the 1970s and early 1980s, but since that time have substantially decreased. We saw a slight but non-significant increase in the most recent five-year period. Cervical cancer rates are higher among AN women than they are among USW women, among whom rates have been decreasing for over two decades.

Corpus uteri (women) or uterine cancer rates are lower among AN women than USW women. While there had been an increasing trend in rates between the 1970s and early 2000s, there was a decline in rates for the most recent five-year period.

Urinary bladder cancer rates have remained steady among AN people for the fifty years of surveillance, with the exception of a slight dip in the 1990s. Urinary bladder cancer rates are lower among AN people, relative to USW.

1.2.5 Mortality

Chapter 5 (pg. 117) presents information on the leading causes of cancer death. In the most recent five-year period, lung cancer remained the leading cause of cancer death, followed by cancers of the colon and rectum, and breast cancers (women only). This pattern was identical to that which was reported for the previous five-year period.

We also compared mortality rates among AN people to those among USW. Among our leading cancers, lung cancer mortality was 1.3 times higher among AN people, and colorectal cancer 2.8 times higher among AN people. This represents a slightly increased disparity relative to the previous five-year period. Breast cancer (women) rates were not significantly different among AN people and USW. There were several less common cancers for which mortality was higher among AN people than USW. These included cancers of the stomach (RR: 4.5), and esophagus (RR: 1.6). These figures indicated an increase in the disparities between AN people and USW compared to the previous five-year period (2009–2013).

Because numbers of cancer deaths are very small for certain cancer sites, we also examined twenty-five-year cancer mortality rates. This enabled us to generate rates for additional less common cancer sites. During this time-period, rates were higher among AN people than USW for the following additional cancer sites: gallbladder (RR: 2.3), intrahepatic bile duct (RR: 1.8), and liver (RR: 1.5). Rates were lower among AN people for the following additional cancer sites: Melanoma of the skin (RR: 0.2), brain and other nervous system (RR: 0.4), non-Melanoma skin (RR: 0.6), acute myeloid leukemia (RR: 0.6), uterus (RR: 0.7), and ovary (RR: 0.7).

Chapter 6 (pg. 123) presents information on mortality trends for the leading cancers. Overall, there was a non-significant decrease in cancer death between the current and previous five-year periods. Trends varied by cancer site. We observed a 30% decrease in lung cancer mortality between the previous and current five-year periods. Colorectal and female breast cancer mortality did not change, and has remained relatively steady for both cancer sites for the twenty-five years of surveillance. Prostate cancer also remained fairly steady. At the beginning of surveillance, prostate cancer mortality rates were lower among AN men than USW men, but that disparity has closed and now mortality rates are almost identical. Stomach cancer rates slightly (but non-significantly) declined in the most recent five-year period; however, rates remain significantly higher (RR 4.5) than among USW.

1.2.6 Regional Information

Cancer information specific to each Tribal health region is given in Section 2.5 (pg. 67), as well as the entirety of Chapter 7 (pg. 145). For information on how each Tribal health region was defined using census tracts, please see Appendix A (pg. 169): Methods. In Section 2.5, we compare incidence rates for the leading cancers by Tribal health region. There was a lot of variability between Tribal health regions for each cancer site. For example, rates of female breast cancer were highest in the Copper River and Prince William Sound and Southeast regions and lowest in the Arctic Slope and Yukon-Kuskokwim regions. Rates of colorectal cancer were highest in the Norton Sound, Arctic Slope, Northwest Arctic and Yukon-Kuskokwim regions and lowest in the Aleutian and Pribilof Islands, the Kenai Peninsula, and the Kodiak area. Lung cancer rates were highest in the Arctic Slope region and lowest in the Yukon-Kuskokwim region and Northwest Arctic. Chapter 7 (pg. 145) presents incidence trends for each Tribal health region, as well as incidence of the leading cancers, relative to AN people statewide.

2

Leading Cancers

2.1 Men and Women Combined

2.1.1 Five-year Incidence

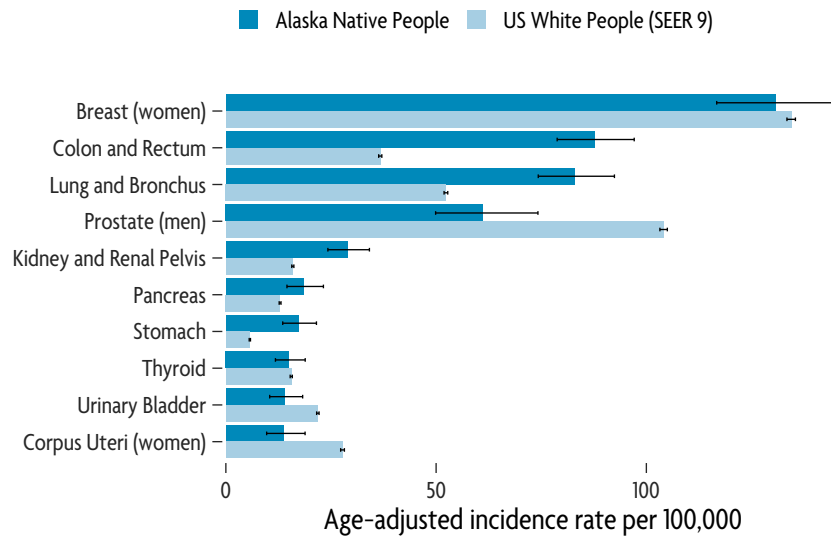


Figure 2.1: Average annual age-adjusted cancer incidence by site for the top 10 sites, men and women, 2014–2018.

Table 2.1: Average annual age-adjusted cancer incidence by site for the top 10 sites, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	2,401	497.6	(476.7, 519.2)	450.9	(449.6, 452.2)	1.1
Breast (women)	340	130.8	(116.7, 146.0)	134.4	(133.4, 135.5)	1.0
Colon and Rectum	405	87.6	(78.8, 97.1)	36.7	(36.3, 37.1)	2.4
Lung and Bronchus	373	83.0	(74.3, 92.4)	52.3	(51.9, 52.8)	1.6
Prostate (men)	126	61.2	(49.9, 74.2)	104.1	(103.2, 105.0)	0.6
Kidney and Renal Pelvis	150	28.9	(24.3, 34.1)	15.9	(15.7, 16.2)	1.8
Pancreas	84	18.5	(14.5, 23.2)	12.9	(12.7, 13.1)	1.4
Stomach	82	17.2	(13.5, 21.5)	5.7	(5.6, 5.8)	3.0
Thyroid	80	15.0	(11.8, 18.9)	15.5	(15.3, 15.8)	1.0
Urinary Bladder	60	13.9	(10.4, 18.3)	21.9	(21.6, 22.2)	0.6
Corpus Uteri (women)	40	13.7	(9.7, 18.8)	27.7	(27.3, 28.2)	0.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

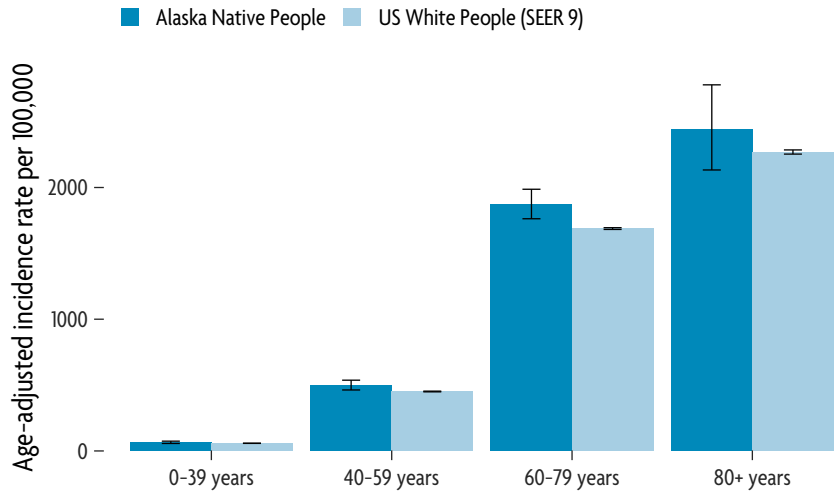


Figure 2.2: Comparison of average annual age-adjusted cancer incidence rates, by age, for all sites, men and women, 2014–2018.

Table 2.2: Comparison of average annual age-adjusted cancer incidence rates, by age, for all sites, men and women, 2014–2018.

	Alaska Native People			U.S. White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	238	65.2	(56.9, 74.3)	57.9	(57.2, 58.6)	1.1
40-59 years	735	498.9	(462.7, 537.1)	451.3	(448.7, 454.0)	1.1
60-79 years	1,200	1,872.2	(1,762.7, 1,986.6)	1,688.2	(1,681.5, 1,695.0)	1.1
80+ years	228	2,440.3	(2,133.0, 2,779.4)	2,269.4	(2,253.5, 2,285.3)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

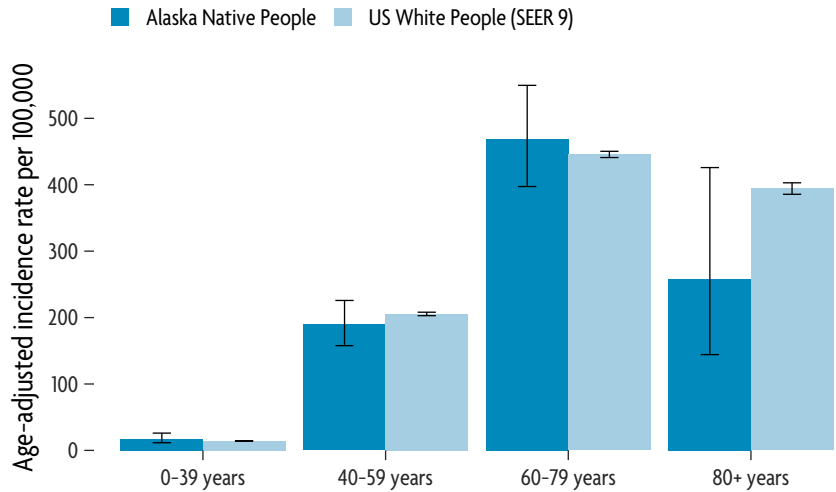


Figure 2.3: Average annual age-adjusted incidence rate by age for cancers of the breast (women), women, 2014–2018.

Table 2.3: Average annual age-adjusted incidence rate by age for cancers of the breast (women), women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	27	17.8	(11.6, 26.1)	14.2	(13.7, 14.7)	1.3
40-59 years	132	189.5	(157.7, 225.8)	205.4	(202.9, 208.1)	0.9
60-79 years	166	468.9	(397.3, 549.6)	445.6	(441.0, 450.4)	1.1
80+ years	15	258.0	(144.3, 425.9)	394.2	(385.6, 402.9)	0.7

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

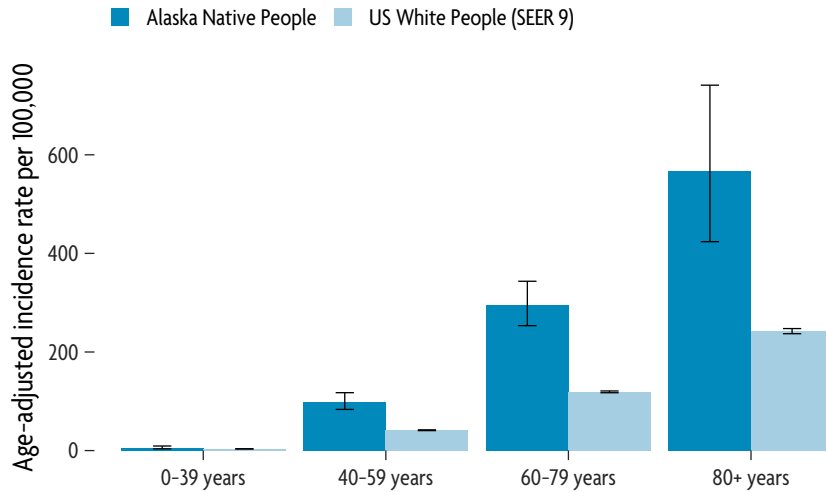


Figure 2.4: Average annual age-adjusted incidence rate by age for cancers of the colon and rectum, men and women, 2014–2018.

Table 2.4: Average annual age-adjusted incidence rate by age for cancers of the colon and rectum, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	19	5.9	(3.5, 9.3)	3.5	(3.3, 3.7)	1.7
40-59 years	143	99.4	(83.5, 117.5)	41.3	(40.5, 42.1)	2.4
60-79 years	190	295.9	(253.4, 343.5)	119.1	(117.3, 120.9)	2.5
80+ years	53	566.3	(423.8, 741.2)	242.2	(237.1, 247.5)	2.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

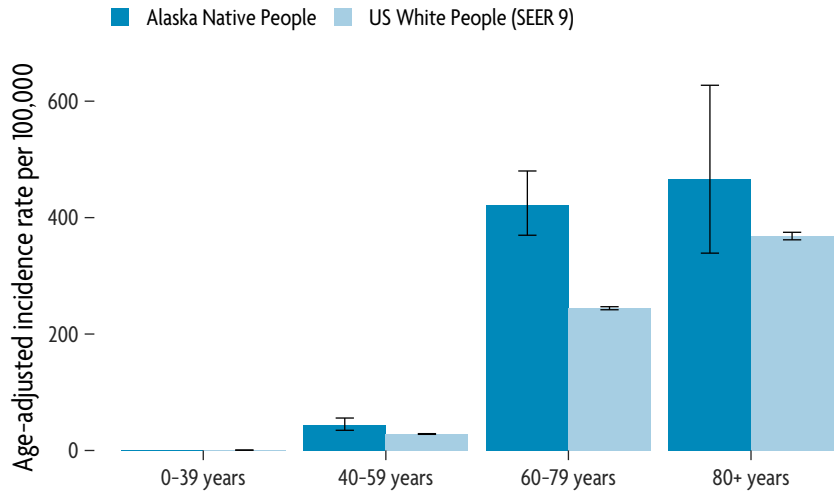


Figure 2.5: Average annual age-adjusted incidence rate by age for cancers of the lung and bronchus, men and women, 2014–2018.

Table 2.5: Average annual age-adjusted incidence rate by age for cancers of the lung and bronchus, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	-	-	-	0.6	(0.5, 0.7)	-
40-59 years	74	44.3	(34.7, 55.7)	28.3	(27.7, 28.9)	1.6
60-79 years	255	422.2	(369.7, 480.1)	244.3	(241.7, 246.9)	1.7
80+ years	44	466.9	(339.0, 627.3)	368.3	(361.8, 374.8)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

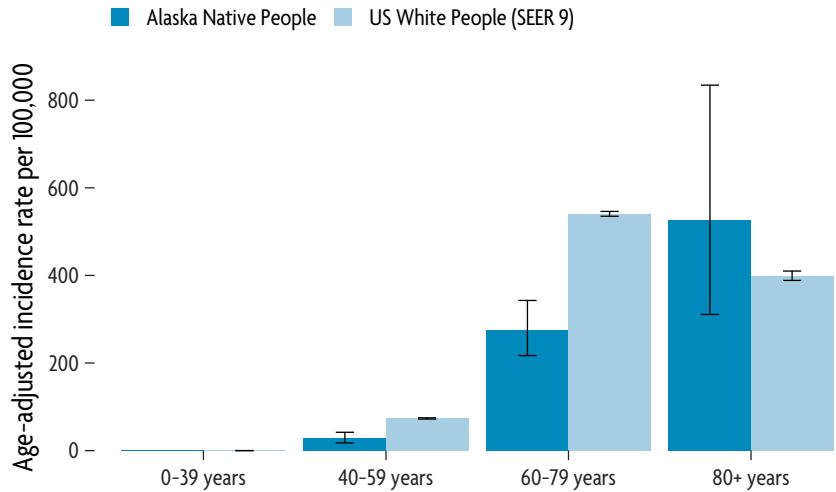


Figure 2.6: Average annual age-adjusted incidence rate by age for cancers of the prostate (men), men, 2014–2018.

Table 2.6: Average annual age-adjusted incidence rate by age for cancers of the prostate (men), men, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	-	-	-	0.1	(0.0, 0.1)	-
40-59 years	23	27.9	(17.6, 41.9)	73.5	(72.1, 74.9)	0.4
60-79 years	85	274.7	(217.1, 342.9)	540.6	(535.1, 546.1)	0.5
80+ years	18	526.5	(310.9, 834.4)	399.2	(388.6, 410.0)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

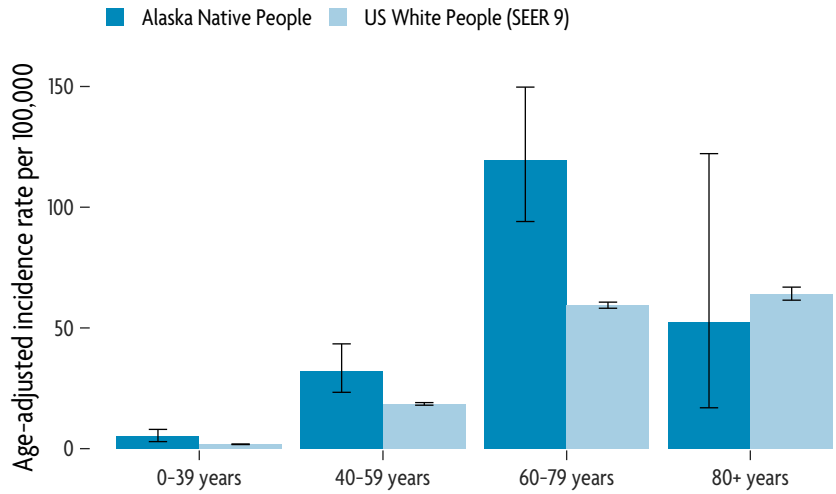


Figure 2.7: Average annual age-adjusted incidence rate by age for cancers of the kidney and renal pelvis, men and women, 2014–2018.

Table 2.7: Average annual age-adjusted incidence rate by age for cancers of the kidney and renal pelvis, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	18	5.0	(2.9, 8.0)	1.8	(1.7, 1.9)	2.8
40-59 years	45	32.2	(23.3, 43.4)	18.5	(18.0, 19.1)	1.7
60-79 years	82	119.5	(94.1, 149.8)	59.4	(58.1, 60.7)	2.0
80+ years	5	52.3	(16.9, 122.2)	64.2	(61.5, 66.9)	0.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

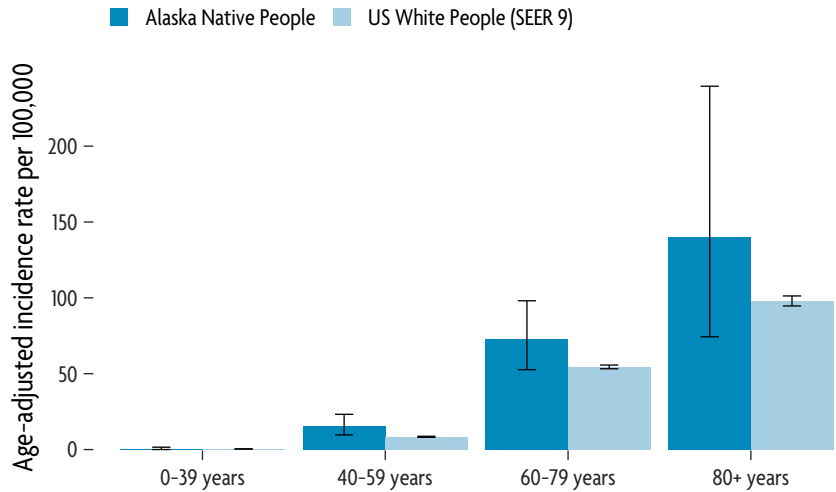


Figure 2.8: Average annual age-adjusted incidence rate by age for cancers of the pancreas, men and women, 2014–2018.

Table 2.8: Average annual age-adjusted incidence rate by age for cancers of the pancreas, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	-	-	-	0.4	(0.3, 0.4)	-
40-59 years	23	15.4	(9.7, 23.2)	8.4	(8.1, 8.8)	1.8
60-79 years	47	72.8	(52.7, 98.1)	54.5	(53.2, 55.7)	1.3
80+ years	13	139.9	(74.3, 239.5)	97.9	(94.7, 101.3)	1.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

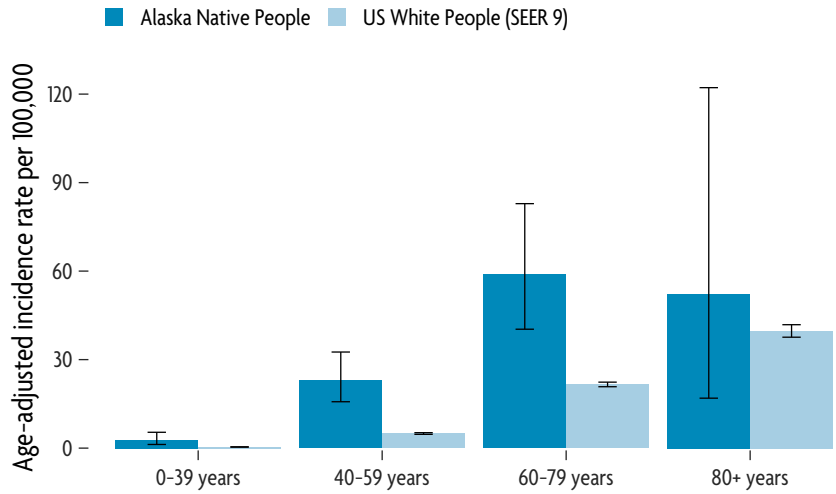


Figure 2.9: Average annual age-adjusted incidence rate by age for cancers of the stomach, men and women, 2014–2018.

Table 2.9: Average annual age-adjusted incidence rate by age for cancers of the stomach, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	9	2.8	(1.2, 5.4)	0.4	(0.3, 0.4)	7.3
40-59 years	33	23.0	(15.7, 32.6)	5.0	(4.7, 5.2)	4.7
60-79 years	35	58.8	(40.3, 82.9)	21.6	(20.8, 22.4)	2.7
80+ years	5	52.3	(16.9, 122.2)	39.7	(37.6, 41.8)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

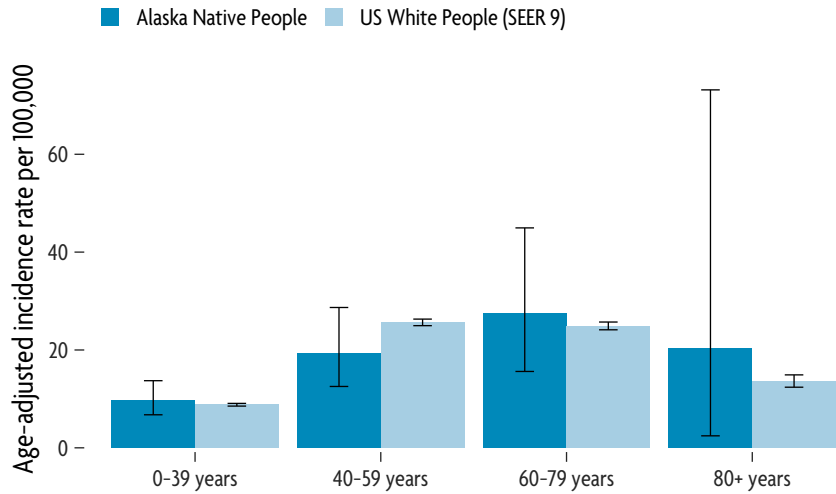


Figure 2.10: Average annual age-adjusted incidence rate by age for cancers of the thyroid, men and women, 2014–2018.

Table 2.10: Average annual age-adjusted incidence rate by age for cancers of the thyroid, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	35	9.8	(6.8, 13.7)	8.8	(8.5, 9.1)	1.1
40-59 years	26	19.4	(12.5, 28.7)	25.6	(25.0, 26.3)	0.8
60-79 years	17	27.5	(15.6, 45.0)	24.9	(24.1, 25.7)	1.1
80+ years	-	-	-	13.6	(12.4, 14.9)	-

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

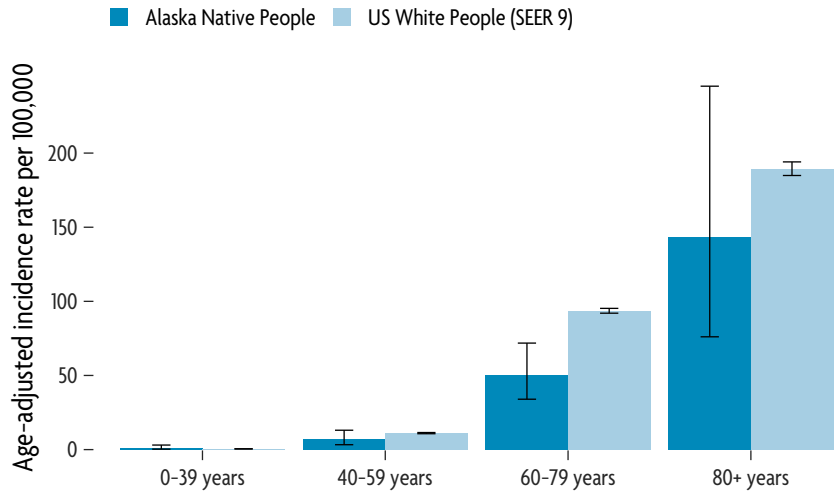


Figure 2.11: Average annual age-adjusted incidence rate by age for cancers of the urinary bladder, men and women, 2014–2018.

Table 2.11: Average annual age-adjusted incidence rate by age for cancers of the urinary bladder, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	-	-	-	0.5	(0.4, 0.6)	-
40-59 years	10	7.0	(3.3, 13.1)	11.1	(10.7, 11.5)	0.6
60-79 years	33	50.3	(34.0, 71.8)	93.6	(92.0, 95.2)	0.5
80+ years	13	143.2	(76.1, 245.1)	189.4	(184.9, 194.1)	0.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

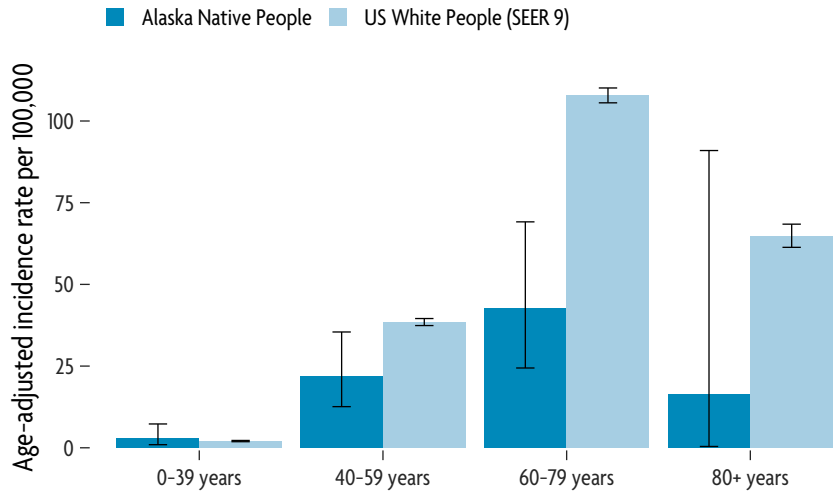


Figure 2.12: Average annual age-adjusted incidence rate by age for cancers of the corpus uteri (women), women, 2014–2018.

Table 2.12: Average annual age-adjusted incidence rate by age for cancers of the corpus uteri (women), women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
0-39 years	5	3.0	(1.0, 7.3)	2.0	(1.9, 2.2)	1.5
40-59 years	17	21.9	(12.6, 35.4)	38.5	(37.4, 39.6)	0.6
60-79 years	17	42.6	(24.4, 69.1)	107.8	(105.6, 110.1)	0.4
80+ years	-	-	-	64.8	(61.3, 68.4)	-

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.1.2 Fifty-year Incidence

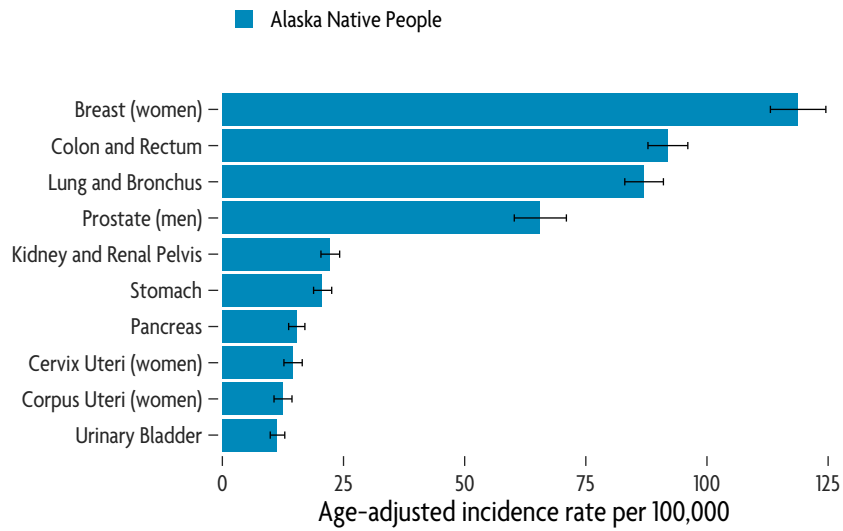


Figure 2.13: Average annual age-adjusted cancer incidence by site for the top 10 sites, men and women, 1969–2018.

Table 2.13: Average annual age-adjusted cancer incidence by site for the top 10 sites, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
All sites	12,697	481.3	(472.4, 490.4)
Breast (women)	1,794	118.7	(113.1, 124.5)
Colon and Rectum	2,225	91.9	(87.8, 96.0)
Lung and Bronchus	2,087	87.0	(83.0, 91.0)
Prostate (men)	704	65.4	(60.2, 71.0)
Kidney and Renal Pelvis	599	22.2	(20.3, 24.2)
Stomach	547	20.6	(18.8, 22.6)
Pancreas	373	15.3	(13.7, 17.0)
Cervix Uteri (women)	258	14.5	(12.7, 16.5)
Corpus Uteri (women)	191	12.4	(10.7, 14.4)
Urinary Bladder	259	11.3	(9.9, 12.9)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard. See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

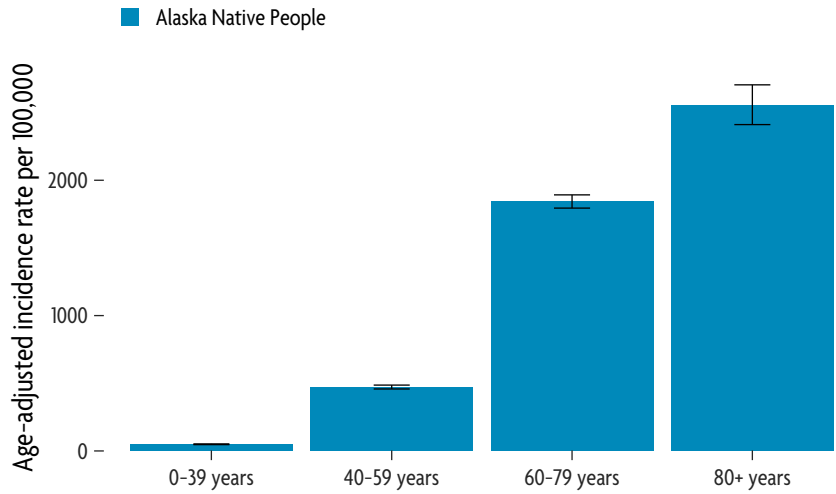


Figure 2.14: Comparison of average annual age-adjusted cancer incidence rates, by age, for all sites, men and women, 1969–2018.

Table 2.14: Comparison of average annual age-adjusted cancer incidence rates, by age, for all sites, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	1,364	49.3	(46.6, 52.0)
40-59 years	4,236	472.0	(457.9, 486.4)
60-79 years	5,913	1,842.7	(1,794.4, 1,892.0)
80+ years	1,184	2,555.1	(2,411.3, 2,705.2)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

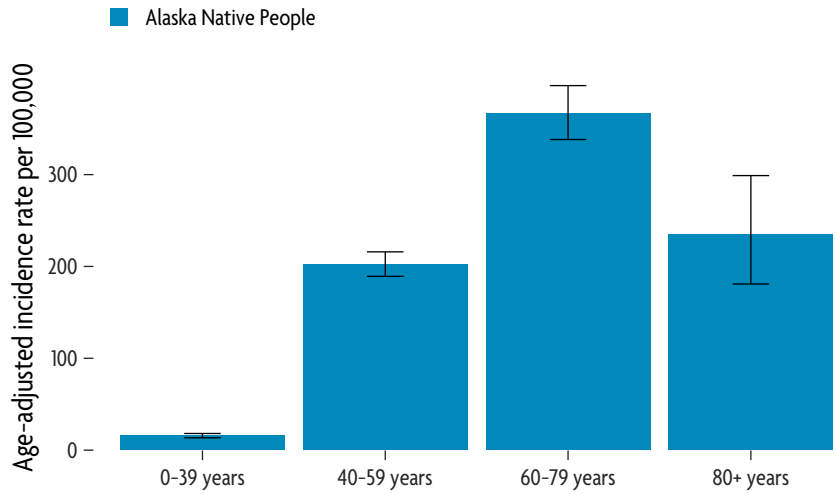


Figure 2.15: Average annual age-adjusted incidence rate by age for cancers of the breast (women), women, 1969–2018.

Table 2.15: Average annual age-adjusted incidence rate by age for cancers of the breast (women), women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	182	15.7	(13.4, 18.1)
40-59 years	900	202.2	(189.2, 215.9)
60-79 years	647	366.7	(338.2, 396.9)
80+ years	65	234.5	(180.9, 298.9)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

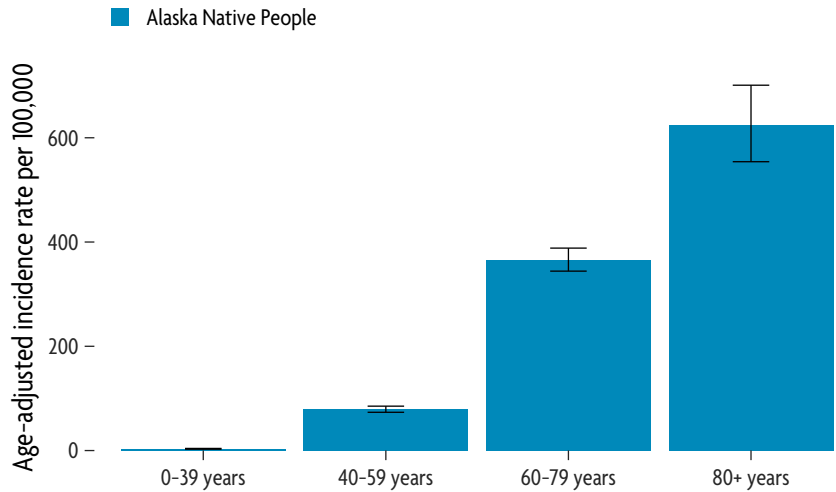


Figure 2.16: Average annual age-adjusted incidence rate by age for cancers of the colon and rectum, men and women, 1969–2018.

Table 2.16: Average annual age-adjusted incidence rate by age for cancers of the colon and rectum, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	79	3.3	(2.6, 4.1)
40-59 years	710	79.1	(73.4, 85.2)
60-79 years	1,148	365.7	(344.1, 388.3)
80+ years	288	624.2	(554.0, 700.8)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

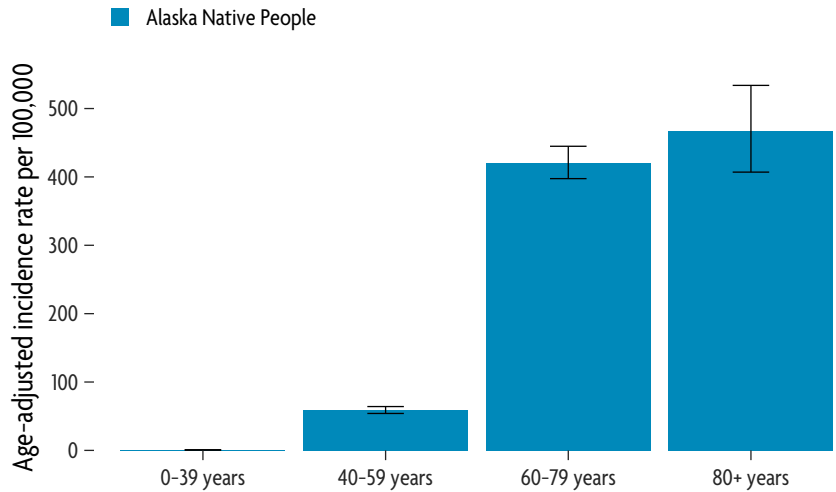


Figure 2.17: Average annual age-adjusted incidence rate by age for cancers of the lung and bronchus, men and women, 1969–2018.

Table 2.17: Average annual age-adjusted incidence rate by age for cancers of the lung and bronchus, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	12	0.6	(0.3, 1.0)
40-59 years	536	58.9	(54.0, 64.1)
60-79 years	1,322	420.6	(397.5, 444.8)
80+ years	217	467.2	(407.0, 533.9)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

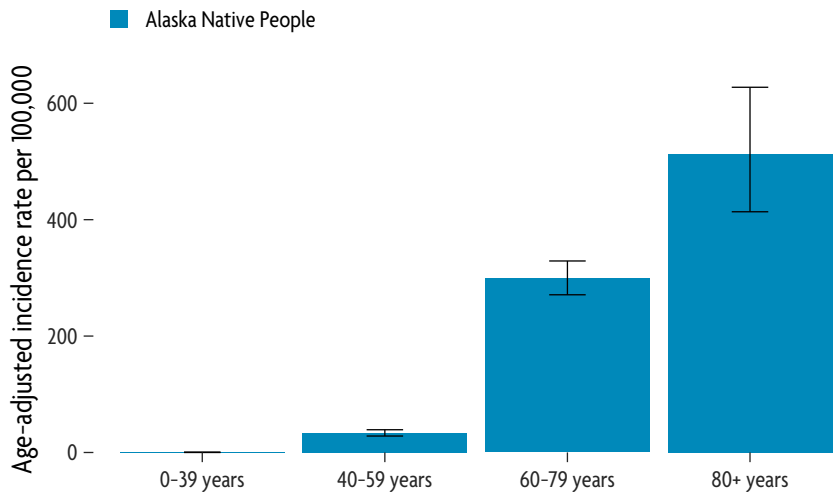


Figure 2.18: Average annual age-adjusted incidence rate by age for cancers of the prostate (men), men, 1969–2018.

Table 2.18: Average annual age-adjusted incidence rate by age for cancers of the prostate (men), men, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	-	-	-
40-59 years	153	33.4	(28.3, 39.1)
60-79 years	455	298.9	(271.0, 329.0)
80+ years	94	512.3	(413.6, 627.5)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

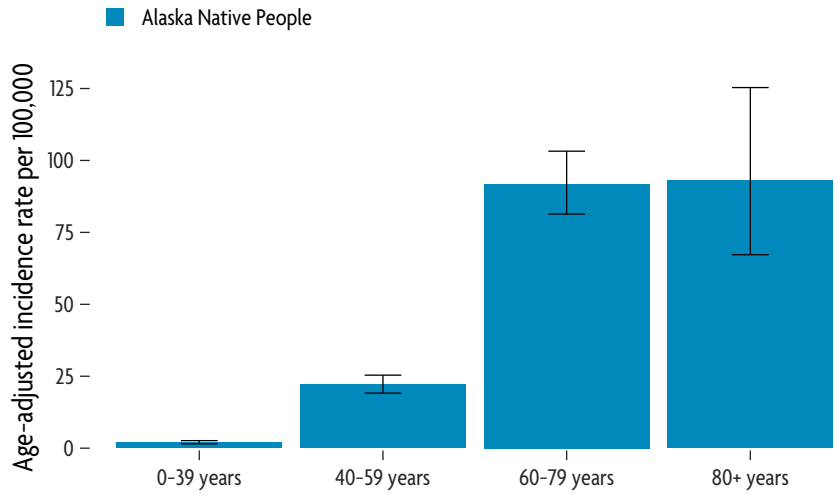


Figure 2.19: Average annual age-adjusted incidence rate by age for cancers of the kidney and renal pelvis, men and women, 1969–2018.

Table 2.19: Average annual age-adjusted incidence rate by age for cancers of the kidney and renal pelvis, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	57	2.0	(1.5, 2.6)
40-59 years	199	22.1	(19.1, 25.4)
60-79 years	300	91.8	(81.4, 103.2)
80+ years	43	93.0	(67.2, 125.3)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

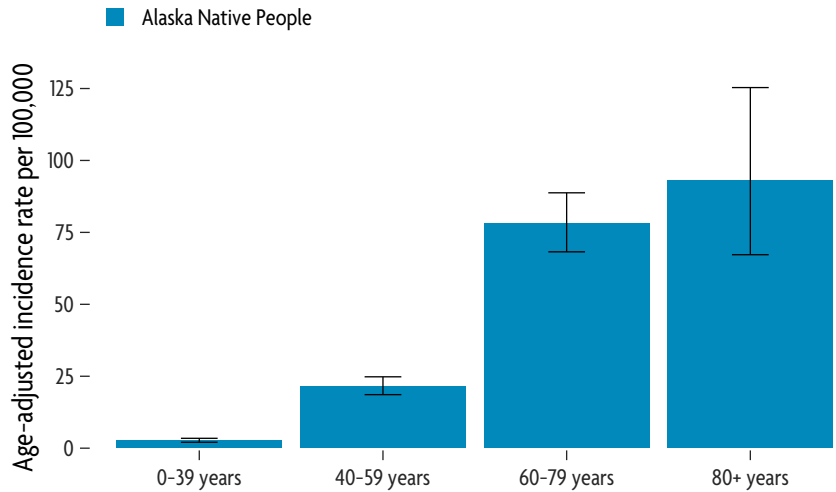


Figure 2.20: Average annual age-adjusted incidence rate by age for cancers of the stomach, men and women, 1969–2018.

