

Alaska's Physician Workforce in 2016

KEY FINDINGS

From analyses of the American Medical Association Physician Masterfile data from 2016:

- In 2016 there were 221 physicians per 100,000 population providing direct patient care in Alaska, including 88 primary care physicians per 100,000 population.
- The mean age of Alaska's practicing physicians was 51 years.
- Women comprised 39% of the state's physician workforce, but 50% of the primary care physicians, including 63% of general pediatricians.
- 23% of Alaska's family medicine physician workforce completed a residency in Alaska and 37% completed a residency in one of the WWAMI states: Washington, Wyoming, Alaska, Montana or Idaho.
- 11% of Alaska's physicians graduated from the University of Washington School of Medicine, a higher percentage than for any other medical school.
- Since 2014, Alaska's physician workforce grew in size, the percent of female physicians increased, and average age decreased for most specialties.

INTRODUCTION

The population of Alaska grew by 4% between 2010 and 2015.¹ At the same time, the state's population is aging. In 2010, the population 65 years and older represented about 8% of Alaska's population, while in 2015 that figure grew to about 10%.¹ These demographic factors will affect the state's health care delivery and payment systems. Key questions for healthcare policy and planning include whether there will be enough physicians in the right places and with the needed specialties to meet growing and changing demand. This Brief offers data on the size, distribution, and education history of Alaska's physician workforce, addressing the following questions:

- *How many physicians practice in Alaska? (overall and by specialty group)*
- *How are physicians distributed across the state, and by urban versus rural areas?*
- *How many physicians practice statewide and by sub-state region relative to the size of the population*
- *Where did Alaska's physicians graduate from medical school and complete residencies?*

To estimate the physician workforce providing direct patient care in Alaska, we analyzed data from the American Medical Association (AMA) Physician Masterfile (see Methods, Appendix A).

In 2016, the per capita physician supply providing direct patient care in Alaska was lower than the national supply.

NUMBER, DEMOGRAPHIC CHARACTERISTICS, AND DISTRIBUTION OF PHYSICIANS IN ALASKA

OVERALL SUPPLY AND DEMOGRAPHICS

In 2016, the per capita physician supply providing direct care in Alaska was lower than the national supply (Figure 1), although Alaska's per capita supply of primary care physicians was higher than the national rate. In 2016, there were 1,634 physicians (221 per 100,000 population) providing direct patient care in the state, and 88 primary care physicians per 100,000 population. Nationally, in 2016 there were 229 physicians per 100,000 providing direct patient care, and 75 primary care physicians per 100,000.

Table 1 shows the number of physicians providing direct patient care in Alaska in 2016, total and by specialty group, as well as the number

Figure 1: Alaska compared with national estimates of physicians per 100,000 population in 2016