Table 2.20: Average annual age-adjusted incidence rate by age for cancers of the stomach, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	65	2.7	(2.1, 3.4)
40-59 years	193	21.5	(18.6, 24.8)
60-79 years	246	78.0	(68.2, 88.8)
80+ years	43	93.0	(67.2, 125.3)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

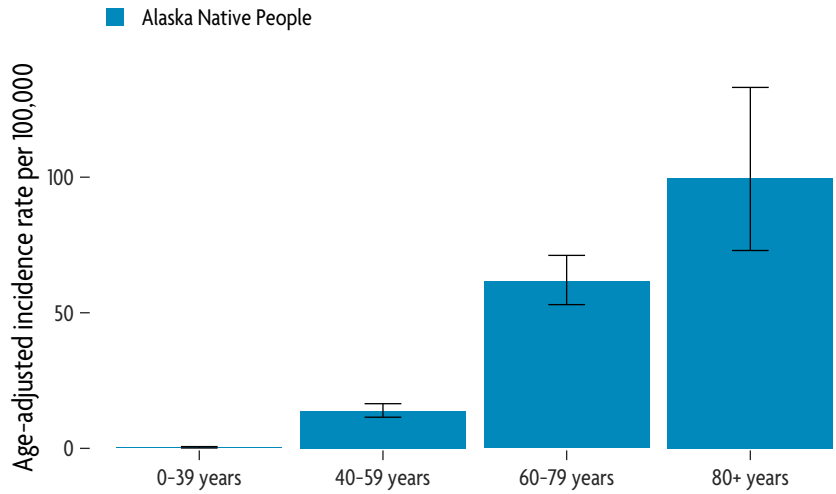


Figure 2.21: Average annual age-adjusted incidence rate by age for cancers of the pancreas, men and women, 1969–2018.

Table 2.21: Average annual age-adjusted incidence rate by age for cancers of the pancreas, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	7	0.3	(0.1, 0.6)
40-59 years	124	13.8	(11.5, 16.5)
60-79 years	196	61.6	(53.0, 71.2)
80+ years	46	99.7	(73.0, 133.1)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

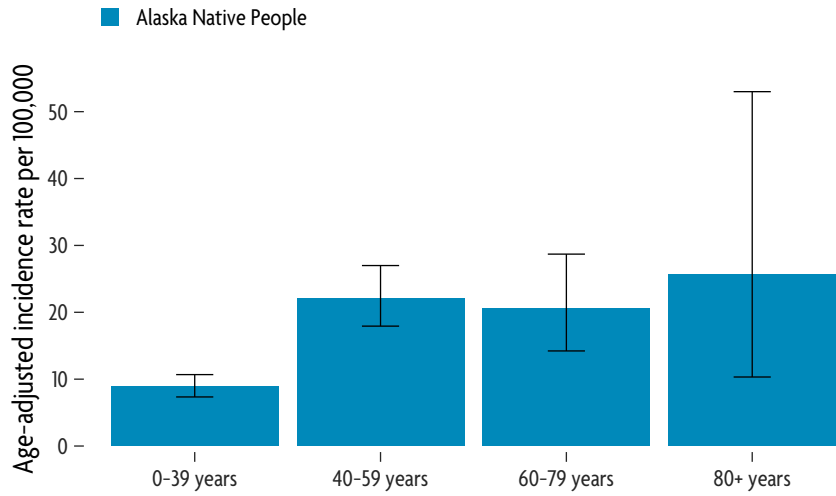


Figure 2.22: Average annual age-adjusted incidence rate by age for cancers of the cervix uteri (women), women, 1969–2018.

Table 2.22: Average annual age-adjusted incidence rate by age for cancers of the cervix uteri (women), women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	118	8.9	(7.3, 10.7)
40-59 years	97	22.1	(17.9, 27.0)
60-79 years	36	20.5	(14.2, 28.7)
80+ years	7	25.7	(10.3, 53.0)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

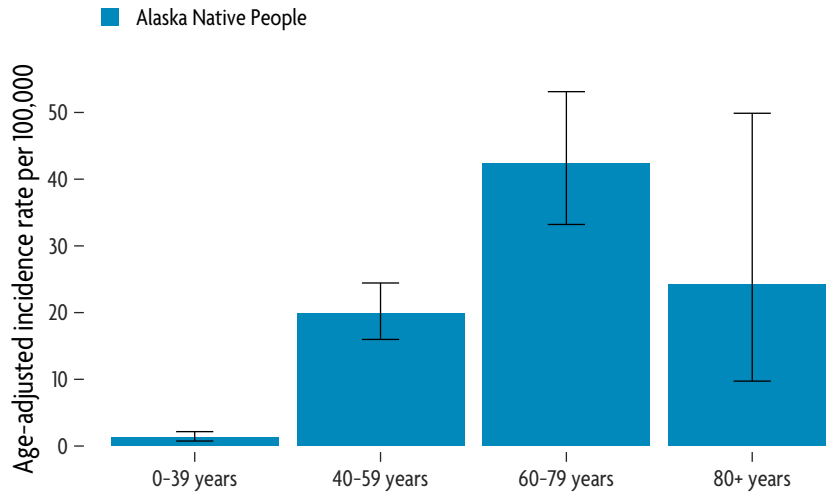


Figure 2.23: Average annual age-adjusted incidence rate by age for cancers of the corpus uteri (women), women, 1969–2018.

Table 2.23: Average annual age-adjusted incidence rate by age for cancers of the corpus uteri (women), women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	16	1.3	(0.8, 2.2)
40-59 years	90	19.9	(16.0, 24.4)
60-79 years	78	42.3	(33.2, 53.1)
80+ years	7	24.2	(9.7, 49.9)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

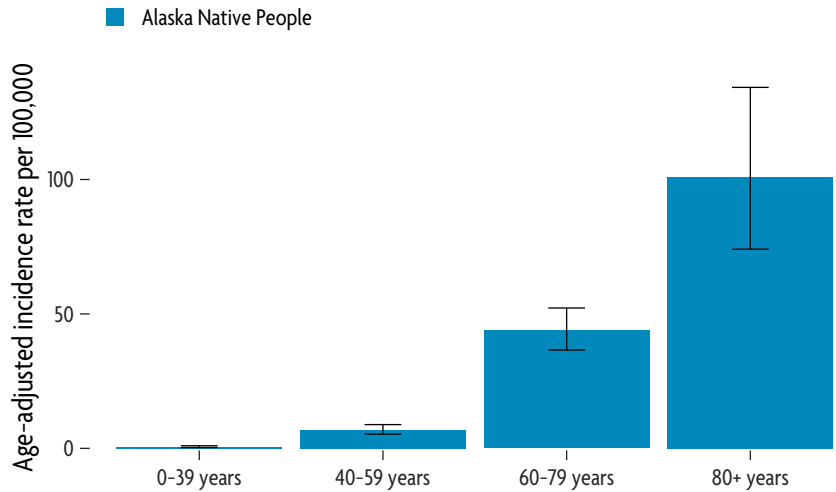


Figure 2.24: Average annual age-adjusted incidence rate by age for cancers of the urinary bladder, men and women, 1969–2018.

Table 2.24: Average annual age-adjusted incidence rate by age for cancers of the urinary bladder, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
0-39 years	14	0.6	(0.3, 1.0)
40-59 years	62	6.9	(5.3, 8.8)
60-79 years	136	43.9	(36.6, 52.2)
80+ years	47	100.9	(74.1, 134.2)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.2 Men Only

2.2.1 Five-year Incidence

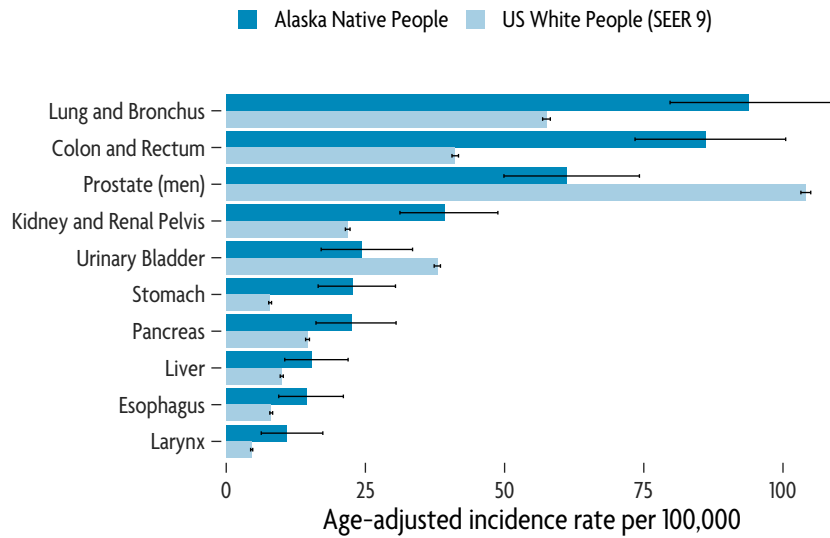


Figure 2.25: Average annual age-adjusted cancer incidence by site for the top 10 sites, men, 2014–2018.

Table 2.25: Average annual age-adjusted cancer incidence by site for the top 10 sites, men, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	1,135	515.3	(482.8, 549.5)	482.5	(480.5, 484.4)	1.1
Lung and Bronchus	187	93.9	(79.7, 109.8)	57.5	(56.8, 58.2)	1.6
Colon and Rectum	192	86.2	(73.4, 100.5)	41.1	(40.5, 41.7)	2.1
Prostate (men)	126	61.1	(49.9, 74.2)	104.1	(103.2, 105.0)	0.6
Kidney and Renal Pelvis	94	39.3	(31.2, 48.8)	21.8	(21.4, 22.2)	1.8
Urinary Bladder	47	24.2	(17.1, 33.5)	37.9	(37.4, 38.5)	0.6
Stomach	51	22.7	(16.5, 30.4)	7.9	(7.6, 8.1)	2.9
Pancreas	49	22.5	(16.1, 30.5)	14.6	(14.3, 14.9)	1.5
Liver	36	15.4	(10.5, 21.9)	10.0	(9.7, 10.2)	1.5
Esophagus	32	14.4	(9.4, 21.0)	8.1	(7.8, 8.3)	1.8
Larynx	20	10.8	(6.3, 17.4)	4.6	(4.4, 4.8)	2.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.2.2 Fifty-year Incidence

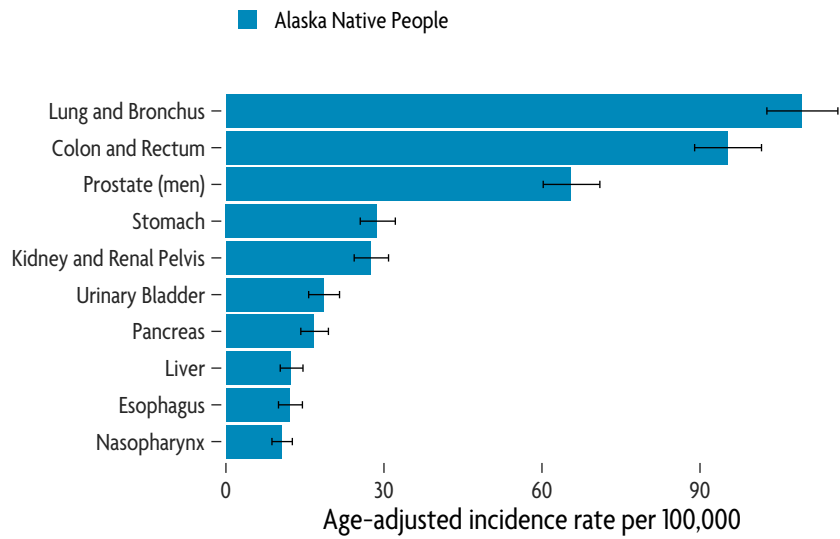


Figure 2.26: Average annual age-adjusted cancer incidence by site for the top 10 sites, men, 1969–2018.

Table 2.26: Average annual age-adjusted cancer incidence by site for the top 10 sites, men, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
All sites	6,015	503.4	(489.3, 517.8)
Lung and Bronchus	1,220	109.3	(102.7, 116.2)
Colon and Rectum	1,082	95.2	(89.0, 101.7)
Prostate (men)	704	65.5	(60.2, 71.0)
Stomach	357	28.7	(25.5, 32.2)
Kidney and Renal Pelvis	340	27.5	(24.4, 30.9)
Urinary Bladder	197	18.5	(15.7, 21.6)
Pancreas	194	16.7	(14.2, 19.5)
Liver	170	12.3	(10.3, 14.6)
Esophagus	137	12.1	(10.0, 14.5)
Nasopharynx	145	10.5	(8.7, 12.6)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard. See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.3 Women Only

2.3.1 Five-year Incidence

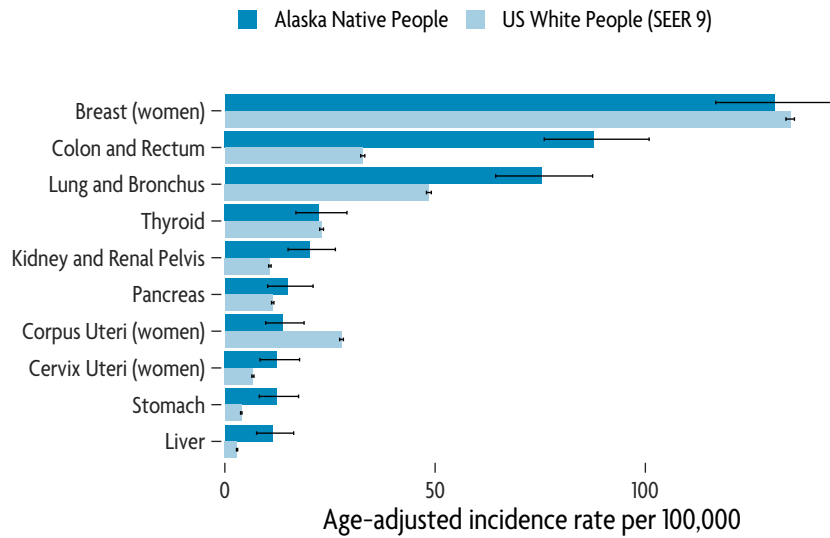


Figure 2.27: Average annual age-adjusted cancer incidence by site for the top 10 sites, women, 2014–2018.

Table 2.27: Average annual age-adjusted cancer incidence by site for the top 10 sites, women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	1,266	493.0	(465.1, 522.0)	431.7	(429.9, 433.5)	1.1
Breast (women)	340	130.8	(116.7, 146.0)	134.4	(133.4, 135.4)	1.0
Colon and Rectum	213	87.8	(76.0, 100.9)	32.8	(32.3, 33.3)	2.7
Lung and Bronchus	186	75.3	(64.4, 87.5)	48.5	(48.0, 49.1)	1.6
Thyroid	60	22.4	(16.9, 29.0)	23.0	(22.6, 23.4)	1.0
Kidney and Renal Pelvis	56	20.1	(15.0, 26.3)	10.7	(10.4, 11.0)	1.9
Pancreas	35	14.9	(10.2, 21.0)	11.4	(11.1, 11.7)	1.3
Corpus Uteri (women)	40	13.7	(9.7, 18.8)	27.7	(27.3, 28.2)	0.5
Cervix Uteri (women)	32	12.4	(8.4, 17.8)	6.7	(6.4, 6.9)	1.9
Stomach	31	12.2	(8.2, 17.5)	3.9	(3.7, 4.1)	3.1
Liver	31	11.3	(7.5, 16.4)	2.9	(2.8, 3.0)	3.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.3.2 Fifty-year Incidence

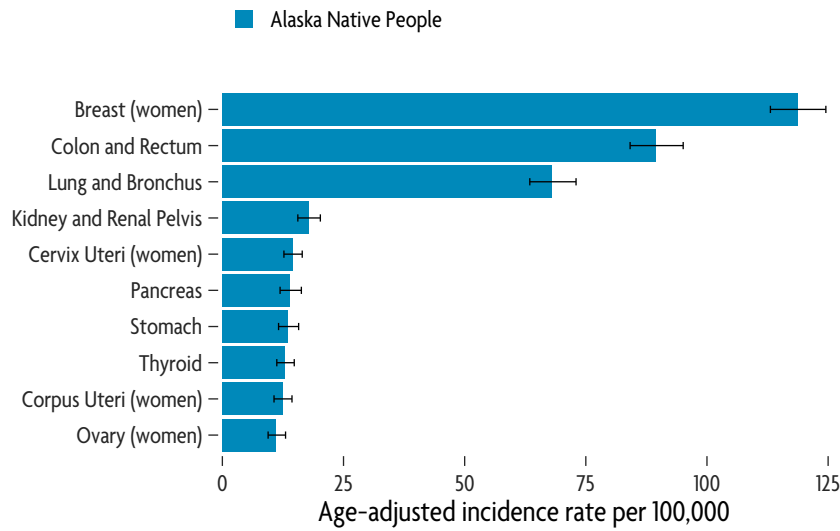


Figure 2.28: Average annual age-adjusted cancer incidence by site for the top 10 sites, women, 1969–2018.

Table 2.28: Average annual age-adjusted cancer incidence by site for the top 10 sites, women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
All sites	6,682	470.4	(458.6, 482.4)
Breast (women)	1,794	118.7	(113.1, 124.5)
Colon and Rectum	1,143	89.5	(84.1, 95.1)
Lung and Bronchus	867	68.1	(63.4, 73.0)
Kidney and Renal Pelvis	259	17.8	(15.6, 20.2)
Cervix Uteri (women)	258	14.5	(12.7, 16.5)
Pancreas	179	14.0	(11.9, 16.3)
Stomach	190	13.6	(11.6, 15.7)
Thyroid	229	12.9	(11.2, 14.8)
Corpus Uteri (women)	191	12.4	(10.7, 14.4)
Ovary (women)	168	11.1	(9.4, 13.0)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard. See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.4 Percentages by Stage

2.4.1 Five-year Percentages

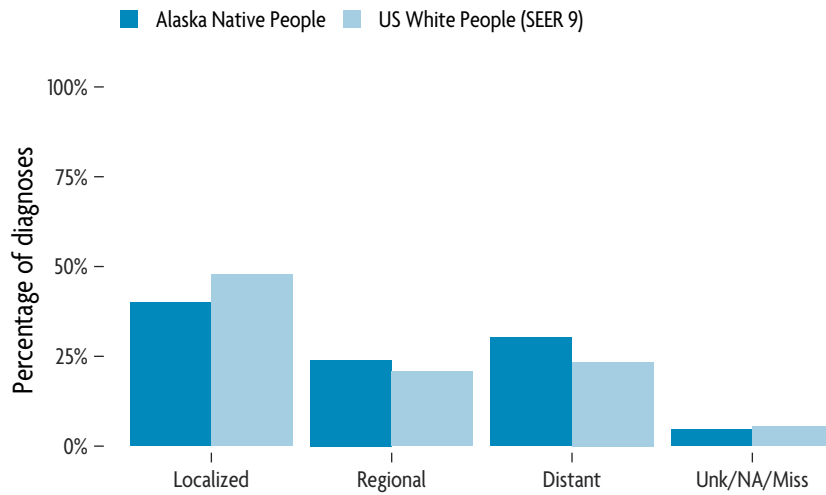


Figure 2.29: Comparison of cancer stage at diagnosis for all sites, men and women, 2014–2018.

Table 2.29: Comparison of cancer stage at diagnosis for all sites, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	2,401	100.0	477,379	100.0
Localized	960	40.5	228,243	49.1
Regional	576	24.3	99,305	21.3
Distant	724	30.5	111,883	24.0
Unk/NA/Miss	110	4.6	25,893	5.6

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

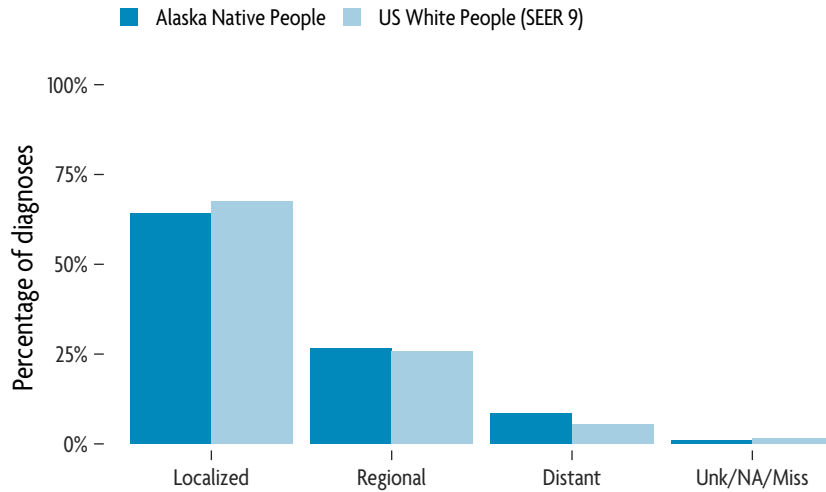


Figure 2.30: Comparison of cancer stage at diagnosis for breast (women), women, 2014–2018.

Table 2.30: Comparison of cancer stage at diagnosis for breast (women), women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	340	100.0	72,819	100.0
Localized	218	64.1	49,195	67.6
Regional	90	26.5	18,715	25.7
Distant	29	8.5	3,850	5.3
Unk/NA/Miss	-	-	1,059	1.5

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

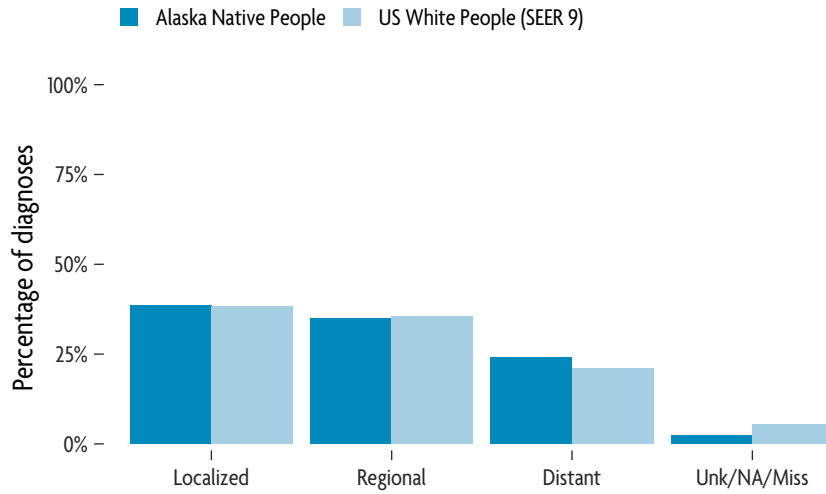


Figure 2.31: Comparison of cancer stage at diagnosis for colon and rectum, men and women, 2014–2018.

Table 2.31: Comparison of cancer stage at diagnosis for colon and rectum, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	405	100.0	38,511	100.0
Localized	156	38.5	14,725	38.2
Regional	141	34.8	13,688	35.5
Distant	98	24.2	8,040	20.9
Unk/NA/Miss	10	2.5	2,058	5.3

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

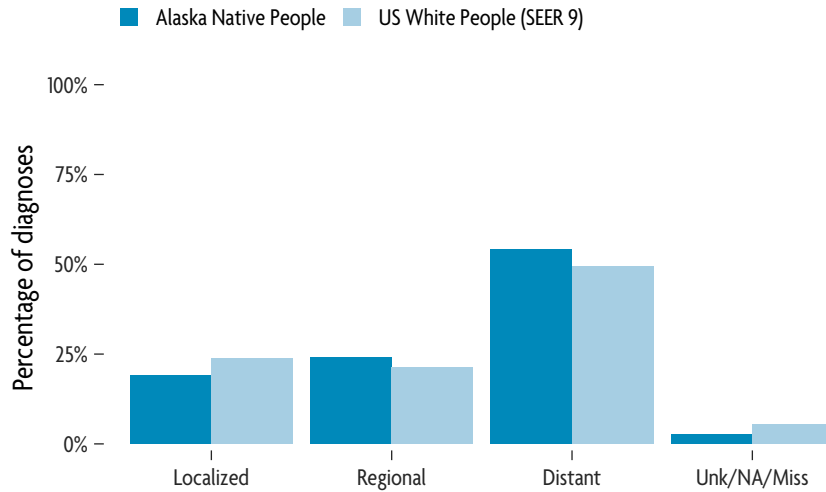


Figure 2.32: Comparison of cancer stage at diagnosis for lung and bronchus, men and women, 2014–2018.

Table 2.32: Comparison of cancer stage at diagnosis for lung and bronchus, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	373	100.0	56,516	100.0
Localized	71	19.0	13,440	23.8
Regional	90	24.1	12,115	21.4
Distant	202	54.2	27,942	49.4
Unk/NA/Miss	10	2.7	3,019	5.3

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

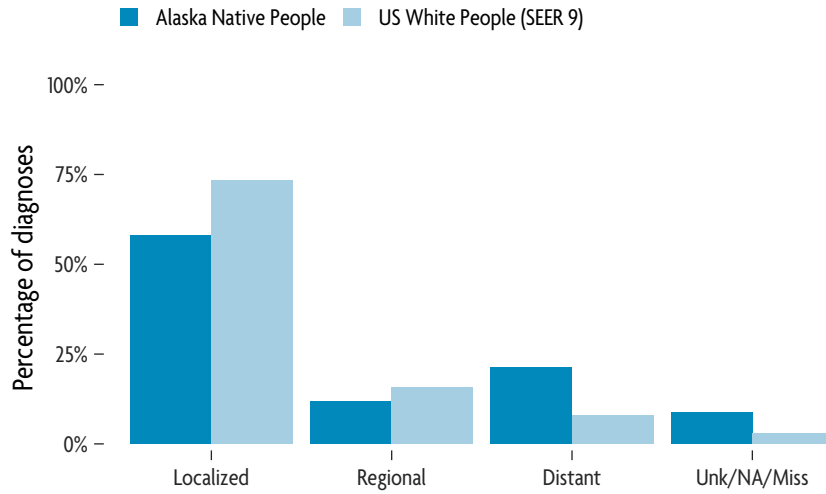


Figure 2.33: Comparison of cancer stage at diagnosis for prostate (men), men, 2014–2018.

Table 2.33: Comparison of cancer stage at diagnosis for prostate (men), men, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	126	100.0	55,827	100.0
Localized	73	57.9	40,937	73.3
Regional	15	11.9	8,758	15.7
Distant	27	21.4	4,433	7.9
Unk/NA/Miss	11	8.7	1,699	3.0

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

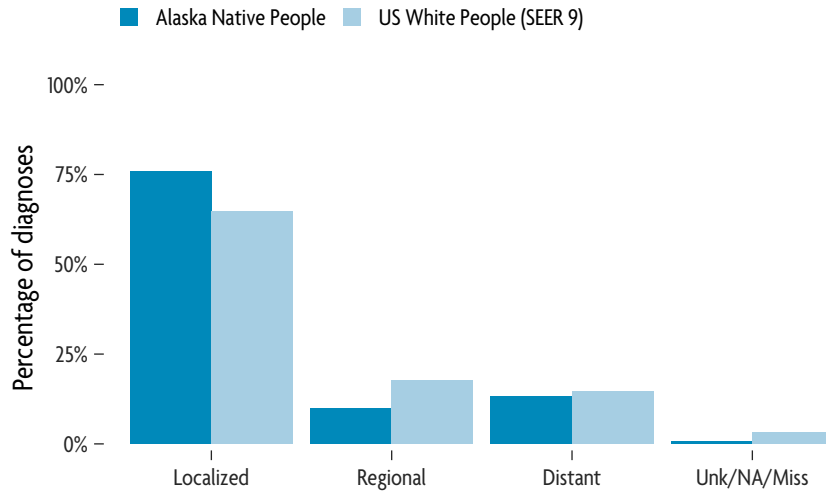


Figure 2.34: Comparison of cancer stage at diagnosis for kidney and renal pelvis, men and women, 2014–2018.

Table 2.34: Comparison of cancer stage at diagnosis for kidney and renal pelvis, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	150	100.0	16,827	100.0
Localized	114	76.0	10,888	64.7
Regional	15	10.0	2,960	17.6
Distant	20	13.3	2,449	14.6
Unk/NA/Miss	-	-	530	3.1

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

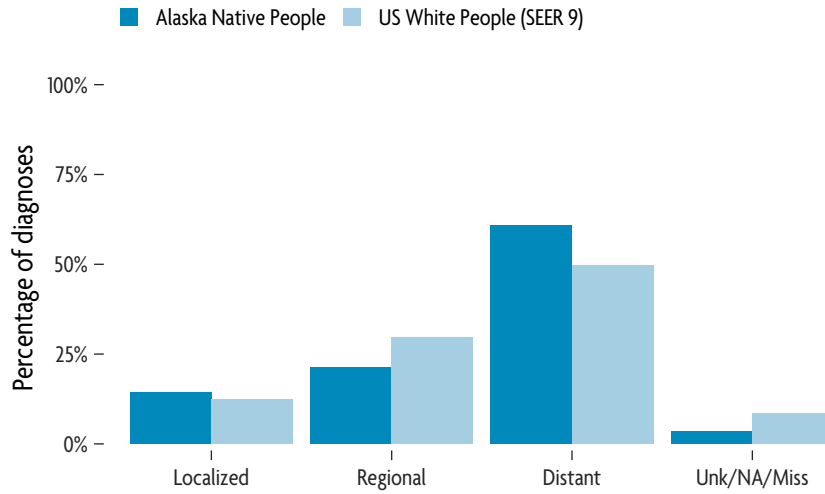


Figure 2.35: Comparison of cancer stage at diagnosis for pancreas, men and women, 2014–2018.

Table 2.35: Comparison of cancer stage at diagnosis for pancreas, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	84	100.0	13,992	100.0
Localized	12	14.3	1,718	12.3
Regional	18	21.4	4,153	29.7
Distant	51	60.7	6,935	49.6
Unk/NA/Miss	-	-	1,186	8.5

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

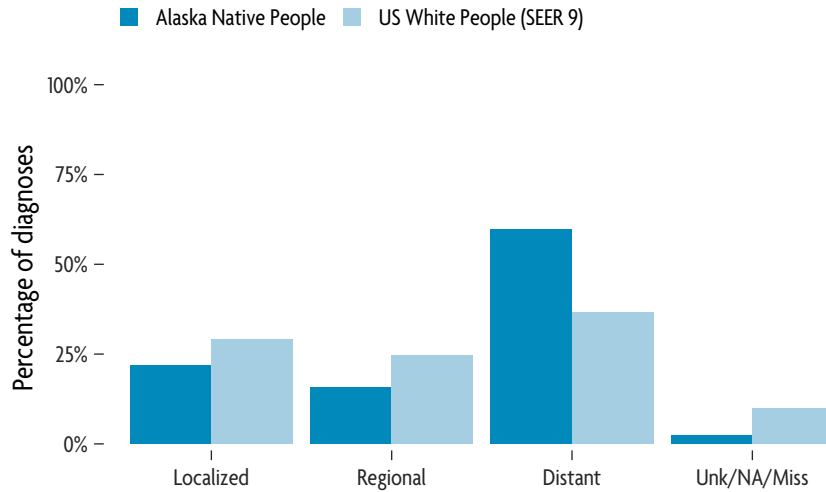


Figure 2.36: Comparison of cancer stage at diagnosis for stomach, men and women, 2014–2018.

Table 2.36: Comparison of cancer stage at diagnosis for stomach, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	82	100.0	6,038	100.0
Localized	18	22.0	1,749	29.0
Regional	13	15.9	1,492	24.7
Distant	49	59.8	2,207	36.6
Unk/NA/Miss	-	-	590	9.8

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

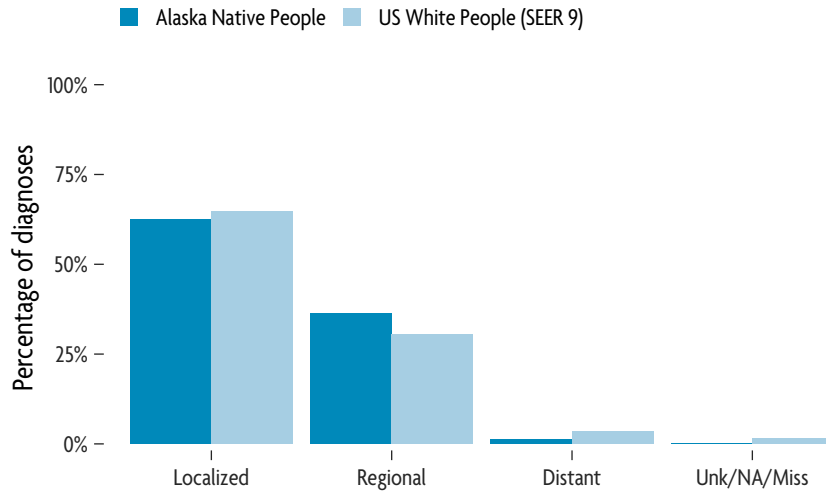


Figure 2.37: Comparison of cancer stage at diagnosis for thyroid, men and women, 2014–2018.

Table 2.37: Comparison of cancer stage at diagnosis for thyroid, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	80	100.0	14,527	100.0
Localized	50	62.5	9,400	64.7
Regional	29	36.2	4,436	30.5
Distant	-	-	487	3.4
Unk/NA/Miss	-	-	204	1.4

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

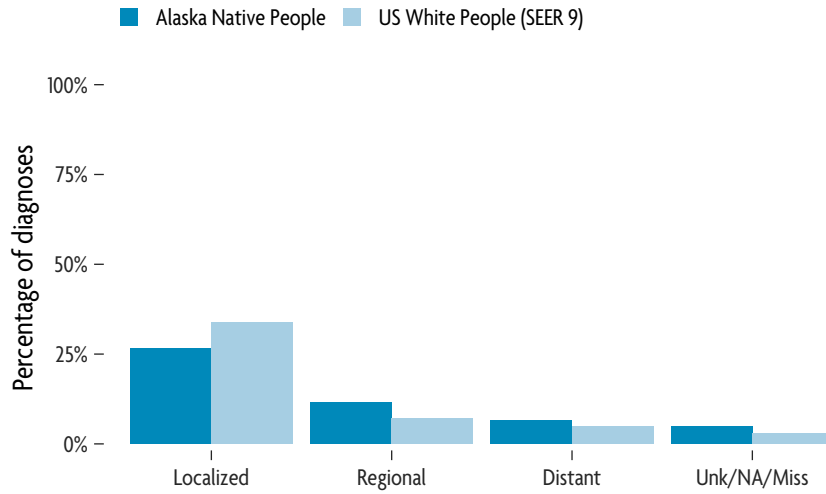


Figure 2.38: Comparison of cancer stage at diagnosis for urinary bladder, men and women, 2014–2018.

Table 2.38: Comparison of cancer stage at diagnosis for urinary bladder, men and women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	60	100.0	23,497	100.0
Localized	16	53.3	7,943	69.4
Regional	7	23.3	1,640	14.3
Distant	-	-	1,153	10.1
Unk/NA/Miss	-	-	706	6.2

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

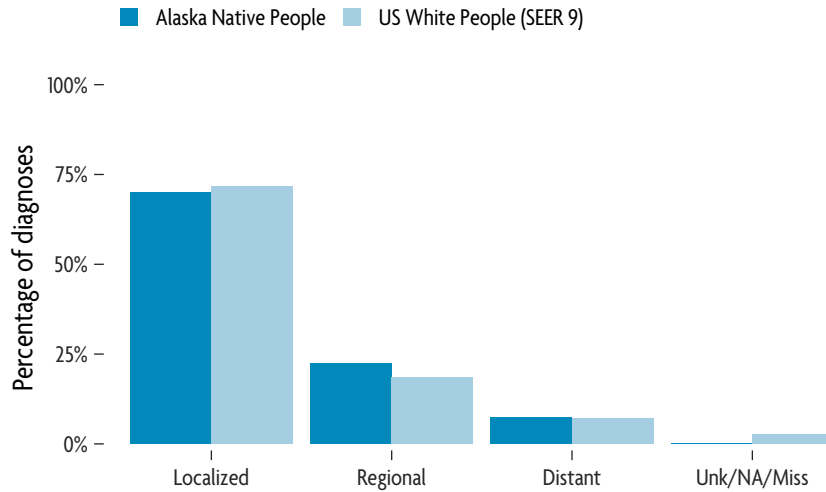


Figure 2.39: Comparison of cancer stage at diagnosis for corpus uteri (women), women, 2014–2018.

Table 2.39: Comparison of cancer stage at diagnosis for corpus uteri (women), women, 2014–2018.

Stage	Alaska Native People		US White People	
	Count	%	Count	%
All stages	40	100.0	15,930	100.0
Localized	28	70.0	11,439	71.8
Regional	9	22.5	2,950	18.5
Distant	-	-	1,134	7.1
Unk/NA/Miss	-	-	407	2.6

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

2.5 Regional Comparisons

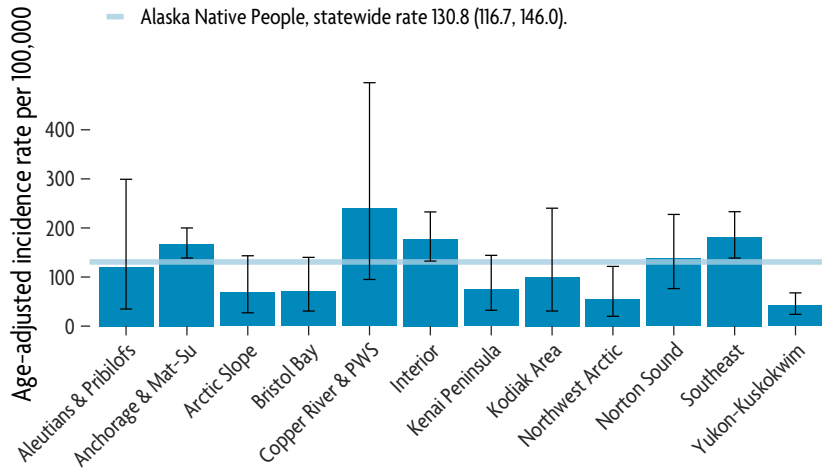


Figure 2.40: Regional comparison of average annual age-adjusted cancer incidence for breast (women), women, 2014–2018.

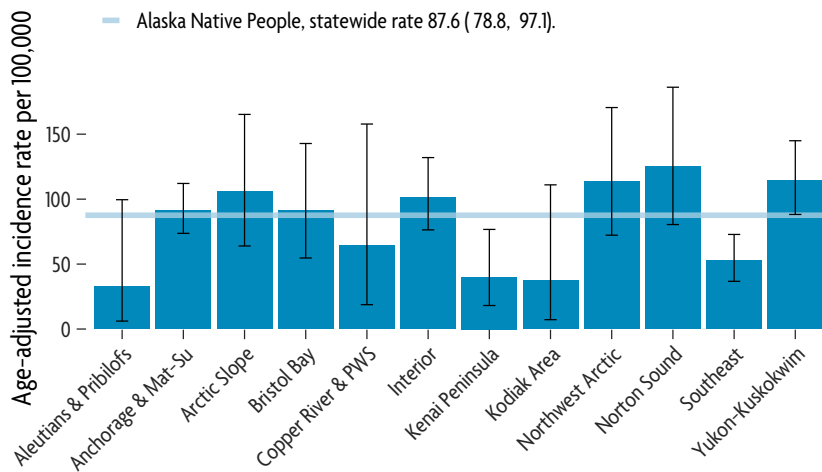


Figure 2.41: Regional comparison of average annual age-adjusted cancer incidence for colon and rectum, men and women, 2014–2018.

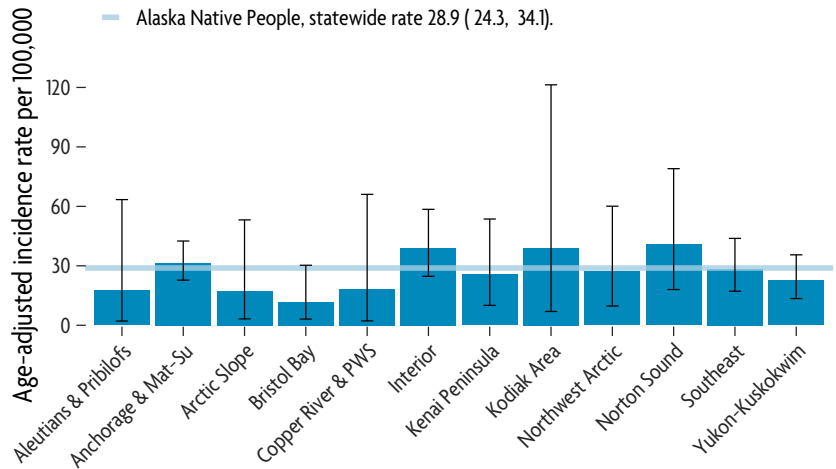


Figure 2.42: Regional comparison of average annual age-adjusted cancer incidence for kidney and renal pelvis, men and women, 2014–2018.

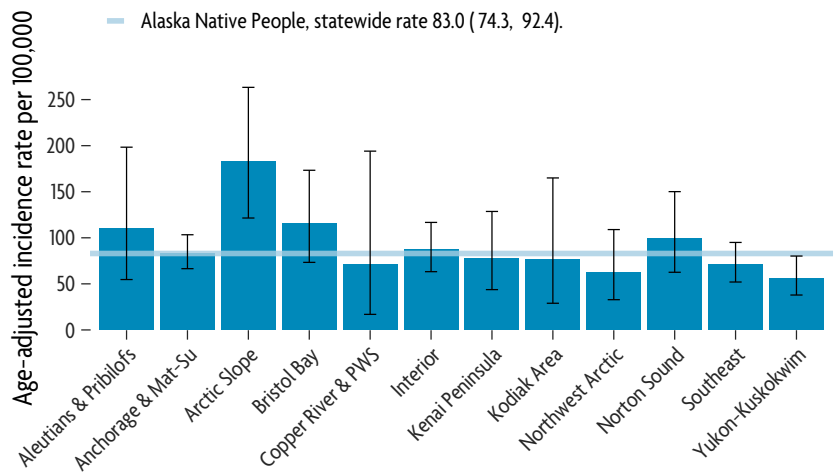


Figure 2.43: Regional comparison of average annual age-adjusted cancer incidence for lung and bronchus, men and women, 2014–2018.

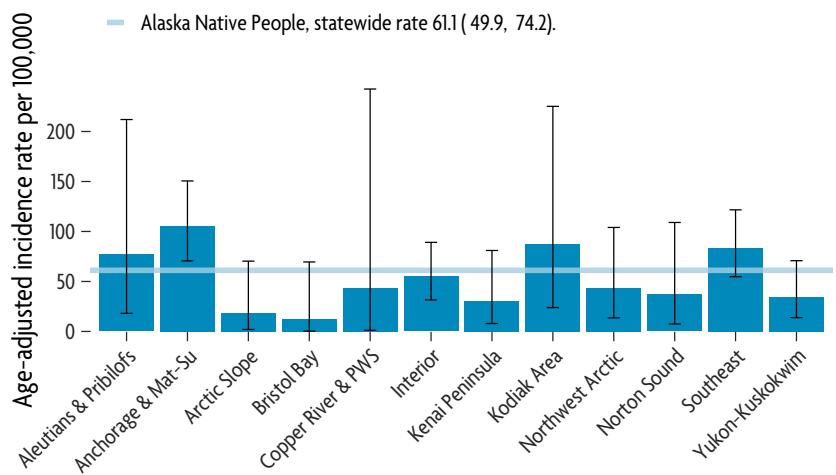


Figure 2.44: Regional comparison of average annual age-adjusted cancer incidence for prostate (men), men, 2014–2018.

3

Incidence by Cancer Site

3.1 Men and Women Combined

3.1.1 Five-year Incidence

Table 3.1: Average annual age-adjusted cancer incidence rate by site, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	2,401	497.6	(476.7, 519.2)	450.9	(449.6, 452.2)	1.1
<i>Oral Cavity and Pharynx</i>						
Lip	-	-	-	0.8	(0.7, 0.9)	-
Tongue	13	2.3	(1.2, 4.1)	4.2	(4.1, 4.3)	0.6
Salivary Gland	7	1.4	(0.5, 2.9)	1.3	(1.2, 1.3)	1.1
Floor of Mouth	7	1.2	(0.5, 2.6)	0.5	(0.4, 0.5)	2.5
Gum and Other Mouth	-	-	-	1.7	(1.6, 1.8)	-
Nasopharynx	28	4.9	(3.2, 7.2)	0.3	(0.3, 0.4)	15.2
Tonsil	11	1.9	(0.9, 3.5)	2.3	(2.2, 2.4)	0.8
Oropharynx	5	1.0	(0.3, 2.5)	0.5	(0.4, 0.5)	2.0
Hypopharynx	5	1.1	(0.3, 2.6)	0.5	(0.5, 0.6)	2.0
Other Oral Cavity and Pharynx	-	-	-	0.3	(0.3, 0.3)	-
<i>Digestive System</i>						
Esophagus	49	9.9	(7.2, 13.4)	4.7	(4.5, 4.8)	2.1
Stomach	82	17.2	(13.5, 21.5)	5.7	(5.6, 5.8)	3.0
Small Intestine	-	-	-	2.4	(2.3, 2.5)	-
Colon and Rectum	405	87.6	(78.8, 97.1)	36.7	(36.3, 37.1)	2.4
Anus, Anal Canal and Anorectum	12	2.2	(1.1, 4.0)	2.0	(1.9, 2.1)	1.1
Liver	67	13.3	(10.2, 17.2)	6.3	(6.1, 6.4)	2.1
Intrahepatic Bile Duct	6	1.6	(0.5, 3.5)	1.4	(1.4, 1.5)	1.1
Gallbladder	12	2.0	(1.0, 3.5)	1.0	(0.9, 1.0)	2.1
Other Biliary	9	2.1	(0.9, 4.2)	1.7	(1.6, 1.8)	1.2
Pancreas	84	18.5	(14.5, 23.2)	12.9	(12.7, 13.1)	1.4
Retroperitoneum	-	-	-	0.4	(0.4, 0.5)	-
Peritoneum, Omentum and Mesentery	-	-	-	0.5	(0.5, 0.6)	-
Other Digestive Organs	14	3.8	(2.1, 6.5)	0.8	(0.8, 0.9)	4.6

(continued)

Table 3.1: (continued)

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
<i>Respiratory System</i>						
Nose, Nasal Cavity and Middle Ear	-	-	-	0.7	(0.6, 0.7)	-
Larynx	23	5.4	(3.3, 8.2)	2.7	(2.6, 2.8)	2.0
Lung and Bronchus	373	83.0	(74.3, 92.4)	52.3	(51.9, 52.8)	1.6
Pleura	-	-	-	0.0	(0.0, 0.0)	-
Trachea, Mediastinum and Other Respiratory Organs	-	-	-	0.2	(0.1, 0.2)	-
<i>Bones and Joints</i>						
Bones and Joints	9	1.5	(0.7, 3.0)	1.0	(1.0, 1.1)	1.5
<i>Soft Tissue including Heart</i>						
Soft Tissue including Heart	17	2.8	(1.6, 4.5)	3.4	(3.3, 3.6)	0.8
<i>Skin excluding Basal and Squamous</i>						
Melanoma of the Skin	27	5.1	(3.3, 7.6)	32.1	(31.7, 32.4)	0.2
Other Non-Epithelial Skin	-	-	-	2.5	(2.4, 2.6)	-
<i>Breast</i>						
Breast (women)	340	130.8	(116.7, 146.0)	134.4	(133.4, 135.5)	1.0
<i>Female Genital System</i>						
Cervix Uteri (women)	32	12.4	(8.4, 17.8)	6.7	(6.4, 6.9)	1.9
Corpus Uteri (women)	40	13.7	(9.7, 18.8)	27.7	(27.3, 28.2)	0.5
Uterus, NOS (women)	-	-	-	0.6	(0.5, 0.6)	-
Ovary (women)	21	7.8	(4.7, 12.1)	11.4	(11.1, 11.7)	0.7
Vagina (women)	-	-	-	0.6	(0.6, 0.7)	-
Vulva (women)	-	-	-	2.9	(2.8, 3.1)	-
Other Female Genital Organs	10	3.5	(1.6, 6.5)	2.1	(2.0, 2.3)	1.6
<i>Male Genital System</i>						
Prostate (men)	126	61.2	(49.9, 74.2)	104.1	(103.2, 105.0)	0.6
Testis (men)	16	4.9	(2.7, 8.1)	7.4	(7.2, 7.7)	0.7
Penis (men)	6	3.8	(1.2, 9.2)	0.9	(0.8, 1.0)	4.4
Other Male Genital Organs	-	-	-	0.3	(0.2, 0.3)	-
<i>Urinary System</i>						
Urinary Bladder	60	13.9	(10.4, 18.3)	21.9	(21.6, 22.2)	0.6
Kidney and Renal Pelvis	150	28.9	(24.3, 34.1)	15.9	(15.7, 16.2)	1.8
Ureter	-	-	-	0.6	(0.5, 0.6)	-
Other Urinary Organs	-	-	-	0.5	(0.4, 0.5)	-
<i>Eye and Orbit</i>						
Eye and Orbit	-	-	-	1.0	(1.0, 1.1)	-
<i>Brain and Other Nervous System</i>						
Brain	21	3.4	(2.0, 5.4)	6.7	(6.6, 6.9)	0.5
Cranial Nerves Other Nervous System	-	-	-	0.4	(0.4, 0.5)	-
<i>Endocrine System</i>						
Thyroid	80	15.0	(11.8, 18.9)	15.5	(15.3, 15.8)	1.0
Other Endocrine including Thymus	9	1.2	(0.5, 2.4)	0.7	(0.6, 0.7)	1.8
<i>Lymphoma</i>						
Hodgkin - Nodal	9	1.6	(0.7, 3.2)	2.7	(2.6, 2.8)	0.6
Hodgkin - Extranodal	-	-	-	0.1	(0.0, 0.1)	-
NHL - Nodal	42	8.3	(5.9, 11.5)	13.5	(13.3, 13.7)	0.6
NHL - Extranodal	17	3.6	(2.0, 6.0)	7.3	(7.2, 7.5)	0.5

(continued)

Table 3.1: (continued)

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
<i>Myeloma</i>						
Myeloma	22	5.4	(3.3, 8.3)	6.4	(6.3, 6.6)	0.8
<i>Leukemia</i>						
Acute Lymphocytic Leukemia	14	1.6	(0.9, 2.7)	1.7	(1.6, 1.8)	0.9
Chronic Lymphocytic Leukemia	6	1.4	(0.5, 3.2)	5.8	(5.6, 5.9)	0.2
Other Lymphocytic Leukemia	-	-	-	0.5	(0.4, 0.5)	-
Acute Myeloid Leukemia	15	2.4	(1.3, 4.1)	4.5	(4.3, 4.6)	0.5
Chronic Myeloid Leukemia	8	1.6	(0.7, 3.1)	2.1	(2.0, 2.1)	0.8
Other Myeloid/Monocytic Leukemia	-	-	-	0.1	(0.1, 0.1)	-
Acute Monocytic Leukemia	-	-	-	0.2	(0.1, 0.2)	-
Other Acute Leukemia	-	-	-	0.2	(0.2, 0.2)	-
Aleukemic, subleukemic and NOS	-	-	-	0.2	(0.2, 0.2)	-
<i>Mesothelioma</i>						
Mesothelioma	-	-	-	1.0	(0.9, 1.1)	-
<i>Kaposi Sarcoma</i>						
Kaposi Sarcoma	-	-	-	0.4	(0.3, 0.4)	-
<i>Miscellaneous</i>						
Miscellaneous	38	9.1	(6.3, 12.7)	7.3	(7.2, 7.5)	1.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

3.1.2 Fifty-year Incidence

Table 3.2: Average annual age-adjusted cancer incidence rate by site, men and women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
All sites	12,697	481.3	(472.4, 490.4)
<i>Oral Cavity and Pharynx</i>			
Lip	7	0.3	(0.1, 0.6)
Tongue	61	2.2	(1.6, 2.8)
Salivary Gland	54	1.7	(1.2, 2.2)
Floor of Mouth	37	1.2	(0.9, 1.7)
Gum and Other Mouth	47	1.7	(1.2, 2.3)
Nasopharynx	209	7.2	(6.2, 8.4)
Tonsil	30	1.0	(0.6, 1.4)
Oropharynx	16	0.5	(0.3, 0.9)
Hypopharynx	32	1.3	(0.9, 1.9)
Other Oral Cavity and Pharynx	10	0.4	(0.2, 0.8)
<i>Digestive System</i>			
Esophagus	206	8.4	(7.2, 9.7)
Stomach	547	20.6	(18.8, 22.6)
Small Intestine	28	1.0	(0.7, 1.5)
Colon and Rectum	2,225	91.9	(87.8, 96.0)
Anus, Anal Canal and Anorectum	46	1.7	(1.2, 2.2)
Liver	258	8.9	(7.8, 10.2)
Intrahepatic Bile Duct	22	0.9	(0.6, 1.5)
Gallbladder	106	4.7	(3.8, 5.7)
Other Biliary	74	3.2	(2.4, 4.0)
Pancreas	373	15.3	(13.7, 17.0)
Retroperitoneum	-	-	-
Peritoneum, Omentum and Mesentery	8	0.3	(0.1, 0.6)
Other Digestive Organs	54	2.4	(1.8, 3.2)
<i>Respiratory System</i>			
Nose, Nasal Cavity and Middle Ear	22	0.8	(0.5, 1.3)
Larynx	84	3.1	(2.5, 3.9)
Lung and Bronchus	2,087	87.0	(83.0, 91.0)
Pleura	-	-	-
Trachea, Mediastinum and Other Respiratory Organs	9	0.4	(0.2, 0.7)
<i>Bones and Joints</i>			
Bones and Joints	51	1.4	(1.0, 1.9)
<i>Soft Tissue including Heart</i>			
Soft Tissue including Heart	81	2.4	(1.8, 3.0)
<i>Skin excluding Basal and Squamous</i>			
Melanoma of the Skin	83	2.6	(2.0, 3.3)
Other Non-Epithelial Skin	19	0.7	(0.4, 1.1)
<i>Breast</i>			
Breast (women)	1,794	118.7	(113.1, 124.5)
<i>Female Genital System</i>			
Cervix Uteri (women)	258	14.5	(12.7, 16.5)

(continued)

Table 3.2: (continued)

	Alaska Native People		
	Count	Rate	95% CI
Corpus Uteri (women)	191	12.4	(10.7, 14.4)
Uterus, NOS (women)	8	0.4	(0.2, 0.8)
Ovary (women)	168	11.1	(9.4, 13.0)
Vagina (women)	13	1.1	(0.6, 1.9)
Vulva (women)	28	2.3	(1.5, 3.4)
Other Female Genital Organs	32	1.8	(1.2, 2.6)
<i>Male Genital System</i>			
Prostate (men)	704	65.4	(60.2, 71.0)
Testis (men)	119	5.3	(4.4, 6.4)
Penis (men)	23	2.3	(1.3, 3.6)
Other Male Genital Organs	6	0.4	(0.1, 1.1)
<i>Urinary System</i>			
Urinary Bladder	259	11.3	(9.9, 12.9)
Kidney and Renal Pelvis	599	22.2	(20.3, 24.2)
Ureter	10	0.4	(0.2, 0.8)
Other Urinary Organs	5	0.2	(0.1, 0.5)
<i>Eye and Orbit</i>			
Eye and Orbit	16	0.4	(0.2, 0.7)
<i>Brain and Other Nervous System</i>			
Brain	121	3.0	(2.4, 3.6)
Cranial Nerves Other Nervous System	12	0.3	(0.1, 0.5)
<i>Endocrine System</i>			
Thyroid	291	8.6	(7.6, 9.7)
Other Endocrine including Thymus	23	0.5	(0.3, 0.8)
<i>Lymphoma</i>			
Hodgkin - Nodal	37	0.9	(0.6, 1.3)
Hodgkin - Extranodal	-	-	-
NHL - Nodal	209	7.4	(6.4, 8.6)
NHL - Extranodal	105	4.0	(3.2, 4.9)
<i>Myeloma</i>			
Myeloma	115	4.4	(3.6, 5.4)
<i>Leukemia</i>			
Acute Lymphocytic Leukemia	82	1.3	(1.0, 1.6)
Chronic Lymphocytic Leukemia	19	0.9	(0.5, 1.4)
Other Lymphocytic Leukemia	-	-	-
Acute Myeloid Leukemia	88	2.8	(2.2, 3.5)
Chronic Myeloid Leukemia	48	1.5	(1.0, 2.0)
Other Myeloid/Monocytic Leukemia	-	-	-
Acute Monocytic Leukemia	6	0.2	(0.1, 0.5)
Other Acute Leukemia	10	0.3	(0.1, 0.6)
Aleukemic, subleukemic and NOS	8	0.3	(0.1, 0.6)

(continued)

Table 3.2: (continued)

	Alaska Native People		
	Count	Rate	95% CI
<i>Mesothelioma</i>			
Mesothelioma	9	0.4	(0.1, 0.7)
<i>Kaposi Sarcoma</i>			
Kaposi Sarcoma	20	0.9	(0.5, 1.4)
<i>Miscellaneous</i>			
Miscellaneous	370	16.7	(14.9, 18.6)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

3.2 Men Only

3.2.1 Five-year Incidence

Table 3.3: Average annual age-adjusted cancer incidence rate by site, men, 2014–2018.

	Alaska Native People			U.S. White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	1,135	515.3	(482.8, 549.5)	482.5	(480.5, 484.4)	1.1
<i>Oral Cavity and Pharynx</i>						
Lip	-	-	-	1.2	(1.1, 1.3)	-
Tongue	9	3.5	(1.5, 6.8)	6.3	(6.1, 6.5)	0.5
Salivary Gland	-	-	-	1.6	(1.5, 1.7)	-
Floor of Mouth	-	-	-	0.7	(0.6, 0.8)	-
Gum and Other Mouth	-	-	-	2.0	(1.8, 2.1)	-
Nasopharynx	21	7.4	(4.5, 11.5)	0.5	(0.4, 0.6)	15.4
Tonsil	9	3.1	(1.4, 6.0)	3.9	(3.8, 4.1)	0.8
Oropharynx	-	-	-	0.8	(0.7, 0.9)	-
Hypopharynx	5	2.2	(0.7, 5.5)	0.9	(0.8, 1.0)	2.4
Other Oral Cavity and Pharynx	-	-	-	0.5	(0.4, 0.6)	-
<i>Digestive System</i>						
Esophagus	32	14.4	(9.4, 21.0)	8.1	(7.8, 8.3)	1.8
Stomach	51	22.7	(16.5, 30.4)	7.9	(7.6, 8.1)	2.9
Small Intestine	-	-	-	2.8	(2.6, 2.9)	-
Colon and Rectum	192	86.2	(73.4, 100.5)	41.1	(40.5, 41.7)	2.1
Anus, Anal Canal and Anorectum	6	2.6	(0.7, 6.7)	1.6	(1.5, 1.8)	1.6
Liver	36	15.4	(10.5, 21.9)	10.0	(9.7, 10.2)	1.5
Intrahepatic Bile Duct	-	-	-	1.6	(1.5, 1.7)	-
Gallbladder	-	-	-	0.7	(0.6, 0.8)	-
Other Biliary	-	-	-	2.2	(2.1, 2.4)	-
Pancreas	49	22.5	(16.1, 30.5)	14.6	(14.3, 14.9)	1.5
Retroperitoneum	-	-	-	0.4	(0.4, 0.5)	-
Peritoneum, Omentum and Mesentery	-	-	-	0.1	(0.1, 0.1)	-
Other Digestive Organs	8	5.5	(2.2, 11.1)	1.0	(0.9, 1.1)	5.5
<i>Respiratory System</i>						
Nose, Nasal Cavity and Middle Ear	-	-	-	0.8	(0.8, 0.9)	-
Larynx	20	10.8	(6.3, 17.4)	4.6	(4.4, 4.8)	2.4
Lung and Bronchus	187	93.9	(79.7, 109.8)	57.5	(56.8, 58.2)	1.6
Pleura	-	-	-	0.0	(0.0, 0.0)	-
Trachea, Mediastinum and Other Respiratory Organs	-	-	-	0.2	(0.2, 0.3)	-
<i>Bones and Joints</i>						
Bones and Joints	-	-	-	1.3	(1.2, 1.4)	-
<i>Soft Tissue including Heart</i>						
Soft Tissue including Heart	12	4.2	(2.1, 7.4)	4.2	(4.0, 4.4)	1.0
<i>Skin excluding Basal and Squamous</i>						
Melanoma of the Skin	9	4.1	(1.8, 8.1)	39.3	(38.8, 39.9)	0.1
Other Non-Epithelial Skin	-	-	-	3.7	(3.5, 3.8)	-
<i>Breast</i>						
Breast	-	-	-	1.2	(1.1, 1.3)	-

(continued)

Table 3.3: (continued)

	Alaska Native People			U.S. White People		RR
	Count	Rate	95% CI	Rate	95% CI	
<i>Male Genital System</i>						
Prostate	126	61.1	(49.9, 74.2)	104.1	(103.2, 105.0)	0.6
Testis	16	4.9	(2.7, 8.1)	7.4	(7.2, 7.7)	0.7
Penis	6	3.8	(1.2, 9.2)	0.9	(0.8, 1.0)	4.4
Other Male Genital Organs	-	-	-	0.3	(0.2, 0.3)	-
<i>Urinary System</i>						
Urinary Bladder	47	24.2	(17.1, 33.5)	37.9	(37.4, 38.5)	0.6
Kidney and Renal Pelvis	94	39.3	(31.2, 48.8)	21.8	(21.4, 22.2)	1.8
Ureter	-	-	-	0.8	(0.7, 0.9)	-
Other Urinary Organs	-	-	-	0.8	(0.7, 0.8)	-
<i>Eye and Orbit</i>						
Eye and Orbit	-	-	-	1.1	(1.0, 1.2)	-
<i>Brain and Other Nervous System</i>						
Brain	15	5.0	(2.4, 9.3)	8.0	(7.8, 8.3)	0.6
Cranial Nerves Other Nervous System	-	-	-	0.5	(0.4, 0.5)	-
<i>Endocrine System</i>						
Thyroid	20	7.6	(4.5, 11.9)	8.3	(8.0, 8.5)	0.9
Other Endocrine including Thymus	7	2.0	(0.7, 4.2)	0.8	(0.7, 0.8)	2.6
<i>Lymphoma</i>						
Hodgkin - Nodal	-	-	-	3.0	(2.9, 3.2)	-
Hodgkin - Extranodal	-	-	-	0.1	(0.0, 0.1)	-
NHL - Nodal	24	10.8	(6.5, 16.9)	16.6	(16.3, 17.0)	0.6
NHL - Extranodal	8	3.5	(1.4, 7.5)	8.8	(8.5, 9.1)	0.4
<i>Myeloma</i>						
Myeloma	11	6.4	(2.9, 12.1)	8.2	(8.0, 8.5)	0.8
<i>Leukemia</i>						
Acute Lymphocytic Leukemia	10	2.2	(1.0, 4.0)	2.0	(1.8, 2.1)	1.1
Chronic Lymphocytic Leukemia	6	3.2	(1.1, 7.4)	7.8	(7.5, 8.0)	0.4
Other Lymphocytic Leukemia	-	-	-	0.8	(0.7, 0.8)	-
Acute Myeloid Leukemia	11	3.6	(1.7, 6.7)	5.5	(5.3, 5.7)	0.7
Chronic Myeloid Leukemia	5	2.1	(0.7, 5.0)	2.6	(2.5, 2.8)	0.8
Other Myeloid/Monocytic Leukemia	-	-	-	0.2	(0.1, 0.2)	-
Acute Monocytic Leukemia	-	-	-	0.2	(0.1, 0.2)	-
Other Acute Leukemia	-	-	-	0.3	(0.2, 0.3)	-
Aleukemic, subleukemic and NOS	-	-	-	0.3	(0.2, 0.3)	-
<i>Mesothelioma</i>						
Mesothelioma	-	-	-	1.7	(1.6, 1.9)	-
<i>Kaposi Sarcoma</i>						
Kaposi Sarcoma	-	-	-	0.6	(0.6, 0.7)	-
<i>Miscellaneous</i>						
Miscellaneous	25	12.3	(7.7, 18.7)	8.0	(7.7, 8.3)	1.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard. See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

3.2.2 *Fifty-year Incidence*

Table 3.4: Average annual age-adjusted cancer incidence rate by site, men, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
All sites	6,015	503.4	(489.3, 517.8)
<i>Oral Cavity and Pharynx</i>			
Lip	6	0.5	(0.2, 1.2)
Tongue	34	2.4	(1.6, 3.4)
Salivary Gland	20	1.2	(0.7, 1.9)
Floor of Mouth	21	1.4	(0.9, 2.2)
Gum and Other Mouth	26	1.6	(1.1, 2.4)
Nasopharynx	145	10.5	(8.7, 12.6)
Tonsil	25	1.6	(1.0, 2.4)
Oropharynx	9	0.5	(0.2, 1.0)
Hypopharynx	26	2.3	(1.4, 3.6)
Other Oral Cavity and Pharynx	9	0.7	(0.3, 1.4)
<i>Digestive System</i>			
Esophagus	137	12.1	(10.0, 14.5)
Stomach	357	28.7	(25.5, 32.2)
Small Intestine	15	1.2	(0.6, 2.2)
Colon and Rectum	1,082	95.2	(89.0, 101.7)
Anus, Anal Canal and Anorectum	20	1.6	(0.9, 2.6)
Liver	170	12.3	(10.3, 14.6)
Intrahepatic Bile Duct	15	1.5	(0.8, 2.6)
Gallbladder	34	3.8	(2.5, 5.5)
Other Biliary	38	3.4	(2.4, 4.9)
Pancreas	194	16.7	(14.2, 19.5)
Retroperitoneum	-	-	-
Peritoneum, Omentum and Mesentery	-	-	-
Other Digestive Organs	28	2.6	(1.7, 3.9)
<i>Respiratory System</i>			
Nose, Nasal Cavity and Middle Ear	15	1.3	(0.7, 2.3)
Larynx	66	5.5	(4.1, 7.1)
Lung and Bronchus	1,220	109.3	(102.7, 116.2)
Pleura	-	-	-
Trachea, Mediastinum and Other Respiratory Organs	8	0.6	(0.3, 1.4)
<i>Bones and Joints</i>			
Bones and Joints	29	1.6	(1.0, 2.5)
<i>Soft Tissue including Heart</i>			
Soft Tissue including Heart	45	2.6	(1.8, 3.6)
<i>Skin excluding Basal and Squamous</i>			
Melanoma of the Skin	31	2.0	(1.3, 2.9)
Other Non-Epithelial Skin	12	0.9	(0.4, 1.7)
<i>Breast</i>			
Breast	-	-	-
<i>Male Genital System</i>			
Prostate	704	65.5	(60.2, 71.0)

(continued)

Table 3.4: (continued)

	Alaska Native People		
	Count	Rate	95% CI
Testis	119	5.3	(4.4, 6.4)
Penis	23	2.3	(1.3, 3.6)
Other Male Genital Organs	6	0.4	(0.1, 1.1)
<i>Urinary System</i>			
Urinary Bladder	197	18.5	(15.7, 21.6)
Kidney and Renal Pelvis	340	27.5	(24.4, 30.9)
Ureter	7	0.7	(0.3, 1.5)
Other Urinary Organs	5	0.4	(0.1, 1.0)
<i>Eye and Orbit</i>			
Eye and Orbit	7	0.4	(0.1, 1.0)
<i>Brain and Other Nervous System</i>			
Brain	64	3.4	(2.5, 4.5)
Cranial Nerves Other Nervous System	-	-	-
<i>Endocrine System</i>			
Thyroid	62	4.1	(3.1, 5.5)
Other Endocrine including Thymus	18	0.7	(0.4, 1.2)
<i>Lymphoma</i>			
Hodgkin - Nodal	17	0.8	(0.4, 1.2)
Hodgkin - Extranodal	-	-	-
NHL - Nodal	118	8.9	(7.2, 10.9)
NHL - Extranodal	54	4.3	(3.1, 5.9)
<i>Myeloma</i>			
Myeloma	58	4.9	(3.6, 6.5)
<i>Leukemia</i>			
Acute Lymphocytic Leukemia	45	1.3	(0.9, 1.7)
Chronic Lymphocytic Leukemia	14	1.4	(0.7, 2.4)
Other Lymphocytic Leukemia	-	-	-
Acute Myeloid Leukemia	56	4.0	(2.8, 5.4)
Chronic Myeloid Leukemia	30	2.0	(1.2, 2.9)
Other Myeloid/Monocytic Leukemia	-	-	-
Acute Monocytic Leukemia	-	-	-
Other Acute Leukemia	6	0.3	(0.1, 0.8)
Aleukemic, subleukemic and NOS	-	-	-
<i>Mesothelioma</i>			
Mesothelioma	8	0.8	(0.3, 1.7)
<i>Kaposi Sarcoma</i>			
Kaposi Sarcoma	17	1.6	(0.8, 2.8)
<i>Miscellaneous</i>			
Miscellaneous	183	17.0	(14.4, 19.9)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

3.3 Women Only

3.3.1 Five-year Incidence

Table 3.5: Average annual age-adjusted cancer incidence rate by site, women, 2014–2018.

	Alaska Native People			U.S. White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	1,266	493.0	(465.1, 522.0)	431.7	(429.9, 433.5)	1.1
<i>Oral Cavity and Pharynx</i>						
Lip	-	-	-	0.4	(0.4, 0.5)	-
Tongue	-	-	-	2.2	(2.1, 2.4)	-
Salivary Gland	-	-	-	1.0	(1.0, 1.1)	-
Floor of Mouth	-	-	-	0.3	(0.3, 0.4)	-
Gum and Other Mouth	-	-	-	1.4	(1.3, 1.5)	-
Nasopharynx	7	2.5	(0.9, 5.3)	0.2	(0.1, 0.2)	14.5
Tonsil	-	-	-	0.7	(0.6, 0.8)	-
Oropharynx	-	-	-	0.2	(0.2, 0.2)	-
Hypopharynx	-	-	-	0.2	(0.2, 0.2)	-
Other Oral Cavity and Pharynx	-	-	-	0.1	(0.1, 0.1)	-
<i>Digestive System</i>						
Esophagus	17	6.0	(3.4, 9.9)	1.8	(1.6, 1.9)	3.4
Stomach	31	12.2	(8.2, 17.5)	3.9	(3.7, 4.1)	3.1
Small Intestine	-	-	-	2.1	(2.0, 2.2)	-
Colon and Rectum	213	87.8	(76.0, 100.9)	32.8	(32.3, 33.3)	2.7
Anus, Anal Canal and Anorectum	6	2.1	(0.8, 4.7)	2.4	(2.3, 2.5)	0.9
Liver	31	11.3	(7.5, 16.4)	2.9	(2.8, 3.0)	3.9
Intrahepatic Bile Duct	-	-	-	1.3	(1.2, 1.4)	-
Gallbladder	8	2.3	(1.0, 4.5)	1.2	(1.1, 1.3)	2.0
Other Biliary	7	3.0	(1.1, 6.3)	1.3	(1.2, 1.4)	2.2
Pancreas	35	14.9	(10.2, 21.0)	11.4	(11.1, 11.7)	1.3
Retroperitoneum	-	-	-	0.4	(0.4, 0.5)	-
Peritoneum, Omentum and Mesentery	-	-	-	0.9	(0.8, 1.0)	-
Other Digestive Organs	6	2.9	(1.0, 6.4)	0.7	(0.6, 0.8)	4.2
<i>Respiratory System</i>						
Nose, Nasal Cavity and Middle Ear	-	-	-	0.5	(0.4, 0.6)	-
Larynx	-	-	-	1.1	(1.0, 1.1)	-
Lung and Bronchus	186	75.3	(64.4, 87.5)	48.5	(48.0, 49.1)	1.6
Pleura	-	-	-	0.0	(0.0, 0.0)	-
Trachea, Mediastinum and Other Respiratory Organs	-	-	-	0.1	(0.1, 0.1)	-
<i>Bones and Joints</i>						
Bones and Joints	5	1.8	(0.6, 4.3)	0.8	(0.8, 0.9)	2.2
<i>Soft Tissue including Heart</i>						
Soft Tissue including Heart	5	1.4	(0.4, 3.2)	2.8	(2.7, 3.0)	0.5
<i>Skin excluding Basal and Squamous</i>						
Melanoma of the Skin	18	6.3	(3.7, 10.1)	26.8	(26.3, 27.2)	0.2
Other Non-Epithelial Skin	-	-	-	1.7	(1.6, 1.8)	-
<i>Breast</i>						
Breast	340	130.8	(116.7, 146.0)	134.4	(133.4, 135.4)	1.0

(continued)

Table 3.5: (continued)

	Alaska Native People			U.S. White People		RR
	Count	Rate	95% CI	Rate	95% CI	
<i>Female Genital System</i>						
Cervix Uteri	32	12.4	(8.4, 17.8)	6.7	(6.4, 6.9)	1.9
Corpus Uteri	40	13.7	(9.7, 18.8)	27.7	(27.3, 28.2)	0.5
Uterus, NOS	-	-	-	0.6	(0.5, 0.6)	-
Ovary	21	7.8	(4.8, 12.1)	11.4	(11.1, 11.7)	0.7
Vagina	-	-	-	0.6	(0.6, 0.7)	-
Vulva	-	-	-	2.9	(2.8, 3.1)	-
Other Female Genital Organs	10	3.5	(1.6, 6.5)	2.1	(2.0, 2.3)	1.6
<i>Urinary System</i>						
Urinary Bladder	13	5.9	(3.1, 10.3)	9.1	(8.8, 9.3)	0.7
Kidney and Renal Pelvis	56	20.1	(15.0, 26.3)	10.7	(10.4, 11.0)	1.9
Ureter	-	-	-	0.4	(0.3, 0.4)	-
Other Urinary Organs	-	-	-	0.2	(0.2, 0.3)	-
<i>Eye and Orbit</i>						
Eye and Orbit	-	-	-	0.9	(0.8, 1.0)	-
<i>Brain and Other Nervous System</i>						
Brain	6	2.1	(0.8, 4.7)	5.6	(5.4, 5.8)	0.4
Cranial Nerves Other Nervous System	-	-	-	0.4	(0.3, 0.4)	-
<i>Endocrine System</i>						
Thyroid	60	22.4	(16.9, 29.0)	23.0	(22.6, 23.4)	1.0
Other Endocrine including Thymus	-	-	-	0.6	(0.5, 0.7)	-
<i>Lymphoma</i>						
Hodgkin - Nodal	6	2.2	(0.8, 5.0)	2.4	(2.2, 2.5)	0.9
Hodgkin - Extranodal	-	-	-	0.0	(0.0, 0.1)	-
NHL - Nodal	18	6.6	(3.8, 10.6)	10.9	(10.6, 11.2)	0.6
NHL - Extranodal	9	3.6	(1.6, 7.1)	6.2	(6.0, 6.4)	0.6
<i>Myeloma</i>						
Myeloma	11	4.7	(2.3, 8.4)	4.9	(4.8, 5.1)	0.9
<i>Leukemia</i>						
Acute Lymphocytic Leukemia	-	-	-	1.4	(1.3, 1.6)	-
Chronic Lymphocytic Leukemia	-	-	-	4.1	(3.9, 4.2)	-
Other Lymphocytic Leukemia	-	-	-	0.2	(0.2, 0.3)	-
Acute Myeloid Leukemia	-	-	-	3.7	(3.6, 3.9)	-
Chronic Myeloid Leukemia	-	-	-	1.6	(1.5, 1.7)	-
Other Myeloid/Monocytic Leukemia	-	-	-	0.1	(0.0, 0.1)	-
Acute Monocytic Leukemia	-	-	-	0.1	(0.1, 0.2)	-
Other Acute Leukemia	-	-	-	0.1	(0.1, 0.2)	-
Aleukemic, subleukemic and NOS	-	-	-	0.2	(0.1, 0.2)	-
<i>Mesothelioma</i>						
Mesothelioma	-	-	-	0.4	(0.4, 0.5)	-
<i>Kaposi Sarcoma</i>						
Kaposi Sarcoma	-	-	-	0.1	(0.0, 0.1)	-
<i>Miscellaneous</i>						
Miscellaneous	13	5.9	(3.1, 10.4)	5.8	(5.7, 6.0)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard. See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People..

3.3.2 *Fifty-year Incidence*

Table 3.6: Average annual age-adjusted cancer incidence rate by site, women, 1969–2018.

	Alaska Native People		
	Count	Rate	95% CI
All sites	6,682	470.4	(458.6, 482.4)
<i>Oral Cavity and Pharynx</i>			
Lip	-	-	-
Tongue	27	1.9	(1.2, 2.8)
Salivary Gland	34	2.0	(1.4, 2.9)
Floor of Mouth	16	1.1	(0.6, 1.7)
Gum and Other Mouth	21	1.6	(1.0, 2.5)
Nasopharynx	64	4.3	(3.2, 5.5)
Tonsil	5	0.3	(0.1, 0.7)
Oropharynx	7	0.5	(0.2, 1.0)
Hypopharynx	6	0.4	(0.1, 0.9)
Other Oral Cavity and Pharynx	-	-	-
<i>Digestive System</i>			
Esophagus	69	5.2	(4.0, 6.6)
Stomach	190	13.6	(11.6, 15.7)
Small Intestine	13	0.9	(0.5, 1.5)
Colon and Rectum	1,143	89.5	(84.1, 95.1)
Anus, Anal Canal and Anorectum	26	1.8	(1.1, 2.6)
Liver	88	5.9	(4.7, 7.4)
Intrahepatic Bile Duct	7	0.5	(0.2, 1.1)
Gallbladder	72	5.6	(4.3, 7.2)
Other Biliary	36	2.9	(2.0, 4.1)
Pancreas	179	14.0	(11.9, 16.3)
Retroperitoneum	-	-	-
Peritoneum, Omentum and Mesentery	5	0.4	(0.1, 1.0)
Other Digestive Organs	26	2.2	(1.4, 3.3)
<i>Respiratory System</i>			
Nose, Nasal Cavity and Middle Ear	7	0.5	(0.2, 1.0)
Larynx	18	1.2	(0.7, 1.8)
Lung and Bronchus	867	68.1	(63.4, 73.0)
Pleura	-	-	-
Trachea, Mediastinum and Other Respiratory Organs	-	-	-
<i>Bones and Joints</i>			
Bones and Joints	22	1.2	(0.7, 1.9)
<i>Soft Tissue including Heart</i>			
Soft Tissue including Heart	36	2.1	(1.4, 3.1)
<i>Skin excluding Basal and Squamous</i>			
Melanoma of the Skin	52	3.2	(2.3, 4.2)
Other Non-Epithelial Skin	7	0.5	(0.2, 1.1)
<i>Breast</i>			
Breast	1,794	118.7	(113.1, 124.5)
<i>Female Genital System</i>			
Cervix Uteri	258	14.5	(12.7, 16.5)

(continued)

Table 3.6: (continued)

	Alaska Native People		
	Count	Rate	95% CI
Corpus Uteri	191	12.4	(10.7, 14.4)
Uterus, NOS	8	0.4	(0.2, 0.8)
Ovary	168	11.1	(9.4, 13.0)
Vagina	13	1.1	(0.6, 1.9)
Vulva	28	2.3	(1.5, 3.4)
Other Female Genital Organs	32	1.8	(1.2, 2.6)
<i>Urinary System</i>			
Urinary Bladder	62	5.3	(4.0, 6.9)
Kidney and Renal Pelvis	259	17.8	(15.6, 20.2)
Ureter	-	-	-
Other Urinary Organs	-	-	-
<i>Eye and Orbit</i>			
Eye and Orbit	9	0.4	(0.1, 0.8)
<i>Brain and Other Nervous System</i>			
Brain	57	2.6	(2.0, 3.5)
Cranial Nerves Other Nervous System	8	0.4	(0.1, 0.7)
<i>Endocrine System</i>			
Thyroid	229	12.9	(11.2, 14.8)
Other Endocrine including Thymus	5	0.2	(0.1, 0.6)
<i>Lymphoma</i>			
Hodgkin - Nodal	20	1.1	(0.6, 1.7)
Hodgkin - Extranodal	-	-	-
NHL - Nodal	91	6.2	(4.9, 7.7)
NHL - Extranodal	51	3.7	(2.7, 4.9)
<i>Myeloma</i>			
Myeloma	57	4.0	(3.0, 5.3)
<i>Leukemia</i>			
Acute Lymphocytic Leukemia	37	1.3	(0.9, 1.9)
Chronic Lymphocytic Leukemia	5	0.4	(0.1, 1.0)
Other Lymphocytic Leukemia	-	-	-
Acute Myeloid Leukemia	32	1.8	(1.2, 2.7)
Chronic Myeloid Leukemia	18	1.0	(0.6, 1.6)
Other Myeloid/Monocytic Leukemia	-	-	-
Acute Monocytic Leukemia	-	-	-
Other Acute Leukemia	-	-	-
Aleukemic, subleukemic and NOS	-	-	-
<i>Mesothelioma</i>			
Mesothelioma	-	-	-
<i>Kaposi Sarcoma</i>			
Kaposi Sarcoma	-	-	-
<i>Miscellaneous</i>			
Miscellaneous	185	15.9	(13.6, 18.6)

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

4

Incidence Trends by Cancer Site

4.1 Men and Women Combined

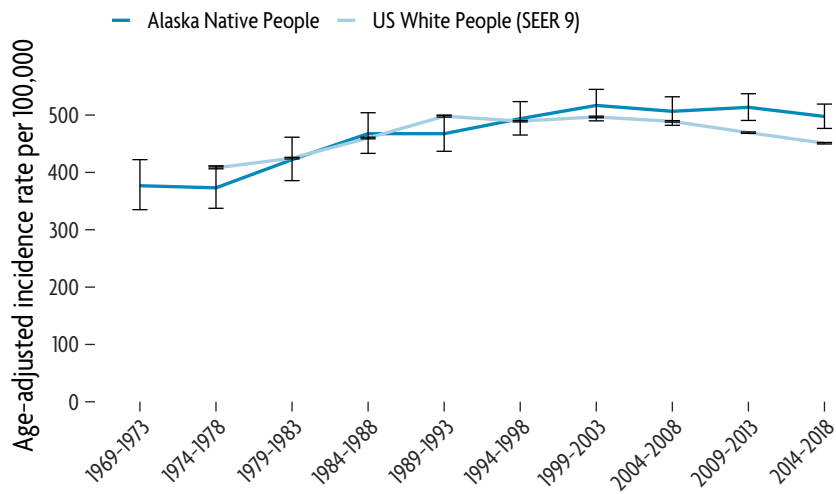


Figure 4.1: Comparison of trends in average annual age-adjusted cancer incidence for all sites, men and women, 1969–2018.

Table 4.1: Comparison of trends in average annual age-adjusted cancer incidence for all sites, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	394	376.8	(335.0, 422.3)	NA	NA	–
1974-1978	493	373.1	(337.4, 411.6)	407.9	(406.3, 409.6)	0.9
1979-1983	624	422.2	(385.7, 461.4)	424.9	(423.4, 426.3)	1.0
1984-1988	842	467.6	(433.2, 504.1)	460.0	(458.6, 461.4)	1.0
1989-1993	1,021	467.5	(436.8, 499.8)	497.9	(496.5, 499.4)	0.9
1994-1998	1,312	493.7	(465.2, 523.5)	489.5	(488.1, 490.9)	1.0
1999-2003	1,591	516.8	(489.9, 544.8)	496.7	(495.4, 498.1)	1.0
2004-2008	1,850	506.6	(482.1, 531.9)	489.0	(487.7, 490.3)	1.0
2009-2013	2,169	513.5	(490.6, 537.3)	469.4	(468.1, 470.6)	1.1

(continued)

Table 4.1: (continued)

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
2014-2018	2,401	497.6	(476.7, 519.2)	450.9	(449.6, 452.2)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

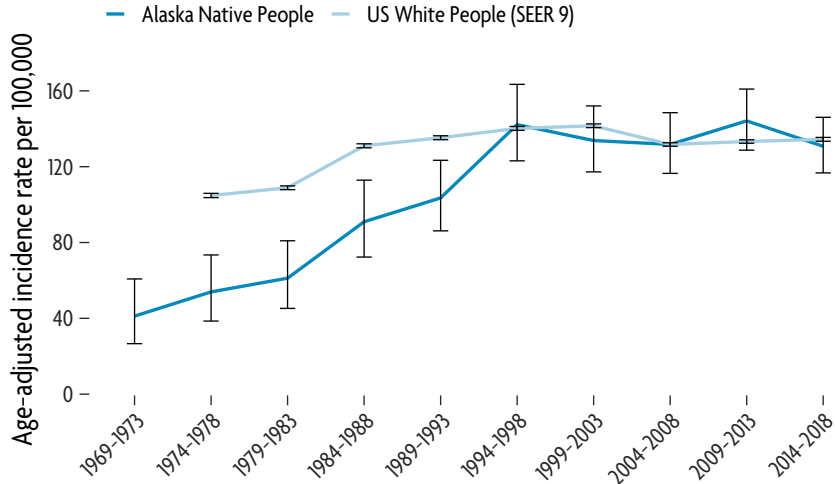


Figure 4.2: Comparison of trends in average annual age-adjusted cancer incidence for breast (women), men and women, 1969–2018.

Table 4.2: Comparison of trends in average annual age-adjusted cancer incidence for breast (women), men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	27	41.2	(26.6, 60.8)	NA	NA	–
1974-1978	42	54.0	(38.6, 73.4)	104.8	(103.7, 105.9)	0.5
1979-1983	55	61.2	(45.2, 80.9)	108.9	(107.9, 109.9)	0.6
1984-1988	96	91.0	(72.3, 112.9)	131.0	(130.0, 132.1)	0.7
1989-1993	136	103.5	(86.2, 123.4)	135.3	(134.2, 136.3)	0.8
1994-1998	218	142.2	(123.1, 163.4)	140.2	(139.2, 141.2)	1.0
1999-2003	253	133.8	(117.2, 152.1)	141.6	(140.6, 142.6)	0.9
2004-2008	285	131.7	(116.5, 148.5)	131.7	(130.8, 132.6)	1.0
2009-2013	342	144.2	(128.7, 160.9)	133.3	(132.4, 134.2)	1.1
2014-2018	340	130.8	(116.7, 146.0)	134.4	(133.4, 135.4)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

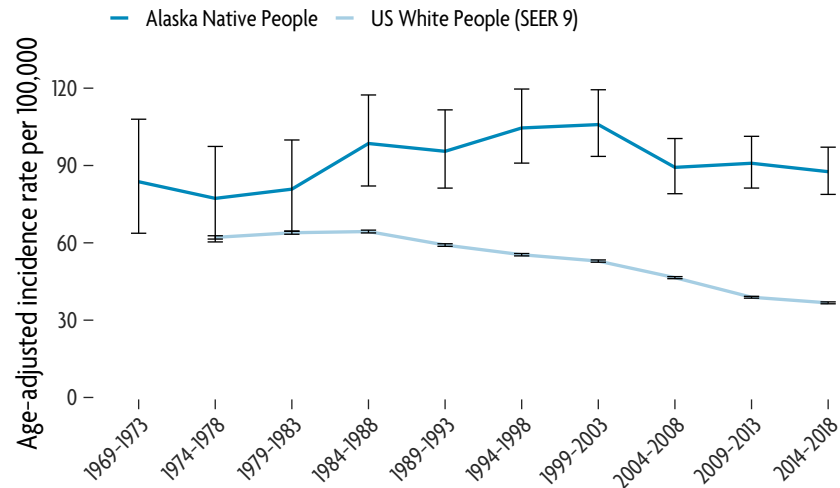


Figure 4.3: Comparison of trends in average annual age-adjusted cancer incidence for colon and rectum, men and women, 1969–2018.

Table 4.3: Comparison of trends in average annual age-adjusted cancer incidence for colon and rectum, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	73	83.7	(63.7, 108.0)	NA	NA	–
1974-1978	84	77.2	(60.4, 97.4)	62.1	(61.5, 62.8)	1.2
1979-1983	105	80.8	(64.6, 99.9)	63.9	(63.3, 64.5)	1.3
1984-1988	151	98.5	(82.0, 117.4)	64.4	(63.8, 64.9)	1.5
1989-1993	179	95.5	(81.2, 111.6)	59.1	(58.6, 59.6)	1.6
1994-1998	244	104.6	(90.9, 119.7)	55.4	(54.9, 55.9)	1.9
1999-2003	301	105.9	(93.5, 119.4)	52.9	(52.5, 53.4)	2.0
2004-2008	312	89.3	(79.0, 100.5)	46.5	(46.1, 46.9)	1.9
2009-2013	371	90.9	(81.2, 101.3)	38.9	(38.5, 39.2)	2.3
2014-2018	405	87.6	(78.8, 97.1)	36.7	(36.3, 37.1)	2.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

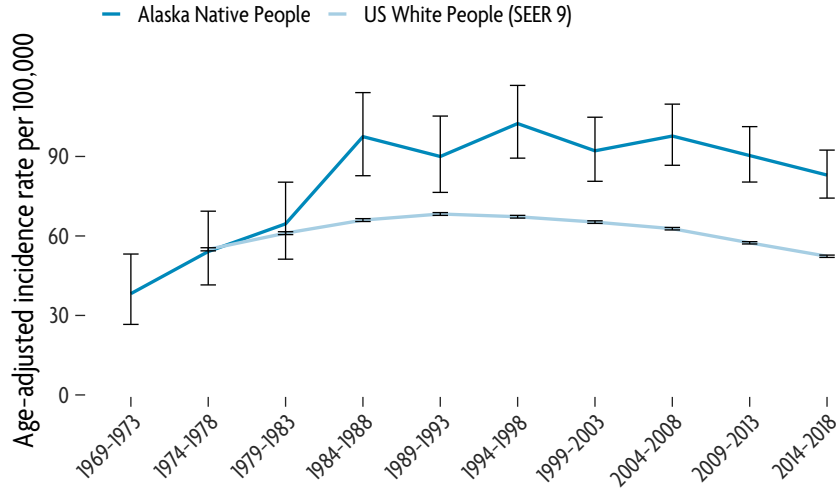


Figure 4.4: Comparison of trends in average annual age-adjusted cancer incidence for lung and bronchus, men and women, 1969–2018.

Table 4.4: Comparison of trends in average annual age-adjusted cancer incidence for lung and bronchus, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	43	38.2	(26.6, 53.2)	NA	NA	–
1974-1978	69	54.1	(41.5, 69.3)	55.0	(54.4, 55.5)	1.0
1979-1983	96	64.6	(51.2, 80.3)	61.1	(60.5, 61.6)	1.1
1984-1988	173	97.5	(82.7, 114.1)	66.0	(65.5, 66.5)	1.5
1989-1993	174	90.0	(76.4, 105.2)	68.3	(67.8, 68.8)	1.3
1994-1998	251	102.4	(89.4, 116.8)	67.3	(66.8, 67.8)	1.5
1999-2003	256	92.1	(80.6, 104.8)	65.2	(64.7, 65.7)	1.4
2004-2008	316	97.7	(86.7, 109.8)	62.7	(62.3, 63.2)	1.6
2009-2013	336	90.3	(80.3, 101.3)	57.4	(57.0, 57.8)	1.6
2014-2018	373	83.0	(74.3, 92.4)	52.3	(51.9, 52.8)	1.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

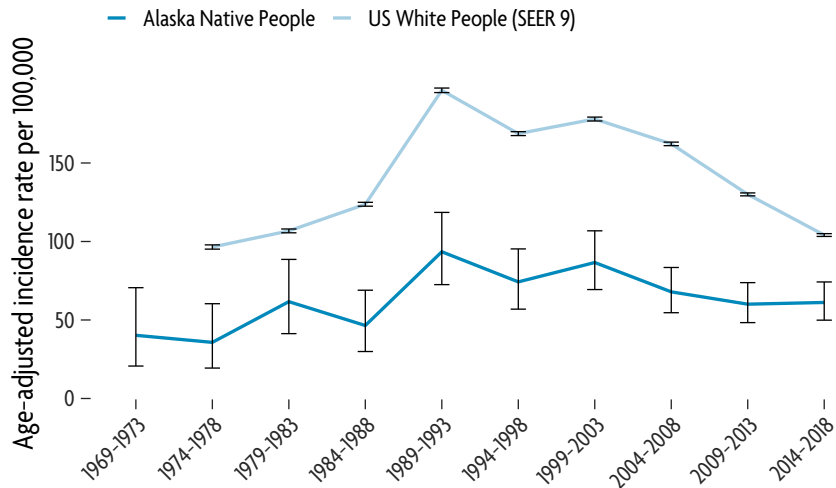


Figure 4.5: Comparison of trends in average annual age-adjusted cancer incidence for prostate (men), men and women, 1969–2018.

Table 4.5: Comparison of trends in average annual age-adjusted cancer incidence for prostate (men), men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	16	40.2	(20.7, 70.6)	NA	NA	–
1974-1978	15	35.7	(19.4, 60.4)	96.5	(95.1, 97.8)	0.4
1979-1983	35	61.7	(41.3, 88.6)	106.7	(105.5, 108.0)	0.6
1984-1988	30	46.5	(29.9, 69.0)	123.7	(122.5, 124.9)	0.4
1989-1993	79	93.5	(72.5, 118.5)	196.3	(194.8, 197.7)	0.5
1994-1998	73	74.3	(56.9, 95.3)	168.7	(167.4, 169.9)	0.4
1999-2003	110	86.6	(69.4, 106.8)	178.0	(176.8, 179.2)	0.5
2004-2008	109	67.9	(54.6, 83.4)	162.2	(161.0, 163.3)	0.4
2009-2013	111	60.1	(48.3, 73.8)	130.0	(129.1, 130.9)	0.5
2014-2018	126	61.1	(49.9, 74.2)	104.1	(103.2, 105.0)	0.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

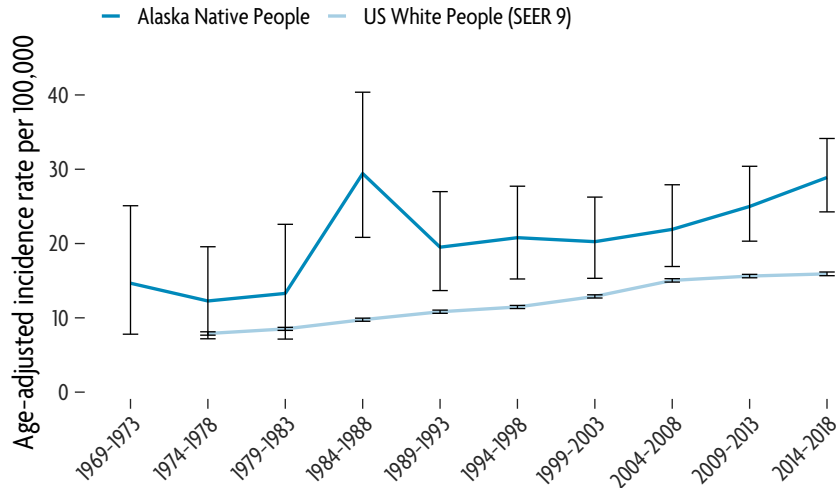


Figure 4.6: Comparison of trends in average annual age-adjusted cancer incidence for kidney and renal pelvis, men and women, 1969–2018.

Table 4.6: Comparison of trends in average annual age-adjusted cancer incidence for kidney and renal pelvis, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	17	14.7	(7.8, 25.1)	NA	NA	–
1974-1978	20	12.3	(7.2, 19.6)	7.9	(7.7, 8.1)	1.6
1979-1983	17	13.3	(7.1, 22.6)	8.5	(8.3, 8.7)	1.6
1984-1988	46	29.4	(20.8, 40.4)	9.8	(9.5, 10.0)	3.0
1989-1993	43	19.5	(13.7, 27.0)	10.8	(10.6, 11.0)	1.8
1994-1998	53	20.8	(15.2, 27.7)	11.5	(11.2, 11.7)	1.8
1999-2003	64	20.2	(15.3, 26.2)	12.9	(12.7, 13.1)	1.6
2004-2008	77	21.9	(16.9, 27.9)	15.0	(14.8, 15.3)	1.5
2009-2013	112	25.0	(20.3, 30.4)	15.6	(15.4, 15.8)	1.6
2014-2018	150	28.9	(24.3, 34.1)	15.9	(15.7, 16.2)	1.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

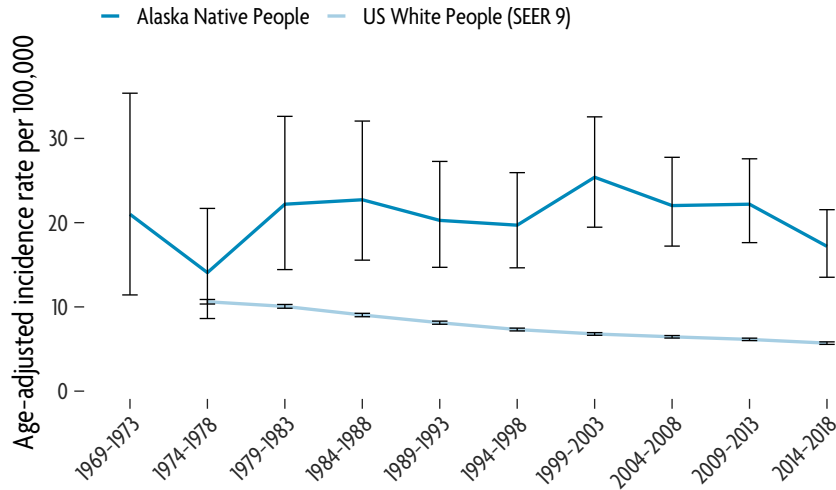


Figure 4.7: Comparison of trends in average annual age-adjusted cancer incidence for stomach, men and women, 1969–2018.

Table 4.7: Comparison of trends in average annual age-adjusted cancer incidence for stomach, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	18	21.0	(11.4, 35.4)	NA	NA	–
1974-1978	21	14.1	(8.6, 21.7)	10.6	(10.3, 10.9)	1.3
1979-1983	32	22.2	(14.4, 32.6)	10.1	(9.8, 10.3)	2.2
1984-1988	40	22.7	(15.6, 32.1)	9.0	(8.8, 9.2)	2.5
1989-1993	49	20.3	(14.7, 27.3)	8.1	(7.9, 8.3)	2.5
1994-1998	59	19.7	(14.6, 25.9)	7.3	(7.2, 7.5)	2.7
1999-2003	71	25.4	(19.5, 32.6)	6.8	(6.6, 7.0)	3.7
2004-2008	82	22.0	(17.2, 27.8)	6.5	(6.3, 6.6)	3.4
2009-2013	93	22.2	(17.6, 27.6)	6.1	(6.0, 6.3)	3.6
2014-2018	82	17.2	(13.5, 21.5)	5.7	(5.5, 5.8)	3.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

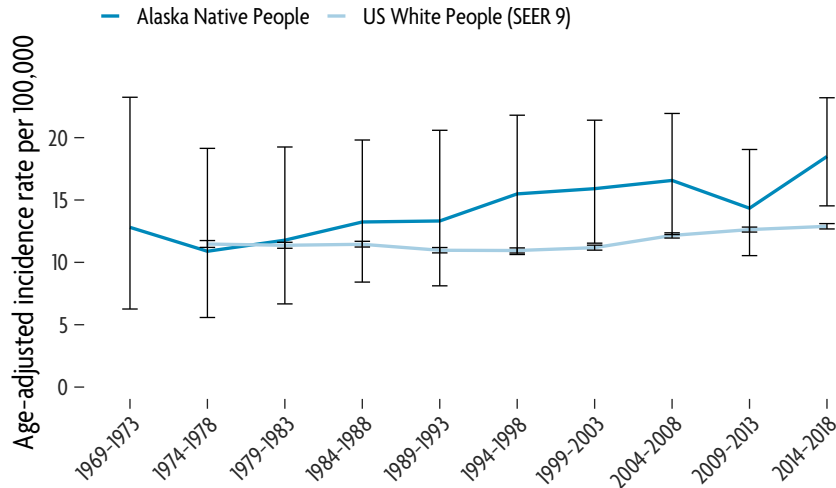


Figure 4.8: Comparison of trends in average annual age-adjusted cancer incidence for pancreas, men and women, 1969–2018.

Table 4.8: Comparison of trends in average annual age-adjusted cancer incidence for pancreas, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	13	12.8	(6.3, 23.2)	NA	NA	–
1974-1978	14	10.9	(5.6, 19.1)	11.5	(11.2, 11.8)	0.9
1979-1983	18	11.8	(6.7, 19.2)	11.4	(11.1, 11.6)	1.0
1984-1988	26	13.2	(8.4, 19.8)	11.4	(11.2, 11.7)	1.2
1989-1993	23	13.3	(8.1, 20.6)	11.0	(10.8, 11.2)	1.2
1994-1998	37	15.5	(10.6, 21.8)	10.9	(10.8, 11.2)	1.4
1999-2003	49	15.9	(11.5, 21.4)	11.2	(11.0, 11.4)	1.4
2004-2008	54	16.6	(12.2, 21.9)	12.2	(11.9, 12.4)	1.4
2009-2013	55	14.3	(10.5, 19.1)	12.6	(12.4, 12.8)	1.1
2014-2018	84	18.5	(14.5, 23.2)	12.9	(12.7, 13.1)	1.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

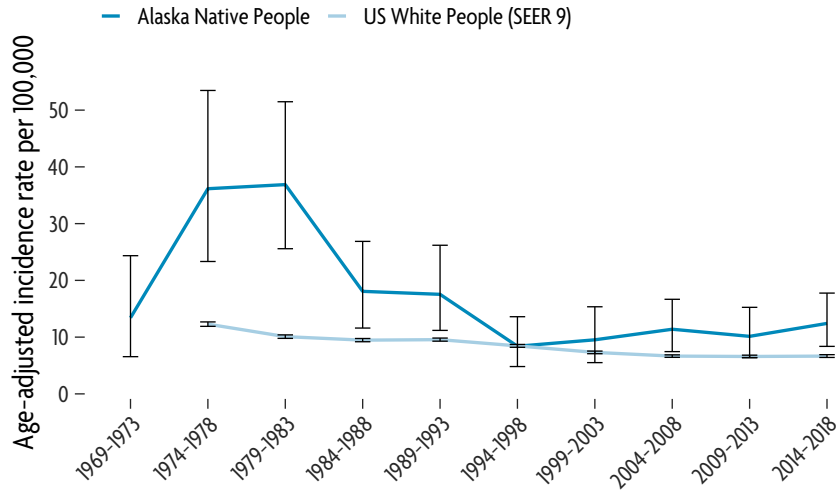


Figure 4.9: Comparison of trends in average annual age-adjusted cancer incidence for cervix uteri (women), men and women, 1969–2018.

Table 4.9: Comparison of trends in average annual age-adjusted cancer incidence for cervix uteri (women), men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	11	13.4	(6.6, 24.4)	NA	NA	–
1974-1978	27	36.1	(23.3, 53.5)	12.3	(11.9, 12.7)	2.9
1979-1983	41	36.9	(25.6, 51.5)	10.1	(9.8, 10.4)	3.7
1984-1988	28	18.1	(11.6, 26.9)	9.5	(9.2, 9.8)	1.9
1989-1993	30	17.5	(11.2, 26.2)	9.6	(9.3, 9.8)	1.8
1994-1998	17	8.4	(4.8, 13.6)	8.5	(8.2, 8.7)	1.0
1999-2003	19	9.5	(5.5, 15.3)	7.3	(7.1, 7.5)	1.3
2004-2008	28	11.4	(7.5, 16.7)	6.7	(6.4, 6.9)	1.7
2009-2013	25	10.1	(6.4, 15.2)	6.6	(6.4, 6.8)	1.5
2014-2018	32	12.4	(8.4, 17.8)	6.7	(6.4, 6.9)	1.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

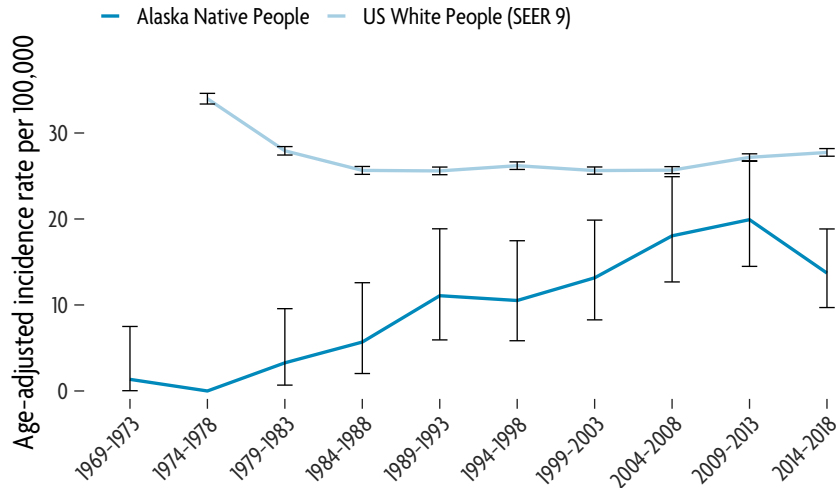


Figure 4.10: Comparison of trends in average annual age-adjusted cancer incidence for corpus uteri (women), men and women, 1969–2018.

Table 4.10: Comparison of trends in average annual age-adjusted cancer incidence for corpus uteri (women), men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	-	-	-	NA	NA	-
1974-1978	-	-	-	34.0	(33.4, 34.6)	-
1979-1983	-	-	-	27.9	(27.4, 28.4)	-
1984-1988	6	5.7	(2.0, 12.6)	25.6	(25.2, 26.1)	0.2
1989-1993	14	11.1	(5.9, 18.9)	25.6	(25.1, 26.0)	0.4
1994-1998	16	10.5	(5.8, 17.5)	26.2	(25.8, 26.6)	0.4
1999-2003	24	13.2	(8.3, 19.9)	25.6	(25.2, 26.1)	0.5
2004-2008	39	18.0	(12.7, 24.9)	25.7	(25.3, 26.1)	0.7
2009-2013	48	19.9	(14.5, 26.7)	27.2	(26.8, 27.6)	0.7
2014-2018	40	13.7	(9.7, 18.8)	27.7	(27.3, 28.2)	0.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

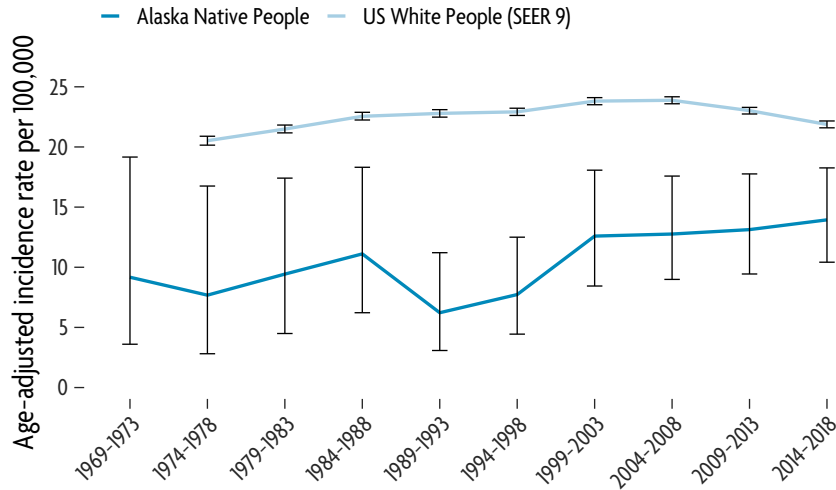


Figure 4.11: Comparison of trends in average annual age-adjusted cancer incidence for urinary bladder, men and women, 1969–2018.

Table 4.11: Comparison of trends in average annual age-adjusted cancer incidence for urinary bladder, men and women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	9	9.2	(3.6, 19.2)	NA	NA	–
1974-1978	7	7.7	(2.8, 16.8)	20.5	(20.1, 20.9)	0.4
1979-1983	11	9.4	(4.5, 17.4)	21.5	(21.2, 21.8)	0.4
1984-1988	19	11.1	(6.2, 18.3)	22.6	(22.2, 22.9)	0.5
1989-1993	12	6.2	(3.1, 11.2)	22.8	(22.5, 23.1)	0.3
1994-1998	19	7.7	(4.4, 12.5)	22.9	(22.6, 23.2)	0.3
1999-2003	33	12.6	(8.4, 18.1)	23.8	(23.5, 24.1)	0.5
2004-2008	42	12.8	(9.0, 17.6)	23.9	(23.6, 24.2)	0.5
2009-2013	47	13.1	(9.4, 17.8)	23.0	(22.7, 23.3)	0.6
2014-2018	60	13.9	(10.4, 18.3)	21.9	(21.6, 22.2)	0.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

4.2 Men Only

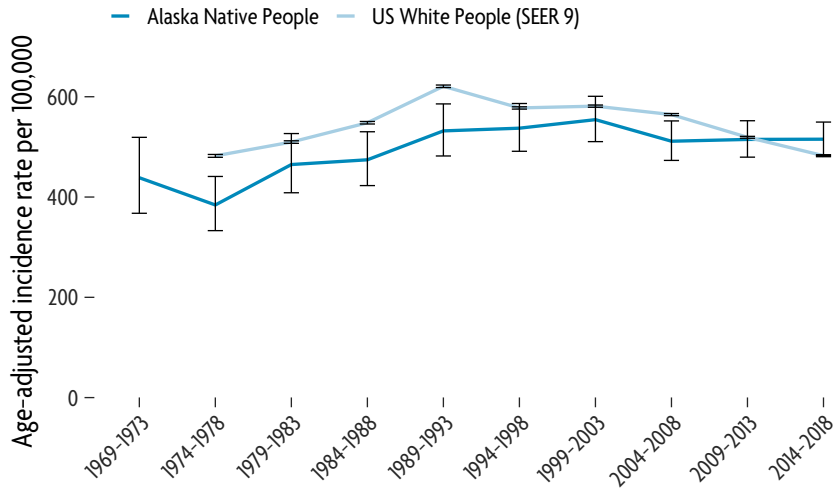


Figure 4.12: Comparison of trends in average annual age-adjusted cancer incidence for all sites, men, 1969–2018.

Table 4.12: Comparison of trends in average annual age-adjusted cancer incidence for all sites, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	208	438.5	(367.6, 519.0)	NA	NA	–
1974-1978	255	384.2	(333.0, 441.0)	482.1	(479.2, 484.9)	0.8
1979-1983	320	464.8	(408.5, 526.6)	509.6	(507.1, 512.2)	0.9
1984-1988	392	474.2	(422.8, 530.2)	548.1	(545.6, 550.7)	0.9
1989-1993	510	531.9	(481.9, 585.7)	620.9	(618.3, 623.4)	0.9
1994-1998	629	537.3	(491.2, 586.5)	577.7	(575.4, 580.0)	0.9
1999-2003	744	554.3	(510.5, 600.9)	581.2	(579.0, 583.5)	1.0
2004-2008	837	511.3	(473.1, 551.8)	564.4	(562.3, 566.5)	0.9
2009-2013	985	514.9	(479.5, 552.1)	519.1	(517.2, 521.0)	1.0
2014-2018	1,135	515.3	(482.8, 549.5)	482.5	(480.5, 484.4)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

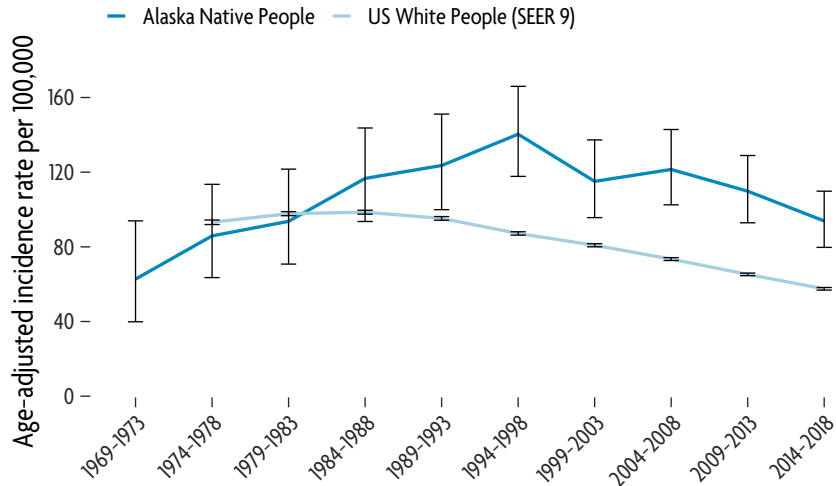


Figure 4.13: Comparison of trends in average annual age-adjusted cancer incidence for lung and bronchus, men, 1969–2018.

Table 4.13: Comparison of trends in average annual age-adjusted cancer incidence for lung and bronchus, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	34	62.7	(39.9, 93.9)	NA	NA	–
1974-1978	55	85.9	(63.5, 113.5)	93.2	(92.0, 94.4)	0.9
1979-1983	68	93.7	(70.8, 121.6)	97.8	(96.7, 98.8)	1.0
1984-1988	99	116.6	(93.6, 143.7)	98.5	(97.5, 99.6)	1.2
1989-1993	109	123.6	(99.9, 151.1)	95.2	(94.3, 96.2)	1.3
1994-1998	163	140.3	(117.8, 166.0)	87.2	(86.3, 88.1)	1.6
1999-2003	147	115.1	(95.7, 137.3)	80.9	(80.0, 81.7)	1.4
2004-2008	177	121.5	(102.5, 142.8)	73.4	(72.7, 74.2)	1.7
2009-2013	181	109.8	(92.9, 128.9)	65.2	(64.5, 65.9)	1.7
2014-2018	187	93.9	(79.7, 109.8)	57.5	(56.8, 58.2)	1.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

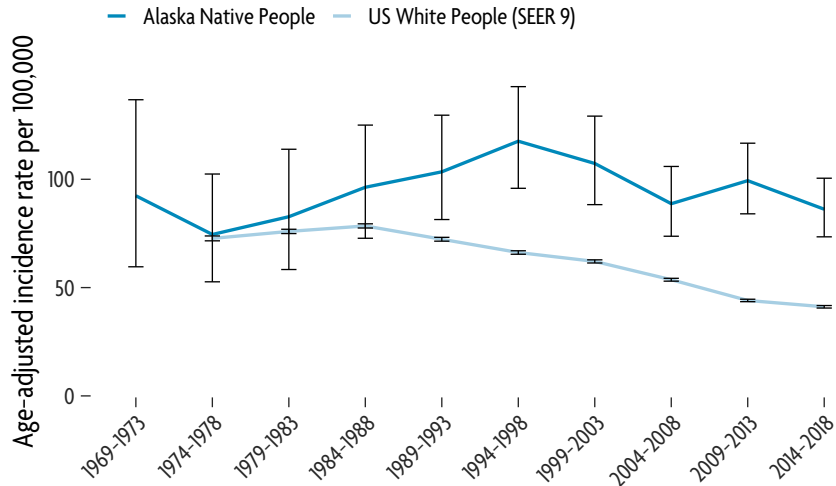


Figure 4.14: Comparison of trends in average annual age-adjusted cancer incidence for colon and rectum, men, 1969–2018.

Table 4.14: Comparison of trends in average annual age-adjusted cancer incidence for colon and rectum, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	36	92.4	(59.6, 136.7)	NA	NA	–
1974-1978	45	74.5	(52.7, 102.4)	72.7	(71.6, 73.8)	1.0
1979-1983	49	82.7	(58.3, 113.9)	75.9	(74.9, 76.9)	1.1
1984-1988	68	96.3	(72.8, 125.0)	78.5	(77.5, 79.4)	1.2
1989-1993	90	103.4	(81.4, 129.6)	72.3	(71.4, 73.2)	1.4
1994-1998	127	117.6	(95.8, 142.8)	66.2	(65.4, 67.0)	1.8
1999-2003	139	107.3	(88.3, 129.2)	62.1	(61.4, 62.8)	1.7
2004-2008	148	88.7	(73.7, 105.9)	53.6	(53.0, 54.3)	1.7
2009-2013	188	99.4	(84.0, 116.7)	44.0	(43.5, 44.6)	2.3
2014-2018	192	86.2	(73.4, 100.5)	41.1	(40.5, 41.7)	2.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

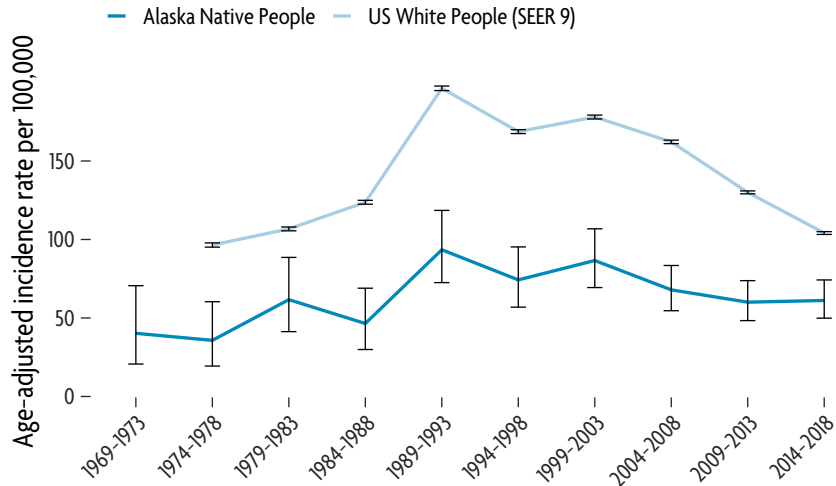


Figure 4.15: Comparison of trends in average annual age-adjusted cancer incidence for prostate (men), men, 1969–2018.

Table 4.15: Comparison of trends in average annual age-adjusted cancer incidence for prostate (men), men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	16	40.2	(20.7, 70.6)	NA	NA	–
1974-1978	15	35.7	(19.4, 60.4)	96.5	(95.1, 97.8)	0.4
1979-1983	35	61.7	(41.3, 88.6)	106.7	(105.5, 108.0)	0.6
1984-1988	30	46.5	(29.9, 69.0)	123.7	(122.5, 124.9)	0.4
1989-1993	79	93.5	(72.5, 118.5)	196.3	(194.8, 197.7)	0.5
1994-1998	73	74.3	(56.9, 95.3)	168.7	(167.4, 169.9)	0.4
1999-2003	110	86.6	(69.4, 106.8)	178.0	(176.8, 179.2)	0.5
2004-2008	109	67.9	(54.6, 83.4)	162.2	(161.0, 163.3)	0.4
2009-2013	111	60.1	(48.3, 73.8)	130.0	(129.1, 130.9)	0.5
2014-2018	126	61.1	(49.9, 74.2)	104.1	(103.2, 105.0)	0.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

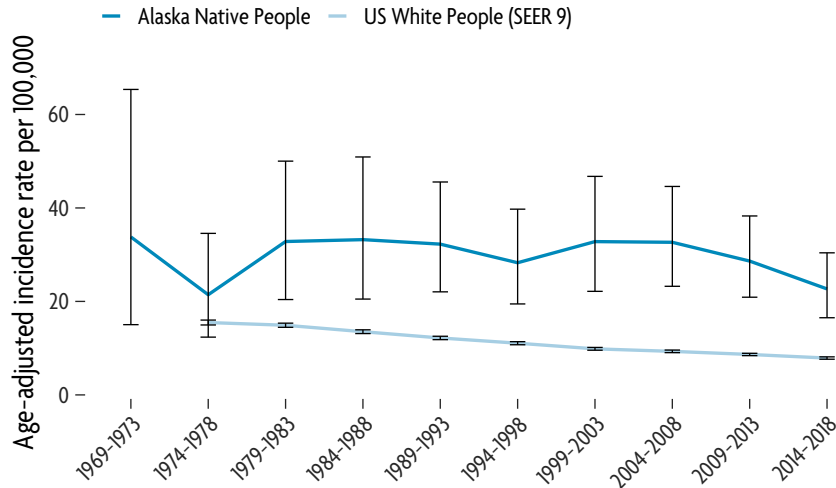


Figure 4.16: Comparison of trends in average annual age-adjusted cancer incidence for stomach, men, 1969–2018.

Table 4.16: Comparison of trends in average annual age-adjusted cancer incidence for stomach, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	12	33.8	(15.0, 65.4)	NA	NA	–
1974-1978	17	21.4	(12.4, 34.6)	15.5	(15.0, 16.0)	1.4
1979-1983	25	32.8	(20.4, 50.0)	14.9	(14.5, 15.3)	2.2
1984-1988	27	33.2	(20.5, 50.9)	13.5	(13.1, 13.9)	2.5
1989-1993	37	32.3	(22.1, 45.6)	12.2	(11.8, 12.6)	2.6
1994-1998	40	28.3	(19.5, 39.7)	11.1	(10.7, 11.4)	2.6
1999-2003	38	32.8	(22.2, 46.8)	9.8	(9.6, 10.2)	3.3
2004-2008	54	32.6	(23.2, 44.6)	9.3	(9.0, 9.6)	3.5
2009-2013	56	28.6	(20.9, 38.3)	8.7	(8.4, 8.9)	3.3
2014-2018	51	22.7	(16.5, 30.4)	7.9	(7.6, 8.1)	2.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

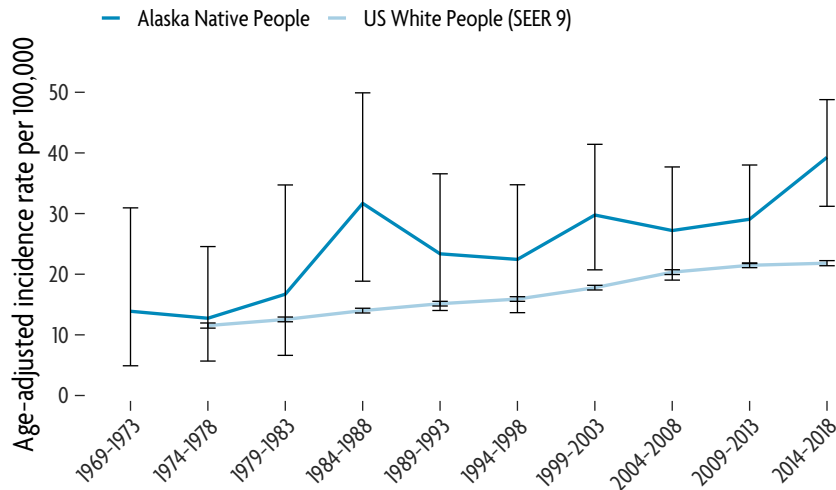


Figure 4.17: Comparison of trends in average annual age-adjusted cancer incidence for kidney and renal pelvis, men, 1969–2018.

Table 4.17: Comparison of trends in average annual age-adjusted cancer incidence for kidney and renal pelvis, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	8	13.9	(4.9, 30.9)	NA	NA	–
1974-1978	10	12.7	(5.7, 24.6)	11.5	(11.1, 12.0)	1.1
1979-1983	9	16.7	(6.6, 34.7)	12.5	(12.2, 12.9)	1.3
1984-1988	23	31.7	(18.9, 49.9)	14.0	(13.6, 14.4)	2.3
1989-1993	22	23.4	(14.0, 36.6)	15.1	(14.8, 15.5)	1.5
1994-1998	25	22.4	(13.7, 34.8)	15.9	(15.5, 16.3)	1.4
1999-2003	43	29.8	(20.7, 41.4)	17.8	(17.4, 18.2)	1.7
2004-2008	45	27.2	(19.0, 37.7)	20.3	(19.9, 20.7)	1.3
2009-2013	61	29.1	(21.8, 38.0)	21.5	(21.1, 21.9)	1.4
2014-2018	94	39.3	(31.2, 48.8)	21.8	(21.4, 22.2)	1.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

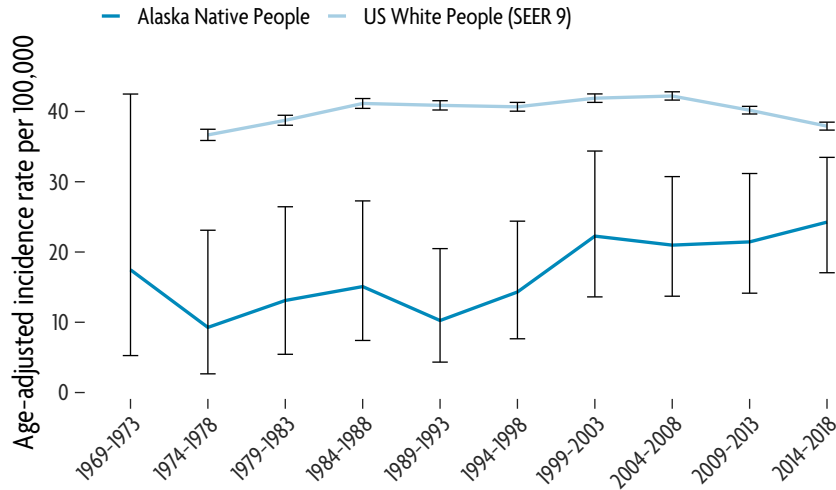


Figure 4.18: Comparison of trends in average annual age-adjusted cancer incidence for urinary bladder, men, 1969–2018.

Table 4.18: Comparison of trends in average annual age-adjusted cancer incidence for urinary bladder, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	7	17.5	(5.3, 42.5)	NA	NA	–
1974-1978	5	9.3	(2.7, 23.1)	36.7	(35.9, 37.5)	0.3
1979-1983	8	13.1	(5.4, 26.4)	38.7	(38.0, 39.5)	0.3
1984-1988	14	15.1	(7.4, 27.3)	41.1	(40.4, 41.8)	0.4
1989-1993	9	10.2	(4.3, 20.5)	40.9	(40.2, 41.5)	0.3
1994-1998	16	14.3	(7.7, 24.4)	40.7	(40.0, 41.3)	0.4
1999-2003	26	22.3	(13.6, 34.4)	41.9	(41.3, 42.5)	0.5
2004-2008	32	21.0	(13.7, 30.7)	42.2	(41.6, 42.8)	0.5
2009-2013	33	21.4	(14.1, 31.2)	40.2	(39.6, 40.7)	0.5
2014-2018	47	24.2	(17.1, 33.5)	37.9	(37.4, 38.5)	0.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

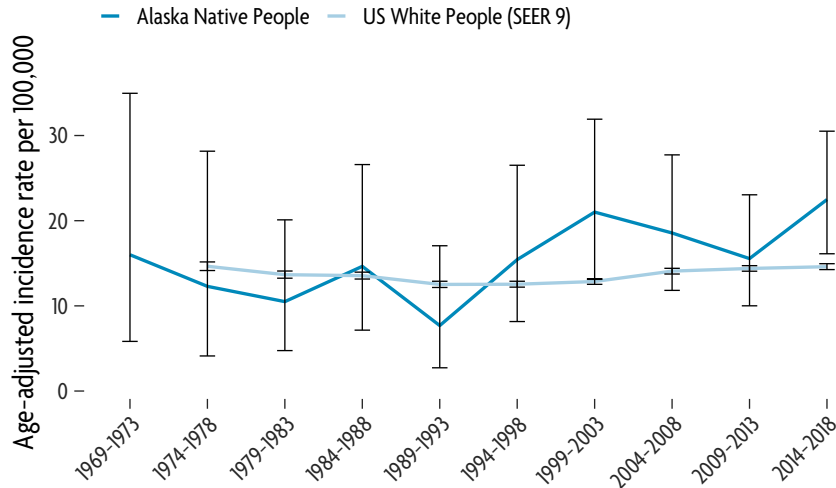


Figure 4.19: Comparison of trends in average annual age-adjusted cancer incidence for pancreas, men, 1969–2018.

Table 4.19: Comparison of trends in average annual age-adjusted cancer incidence for pancreas, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	8	16.0	(5.8, 35.0)	NA	NA	–
1974-1978	7	12.3	(4.1, 28.2)	14.7	(14.2, 15.2)	0.8
1979-1983	9	10.5	(4.8, 20.1)	13.7	(13.2, 14.1)	0.8
1984-1988	13	14.6	(7.2, 26.6)	13.6	(13.2, 14.0)	1.1
1989-1993	7	7.7	(2.7, 17.1)	12.5	(12.2, 12.9)	0.6
1994-1998	16	15.4	(8.2, 26.5)	12.5	(12.2, 12.9)	1.2
1999-2003	27	21.0	(13.1, 31.9)	12.9	(12.5, 13.2)	1.6
2004-2008	29	18.6	(11.8, 27.7)	14.1	(13.7, 14.4)	1.3
2009-2013	29	15.6	(10.0, 23.0)	14.4	(14.1, 14.7)	1.1
2014-2018	49	22.5	(16.1, 30.5)	14.6	(14.3, 14.9)	1.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

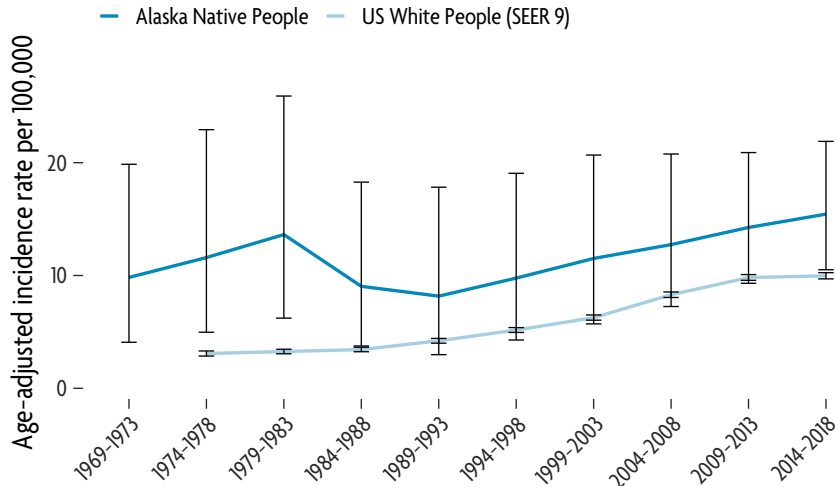


Figure 4.20: Comparison of trends in average annual age-adjusted cancer incidence for liver, men, 1969–2018.

Table 4.20: Comparison of trends in average annual age-adjusted cancer incidence for liver, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	8	9.8	(4.1, 19.9)	NA	NA	–
1974-1978	10	11.6	(5.0, 22.9)	3.1	(2.9, 3.3)	3.8
1979-1983	13	13.6	(6.2, 25.9)	3.3	(3.1, 3.5)	4.2
1984-1988	11	9.0	(3.8, 18.3)	3.4	(3.2, 3.6)	2.6
1989-1993	10	8.2	(3.0, 17.8)	4.2	(4.0, 4.4)	1.9
1994-1998	12	9.8	(4.3, 19.1)	5.2	(5.0, 5.4)	1.9
1999-2003	15	11.5	(5.7, 20.7)	6.3	(6.0, 6.5)	1.8
2004-2008	22	12.7	(7.2, 20.8)	8.3	(8.1, 8.5)	1.5
2009-2013	33	14.3	(9.3, 20.9)	9.8	(9.6, 10.1)	1.5
2014-2018	36	15.4	(10.5, 21.9)	10.0	(9.7, 10.2)	1.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

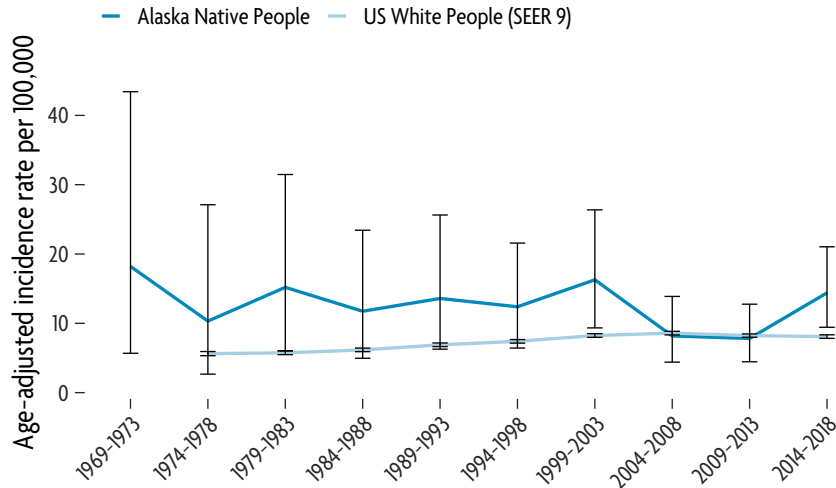


Figure 4.21: Comparison of trends in average annual age-adjusted cancer incidence for esophagus, men, 1969–2018.

Table 4.21: Comparison of trends in average annual age-adjusted cancer incidence for esophagus, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	6	18.2	(5.7, 43.4)	NA	NA	–
1974-1978	5	10.3	(2.7, 27.1)	5.6	(5.3, 5.9)	1.8
1979-1983	9	15.2	(6.0, 31.5)	5.7	(5.5, 6.0)	2.6
1984-1988	8	11.7	(5.0, 23.4)	6.2	(5.9, 6.4)	1.9
1989-1993	11	13.6	(6.3, 25.6)	6.9	(6.6, 7.2)	2.0
1994-1998	14	12.4	(6.4, 21.6)	7.4	(7.1, 7.7)	1.7
1999-2003	19	16.3	(9.3, 26.4)	8.2	(8.0, 8.5)	2.0
2004-2008	15	8.2	(4.4, 13.9)	8.6	(8.3, 8.8)	1.0
2009-2013	18	7.8	(4.5, 12.8)	8.2	(8.0, 8.5)	1.0
2014-2018	32	14.4	(9.4, 21.0)	8.1	(7.8, 8.3)	1.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

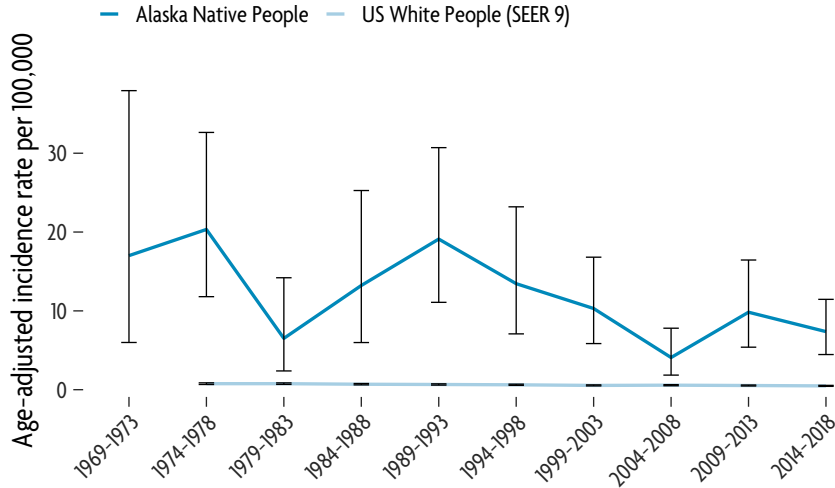


Figure 4.22: Comparison of trends in average annual age-adjusted cancer incidence for nasopharynx, men, 1969–2018.

Table 4.22: Comparison of trends in average annual age-adjusted cancer incidence for nasopharynx, men, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	9	17.0	(6.0, 37.9)	NA	NA	–
1974-1978	17	20.3	(11.8, 32.6)	0.8	(0.7, 0.9)	26.8
1979-1983	6	6.5	(2.4, 14.2)	0.8	(0.7, 0.9)	8.6
1984-1988	12	13.2	(6.0, 25.3)	0.7	(0.6, 0.8)	19.2
1989-1993	21	19.1	(11.1, 30.7)	0.7	(0.6, 0.7)	29.0
1994-1998	15	13.4	(7.1, 23.2)	0.6	(0.6, 0.7)	21.7
1999-2003	17	10.3	(5.8, 16.8)	0.5	(0.5, 0.6)	19.1
2004-2008	9	4.1	(1.8, 7.8)	0.6	(0.5, 0.6)	7.2
2009-2013	18	9.8	(5.4, 16.4)	0.5	(0.5, 0.6)	18.5
2014-2018	21	7.4	(4.5, 11.5)	0.5	(0.4, 0.6)	15.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

4.3 Women Only

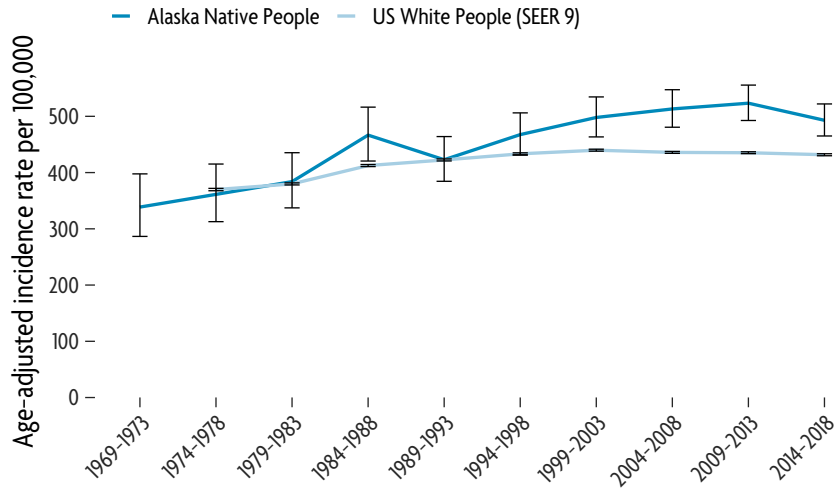


Figure 4.23: Comparison of trends in average annual age-adjusted cancer incidence for all sites, women, 1969–2018.

Table 4.23: Comparison of trends in average annual age-adjusted cancer incidence for all sites, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	186	338.7	(286.5, 397.7)	NA	NA	–
1974-1978	238	361.2	(312.7, 415.2)	369.8	(367.7, 371.9)	1.0
1979-1983	304	383.9	(337.2, 435.3)	379.8	(378.0, 381.7)	1.0
1984-1988	450	466.6	(420.5, 516.4)	412.5	(410.6, 414.3)	1.1
1989-1993	511	422.9	(384.5, 464.1)	422.5	(420.7, 424.3)	1.0
1994-1998	683	467.5	(431.1, 506.1)	433.4	(431.6, 435.1)	1.1
1999-2003	847	498.0	(463.4, 534.5)	439.8	(438.1, 441.5)	1.1
2004-2008	1,013	513.2	(480.6, 547.3)	435.9	(434.2, 437.6)	1.2
2009-2013	1,184	523.4	(492.6, 555.6)	435.3	(433.6, 436.9)	1.2
2014-2018	1,266	493.0	(465.1, 522.0)	431.7	(429.9, 433.5)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

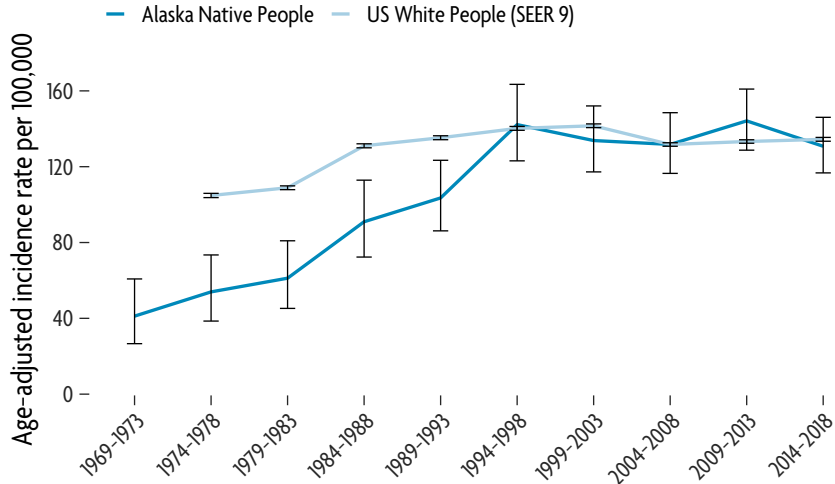


Figure 4.24: Comparison of trends in average annual age-adjusted cancer incidence for breast (women), women, 1969–2018.

Table 4.24: Comparison of trends in average annual age-adjusted cancer incidence for breast (women), women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	27	41.2	(26.6, 60.8)	NA	NA	–
1974-1978	42	54.0	(38.6, 73.4)	104.8	(103.7, 105.9)	0.5
1979-1983	55	61.2	(45.2, 80.9)	108.9	(107.9, 109.9)	0.6
1984-1988	96	91.0	(72.3, 112.9)	131.0	(130.0, 132.1)	0.7
1989-1993	136	103.5	(86.2, 123.4)	135.3	(134.2, 136.3)	0.8
1994-1998	218	142.2	(123.1, 163.4)	140.2	(139.2, 141.2)	1.0
1999-2003	253	133.8	(117.2, 152.1)	141.6	(140.6, 142.6)	0.9
2004-2008	285	131.7	(116.5, 148.5)	131.7	(130.8, 132.6)	1.0
2009-2013	342	144.2	(128.7, 160.9)	133.3	(132.4, 134.2)	1.1
2014-2018	340	130.8	(116.7, 146.0)	134.4	(133.4, 135.4)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

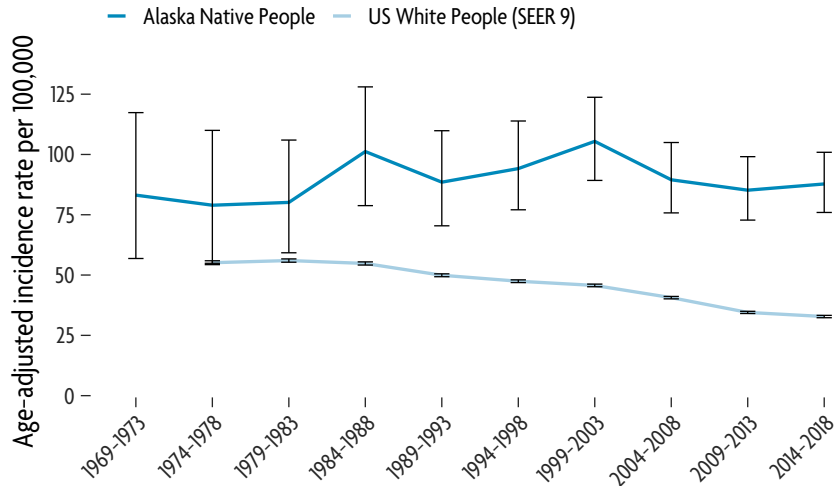


Figure 4.25: Comparison of trends in average annual age-adjusted cancer incidence for colon and rectum, women, 1969–2018.

Table 4.25: Comparison of trends in average annual age-adjusted cancer incidence for colon and rectum, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	37	83.1	(56.9, 117.3)	NA	NA	–
1974-1978	39	79.0	(54.9, 110.0)	55.1	(54.3, 55.9)	1.4
1979-1983	56	80.1	(59.2, 106.0)	56.0	(55.3, 56.7)	1.4
1984-1988	83	101.2	(78.8, 128.0)	54.8	(54.1, 55.5)	1.8
1989-1993	89	88.5	(70.4, 109.8)	49.9	(49.3, 50.5)	1.8
1994-1998	117	94.1	(77.1, 113.9)	47.4	(46.9, 48.0)	2.0
1999-2003	162	105.4	(89.2, 123.7)	45.7	(45.1, 46.2)	2.3
2004-2008	164	89.5	(75.8, 105.0)	40.6	(40.1, 41.1)	2.2
2009-2013	183	85.2	(72.8, 99.1)	34.5	(34.1, 35.0)	2.5
2014-2018	213	87.8	(76.0, 100.9)	32.8	(32.3, 33.3)	2.7

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

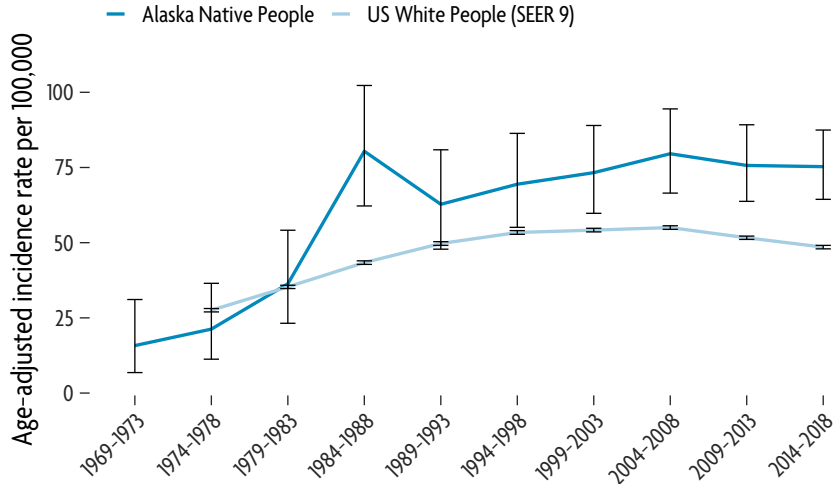


Figure 4.26: Comparison of trends in average annual age-adjusted cancer incidence for lung and bronchus, women, 1969–2018.

Table 4.26: Comparison of trends in average annual age-adjusted cancer incidence for lung and bronchus, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	9	15.8	(6.8, 31.1)	NA	NA	–
1974-1978	14	21.3	(11.3, 36.5)	27.5	(27.0, 28.1)	0.8
1979-1983	28	36.3	(23.2, 54.1)	35.3	(34.8, 35.9)	1.0
1984-1988	74	80.4	(62.2, 102.3)	43.4	(42.8, 44.0)	1.9
1989-1993	65	62.8	(47.8, 80.9)	49.7	(49.1, 50.3)	1.3
1994-1998	88	69.4	(55.1, 86.3)	53.4	(52.8, 54.0)	1.3
1999-2003	109	73.3	(59.8, 89.0)	54.2	(53.6, 54.8)	1.4
2004-2008	139	79.6	(66.5, 94.5)	55.0	(54.4, 55.6)	1.4
2009-2013	155	75.7	(63.7, 89.2)	51.6	(51.1, 52.2)	1.5
2014-2018	186	75.3	(64.4, 87.5)	48.5	(48.0, 49.1)	1.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

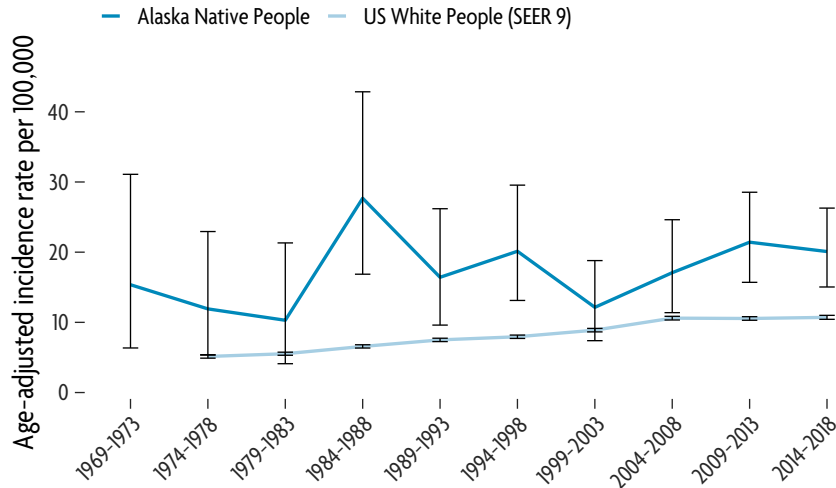


Figure 4.27: Comparison of trends in average annual age-adjusted cancer incidence for kidney and renal pelvis, women, 1969–2018.

Table 4.27: Comparison of trends in average annual age-adjusted cancer incidence for kidney and renal pelvis, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	9	15.4	(6.3, 31.1)	NA	NA	–
1974-1978	10	11.9	(5.3, 22.9)	5.1	(4.9, 5.4)	2.3
1979-1983	8	10.3	(4.1, 21.3)	5.5	(5.3, 5.8)	1.9
1984-1988	23	27.7	(16.9, 42.9)	6.6	(6.3, 6.8)	4.2
1989-1993	21	16.4	(9.6, 26.2)	7.5	(7.3, 7.7)	2.2
1994-1998	28	20.1	(13.1, 29.6)	8.0	(7.7, 8.2)	2.5
1999-2003	21	12.1	(7.4, 18.8)	8.9	(8.6, 9.1)	1.4
2004-2008	32	17.1	(11.4, 24.6)	10.6	(10.3, 10.9)	1.6
2009-2013	51	21.4	(15.7, 28.5)	10.6	(10.3, 10.8)	2.0
2014-2018	56	20.1	(15.0, 26.3)	10.7	(10.4, 11.0)	1.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

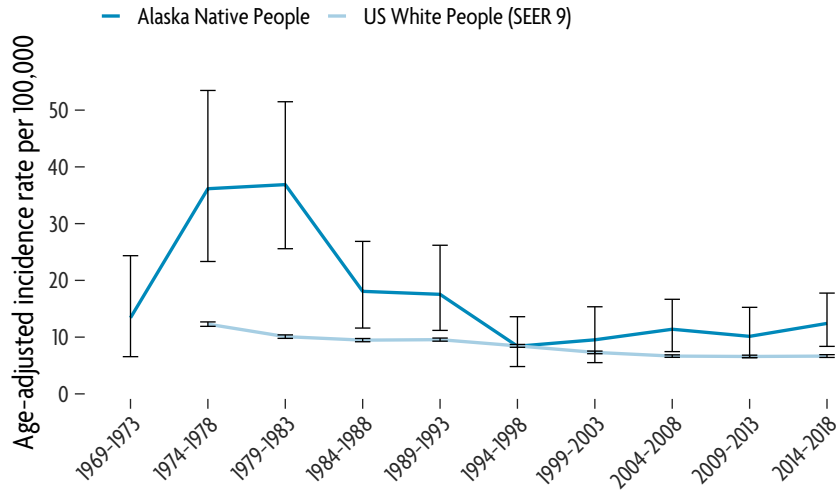


Figure 4.28: Comparison of trends in average annual age-adjusted cancer incidence for cervix uteri (women), women, 1969–2018.

Table 4.28: Comparison of trends in average annual age-adjusted cancer incidence for cervix uteri (women), women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	11	13.4	(6.6, 24.4)	NA	NA	–
1974-1978	27	36.1	(23.3, 53.5)	12.3	(11.9, 12.7)	2.9
1979-1983	41	36.9	(25.6, 51.5)	10.1	(9.8, 10.4)	3.7
1984-1988	28	18.1	(11.6, 26.9)	9.5	(9.2, 9.8)	1.9
1989-1993	30	17.5	(11.2, 26.2)	9.6	(9.3, 9.8)	1.8
1994-1998	17	8.4	(4.8, 13.6)	8.5	(8.2, 8.7)	1.0
1999-2003	19	9.5	(5.5, 15.3)	7.3	(7.1, 7.5)	1.3
2004-2008	28	11.4	(7.5, 16.7)	6.7	(6.4, 6.9)	1.7
2009-2013	25	10.1	(6.4, 15.2)	6.6	(6.4, 6.8)	1.5
2014-2018	32	12.4	(8.4, 17.8)	6.7	(6.4, 6.9)	1.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

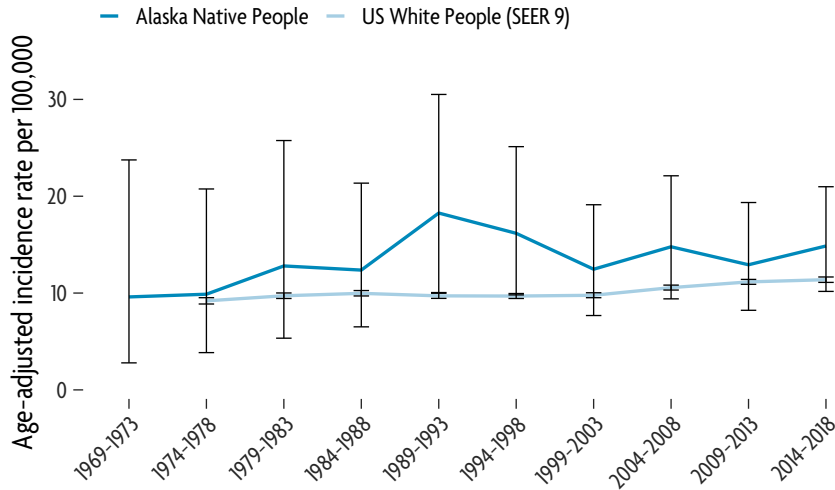


Figure 4.29: Comparison of trends in average annual age-adjusted cancer incidence for pancreas, women, 1969–2018.

Table 4.29: Comparison of trends in average annual age-adjusted cancer incidence for pancreas, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	5	9.6	(2.8, 23.8)	NA	NA	–
1974-1978	7	9.9	(3.8, 20.8)	9.2	(8.9, 9.5)	1.1
1979-1983	9	12.8	(5.3, 25.8)	9.7	(9.4, 10.0)	1.3
1984-1988	13	12.4	(6.5, 21.4)	10.0	(9.7, 10.3)	1.2
1989-1993	16	18.3	(10.1, 30.5)	9.7	(9.4, 10.0)	1.9
1994-1998	21	16.2	(9.8, 25.1)	9.7	(9.4, 9.9)	1.7
1999-2003	22	12.5	(7.7, 19.1)	9.8	(9.5, 10.0)	1.3
2004-2008	25	14.8	(9.4, 22.1)	10.6	(10.3, 10.8)	1.4
2009-2013	26	12.9	(8.2, 19.4)	11.2	(10.9, 11.4)	1.2
2014-2018	35	14.9	(10.2, 21.0)	11.4	(11.1, 11.7)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

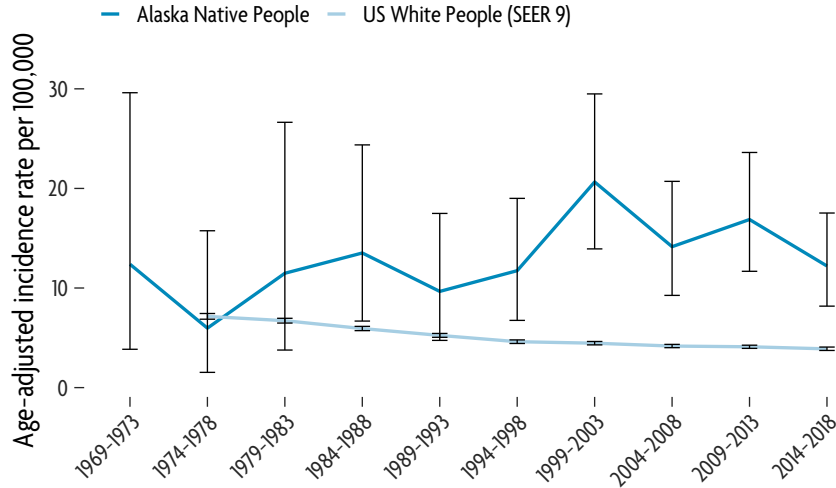


Figure 4.30: Comparison of trends in average annual age-adjusted cancer incidence for stomach, women, 1969–2018.

Table 4.30: Comparison of trends in average annual age-adjusted cancer incidence for stomach, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	6	12.4	(3.8, 29.6)	NA	NA	-
1974-1978	-	-	-	7.2	(6.9, 7.4)	-
1979-1983	7	11.5	(3.8, 26.6)	6.7	(6.5, 7.0)	1.7
1984-1988	13	13.5	(6.7, 24.4)	5.9	(5.7, 6.2)	2.3
1989-1993	12	9.7	(4.7, 17.5)	5.2	(5.0, 5.4)	1.8
1994-1998	19	11.7	(6.8, 19.0)	4.6	(4.4, 4.8)	2.5
1999-2003	33	20.6	(13.9, 29.5)	4.5	(4.3, 4.6)	4.6
2004-2008	28	14.2	(9.3, 20.7)	4.2	(4.0, 4.3)	3.4
2009-2013	37	16.9	(11.7, 23.6)	4.1	(3.9, 4.3)	4.1
2014-2018	31	12.2	(8.2, 17.5)	3.9	(3.7, 4.1)	3.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

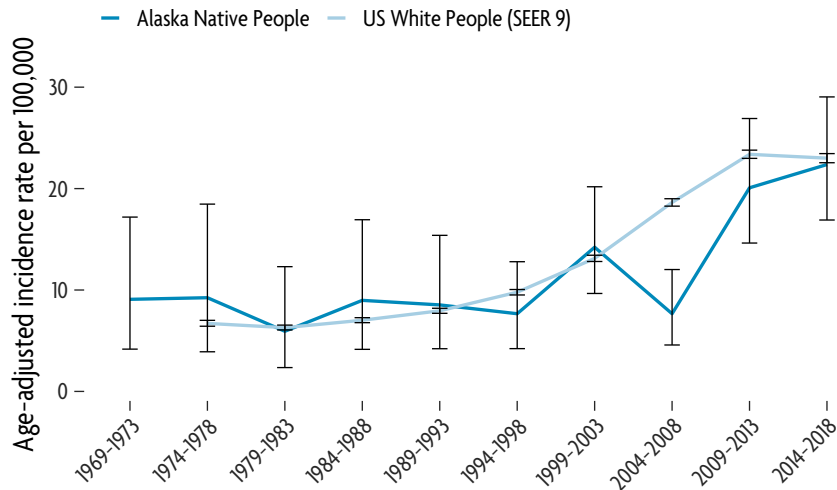


Figure 4.31: Comparison of trends in average annual age-adjusted cancer incidence for thyroid, women, 1969–2018.

Table 4.31: Comparison of trends in average annual age-adjusted cancer incidence for thyroid, women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	10	9.1	(4.2, 17.2)	NA	NA	–
1974-1978	8	9.2	(3.9, 18.5)	6.7	(6.4, 7.0)	1.4
1979-1983	8	5.9	(2.4, 12.3)	6.3	(6.1, 6.5)	0.9
1984-1988	11	9.0	(4.2, 16.9)	7.0	(6.8, 7.3)	1.3
1989-1993	15	8.5	(4.2, 15.4)	8.0	(7.7, 8.2)	1.1
1994-1998	15	7.7	(4.2, 12.8)	9.8	(9.5, 10.1)	0.8
1999-2003	33	14.2	(9.7, 20.2)	13.1	(12.8, 13.4)	1.1
2004-2008	20	7.7	(4.6, 12.0)	18.6	(18.3, 19.0)	0.4
2009-2013	49	20.1	(14.6, 26.9)	23.4	(23.0, 23.8)	0.9
2014-2018	60	22.4	(16.9, 29.0)	23.0	(22.6, 23.4)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

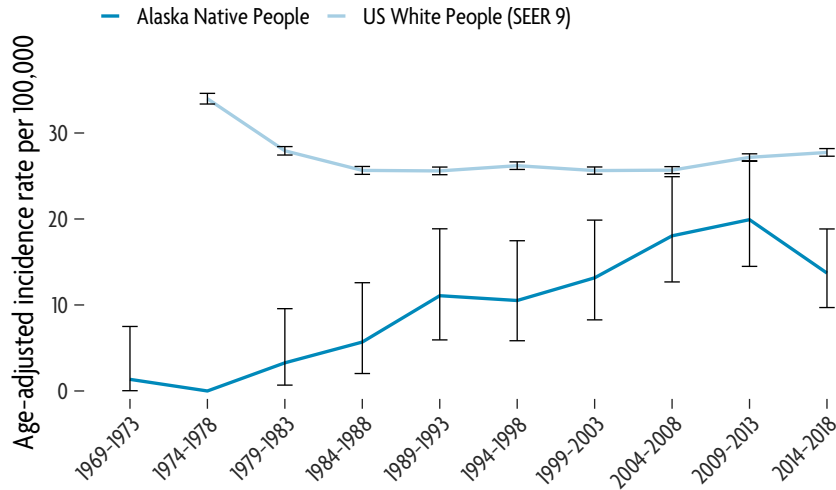


Figure 4.32: Comparison of trends in average annual age-adjusted cancer incidence for corpus uteri (women), women, 1969–2018.

Table 4.32: Comparison of trends in average annual age-adjusted cancer incidence for corpus uteri (women), women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	-	-	-	NA	NA	-
1974-1978	-	-	-	34.0	(33.4, 34.6)	-
1979-1983	-	-	-	27.9	(27.4, 28.4)	-
1984-1988	6	5.7	(2.0, 12.6)	25.6	(25.2, 26.1)	0.2
1989-1993	14	11.1	(5.9, 18.9)	25.6	(25.1, 26.0)	0.4
1994-1998	16	10.5	(5.8, 17.5)	26.2	(25.8, 26.6)	0.4
1999-2003	24	13.2	(8.3, 19.9)	25.6	(25.2, 26.1)	0.5
2004-2008	39	18.0	(12.7, 24.9)	25.7	(25.3, 26.1)	0.7
2009-2013	48	19.9	(14.5, 26.7)	27.2	(26.8, 27.6)	0.7
2014-2018	40	13.7	(9.7, 18.8)	27.7	(27.3, 28.2)	0.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

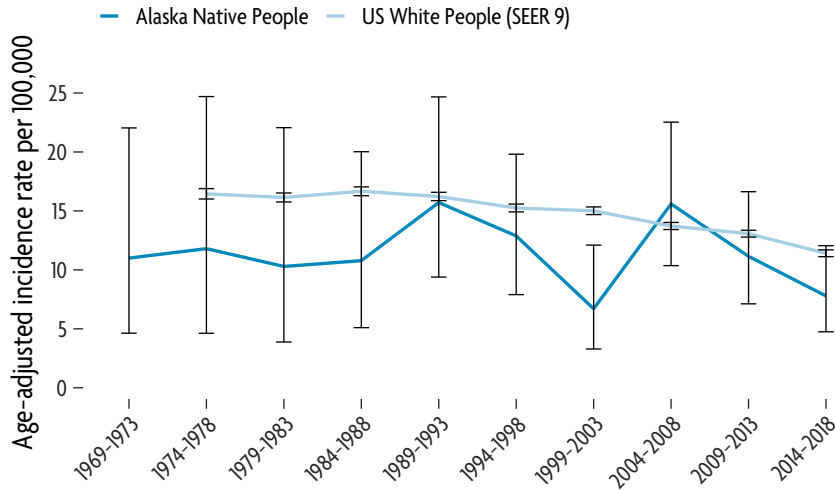


Figure 4.33: Comparison of trends in average annual age-adjusted cancer incidence for ovary (women), women, 1969–2018.

Table 4.33: Comparison of trends in average annual age-adjusted cancer incidence for ovary (women), women, 1969–2018.

	Alaska Native People			US White People (SEER 9)		RR
	Count	Rate	95% CI	Rate	95% CI	
1969-1973	8	11.0	(4.6, 22.0)	NA	NA	–
1974-1978	10	11.8	(4.6, 24.7)	16.4	(16.0, 16.9)	0.7
1979-1983	8	10.3	(3.9, 22.1)	16.1	(15.8, 16.5)	0.6
1984-1988	11	10.8	(5.1, 20.0)	16.7	(16.3, 17.0)	0.6
1989-1993	20	15.7	(9.4, 24.7)	16.2	(15.9, 16.6)	1.0
1994-1998	21	12.9	(7.9, 19.8)	15.2	(14.9, 15.6)	0.8
1999-2003	12	6.7	(3.3, 12.1)	15.0	(14.7, 15.3)	0.4
2004-2008	31	15.6	(10.4, 22.5)	13.7	(13.4, 14.0)	1.1
2009-2013	26	11.2	(7.1, 16.6)	13.1	(12.8, 13.4)	0.9
2014-2018	21	7.8	(4.8, 12.1)	11.4	(11.1, 11.7)	0.7

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
 See section A.2 on page 171 for information regarding statistical methods, including years of data available for US White People.

5

Cancer Mortality by Cause

5.1 Men and Women Combined

5.1.1 Five-year Cancer Mortality

Table 5.1: Average annual age-adjusted cancer mortality rate by cause of death, men and women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All malignant cancers	913	211.6	(197.2, 226.9)	156.3	(156.1, 156.5)	1.4
Lung and Bronchus	218	50.8	(43.9, 58.7)	39.3	(39.2, 39.4)	1.3
Colon and Rectum	149	37.4	(31.3, 44.5)	13.4	(13.3, 13.5)	2.8
Breast (women)	56	23.5	(17.5, 31.1)	19.6	(19.5, 19.7)	1.2
Prostate (men)	20	16.4	(9.7, 26.2)	17.9	(17.8, 18.0)	0.9
Stomach	57	11.8	(8.8, 15.7)	2.6	(2.6, 2.6)	4.5
Pancreas	52	11.6	(8.5, 15.7)	11.0	(10.9, 11.0)	1.1
Esophagus	33	6.6	(4.4, 9.8)	4.1	(4.1, 4.2)	1.6
Liver	26	5.5	(3.5, 8.5)	4.5	(4.5, 4.6)	1.2
Kidney and Renal Pelvis	23	4.8	(2.9, 7.5)	3.8	(3.7, 3.8)	1.3
Urinary Bladder	16	4.2	(2.3, 7.2)	4.5	(4.5, 4.6)	0.9
Ovary (women)	11	4.0	(2.0, 7.8)	6.9	(6.9, 7.0)	0.6
Brain and Other Nervous System	18	3.6	(2.1, 6.2)	4.8	(4.8, 4.9)	0.8
Non-Hodgkin Lymphoma	14	3.3	(1.7, 6.0)	5.6	(5.6, 5.7)	0.6
Nasopharynx	14	2.9	(1.5, 5.3)	0.1	(0.1, 0.1)	29.0
Intrahepatic Bile Duct	12	2.6	(1.2, 5.0)	1.7	(1.7, 1.7)	1.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Causes with a count less than or equal to 10 have been excluded from this table.

5.1.2 *Twenty-five-year Cancer Mortality*

Table 5.2: Average annual age-adjusted cancer mortality rate by cause of death, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All malignant cancers	3,880	237.8	(229.8, 245.9)	178.5	(178.4, 178.6)	1.3
Lung and Bronchus	1,058	66.3	(62.2, 70.8)	49.3	(49.3, 49.4)	1.3
Colon and Rectum	550	35.9	(32.7, 39.3)	16.8	(16.8, 16.9)	2.1
Breast (women)	236	24.6	(21.4, 28.2)	23.3	(23.2, 23.3)	1.1
Prostate (men)	90	18.4	(14.5, 23.1)	23.0	(23.0, 23.1)	0.8
Stomach	260	14.0	(12.3, 16.0)	3.3	(3.3, 3.4)	4.2
Pancreas	223	13.2	(11.4, 15.2)	10.6	(10.6, 10.7)	1.2
Kidney and Renal Pelvis	113	7.3	(6.0, 8.9)	4.1	(4.1, 4.1)	1.8
Esophagus	115	6.8	(5.6, 8.4)	4.2	(4.2, 4.2)	1.6
Ovary (women)	60	6.1	(4.6, 7.9)	8.3	(8.3, 8.4)	0.7
Liver	103	6.0	(4.8, 7.4)	3.9	(3.9, 3.9)	1.5
Non-Hodgkin Lymphoma	69	4.4	(3.3, 5.7)	7.1	(7.1, 7.1)	0.6
Urinary Bladder	47	3.5	(2.5, 4.8)	4.6	(4.5, 4.6)	0.8
Nasopharynx	57	3.4	(2.5, 4.6)	0.2	(0.2, 0.2)	17.0
Cervix Uteri (women)	35	3.3	(2.2, 4.7)	2.3	(2.3, 2.3)	1.4
Myeloma	44	2.5	(1.8, 3.5)	3.3	(3.2, 3.3)	0.8
Intrahepatic Bile Duct	38	2.4	(1.6, 3.4)	1.3	(1.3, 1.3)	1.8
Brain and Other Nervous System	46	2.1	(1.5, 2.9)	4.8	(4.8, 4.8)	0.4
Acute Myeloid Leukemia	40	1.8	(1.2, 2.6)	2.8	(2.8, 2.8)	0.6
Uterus, NOS (women)	13	1.5	(0.8, 2.6)	2.1	(2.1, 2.1)	0.7
Gallbladder	21	1.4	(0.8, 2.2)	0.6	(0.6, 0.6)	2.3
Other Digestive Organs	19	1.3	(0.7, 2.1)	0.3	(0.3, 0.3)	4.3
Other Oral Cavity and Pharynx	20	1.2	(0.7, 2.0)	0.5	(0.5, 0.5)	2.4
Larynx	16	1.0	(0.6, 1.8)	1.1	(1.1, 1.1)	0.9
Soft Tissue including Heart	18	0.9	(0.5, 1.5)	1.3	(1.3, 1.3)	0.7
Aleukemic, subleukemic and NOS	16	0.9	(0.5, 1.6)	1.0	(1.0, 1.0)	0.9
Gum and Other Mouth	11	0.7	(0.3, 1.3)	0.4	(0.4, 0.4)	1.8
Melanoma of the Skin	12	0.7	(0.3, 1.3)	3.0	(3.0, 3.0)	0.2
Other Biliary	10	0.6	(0.3, 1.3)	0.5	(0.5, 0.5)	1.2
Non-Melanoma Skin	10	0.6	(0.3, 1.2)	1.0	(1.0, 1.0)	0.6
Acute Lymphocytic Leukemia	14	0.5	(0.3, 1.0)	0.5	(0.5, 0.5)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Causes with a count less than or equal to 10 have been excluded from this table.

5.2 Men Only

5.2.1 Five-year Cancer Mortality

Table 5.3: Average annual age-adjusted cancer mortality rate by cause of death, men, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All malignant cancers	469	243.4	(219.5, 269.7)	185.9	(185.6, 186.2)	1.3
Lung and Bronchus	115	58.4	(47.4, 71.9)	47.1	(46.9, 47.2)	1.2
Colon and Rectum	70	38.1	(28.8, 50.1)	15.9	(15.8, 16.0)	2.4
Stomach	39	17.8	(12.2, 25.8)	3.5	(3.4, 3.5)	5.1
Prostate (men)	20	16.4	(9.7, 26.2)	0.2	(0.2, 0.2)	82.0
Pancreas	28	13.2	(8.4, 20.7)	12.8	(12.7, 12.8)	1.0
Esophagus	23	10.5	(6.2, 17.5)	7.4	(7.3, 7.4)	1.4
Kidney and Renal Pelvis	15	7.0	(3.7, 13.2)	0.4	(0.4, 0.4)	17.5
Urinary Bladder	10	6.0	(2.5, 12.5)	0.3	(0.3, 0.3)	20.0
Liver	14	5.7	(3.0, 11.1)	7.1	(7.0, 7.2)	0.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Causes with a count less than or equal to 10 have been excluded from this table.

5.2.2 *Twenty-five-year Cancer Mortality*

Table 5.4: Average annual age-adjusted cancer mortality rate by cause of death, men, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All malignant cancers	2,026	279.3	(265.9, 293.4)	217.5	(217.3, 217.6)	1.3
Lung and Bronchus	611	84.5	(77.4, 92.4)	63.5	(63.4, 63.6)	1.3
Colon and Rectum	269	38.8	(33.8, 44.5)	20.1	(20.1, 20.2)	1.9
Stomach	161	18.9	(15.8, 22.6)	4.6	(4.6, 4.6)	4.1
Prostate (men)	90	18.4	(14.5, 23.1)	23.0	(23.0, 23.1)	0.8
Pancreas	119	15.5	(12.6, 19.1)	12.4	(12.3, 12.4)	1.2
Esophagus	79	10.3	(7.9, 13.4)	7.5	(7.5, 7.6)	1.4
Kidney and Renal Pelvis	70	10.2	(7.7, 13.3)	5.9	(5.9, 5.9)	1.7
Liver	64	8.1	(6.0, 10.9)	6.1	(6.1, 6.1)	1.3
Urinary Bladder	31	5.4	(3.5, 8.1)	8.0	(8.0, 8.0)	0.7
Nasopharynx	38	5.1	(3.5, 7.4)	0.2	(0.2, 0.2)	25.5
Non-Hodgkin Lymphoma	38	5.1	(3.4, 7.5)	9.0	(9.0, 9.0)	0.6
Myeloma	18	2.7	(1.5, 4.8)	4.2	(4.1, 4.2)	0.6
Brain and Other Nervous System	26	2.6	(1.6, 4.4)	5.8	(5.8, 5.9)	0.4
Acute Myeloid Leukemia	26	2.5	(1.5, 4.2)	3.6	(3.6, 3.7)	0.7
Intrahepatic Bile Duct	16	2.4	(1.3, 4.3)	1.5	(1.5, 1.5)	1.6
Larynx	16	2.3	(1.2, 4.3)	2.0	(2.0, 2.0)	1.1
Other Oral Cavity and Pharynx	16	2.0	(1.1, 3.7)	0.8	(0.8, 0.8)	2.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Causes with a count less than or equal to 10 have been excluded from this table.

5.3 Women Only

5.3.1 Five-year Cancer Mortality

Table 5.5: Average annual age-adjusted cancer mortality rate by cause of death, women, 2014–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All malignant cancers	444	187.9	(170.1, 207.3)	134.3	(134.0, 134.5)	1.4
Lung and Bronchus	103	44.2	(35.8, 54.2)	33.3	(33.2, 33.4)	1.3
Colon and Rectum	79	36.6	(28.7, 46.1)	11.3	(11.2, 11.4)	3.2
Breast (women)	56	23.5	(17.5, 31.1)	19.6	(19.5, 19.7)	1.2
Pancreas	24	10.2	(6.3, 15.6)	9.5	(9.4, 9.5)	1.1
Stomach	18	6.6	(3.9, 10.9)	1.9	(1.9, 1.9)	3.5
Liver	12	5.0	(2.4, 9.2)	2.3	(2.3, 2.3)	2.2
Ovary (women)	11	4.0	(2.0, 7.8)	6.9	(6.9, 7.0)	0.6
Esophagus	10	3.5	(1.6, 7.0)	1.4	(1.4, 1.5)	2.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Causes with a count less than or equal to 10 have been excluded from this table.

5.3.2 *Twenty-five-year Cancer Mortality*

Table 5.6: Average annual age-adjusted cancer mortality rate by cause of death, women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
All malignant cancers	1,854	207.1	(197.4, 217.2)	151.5	(151.4, 151.7)	1.4
Lung and Bronchus	447	51.8	(46.9, 57.0)	38.7	(38.7, 38.8)	1.3
Colon and Rectum	281	33.6	(29.6, 38.0)	14.2	(14.2, 14.3)	2.4
Breast (women)	236	24.6	(21.4, 28.2)	23.3	(23.2, 23.3)	1.1
Pancreas	104	11.3	(9.2, 13.9)	9.2	(9.2, 9.3)	1.2
Stomach	99	10.0	(8.1, 12.4)	2.4	(2.4, 2.4)	4.2
Ovary (women)	60	6.1	(4.6, 7.9)	8.3	(8.3, 8.4)	0.7
Kidney and Renal Pelvis	43	5.1	(3.6, 7.0)	2.6	(2.6, 2.7)	2.0
Liver	39	4.2	(2.9, 5.9)	2.1	(2.0, 2.1)	2.0
Esophagus	36	4.1	(2.8, 5.8)	1.6	(1.5, 1.6)	2.6
Non-Hodgkin Lymphoma	31	3.7	(2.5, 5.4)	5.7	(5.7, 5.7)	0.6
Cervix Uteri (women)	35	3.3	(2.2, 4.7)	2.3	(2.3, 2.3)	1.4
Myeloma	26	2.6	(1.6, 3.9)	2.6	(2.6, 2.6)	1.0
Intrahepatic Bile Duct	22	2.4	(1.5, 3.8)	1.1	(1.1, 1.1)	2.2
Nasopharynx	19	2.1	(1.2, 3.4)	0.1	(0.1, 0.1)	21.0
Urinary Bladder	16	2.1	(1.2, 3.5)	2.2	(2.2, 2.2)	1.0
Brain and Other Nervous System	20	1.7	(1.0, 2.7)	3.9	(3.9, 3.9)	0.4
Other Digestive Organs	13	1.5	(0.8, 2.7)	0.2	(0.2, 0.2)	7.5
Uterus, NOS (women)	13	1.5	(0.8, 2.6)	2.1	(2.1, 2.1)	0.7
Gallbladder	12	1.3	(0.6, 2.4)	0.8	(0.8, 0.8)	1.6
Acute Myeloid Leukemia	14	1.2	(0.6, 2.2)	2.2	(2.2, 2.2)	0.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

Causes with a count less than or equal to 10 have been excluded from this table.

6

Cancer Mortality Trends by Cause

6.1 Men and Women Combined

6.1.1 All Malignant Cancers

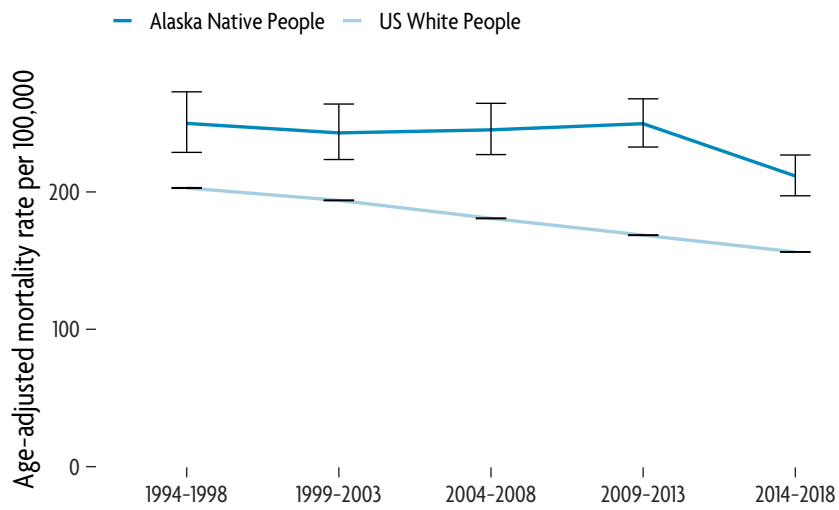


Figure 6.1: Comparison of trends in average annual age-adjusted cancer mortality rate, all malignant cancers, men and women, 1994–2018.

Table 6.1: Comparison of trends in average annual age-adjusted cancer mortality rate, all malignant cancers, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	593	249.9	(228.8, 272.9)	202.9	(202.6, 203.1)	1.2
1999-2003	660	243.0	(223.6, 264.0)	193.9	(193.6, 194.1)	1.3
2004-2008	787	245.2	(227.2, 264.5)	180.8	(180.5, 181.0)	1.4
2009-2013	927	249.7	(232.7, 267.8)	168.5	(168.3, 168.7)	1.5
2014-2018	913	211.6	(197.2, 226.9)	156.3	(156.1, 156.5)	1.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.1.2 Lung And Bronchus

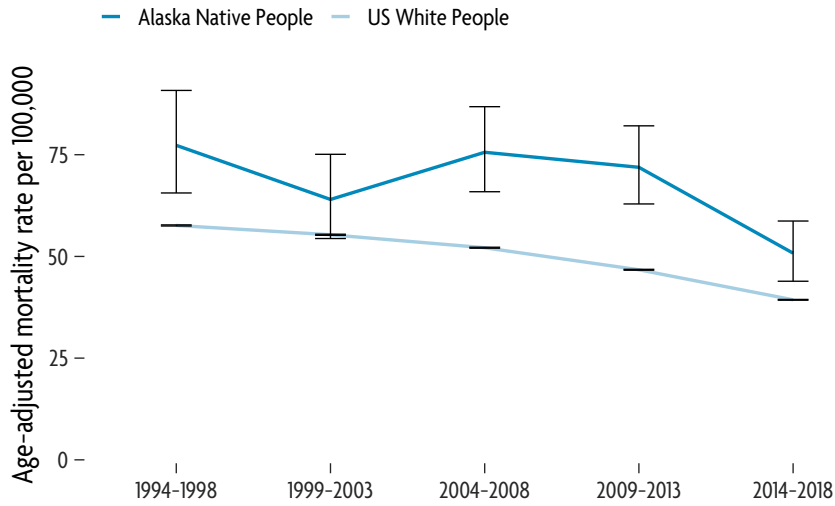


Figure 6.2: Comparison of trends in average annual age-adjusted cancer mortality rate, lung and bronchus, men and women, 1994–2018.

Table 6.2: Comparison of trends in average annual age-adjusted cancer mortality rate, lung and bronchus, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	174	77.3	(65.6, 90.8)	57.6	(57.5, 57.8)	1.3
1999-2003	173	64.0	(54.4, 75.1)	55.3	(55.2, 55.5)	1.2
2004-2008	239	75.6	(65.9, 86.8)	52.1	(52.0, 52.3)	1.4
2009-2013	254	71.9	(62.9, 82.1)	46.7	(46.6, 46.8)	1.5
2014-2018	218	50.8	(43.9, 58.7)	39.3	(39.2, 39.4)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.1.3 Colon And Rectum

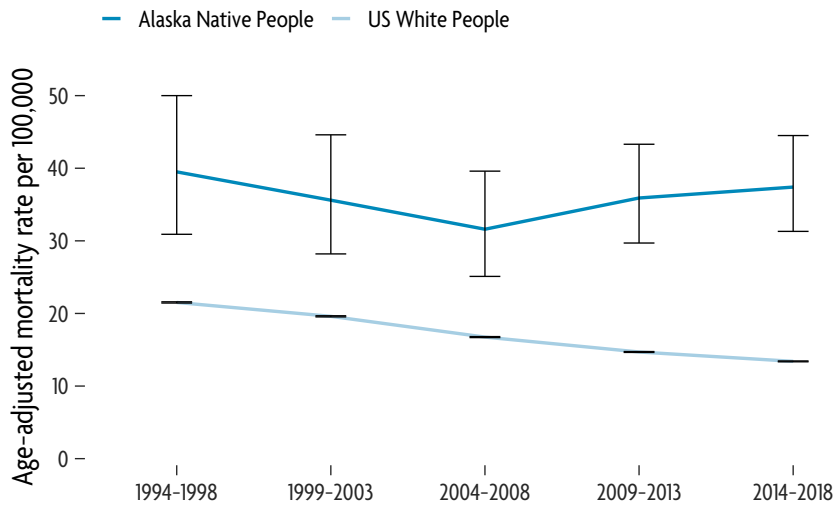


Figure 6.3: Comparison of trends in average annual age-adjusted cancer mortality rate, colon and rectum, men and women, 1994–2018.

Table 6.3: Comparison of trends in average annual age-adjusted cancer mortality rate, colon and rectum, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	83	39.5	(30.9, 50.0)	21.5	(21.4, 21.6)	1.8
1999-2003	90	35.6	(28.2, 44.6)	19.6	(19.5, 19.7)	1.8
2004-2008	93	31.6	(25.1, 39.6)	16.7	(16.7, 16.8)	1.9
2009-2013	135	35.9	(29.7, 43.3)	14.7	(14.6, 14.8)	2.4
2014-2018	149	37.4	(31.3, 44.5)	13.4	(13.3, 13.5)	2.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.1.4 Breast (Women)

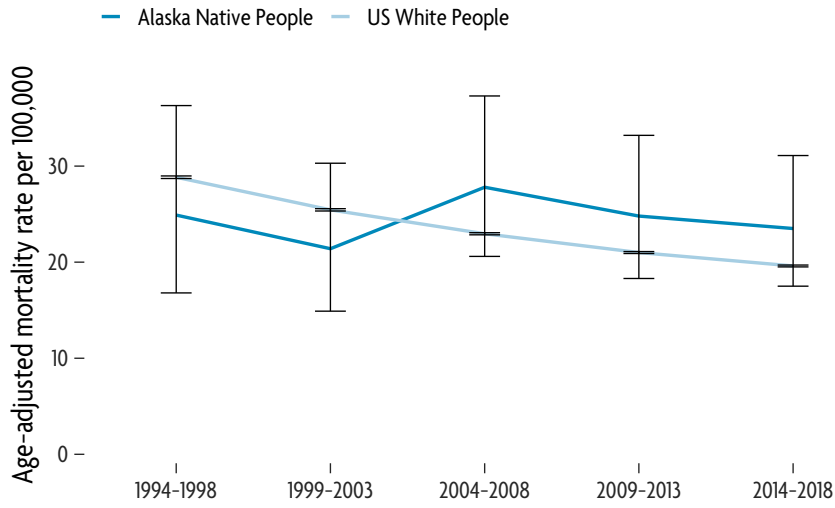


Figure 6.4: Comparison of trends in average annual age-adjusted cancer mortality rate, breast (women), men and women, 1994–2018.

Table 6.4: Comparison of trends in average annual age-adjusted cancer mortality rate, breast (women), women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	34	24.9	(16.8, 36.3)	28.8	(28.7, 29.0)	0.9
1999-2003	38	21.4	(14.9, 30.3)	25.4	(25.3, 25.6)	0.8
2004-2008	55	27.8	(20.6, 37.3)	23.0	(22.8, 23.1)	1.2
2009-2013	53	24.8	(18.3, 33.2)	21.0	(20.9, 21.1)	1.2
2014-2018	56	23.5	(17.5, 31.1)	19.6	(19.5, 19.7)	1.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.1.5 Prostate (Men)

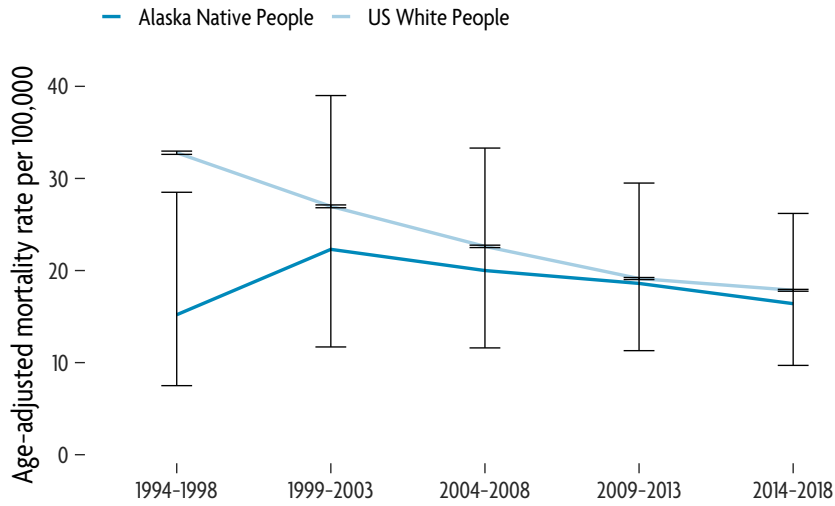


Figure 6.5: Comparison of trends in average annual age-adjusted cancer mortality rate, prostate (men), men and women, 1994–2018.

Table 6.5: Comparison of trends in average annual age-adjusted cancer mortality rate, prostate (men), men, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	13	15.2	(7.5, 28.5)	32.8	(32.6, 33.0)	0.5
1999-2003	14	22.3	(11.7, 39.0)	27.0	(26.8, 27.1)	0.8
2004-2008	19	20.0	(11.6, 33.3)	22.6	(22.5, 22.8)	0.9
2009-2013	24	18.6	(11.3, 29.5)	19.1	(19.0, 19.2)	1.0
2014-2018	20	16.4	(9.7, 26.2)	17.9	(17.8, 18.0)	0.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.1.6 Stomach

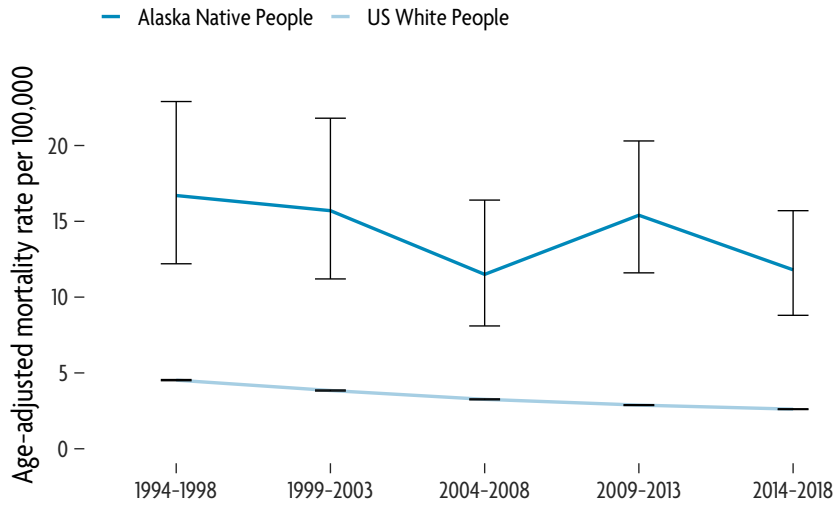


Figure 6.6: Comparison of trends in average annual age-adjusted cancer mortality rate, stomach, men and women, 1994–2018.

Table 6.6: Comparison of trends in average annual age-adjusted cancer mortality rate, stomach, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	51	16.7	(12.2, 22.9)	4.5	(4.5, 4.6)	3.7
1999-2003	46	15.7	(11.2, 21.8)	3.8	(3.8, 3.9)	4.1
2004-2008	42	11.5	(8.1, 16.4)	3.3	(3.2, 3.3)	3.5
2009-2013	64	15.4	(11.6, 20.3)	2.9	(2.9, 2.9)	5.3
2014-2018	57	11.8	(8.8, 15.7)	2.6	(2.6, 2.6)	4.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.2 Men Only

6.2.1 All Malignant Cancers

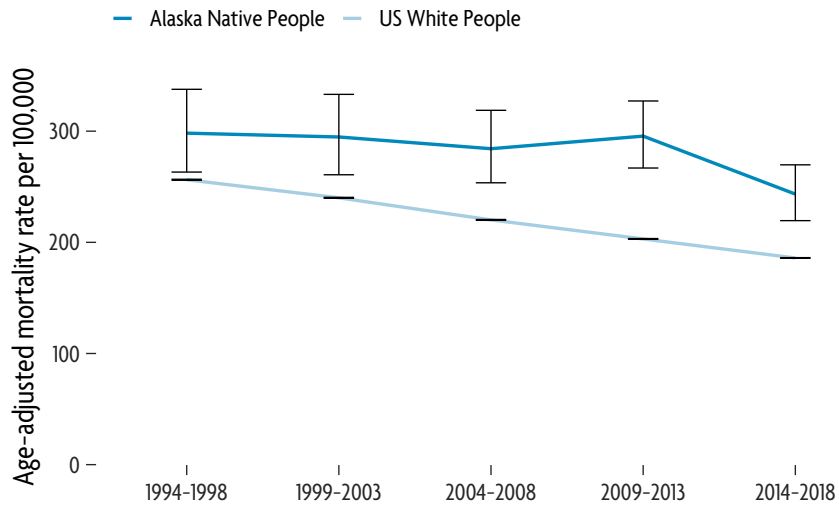


Figure 6.7: Comparison of trends in average annual age-adjusted cancer mortality rate, all malignant cancers, men, 1994–2018.

Table 6.7: Comparison of trends in average annual age-adjusted cancer mortality rate, all malignant cancers, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	321	298.2	(263.2, 337.7)	256.3	(255.8, 256.7)	1.2
1999-2003	349	294.8	(260.8, 333.1)	240.0	(239.6, 240.5)	1.2
2004-2008	402	284.2	(253.6, 318.8)	220.2	(219.8, 220.6)	1.3
2009-2013	485	295.5	(266.9, 327.2)	203.0	(202.7, 203.4)	1.5
2014-2018	469	243.4	(219.5, 269.7)	185.9	(185.6, 186.2)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.2.2 Lung And Bronchus

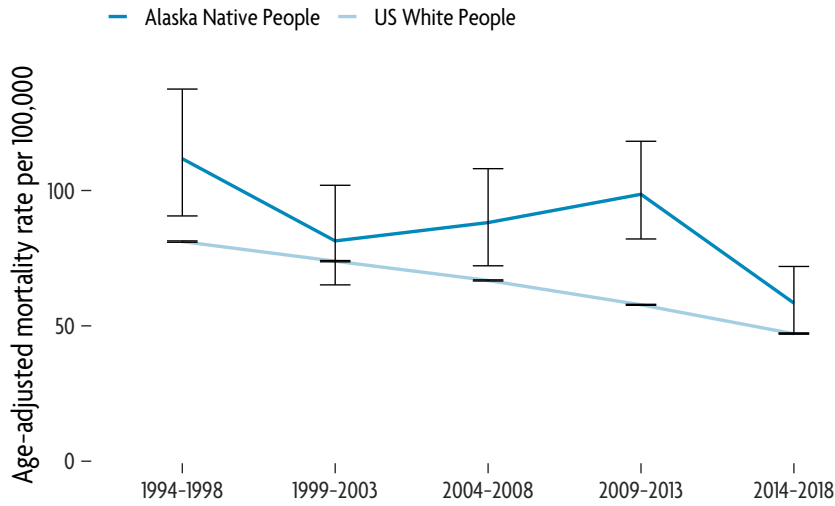


Figure 6.8: Comparison of trends in average annual age-adjusted cancer mortality rate, lung and bronchus, men, 1994–2018.

Table 6.8: Comparison of trends in average annual age-adjusted cancer mortality rate, lung and bronchus, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	114	111.7	(90.6, 137.5)	81.1	(80.9, 81.4)	1.4
1999-2003	103	81.4	(65.1, 101.9)	73.9	(73.7, 74.1)	1.1
2004-2008	128	88.2	(72.2, 108.1)	66.8	(66.6, 67.0)	1.3
2009-2013	151	98.6	(82.1, 118.2)	57.8	(57.6, 58.0)	1.7
2014-2018	115	58.4	(47.4, 71.9)	47.1	(46.9, 47.2)	1.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.2.3 Colon And Rectum

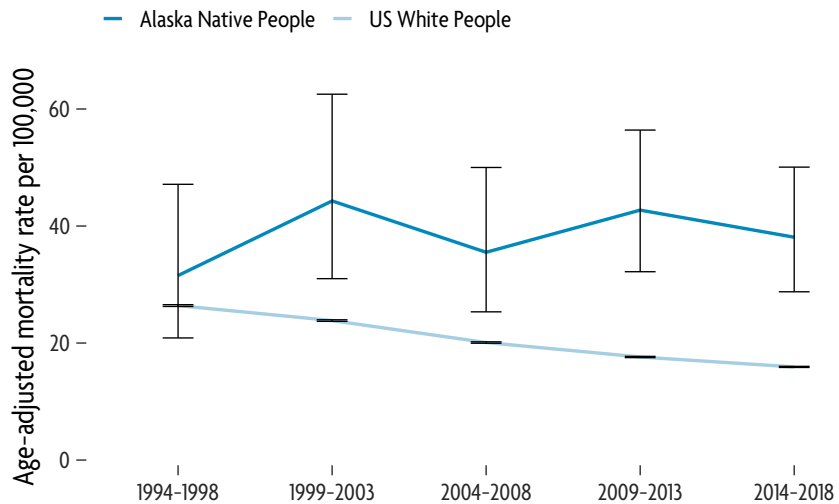


Figure 6.9: Comparison of trends in average annual age-adjusted cancer mortality rate, colon and rectum, men, 1994–2018.

Table 6.9: Comparison of trends in average annual age-adjusted cancer mortality rate, colon and rectum, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	33	31.5	(20.9, 47.1)	26.4	(26.3, 26.6)	1.2
1999-2003	47	44.3	(31.0, 62.5)	23.8	(23.7, 24.0)	1.9
2004-2008	49	35.5	(25.3, 50.0)	20.1	(20.0, 20.2)	1.8
2009-2013	70	42.7	(32.2, 56.4)	17.6	(17.5, 17.7)	2.4
2014-2018	70	38.1	(28.8, 50.1)	15.9	(15.8, 16.0)	2.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.2.4 Stomach

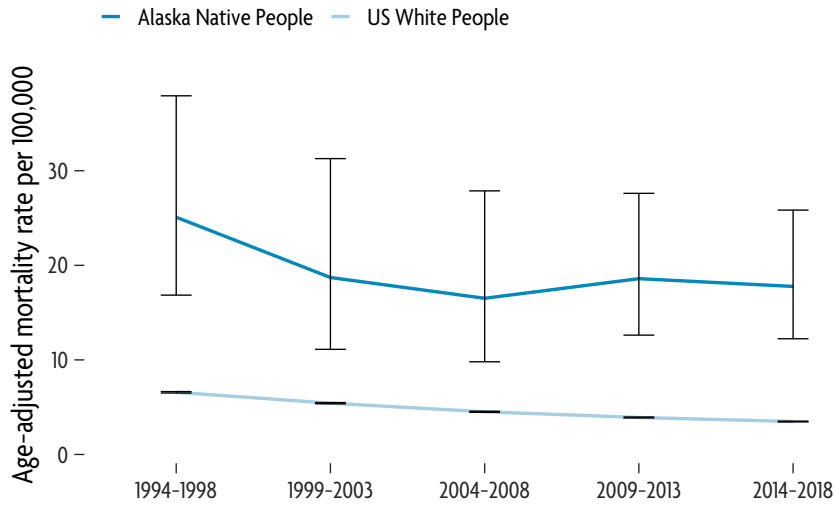


Figure 6.10: Comparison of trends in average annual age-adjusted cancer mortality rate, stomach, men, 1994–2018.

Table 6.10: Comparison of trends in average annual age-adjusted cancer mortality rate, stomach, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	35	25.1	(16.8, 37.9)	6.6	(6.5, 6.6)	3.8
1999-2003	23	18.7	(11.1, 31.3)	5.4	(5.4, 5.5)	3.5
2004-2008	26	16.5	(9.8, 27.9)	4.5	(4.5, 4.6)	3.7
2009-2013	38	18.6	(12.6, 27.6)	3.9	(3.9, 4.0)	4.8
2014-2018	39	17.8	(12.2, 25.8)	3.5	(3.4, 3.5)	5.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.2.5 Prostate (Men)

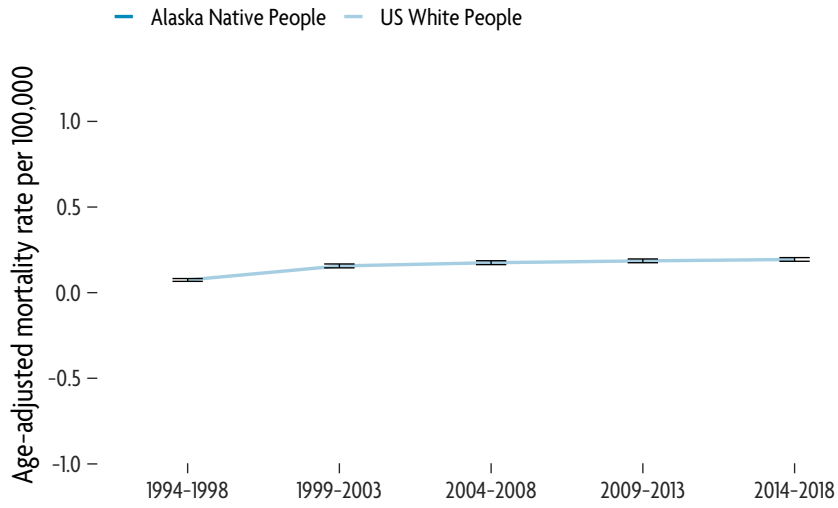


Figure 6.11: Comparison of trends in average annual age-adjusted cancer mortality rate, prostate (men), men, 1994–2018.

Table 6.11: Comparison of trends in average annual age-adjusted cancer mortality rate, prostate (men), men, 1994–2018.

	Alaska Native People			US White People		
	Count	Rate	95% CI	Rate	95% CI	RR
1994-1998	NA	NA	(-, -)	0.1	(0.1, 0.1)	-
1999-2003	NA	NA	(-, -)	0.2	(0.1, 0.2)	-
2004-2008	NA	NA	(-, -)	0.2	(0.2, 0.2)	-
2009-2013	NA	NA	(-, -)	0.2	(0.2, 0.2)	-
2014-2018	NA	NA	(-, -)	0.2	(0.2, 0.2)	-

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.2.6 Pancreas

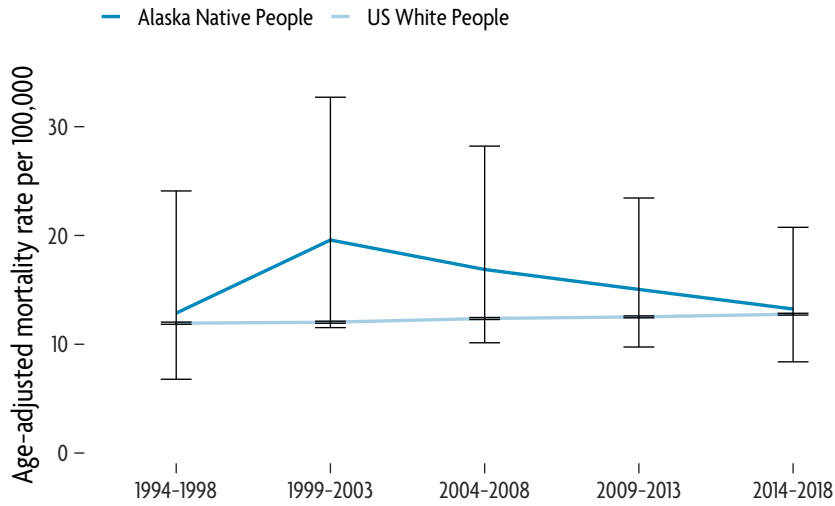


Figure 6.12: Comparison of trends in average annual age-adjusted cancer mortality rate, pancreas, men, 1994–2018.

Table 6.12: Comparison of trends in average annual age-adjusted cancer mortality rate, pancreas, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	15	12.9	(6.8, 24.1)	11.9	(11.8, 12.0)	1.1
1999-2003	23	19.6	(11.5, 32.7)	12.0	(11.9, 12.1)	1.6
2004-2008	24	16.9	(10.1, 28.2)	12.4	(12.3, 12.5)	1.4
2009-2013	29	15.0	(9.7, 23.4)	12.5	(12.4, 12.6)	1.2
2014-2018	28	13.2	(8.4, 20.7)	12.8	(12.7, 12.8)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.3 Women Only

6.3.1 All Malignant Cancers

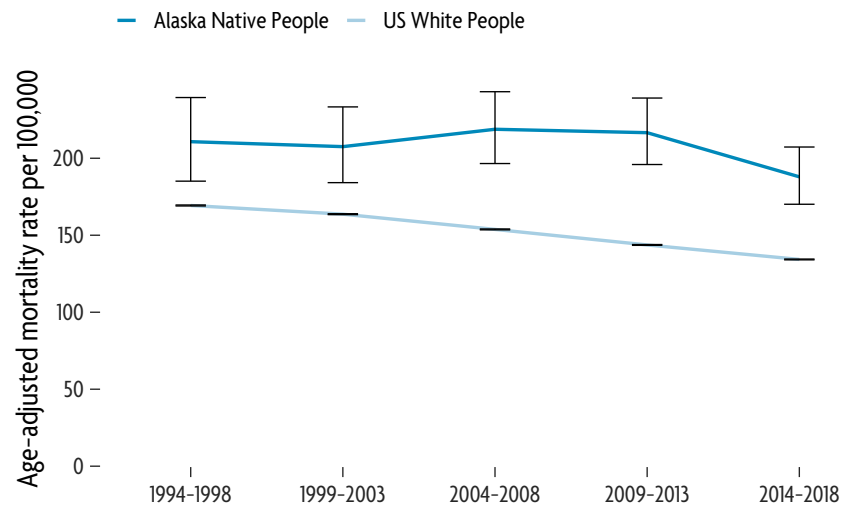


Figure 6.13: Comparison of trends in average annual age-adjusted cancer mortality rate, all malignant cancers, women, 1994–2018.

Table 6.13: Comparison of trends in average annual age-adjusted cancer mortality rate, all malignant cancers, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	272	210.8	(185.1, 239.4)	169.3	(169.0, 169.6)	1.2
1999-2003	311	207.5	(184.2, 233.4)	163.7	(163.4, 164.0)	1.3
2004-2008	385	218.8	(196.6, 243.2)	153.8	(153.5, 154.1)	1.4
2009-2013	442	216.6	(195.9, 239.1)	143.7	(143.4, 144.0)	1.5
2014-2018	444	187.9	(170.1, 207.3)	134.3	(134.0, 134.5)	1.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.3.2 Lung And Bronchus

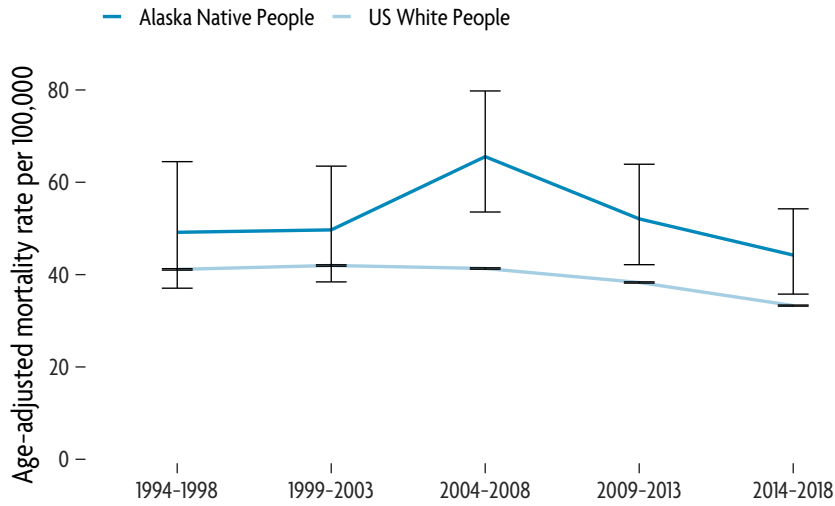


Figure 6.14: Comparison of trends in average annual age-adjusted cancer mortality rate, lung and bronchus, women, 1994–2018.

Table 6.14: Comparison of trends in average annual age-adjusted cancer mortality rate, lung and bronchus, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	60	49.2	(37.1, 64.5)	41.1	(41.0, 41.3)	1.2
1999-2003	70	49.7	(38.4, 63.5)	42.0	(41.8, 42.1)	1.2
2004-2008	111	65.6	(53.6, 79.8)	41.3	(41.2, 41.5)	1.6
2009-2013	103	52.1	(42.2, 63.9)	38.3	(38.2, 38.4)	1.4
2014-2018	103	44.2	(35.8, 54.2)	33.3	(33.2, 33.4)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.3.3 Colon And Rectum

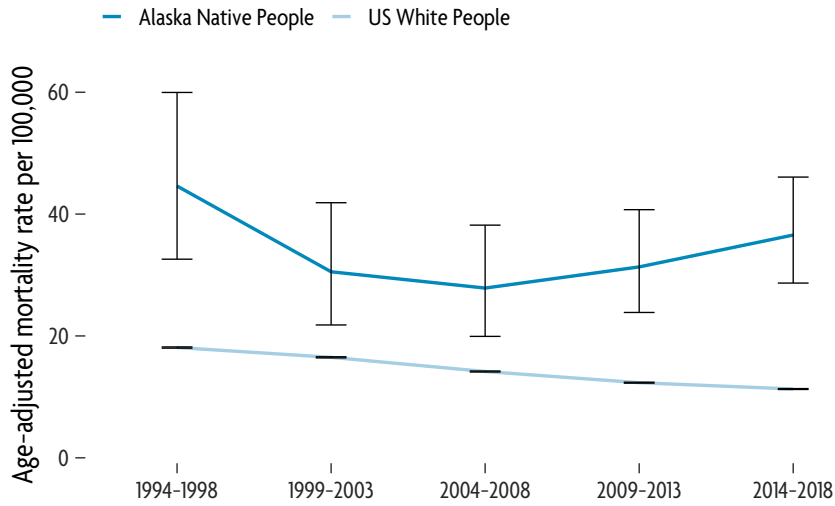


Figure 6.15: Comparison of trends in average annual age-adjusted cancer mortality rate, colon and rectum, women, 1994–2018.

Table 6.15: Comparison of trends in average annual age-adjusted cancer mortality rate, colon and rectum, men and women, 1994–2018.

	Alaska Native People			US White People		
	Count	Rate	95% CI	Rate	95% CI	RR
1994-1998	50	44.6	(32.6, 60.0)	18.1	(18.0, 18.2)	2.5
1999-2003	43	30.5	(21.8, 41.9)	16.5	(16.4, 16.6)	1.9
2004-2008	44	27.9	(19.9, 38.2)	14.2	(14.1, 14.2)	2.0
2009-2013	65	31.3	(23.9, 40.7)	12.3	(12.3, 12.4)	2.5
2014-2018	79	36.6	(28.7, 46.1)	11.3	(11.2, 11.4)	3.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.3.4 Breast (Women)

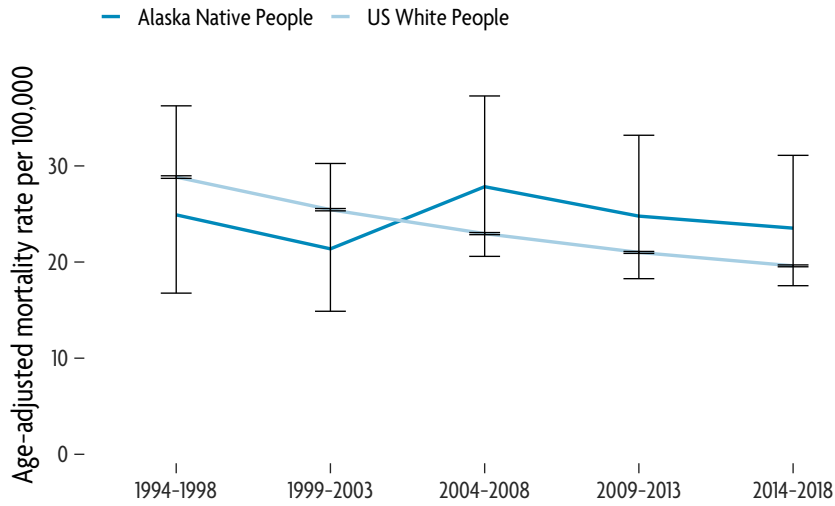


Figure 6.16: Comparison of trends in average annual age-adjusted cancer mortality rate, breast (women), women, 1994–2018.

Table 6.16: Comparison of trends in average annual age-adjusted cancer mortality rate, breast (women), women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	34	24.9	(16.8, 36.3)	28.8	(28.7, 29.0)	0.9
1999-2003	38	21.4	(14.9, 30.3)	25.4	(25.3, 25.6)	0.8
2004-2008	55	27.8	(20.6, 37.3)	23.0	(22.8, 23.1)	1.2
2009-2013	53	24.8	(18.3, 33.2)	21.0	(20.9, 21.1)	1.2
2014-2018	56	23.5	(17.5, 31.1)	19.6	(19.5, 19.7)	1.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.3.5 Pancreas

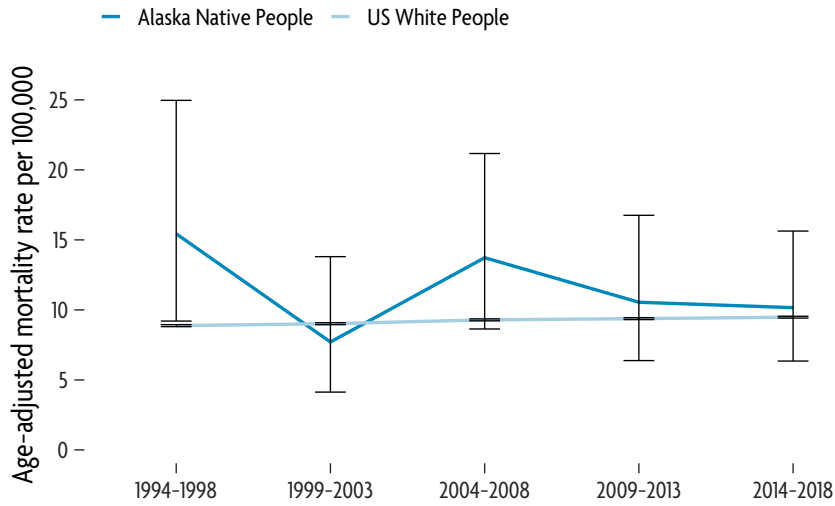


Figure 6.17: Comparison of trends in average annual age-adjusted cancer mortality rate, pancreas, women, 1994–2018.

Table 6.17: Comparison of trends in average annual age-adjusted cancer mortality rate, pancreas, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	20	15.4	(9.2, 25.0)	8.9	(8.8, 8.9)	1.7
1999-2003	14	7.7	(4.1, 13.8)	9.0	(8.9, 9.1)	0.9
2004-2008	24	13.7	(8.6, 21.2)	9.3	(9.2, 9.4)	1.5
2009-2013	22	10.5	(6.4, 16.8)	9.4	(9.3, 9.4)	1.1
2014-2018	24	10.2	(6.3, 15.6)	9.5	(9.4, 9.5)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

6.3.6 Stomach

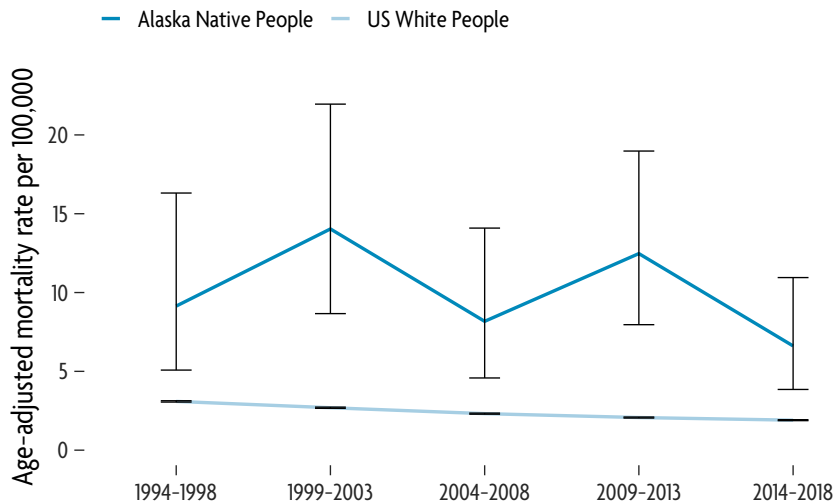


Figure 6.18: Comparison of trends in average annual age-adjusted cancer mortality rate, stomach, women, 1994–2018.

Table 6.18: Comparison of trends in average annual age-adjusted cancer mortality rate, stomach, men and women, 1994–2018.

	Alaska Native People			US White People		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	16	9.1	(5.1, 16.3)	3.1	(3.1, 3.1)	3.0
1999-2003	23	14.0	(8.7, 22.0)	2.7	(2.7, 2.7)	5.2
2004-2008	16	8.2	(4.6, 14.1)	2.3	(2.3, 2.4)	3.5
2009-2013	26	12.5	(8.0, 19.0)	2.1	(2.0, 2.1)	6.0
2014-2018	18	6.6	(3.9, 10.9)	1.9	(1.9, 1.9)	3.5

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

7

Regional Information

7.1 Trends

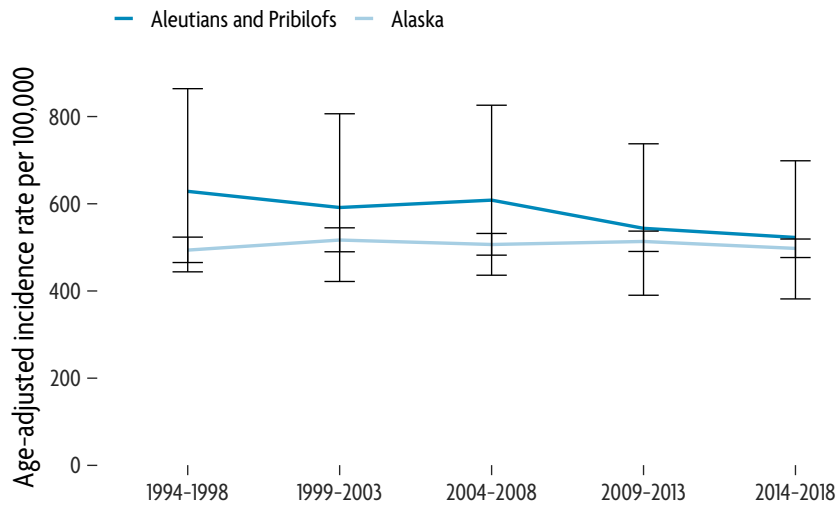


Figure 7.1: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Aleutians and Pribilofs Tribal Health Region, 1994–2018.

Table 7.1: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Aleutians and Pribilofs Tribal Health Region, 1994–2018.

	Aleutians and Pribilofs			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	48	630.2	(443.2, 869.3)	493.7	(465.2, 523.5)	1.3
1999-2003	47	590.3	(420.6, 805.8)	516.8	(489.9, 544.8)	1.1
2004-2008	46	589.6	(422.8, 800.3)	506.6	(482.1, 531.9)	1.2
2009-2013	46	522.9	(374.7, 710.3)	513.5	(490.6, 537.3)	1.0
2014-2018	51	493.4	(361.4, 657.7)	497.6	(476.7, 519.2)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

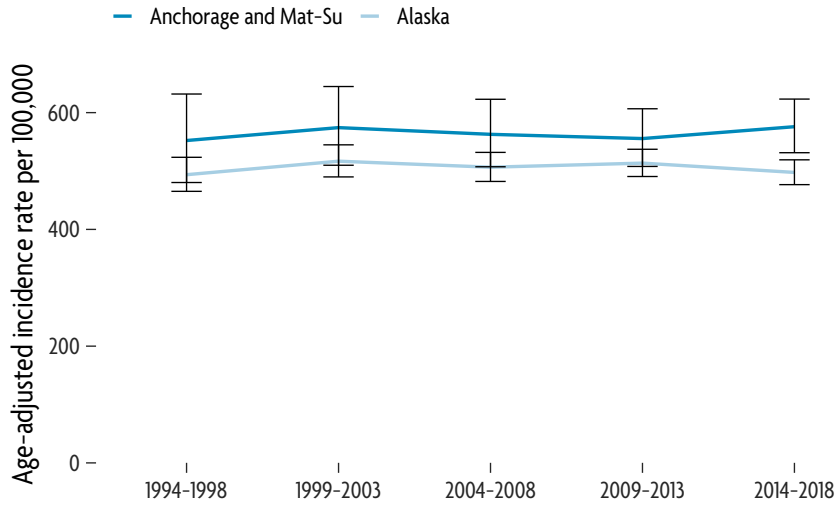


Figure 7.2: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Anchorage and Mat-Su Tribal Health Region, 1994–2018.

Table 7.2: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Anchorage and Mat-Su Tribal Health Region, 1994–2018.

	Anchorage and Mat-Su			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	299	550.8	(479.9, 629.3)	493.7	(465.2, 523.5)	1.1
1999-2003	399	570.3	(506.7, 639.6)	516.8	(489.9, 544.8)	1.1
2004-2008	501	554.0	(500.1, 612.2)	506.6	(482.1, 531.9)	1.1
2009-2013	632	556.6	(508.7, 607.8)	513.5	(490.6, 537.3)	1.1
2014-2018	767	573.7	(529.6, 620.6)	497.6	(476.7, 519.2)	1.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

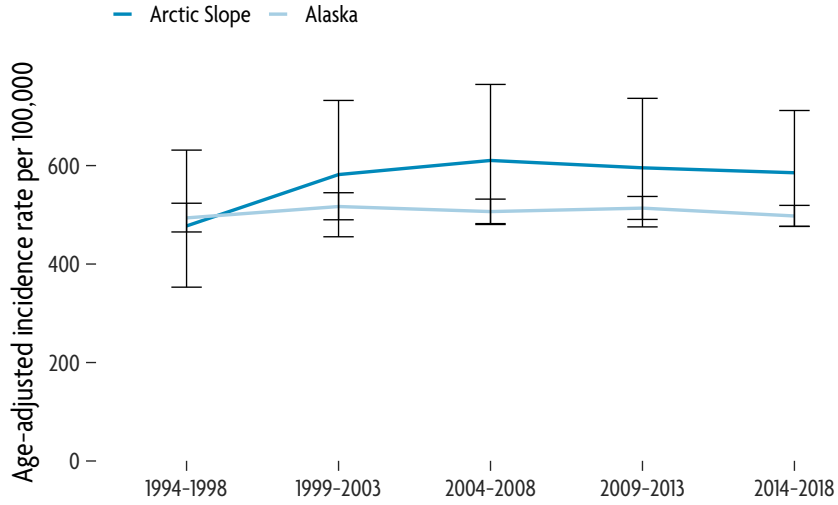


Figure 7.3: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Arctic Slope Tribal Health Region, 1994–2018.

Table 7.3: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Arctic Slope Tribal Health Region, 1994–2018.

	Arctic Slope			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	57	483.8	(356.6, 641.5)	493.7	(465.2, 523.5)	1.0
1999-2003	85	583.0	(457.2, 732.8)	516.8	(489.9, 544.8)	1.1
2004-2008	88	612.9	(482.6, 767.7)	506.6	(482.1, 531.9)	1.2
2009-2013	102	594.4	(476.1, 733.1)	513.5	(490.6, 537.3)	1.2
2014-2018	112	590.2	(480.8, 717.1)	497.6	(476.7, 519.2)	1.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods.

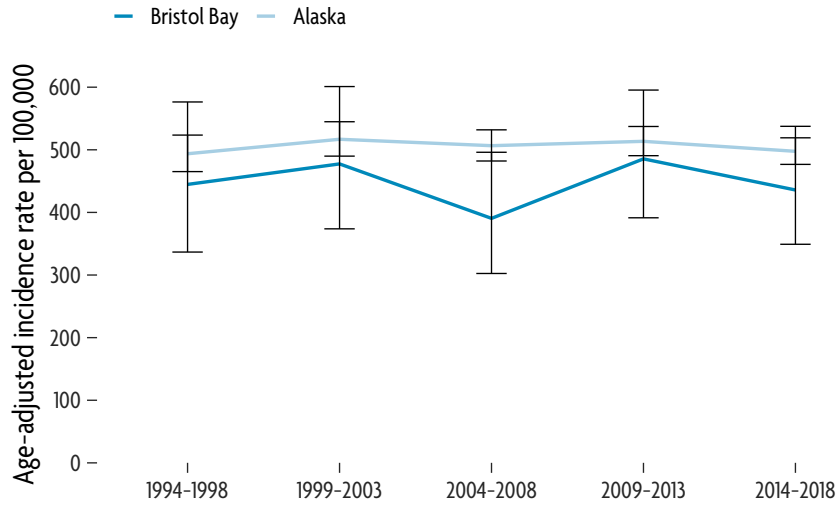


Figure 7.4: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Bristol Bay Tribal Health Region, 1994–2018.

Table 7.4: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Bristol Bay Tribal Health Region, 1994–2018.

	Bristol Bay			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	66	447.6	(339.4, 579.5)	493.7	(465.2, 523.5)	0.9
1999-2003	81	478.3	(374.9, 601.4)	516.8	(489.9, 544.8)	0.9
2004-2008	73	390.4	(302.6, 495.7)	506.6	(482.1, 531.9)	0.8
2009-2013	103	486.9	(392.7, 596.9)	513.5	(490.6, 537.3)	0.9
2014-2018	97	436.4	(349.6, 538.2)	497.6	(476.7, 519.2)	0.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

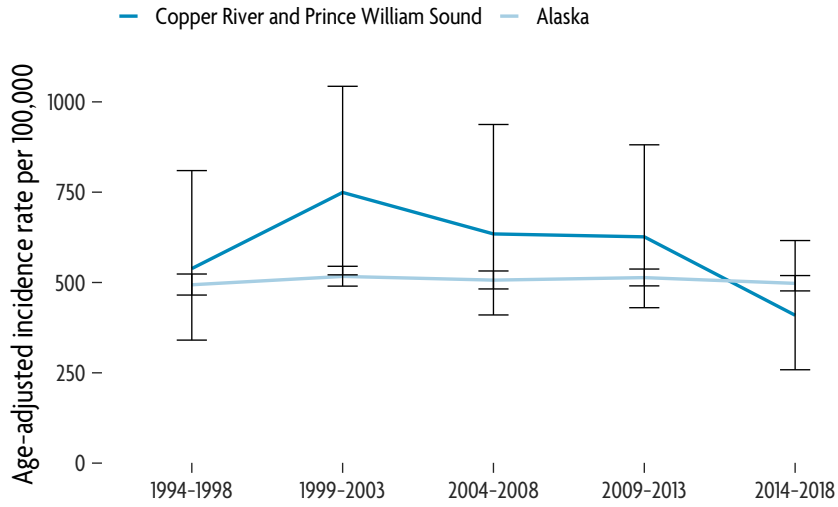


Figure 7.5: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Copper River and Prince William Sound Tribal Health Region, 1994–2018.

Table 7.5: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Copper River and Prince William Sound Tribal Health Region, 1994–2018.

	Copper River and Prince William Sound			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	25	547.8	(346.6, 823.4)	493.7	(465.2, 523.5)	1.1
1999-2003	38	742.3	(515.0, 1,035.6)	516.8	(489.9, 544.8)	1.4
2004-2008	35	596.9	(401.2, 854.6)	506.6	(482.1, 531.9)	1.2
2009-2013	37	620.8	(427.2, 872.0)	513.5	(490.6, 537.3)	1.2
2014-2018	28	401.8	(257.5, 597.8)	497.6	(476.7, 519.2)	0.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

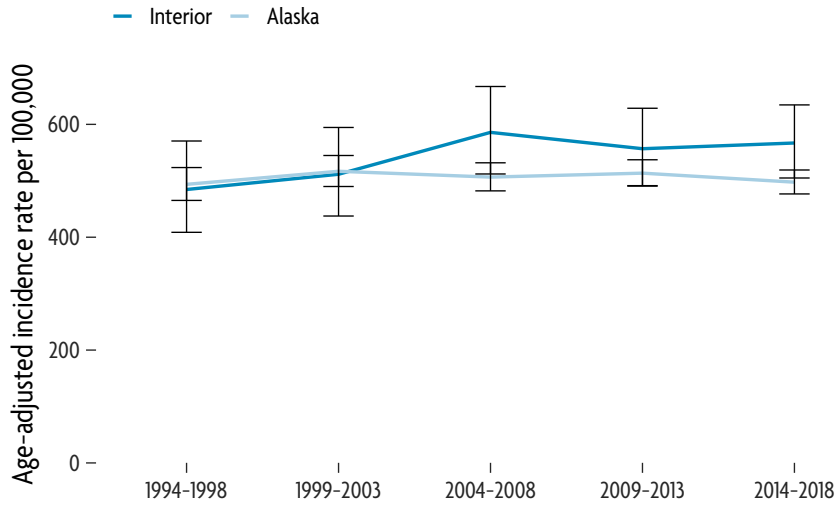


Figure 7.6: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Interior Tribal Health Region, 1994–2018.

Table 7.6: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Interior Tribal Health Region, 1994–2018.

	Interior			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	161	488.2	(411.8, 574.7)	493.7	(465.2, 523.5)	1.0
1999-2003	194	511.6	(437.6, 594.5)	516.8	(489.9, 544.8)	1.0
2004-2008	260	584.5	(511.1, 665.5)	506.6	(482.1, 531.9)	1.2
2009-2013	295	556.4	(491.2, 627.8)	513.5	(490.6, 537.3)	1.1
2014-2018	338	568.8	(506.9, 636.2)	497.6	(476.7, 519.2)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

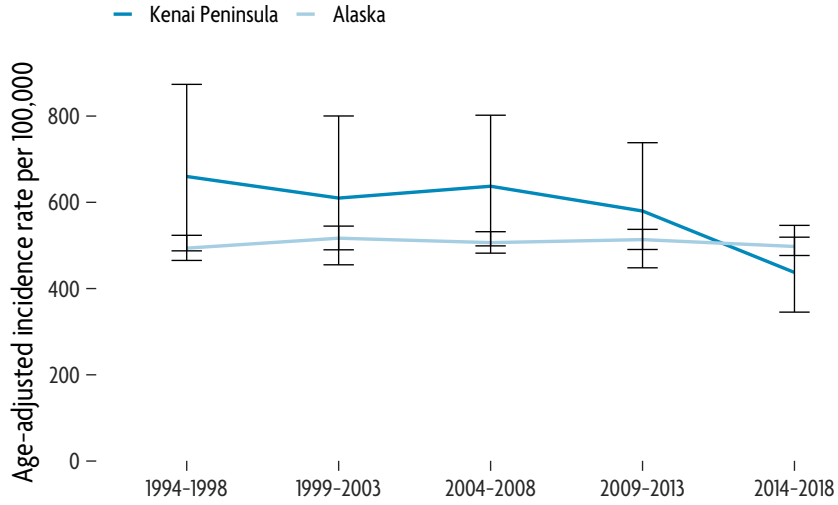


Figure 7.7: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Kenai Peninsula Tribal Health Region, 1994–2018.

Table 7.7: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Kenai Peninsula Tribal Health Region, 1994–2018.

	Kenai Peninsula			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	62	665.5	(494.8, 876.1)	493.7	(465.2, 523.5)	1.3
1999-2003	71	606.0	(455.4, 790.5)	516.8	(489.9, 544.8)	1.2
2004-2008	95	643.2	(503.9, 809.2)	506.6	(482.1, 531.9)	1.3
2009-2013	90	580.2	(448.1, 739.1)	513.5	(490.6, 537.3)	1.1
2014-2018	103	425.1	(336.9, 529.2)	497.6	(476.7, 519.2)	0.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods.

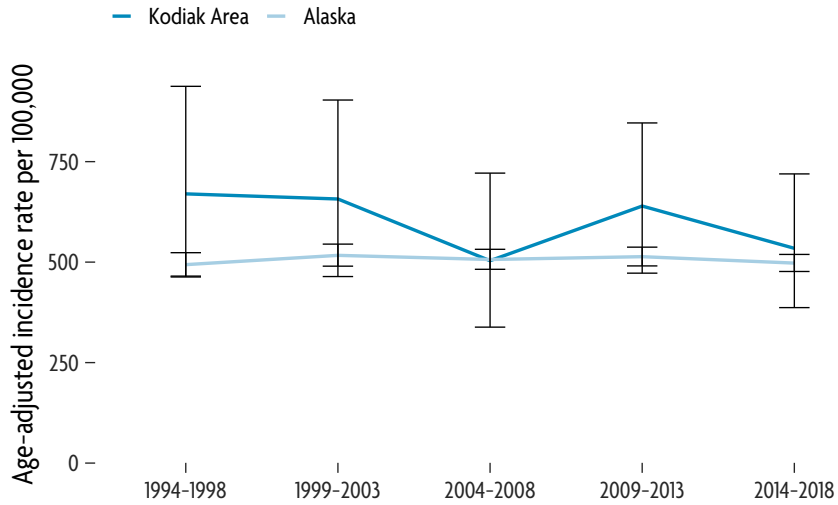


Figure 7.8: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Kodiak Area Tribal Health Region, 1994–2018.

Table 7.8: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Kodiak Area Tribal Health Region, 1994–2018.

	Kodiak Area			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	40	677.0	(467.0, 949.2)	493.7	(465.2, 523.5)	1.4
1999-2003	44	663.6	(468.6, 912.5)	516.8	(489.9, 544.8)	1.3
2004-2008	36	472.9	(323.1, 668.2)	506.6	(482.1, 531.9)	0.9
2009-2013	53	626.2	(464.1, 826.6)	513.5	(490.6, 537.3)	1.2
2014-2018	47	536.4	(389.1, 721.2)	497.6	(476.7, 519.2)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

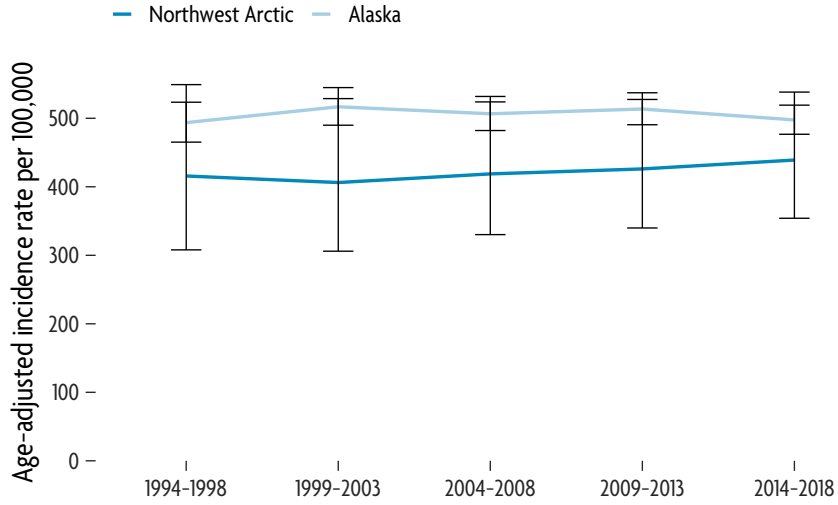


Figure 7.9: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Northwest Arctic Tribal Health Region, 1994–2018.

Table 7.9: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Northwest Arctic Tribal Health Region, 1994–2018.

	Northwest Arctic			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	57	413.8	(306.8, 546.0)	493.7	(465.2, 523.5)	0.8
1999-2003	64	407.2	(307.7, 528.5)	516.8	(489.9, 544.8)	0.8
2004-2008	82	419.6	(330.9, 524.9)	506.6	(482.1, 531.9)	0.8
2009-2013	90	424.3	(338.6, 525.1)	513.5	(490.6, 537.3)	0.8
2014-2018	98	434.8	(350.9, 532.8)	497.6	(476.7, 519.2)	0.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods.

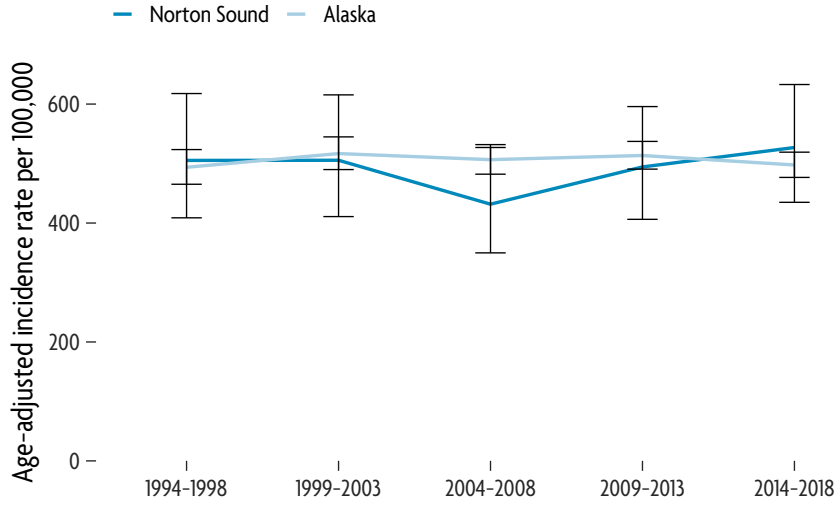


Figure 7.10: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Norton Sound Tribal Health Region, 1994–2018.

Table 7.10: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Norton Sound Tribal Health Region, 1994–2018.

	Norton Sound			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	103	505.9	(409.5, 618.2)	493.7	(465.2, 523.5)	1.0
1999-2003	105	502.8	(408.8, 611.9)	516.8	(489.9, 544.8)	1.0
2004-2008	104	432.3	(350.4, 527.6)	506.6	(482.1, 531.9)	0.9
2009-2013	126	493.8	(405.9, 595.1)	513.5	(490.6, 537.3)	1.0
2014-2018	141	531.9	(439.2, 638.4)	497.6	(476.7, 519.2)	1.1

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

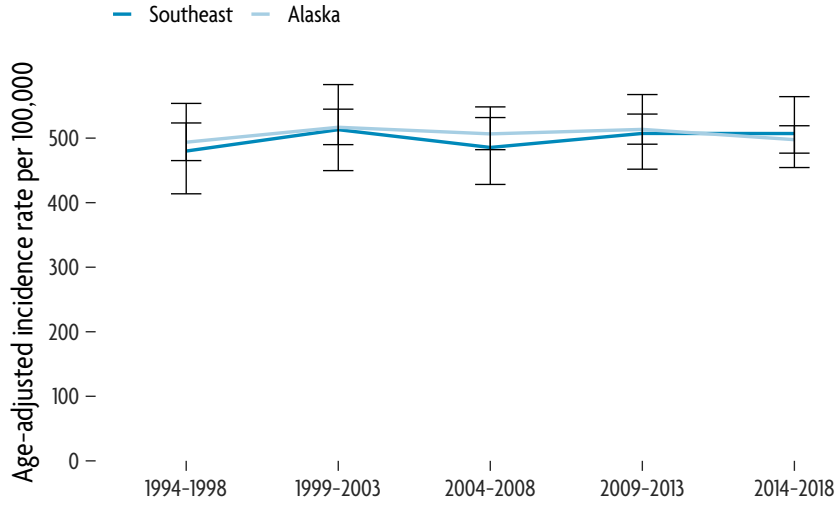


Figure 7.II: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Southeast Tribal Health Region, 1994–2018.

Table 7.II: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Southeast Tribal Health Region, 1994–2018.

	Southeast			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	213	481.5	(415.1, 555.5)	493.7	(465.2, 523.5)	1.0
1999-2003	258	512.4	(449.1, 582.1)	516.8	(489.9, 544.8)	1.0
2004-2008	280	484.6	(427.5, 547.1)	506.6	(482.1, 531.9)	1.0
2009-2013	331	509.5	(453.9, 570.0)	513.5	(490.6, 537.3)	1.0
2014-2018	361	502.8	(450.7, 559.3)	497.6	(476.7, 519.2)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

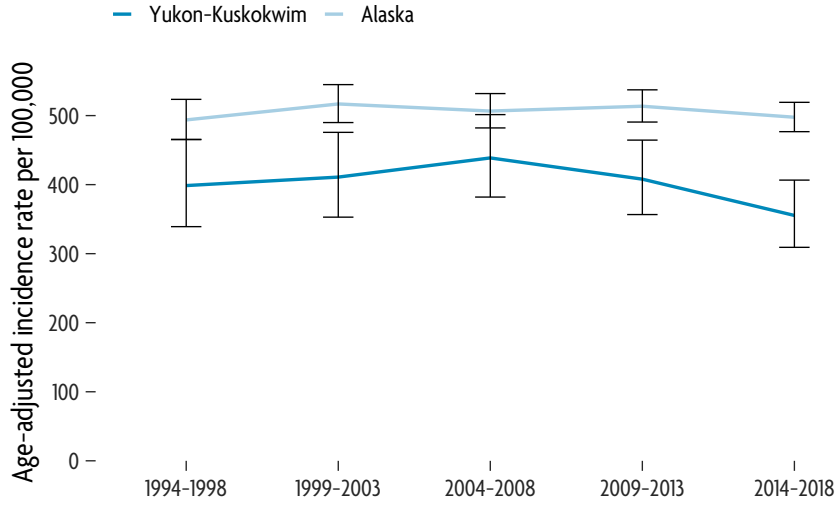


Figure 7.12: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Yukon-Kuskokwim Tribal Health Region, 1994–2018.

Table 7.12: Comparison of trends in average annual age-adjusted cancer incidence for all sites in the Yukon-Kuskokwim Tribal Health Region, 1994–2018.

	Yukon-Kuskokwim			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
1994-1998	181	397.8	(338.4, 464.6)	493.7	(465.2, 523.5)	0.8
1999-2003	205	407.5	(350.2, 471.5)	516.8	(489.9, 544.8)	0.8
2004-2008	250	434.3	(378.3, 496.2)	506.6	(482.1, 531.9)	0.9
2009-2013	264	407.0	(355.8, 463.6)	513.5	(490.6, 537.3)	0.8
2014-2018	258	352.9	(307.4, 403.3)	497.6	(476.7, 519.2)	0.7

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

7.2 Fifteen-year Incidence

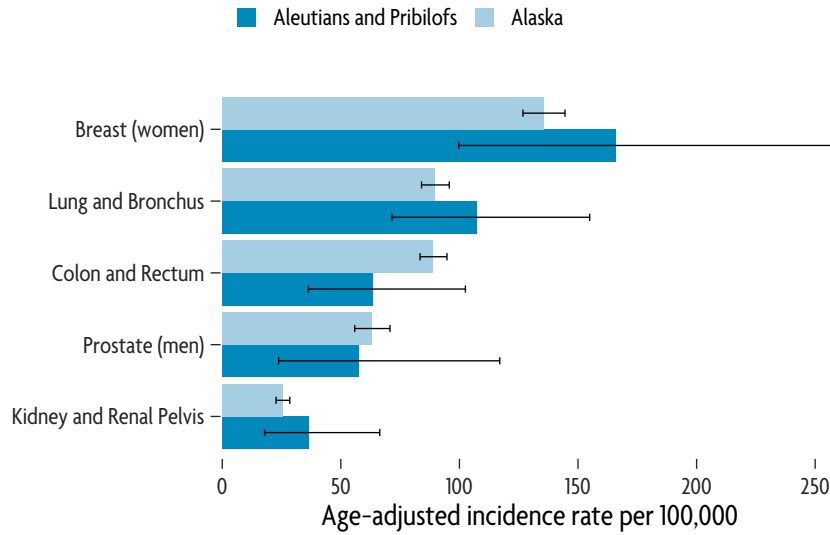


Figure 7.13: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Aleutians and Pribilofs Tribal Health Region, men and women, 2004–2018.

Table 7.13: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Aleutians and Pribilofs Tribal Health Region, men and women, 2004–2018.

	Aleutians and Pribilofs			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	143	526.3	(440.7, 623.7)	505.3	(492.2, 518.6)	1.0
Breast (women)	20	165.9	(99.7, 259.5)	135.4	(126.8, 144.5)	1.2
Lung and Bronchus	30	107.5	(71.6, 154.9)	89.7	(84.0, 95.7)	1.2
Colon and Rectum	17	63.3	(36.3, 102.5)	88.9	(83.4, 94.7)	0.7
Prostate (men)	8	57.6	(23.8, 117.0)	63.0	(55.9, 70.7)	0.9
Kidney and Renal Pelvis	11	36.5	(17.8, 66.4)	25.5	(22.7, 28.5)	1.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

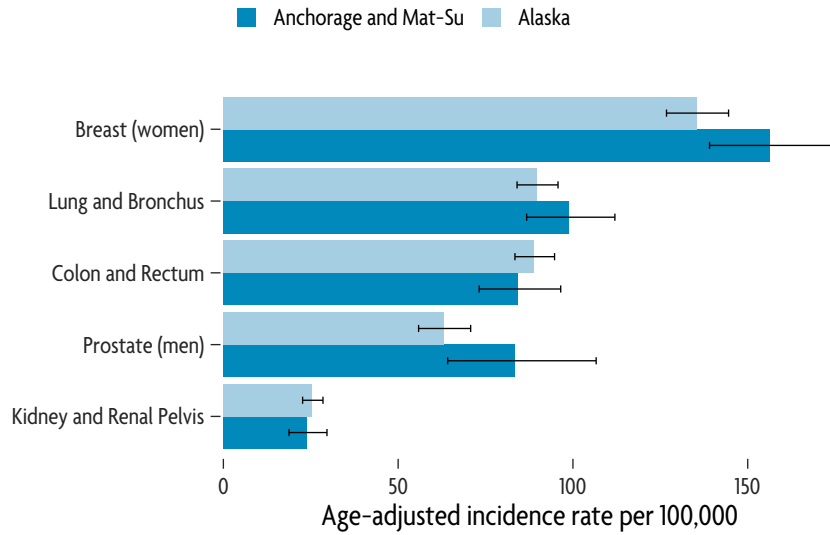


Figure 7.14: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Anchorage and Mat-Su Tribal Health Region, men and women, 2004–2018.

Table 7.14: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Anchorage and Mat-Su Tribal Health Region, men and women, 2004–2018.

	Anchorage and Mat-Su			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	1,900	561.4	(533.5, 590.5)	505.3	(492.2, 518.6)	1.1
Breast (women)	333	156.5	(139.1, 175.4)	135.4	(126.8, 144.5)	1.2
Lung and Bronchus	300	98.8	(86.8, 112.0)	89.7	(84.0, 95.7)	1.1
Colon and Rectum	263	84.2	(73.2, 96.5)	88.9	(83.4, 94.7)	0.9
Prostate (men)	92	83.4	(64.2, 106.6)	63.0	(55.9, 70.7)	1.3
Kidney and Renal Pelvis	89	23.8	(18.8, 29.6)	25.5	(22.7, 28.5)	0.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

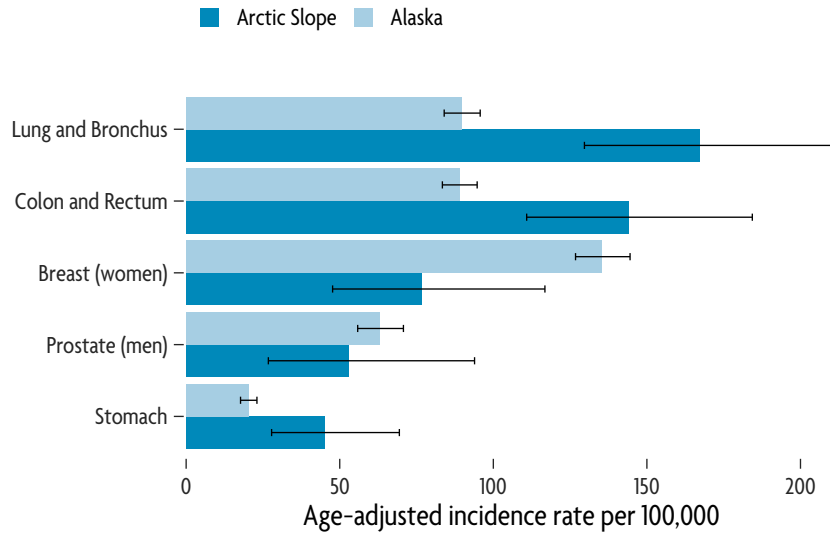


Figure 7.15: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Arctic Slope Tribal Health Region, men and women, 2004–2018.

Table 7.15: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Arctic Slope Tribal Health Region, men and women, 2004–2018.

	Arctic Slope			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	302	592.6	(523.3, 668.5)	505.3	(492.2, 518.6)	1.2
Lung and Bronchus	75	167.1	(129.7, 211.9)	89.7	(84.0, 95.7)	1.9
Colon and Rectum	71	144.2	(110.9, 184.3)	88.9	(83.4, 94.7)	1.6
Breast (women)	22	76.7	(47.7, 116.8)	135.4	(126.8, 144.5)	0.6
Prostate (men)	14	52.9	(26.8, 93.9)	63.0	(55.9, 70.7)	0.8
Stomach	23	45.2	(27.8, 69.4)	20.2	(17.7, 23.0)	2.2

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

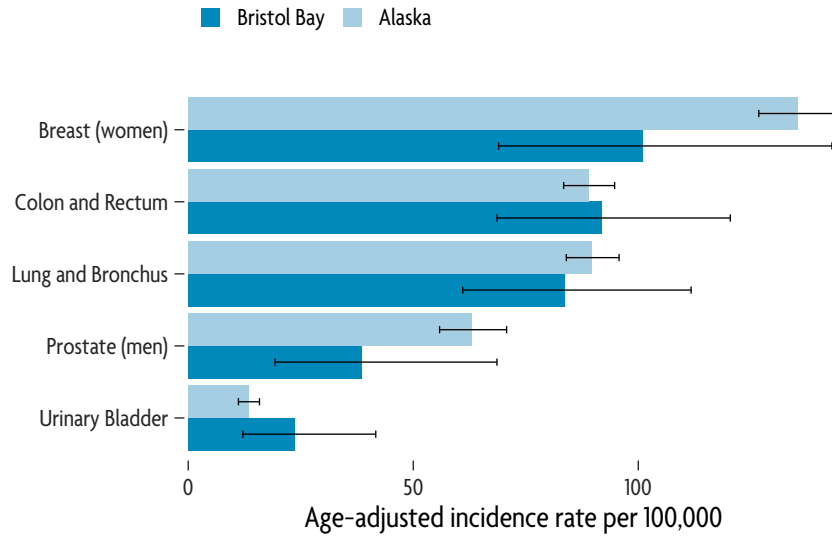


Figure 7.16: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Bristol Bay Tribal Health Region, men and women, 2004–2018.

Table 7.16: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Bristol Bay Tribal Health Region, men and women, 2004–2018.

	Bristol Bay			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	273	441.5	(388.2, 500.1)	505.3	(492.2, 518.6)	0.9
Breast (women)	34	101.1	(69.0, 143.0)	135.4	(126.8, 144.5)	0.7
Colon and Rectum	57	91.8	(68.6, 120.5)	88.9	(83.4, 94.7)	1.0
Lung and Bronchus	49	83.5	(61.0, 111.7)	89.7	(84.0, 95.7)	0.9
Prostate (men)	12	38.5	(19.3, 68.6)	63.0	(55.9, 70.7)	0.6
Urinary Bladder	13	23.7	(12.1, 41.7)	13.3	(11.2, 15.8)	1.8

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods.

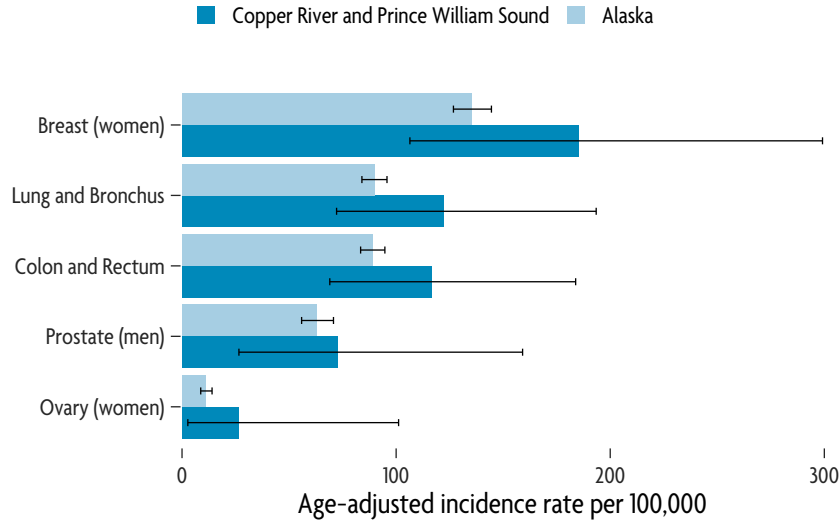


Figure 7.17: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Copper River and Prince William Sound Tribal Health Region, men and women, 2004–2018.

Table 7.17: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Copper River and Prince William Sound Tribal Health Region, men and women, 2004–2018.

	Copper River and Prince William Sound			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	100	544.1	(437.8, 668.4)	505.3	(492.2, 518.6)	1.1
Breast (women)	18	185.1	(106.4, 299.1)	135.4	(126.8, 144.5)	1.4
Lung and Bronchus	19	122.1	(72.2, 193.4)	89.7	(84.0, 95.7)	1.4
Colon and Rectum	20	116.4	(69.0, 183.8)	88.9	(83.4, 94.7)	1.3
Prostate (men)	7	72.8	(26.6, 159.1)	63.0	(55.9, 70.7)	1.2
Ovary (women)	-	-	-	11.1	(8.7, 14.0)	-

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

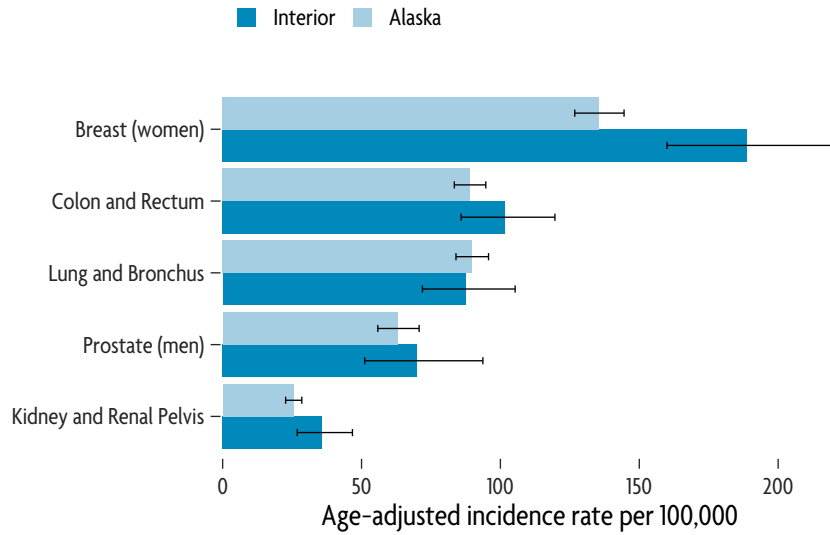


Figure 7.18: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Interior Tribal Health Region, men and women, 2004–2018.

Table 7.18: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Interior Tribal Health Region, men and women, 2004–2018.

	Count	Interior		Alaska		RR
		Rate	95% CI	Rate	95% CI	
All sites	893	565.7	(527.3, 606.2)	505.3	(492.2, 518.6)	1.1
Breast (women)	163	188.8	(160.0, 221.3)	135.4	(126.8, 144.5)	1.4
Colon and Rectum	161	101.7	(85.9, 119.6)	88.9	(83.4, 94.7)	1.1
Lung and Bronchus	123	87.4	(71.9, 105.3)	89.7	(84.0, 95.7)	1.0
Prostate (men)	51	70.1	(51.1, 93.7)	63.0	(55.9, 70.7)	1.1
Kidney and Renal Pelvis	59	35.8	(26.9, 46.7)	25.5	(22.7, 28.5)	1.4

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

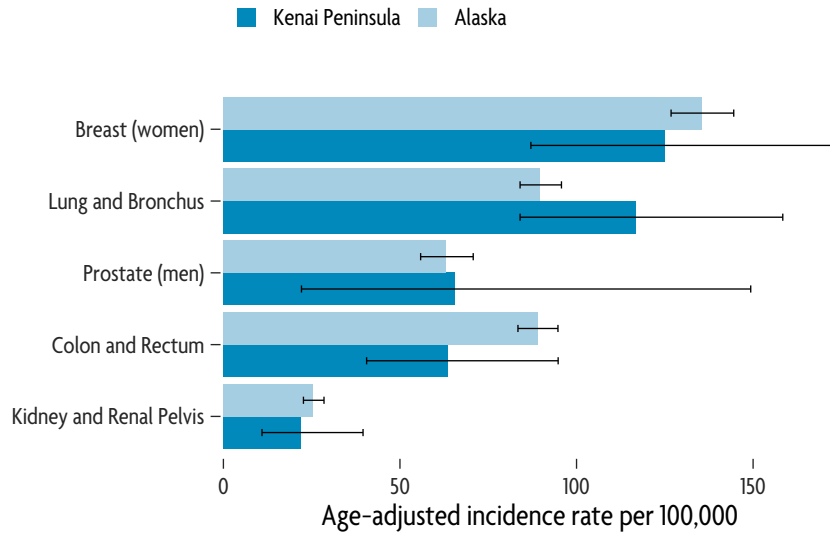


Figure 7.19: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Kenai Peninsula Tribal Health Region, men and women, 2004–2018.

Table 7.19: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Kenai Peninsula Tribal Health Region, men and women, 2004–2018.

	Kenai Peninsula			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	288	531.6	(463.2, 607.4)	505.3	(492.2, 518.6)	1.1
Breast (women)	40	124.9	(87.1, 173.6)	135.4	(126.8, 144.5)	0.9
Lung and Bronchus	53	116.9	(84.0, 158.4)	89.7	(84.0, 95.7)	1.3
Prostate (men)	11	65.4	(22.1, 149.3)	63.0	(55.9, 70.7)	1.0
Colon and Rectum	31	63.5	(40.5, 94.8)	88.9	(83.4, 94.7)	0.7
Kidney and Renal Pelvis	14	22.0	(10.9, 39.5)	25.5	(22.7, 28.5)	0.9

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

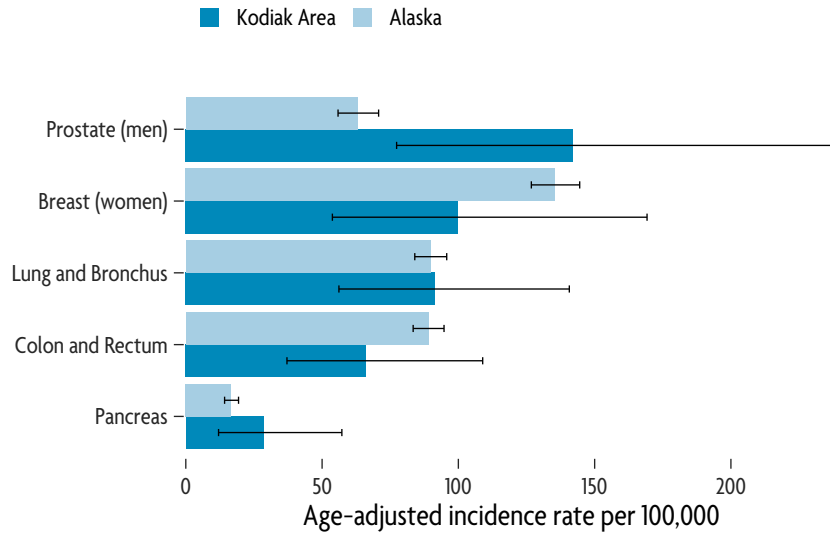


Figure 7.20: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Kodiak Area Tribal Health Region, men and women, 2004–2018.

Table 7.20: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Kodiak Area Tribal Health Region, men and women, 2004–2018.

	Kodiak Area			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	136	552.2	(460.1, 657.3)	505.3	(492.2, 518.6)	1.1
Prostate (men)	16	142.0	(77.3, 239.0)	63.0	(55.9, 70.7)	2.3
Breast (women)	14	99.8	(53.8, 169.2)	135.4	(126.8, 144.5)	0.7
Lung and Bronchus	22	91.5	(56.2, 140.7)	89.7	(84.0, 95.7)	1.0
Colon and Rectum	16	66.2	(37.1, 108.9)	88.9	(83.4, 94.7)	0.7
Pancreas	8	28.6	(12.0, 57.2)	16.6	(14.2, 19.3)	1.7

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

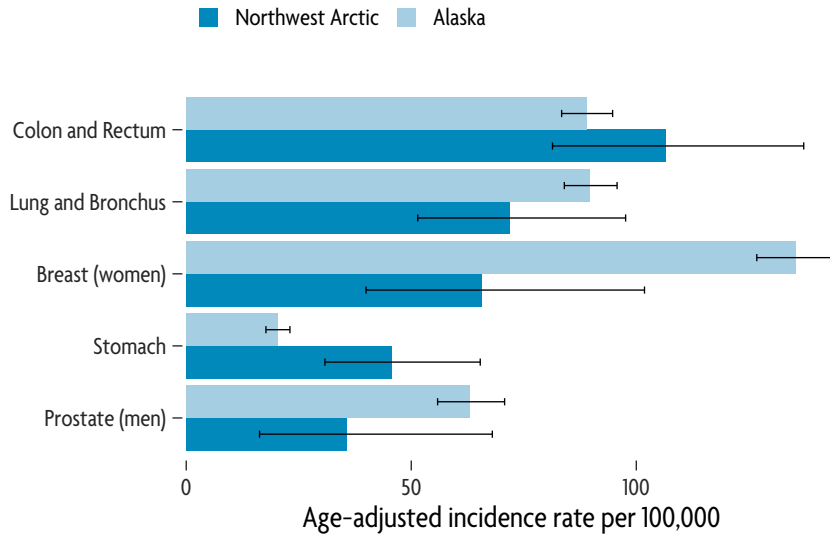


Figure 7.21: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Northwest Arctic Tribal Health Region, men and women, 2004–2018.

Table 7.21: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Northwest Arctic Tribal Health Region, men and women, 2004–2018.

	Northwest Arctic			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	270	427.1	(376.4, 482.7)	505.3	(492.2, 518.6)	0.8
Colon and Rectum	63	106.6	(81.4, 137.2)	88.9	(83.4, 94.7)	1.2
Lung and Bronchus	42	71.8	(51.4, 97.6)	89.7	(84.0, 95.7)	0.8
Breast (women)	20	65.7	(40.0, 101.8)	135.4	(126.8, 144.5)	0.5
Stomach	31	45.7	(30.8, 65.3)	20.2	(17.7, 23.0)	2.3
Prostate (men)	10	35.8	(16.3, 68.0)	63.0	(55.9, 70.7)	0.6

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods.

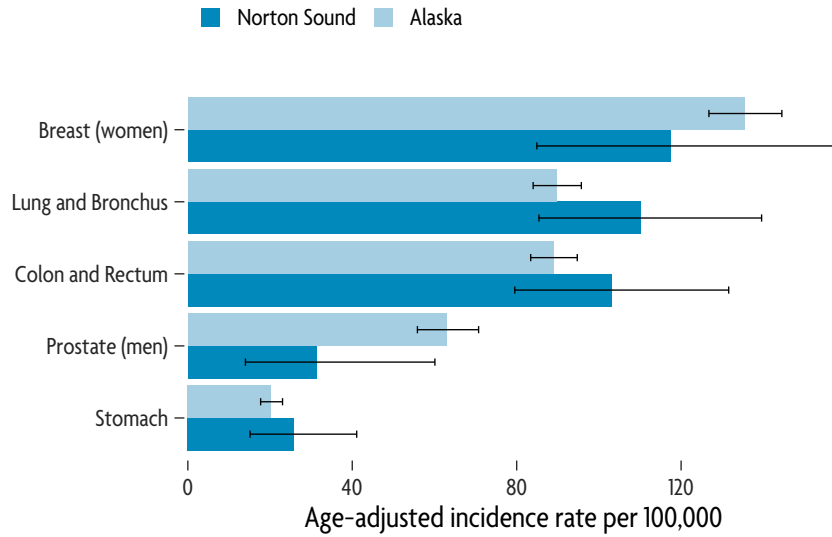


Figure 7.22: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Norton Sound Tribal Health Region, men and women, 2004–2018.

Table 7.22: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Norton Sound Tribal Health Region, men and women, 2004–2018.

	Norton Sound			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	371	485.9	(434.3, 541.8)	505.3	(492.2, 518.6)	1.0
Breast (women)	46	117.5	(84.9, 158.4)	135.4	(126.8, 144.5)	0.9
Lung and Bronchus	77	110.1	(85.4, 139.6)	89.7	(84.0, 95.7)	1.2
Colon and Rectum	75	103.2	(79.5, 131.6)	88.9	(83.4, 94.7)	1.2
Prostate (men)	10	31.2	(14.0, 60.1)	63.0	(55.9, 70.7)	0.5
Stomach	19	25.8	(15.1, 41.1)	20.2	(17.7, 23.0)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.
See section A.2 on page 171 for information regarding statistical methods.

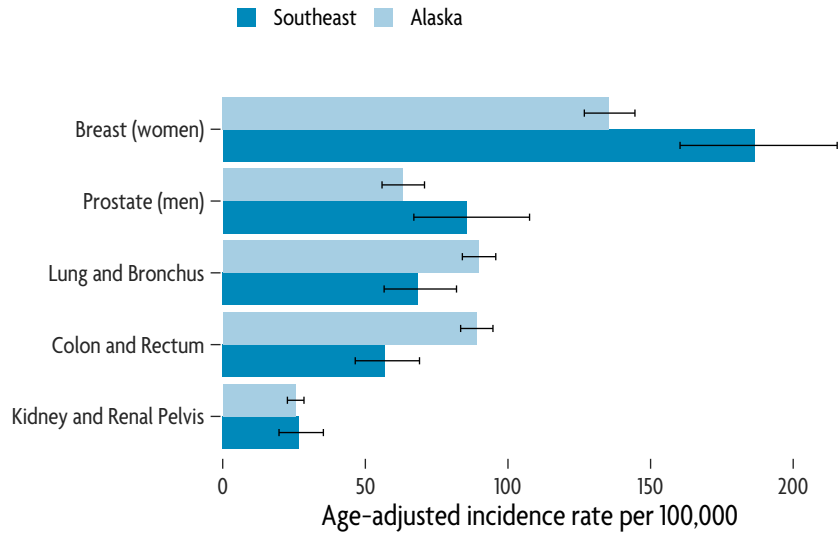


Figure 7.23: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Southeast Tribal Health Region, men and women, 2004–2018.

Table 7.23: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Southeast Tribal Health Region, men and women, 2004–2018.

	Southeast			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	972	500.6	(468.7, 534.2)	505.3	(492.2, 518.6)	1.0
Breast (women)	190	186.4	(160.3, 215.4)	135.4	(126.8, 144.5)	1.4
Prostate (men)	83	85.5	(67.0, 107.6)	63.0	(55.9, 70.7)	1.4
Lung and Bronchus	124	68.4	(56.6, 82.0)	89.7	(84.0, 95.7)	0.8
Colon and Rectum	110	56.9	(46.5, 69.0)	88.9	(83.4, 94.7)	0.6
Kidney and Renal Pelvis	52	26.7	(19.7, 35.3)	25.5	(22.7, 28.5)	1.0

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

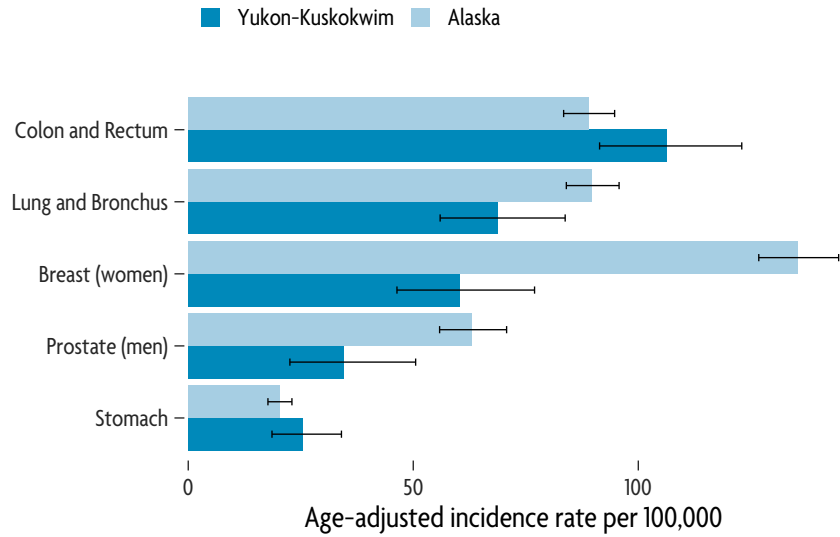


Figure 7.24: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Yukon-Kuskokwim Tribal Health Region, men and women, 2004–2018.

Table 7.24: Average annual age-adjusted cancer incidence by site for the top 5 sites in the Yukon-Kuskokwim Tribal Health Region, men and women, 2004–2018.

	Yukon-Kuskokwim			Alaska		RR
	Count	Rate	95% CI	Rate	95% CI	
All sites	772	395.3	(365.7, 426.6)	505.3	(492.2, 518.6)	0.8
Colon and Rectum	204	106.3	(91.4, 123.0)	88.9	(83.4, 94.7)	1.2
Lung and Bronchus	111	68.8	(56.0, 83.8)	89.7	(84.0, 95.7)	0.8
Breast (women)	67	60.2	(46.4, 77.0)	135.4	(126.8, 144.5)	0.4
Prostate (men)	32	34.5	(22.6, 50.5)	63.0	(55.9, 70.7)	0.5
Stomach	53	25.5	(18.6, 34.0)	20.2	(17.7, 23.0)	1.3

Rates are per 100,000 and age-adjusted to the 2000 US Std Population (19 age groups - Census P25-1130) standard.

See section A.2 on page 171 for information regarding statistical methods.

A

Methods

Approximately 148,042¹ Alaska Native and American Indian (ANAI) people reside in Alaska (individuals reporting ANAI identity alone, or in combination with another racial identity). ANAI people comprise 19.5% of the Alaskan population, and almost 90% of ANAI people living in Alaska identify as Alaska Native; therefore, throughout this report, we refer to all ANAI people resident in Alaska as “Alaska Native (AN) people.”

The Alaska Native Tumor Registry collects cancer information for all AN people who are resident in Alaska at the time of cancer diagnosis; who are eligible for Indian Health Service benefits; and who have been diagnosed with cancer from 1969 through the present day. According to ANTR standard case-finding practices, cases were ascertained through a variety of sources, including...

- hospital discharge diagnoses for Tribal and non-Tribal health facilities in Alaska
- tumor registry and pathology files of the ANMC and other in-state healthcare facilities
- linkages with other population-based cancer registries (e.g., the Alaska Cancer Registry and the Washington State Cancer Registry), and
- death certificates (<1% cases were registered solely on the basis of information from a death certificate).

Cancer incidence and mortality data for the US White (USW) population are included in this report to provide a standard point of reference or comparison. Such comparisons help us to describe similarities and differences in cancer patterns, which in turn can help identify areas of strength, and opportunities for improvement. Cancer data for USW were taken from the SEER 9 data set.³ Population estimates for both the Alaska Native and US White populations originate from the US Census (1970, 1980, 1990, 2000, and 2010) as well as from the National Center for Health Statistics’ bridged population series for AN people, 1990–2018, available from SEER.^{4,5}

Primary cancer site, pathology, behavior, and grade coding followed the International Classification of Diseases for Oncology, 3rd edition.⁶ Cancer sites of origin were grouped according to SEER primary site groups. These are defined in detail in Section A.2.3 (pg. 171) SEER site recode definitions.

¹ Population of ANAI people (race alone or in combination) in Alaska as of July 2019 based on Alaska Department of Labor and Workforce Development, Research and Analysis Section vintage 2019 population estimates. Sources: <https://live.laborstats.alaska.gov/pop/index.cfm> (accessed 2021-04-09), <https://live.laborstats.alaska.gov/pop/estimates/data/AgeBySexByRaceAIChispAK.xls> (accessed 2021-04-09)

Incidence rates, rate ratios (RRs), and confidence intervals were computed using R version 3.6.3 (2020-02-29)⁷ and cross-checked against output from SEER*Stat.⁸ Rates for AN people were age-adjusted to the US Census 2000 standard population using the direct method for comparison with USW rates (see Section A.1, pg. 170). Rate ratios are expressed as the AN rate divided by the USW rate. Cancer incidence rates for each Tribal health region within Alaska were compared with the average annual cancer incidence rates for all AN people statewide. In this report, cell sizes <5 are censored for patient privacy.

A.1 Equations

Equation (A.1) defines the crude incidence rate while equation (A.5) defines the age-adjusted incidence rate.

A.1.1 Crude

$$rate_{crude} = \frac{count}{population} \times 100,000 \quad (A.1)$$

$$SE_{crude} = \frac{\sqrt{count}}{population} \times 100,000 \quad (A.2)$$

$$CI_{lo} = \frac{\frac{1}{2} \times \text{invchi}\left(\frac{p}{2}, 2 \times count\right)}{population} \times 100,000 \quad (A.3)$$

$$CI_{hi} = \frac{\frac{1}{2} \times \text{invchi}\left(1 - \frac{p}{2}, 2 \times (count + 1)\right)}{population} \times 100,000 \quad (A.4)$$

A.1.2 Adjusted

$$rate_{adj\ x \rightarrow y} = \sum_{i=x}^y \left[\left(\frac{count_i}{population_i} \right) \times 100,000 \times \left(\frac{stdmil_i}{\sum_{j=x}^y stdmil_j} \right) \right] \quad (A.5)$$

$$SE_{adj} = \left[\sum_{i=x}^y \left(\frac{stdmil_i}{\sum_{j=x}^y stdmil_j} \right)^2 \times \left(\frac{count_i}{population_i^2} \right) \right]^{\frac{1}{2}} \times 100,000 \quad (A.6)$$

$$w_i = \frac{stdmil_i}{population_i \times \sum_{j=x}^y stdmil_j} \quad (A.7)$$

$$w_m = \max(w_i) \quad (A.8)$$

$$z = w_m^2 \quad (A.9)$$

$$v = \sum_{i=x}^y (w_i^2 \times n_i) \quad (A.10)$$

$$CI_{lo} = \frac{v}{2 \times rate} \times \text{invchi}\left(\frac{p}{2}, \frac{2 \times rate^2}{v}\right) \times 100,000 \quad (\text{A.11})$$

$$CI_{hi} = \frac{v + z}{2 \times (rate + w_m)} \times \text{invchi}\left(1 - \frac{p}{2}, \frac{2 \times (rate + w_m)^2}{v + z}\right) \times 100,000 \quad (\text{A.12})$$

A.2 Additional Considerations

A.2.1 US White Data

Incidence data for USW people come from the SEER 9 database,³ which includes data from the following cancer registries: Connecticut, Detroit, Georgia, San Francisco-Oakland, Hawaii, Iowa, New Mexico, Seattle-Puget Sound, and Utah. Data from these registries are only available for the years 1975–2017. Therefore, in five-year data, data for USW include only the years 2014–2017. For longer term trends, data for USW include the years 1975–2017.

A.2.2 Childhood Cancers

In this report the term “men” includes boys (younger than adults) and the term “women” includes girls (younger than adults). Cancer is predominantly an adult disease; however, we do acknowledge that children are also diagnosed with cancers and are not excluded from the data.

A.2.3 Mortality Data

All mortality data for both AN and USW people were sourced from SEER*Stat⁹ for the 25-year period from 1994 through 2018 and are included in this publication.

A.2.4 Stage at Diagnosis

Directly corresponding stage variables were not available for ANAI and USW data sets. While the available stage variables use the same general classifications for stage at diagnosis (e.g., local, regional, distant, unknown, etc.) the specific rules used to make those classifications vary slightly. For ANAI data several stage classifications were available; we chose to use the two classifications that were most complete and covered the desired date range: “Derived SS2000” and “Derived Summary Stage 2018”. For USW data we chose to use “SEER Combined Summary Stage (2004+)” because it is largely compatible with “Derived SS2000.” The following description of the “SEER Combined Summary Stage (2004+)” variable is provided in the *Dictionary of SEER*Stat Variables*.¹⁰

Combination of NAACCR Item #s 759 and 3020. For 2004–2015 cases it is copied from Derived SS2000 and for 2016+ it is the best available between Derived SS2000 and SEER Summary Stage 2000. All benign/borderline cases set to NA.

A.2.5 *Miscellaneous*

- Error bars on charts represent the 95% confidence interval.
- The “in situ” stage is not included in the data used for this report.

A.3 *Software Resources*

The software resources listed in this section are those that were used directly in production of this report. These listings are provided strictly for informational purposes and do not constitute an endorsement or approval of any of the listed resources.

A.3.1 *Applications*

- SEER*Stat⁸
- SEER*Prep¹¹
- R: A language and Environment for Statistical Computing⁷
- RStudio: Integrated Development Environment for R¹²
- JabRef—An open-source, cross-platform citation and reference management software¹³
- Microsoft Access 2016¹⁴
- Microsoft Excel 2016¹⁵
- Microsoft SQL Server 2012¹⁶
- Microsoft SQL Server Management Studio¹⁷

A.3.2 *R Packages*

- bookdown (0.20)^{18,19}
- brew (1.0-6)²⁰
- clipr (0.7.0)²¹
- DBI (1.1.0)²²
- dplyr (1.0.0)²³
- dsr (0.2.2)²⁴
- extrafont (0.17)²⁵
- ggplot2 (3.3.2)²⁶
- kableExtra (1.2.1)²⁷
- knitr (1.29)^{28–30}
- lubridate (1.7.9)³¹
- purrr (0.3.4)³²
- readxl (1.3.1)³³
- rio (0.5.16)³⁴
- rlang (0.4.7)³⁵
- stringr (1.4.0)³⁶
- tidyverse (1.3.0)³⁷
- tinytex (0.25)^{38,39}

- tufte (0.6)⁴⁰

A.3.3 *Citation Styles*

- International Journal of Epidemiology Citation Style⁴¹

B

Tribal Health Regions



The tribal health regions within this report are based upon census areas and boroughs. In general, these regions closely align with the Alaska Tribal Health System's service areas. However, the regions used in this report do not include the exceptions noted on the following page.

Table B.1: Tribal Health Region definitions.

Title I and V THOs in Region	Census Area/Borough included in Region	Exceptions to Census Area/Borough	
		Villages Added	Villages Removed
Aleutians and Pribilofs			
Aleutian Pribilof Islands Association (APIA), Eastern Aleutian Tribes Inc., St. George Traditional Council	Aleutians East Borough, Aleutians West Borough	NA	NA
Anchorage/Mat-Su			
Southcentral Foundation (SCF), Chickaloon Village, Native Village of Eklutna, Knik Tribal Council	Anchorage Municipality, Matanuska-Susitna Borough	NA	NA
Arctic Slope			
Arctic Slope Native Association (ASNA), Ukpeagvik Inupiat Corporation	North Slope Borough	NA	Point Hope (Northwest Arctic), Anaktuvak Pass (Interior)
Bristol Bay			
Bristol Bay Area Health Corporation (BBAHC)	Dillingham, Lake and Peninsula Borough, Bristol Bay Borough	Goodnews Bay, Platinum	NA
Copper River/Prince William Sound			
Chugachmiut Inc. (part)**, Chitina Traditional Council, Copper River Native Association (CRNA), Mt. Sanford Tribal Consortium, Valdez Native Tribe	Valdez/Cordova	Cantwell	NA
Interior			
Tanana Chiefs Conference (TCC), Council of Athabaskan Tribal Governments, Fairbanks Native Assoc., Tanana IRA Native Council	Denali Borough, Fairbanks North Star Borough, Southeast Fairbanks, Yukon-Koyukuk	Anaktuvak Pass	Cantwell (Copper River/Prince William Sound); Grayling, Anvik Shageluk, Holy Cross (Yukon- Kuskokwim)
Kenai Peninsula			
Chugachmiut (part)**, Kenaitze Indian Tribe IRA, Ninilchik Traditional Council, Seldovia Village Tribe	Kenai Peninsula Borough	NA	NA
Kodiak Area			
Kodiak Area Native Assoc. (KANA), Native Village of Karluk	Kodiak Island Borough	NA	NA
Northwest Arctic			
Maniilaq Association	Northwest Arctic Borough	Point Hope	NA
Norton Sound			
Norton Sound Health Corp. (NSHC), Native Village of Diomedes	Nome	NA	NA
Southeast			

(continued)

Table B.1: (continued)

Title I and V THOs in Region	Census Area/Borough included in Region	Exceptions to Census Area/Borough	
		Villages Added	Villages Removed
Southeast Alaska Regional Health Consortium (SEARHC), Hoonah Indian Association, Ketchikan Indian Community, Metlakatla Indian Community, Yakutat Tlingit Tribe	Yakutat Borough, Skagway-Hoonah-Angoon, Haines Borough, Juneau Borough, Sitka Borough, Wrangell-Petersburg, Prince of Wales/Outer Ketchikan, Ketchikan-Gateway Borough, Yakutat Borough	NA	NA
Yukon- Kuskokwim Akiachak Native Community, Native Village of Quinhagak, Yukon Kuskokwim Health Corp (YKHC)	Bethel, Kusilvak (formerly Wade Hampton)	Grayling, Anvik, Shageluk, Holy Cross	Goodnews Bay, Platinum (Bristol Bay)

** Chugachmiut is separated into 2 regions: Chenega Bay, Tatitlek, Valdez and Cordova are included in Copper River/Prince William Sound; Port Graham, Nanwalek and Seward are included in Kenai Peninsula.

C

SEER Site Recode Definitions

Table C.1: Site recode ICD-O-3/WHO 2008 definition.⁴²

Site	Site Codes	Histologic Type	Recode
Oral Cavity and Pharynx			
Lip	C000-C009		20010
Tongue	C019-C029		20020
Salivary Gland	C079-C089		20030
Floor of Mouth	C040-C049		20040
Gum and Other Mouth	C030-C039, C050-C059, C060-C069	excluding 9050-9055, 9140, 9590-9992	20050
Nasopharynx	C110-C119		20060
Tonsil	C090-C099		20070
Oropharynx	C100-C109		20080
Hypopharynx	C129, C130-C139		20090
Other Oral Cavity and Pharynx	C140, C142, C148		20100
Digestive System			
Esophagus	C150-C159		21010
Stomach	C160-C169		21020
Small Intestine	C170-C179		21030
<i>Colon and Rectum</i>			
<i>Colon excluding Rectum</i>			
Cecum	C180		21041
Appendix	C181		21042
Ascending Colon	C182		21043
Hepatic Flexure	C183		21044
Transverse Colon	C184		21045
Splenic Flexure	C185		21046
Descending Colon	C186	excluding 9050-9055, 9140, 9590-9992	21047
Sigmoid Colon	C187		21048
Large Intestine, NOS	C188-C189, C260		21049
<i>Rectum and Rectosigmoid Junction</i>			
Rectosigmoid Junction	C199		21051
Rectum	C209		21052
Anus, Anal Canal and Anorectum	C210-C212, C218		21060
<i>Liver and Intrahepatic Bile Duct</i>			
Liver	C220		21071

(continued)

Table C.1: (continued)

Site	Site Codes	Histologic Type	Recode
Intrahepatic Bile Duct	C221		21072
Gallbladder	C239		21080
Other Biliary	C240-C249		21090
Pancreas	C250-C259		21100
Retroperitoneum	C480		21110
Peritoneum, Omentum and Mesentery	C481-C482		21120
Other Digestive Organs	C268-C269, C488		21130
Respiratory System			
Nose, Nasal Cavity and Middle Ear	C300-C301, C310-C319		22010
Larynx	C320-C329	excluding 9050-9055, 9140, 9590-9992	22020
Lung and Bronchus	C340-C349		22030
Pleura	C384		22050
Trachea, Mediastinum and Other Respiratory Organs	C339, C381-C383, C388, C390, C398, C399		22060
Bones and Joints			
	C400-C419	excluding 9050-9055, 9140, 9590-9992	23000
Soft Tissue including Heart			
	C380, C470-C479, C490-C499	excluding 9050-9055, 9140, 9590-9992	24000
Skin excluding Basal and Squamous			
Melanoma of the Skin	C440-C449	8720-8790	25010
Other Non-Epithelial Skin	C440-C449	excluding 8000-8005, 8010-8046, 8050-8084, 8090-8110, 8720-8790, 9050-9055, 9140, 9590-9992	25020
Breast			
	C500-C509	excluding 9050-9055, 9140, 9590-9992	26000
Female Genital System			
Cervix Uteri	C530-C539		27010
<i>Corpus and Uterus, NOS</i>			
Corpus Uteri	C540-C549		27020
Uterus, NOS	C559	excluding 9050-9055, 9140, 9590-9992	27030
Ovary	C569		27040
Vagina	C529		27050
Vulva	C510-C519		27060
Other Female Genital Organs	C570-C579, C589		27070
Male Genital System			
Prostate	C619		28010
Testis	C620-C629	excluding 9050-9055, 9140, 9590-9992	28020
Penis	C600-C609		28030
Other Male Genital Organs	C630-C639		28040
Urinary System			
Urinary Bladder	C670-C679		29010
Kidney and Renal Pelvis	C649, C659	excluding 9050-9055, 9140, 9590-9992	29020
Ureter	C669		29030
Other Urinary Organs	C680-C689		29040
Eye and Orbit			
	C690-C699	excluding 9050-9055, 9140, 9590-9992	30000
Brain and Other Nervous System			

(continued)

Table C.1: (continued)

Site	Site Codes	Histologic Type	Recode
Brain	C710-C719	excluding 9050-9055, 9140, 9530-9539, 9590-9992	31010
Cranial Nerves Other Nervous System	C710-C719 C700-C709, C720-C729	9530-9539 excluding 9050-9055, 9140, 9590-9992	31040 31040
Endocrine System			
Thyroid	C739	excluding 9050-9055, 9140, 9590-9992	32010
Other Endocrine including Thymus	C379, C740-C749, C750-C759		32020
Lymphoma			
<i>Hodgkin Lymphoma</i>			
Hodgkin - Nodal	C024, C098-C099, C111, C142, C379, C422, C770-C779	9650-9667	33011
Hodgkin - Extranodal	All other sites		33012
<i>Non-Hodgkin Lymphoma</i>			
NHL - Nodal	C024, C098, C099, C111, C142, C379, C422, C770-C779	9590-9597, 9670-9671, 9673, 9675, 9678-9680, 9684, 9687-9691, 9695, 9698-9702, 9705, 9708-9709, 9712, 9714-9719, 9724-9729, 9735, 9737-9738, 9811-9818, 9823, 9827, 9837	33041
NHL - Extranodal	All sites except C024, C098-C099, C111, C142, C379, C422, C770-C779 All sites except C024, C098-C099, C111, C142, C379, C420-C422, C424, C770-C779	9590-9597, 9670-9671, 9673, 9675, 9678-9680, 9684, 9687, 9688, 9689-9691, 9695, 9698-9702, 9705, 9708-9709, 9712, 9714-9719, 9724-9729, 9735, 9737, 9738 9811-9818, 9823, 9827, 9837	33042
Myeloma			
		9731-9732, 9734	34000
Leukemia			
<i>Lymphocytic Leukemia</i>			
Acute Lymphocytic Leukemia	C420, C421, C424	9826, 9835-9836 9811-9818, 9837	35011
Chronic Lymphocytic Leukemia	C420, C421, C424	9823	35012
Other Lymphocytic Leukemia		9820, 9832-9834, 9940	35013
<i>Myeloid and Monocytic Leukemia</i>			
Acute Myeloid Leukemia		9840, 9861, 9865-9867, 9869, 9871-9874, 9895-9897, 9898, 9910-9911, 9920	35021
Acute Monocytic Leukemia		9891	35031
Chronic Myeloid Leukemia		9863, 9875-9876, 9945-9946	35022
Other Myeloid/Monocytic Leukemia		9860, 9930	35023
<i>Other Leukemia</i>			
Other Acute Leukemia		9801, 9805-9809, 9931	35041
Aleukemic, subleukemic and NOS	C420, C421, C424	9733, 9742, 9800, 9831, 9870, 9948, 9963-9964 9827	35043
Mesothelioma			
		9050-9055	36010

(continued)

Table C.1: (continued)

Site	Site Codes	Histologic Type	Recode
Kaposi Sarcoma		9140	36020
Miscellaneous		9740-9741, 9750-9769, 9950, 9960-9962, 9965-9967, 9970-9971, 9975, 9980, 9982-9987, 9989, 9991-9992	37000
	C760-C768, C809 C420-C424 C770-C779	excluding 9050-9055, 9140, 9590-9992	
Invalid	Site or histology code not within valid range or site code not found in this table.		99999

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