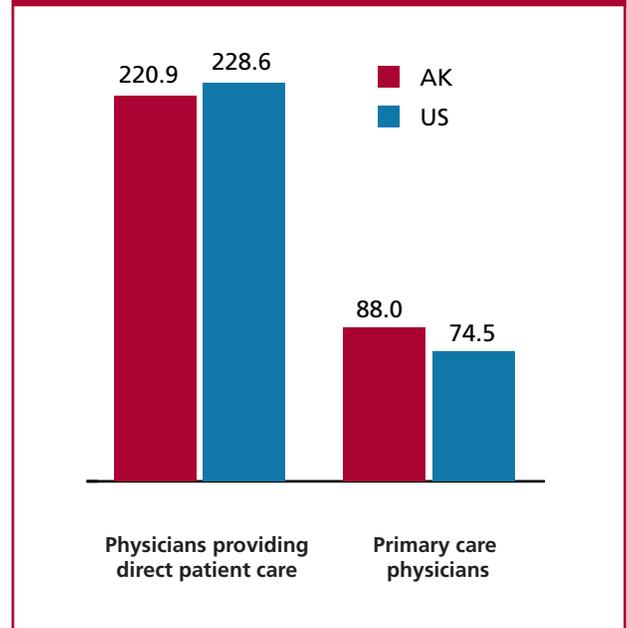


Table 1. Number, gender and age of Alaska physicians in 2016

Physicians providing direct patient care*	2016					% Changes between 2014-2016				
	#	#/100,000 population	% female	Mean age (Years)	% age 55 or older	#	#/100,000 population	% female	Mean age (Years)	% age 55 or older
Total	1,634	220.9	38.6%	50.9	39.5%	10.9%	11.4%	3.9%	-1.8%	-3.6%
Primary care	651	88.0	50.7%	49.6	35.8%	14.0%	14.6%	1.2%	-2.7%	-6.8%
Family medicine	432	58.4	49.3%	49.9	38.0%	15.2%	15.9%	0.0%	-1.9%	-1.9%
General internal medicine	112	15.1	44.6%	49.5	33.0%	12.0%	13.0%	6.3%	-5.4%	-23.2%
General pediatrics	107	14.5	62.6%	48.3	29.9%	11.5%	12.1%	1.8%	-2.6%	-7.4%
Surgeons	189	25.5	42.9%	52.1	43.9%	9.9%	10.6%	1.1%	-1.3%	-2.0%
General surgery	49	6.6	34.7%	50.3	30.6%	6.5%	6.8%	22.6%	-2.5%	-25.9%
Obstetrics-gynecology	95	12.8	58.9%	51.4	44.2%	11.8%	12.6%	-5.5%	-0.9%	7.3%
Other surgery	45	6.1	17.8%	55.7	57.8%	9.8%	10.6%	4.0%	-0.7%	3.0%
Psychiatrists	92	12.4	42.4%	54.6	58.7%	8.2%	9.1%	6.0%	0.8%	6.1%
Other Specialists	702	94.9	25.6%	51.3	39.3%	8.7%	9.2%	7.7%	-1.2%	-3.2%

*Not federally employed, age <75 years, in Alaska
Using 2016 statewide population numbers, from <http://live.laborstats.alaska.gov/pop/index.cfm>

per capita, percent female, mean age, and percent change between 2014 and 2016. Detailed findings from 2014 analyses are available in the report “Alaska State’s Physician Workforce in 2014”.² The mean age overall and by specialty for most Alaska physicians was similar, between 48 and 51 years, with the exception of psychiatrists and “other” surgeons who had average ages of 55 and 56 years, respectively. About 40% of Alaska’s physicians were age 55 or older. Overall, 39% of Alaska’s overall physician workforce were women, who comprise half of the primary care specialties and 63% of general pediatricians. In general, between 2014 and 2016, the size of the state’s physician workforce grew. The percent of female physicians increased overall, but slightly decreased among obstetrician-gynecologists. The average ages of physicians overall decreased, with the exception of those in psychiatry.

DISTRIBUTION

Using the rural-urban commuting area (RUCA) classification system,

Figure 2: Alaska physicians* in urban and rural areas (total and primary care) per 100,000 population in 2016

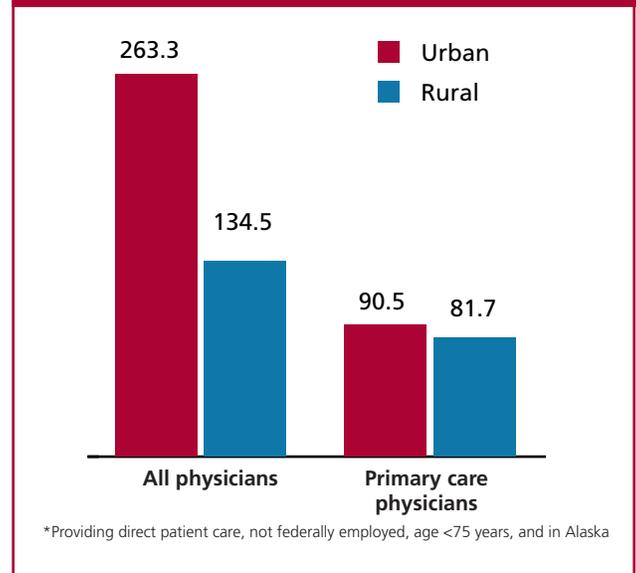


Table 2. Alaska physicians in urban, rural and sub-rural areas in 2016**

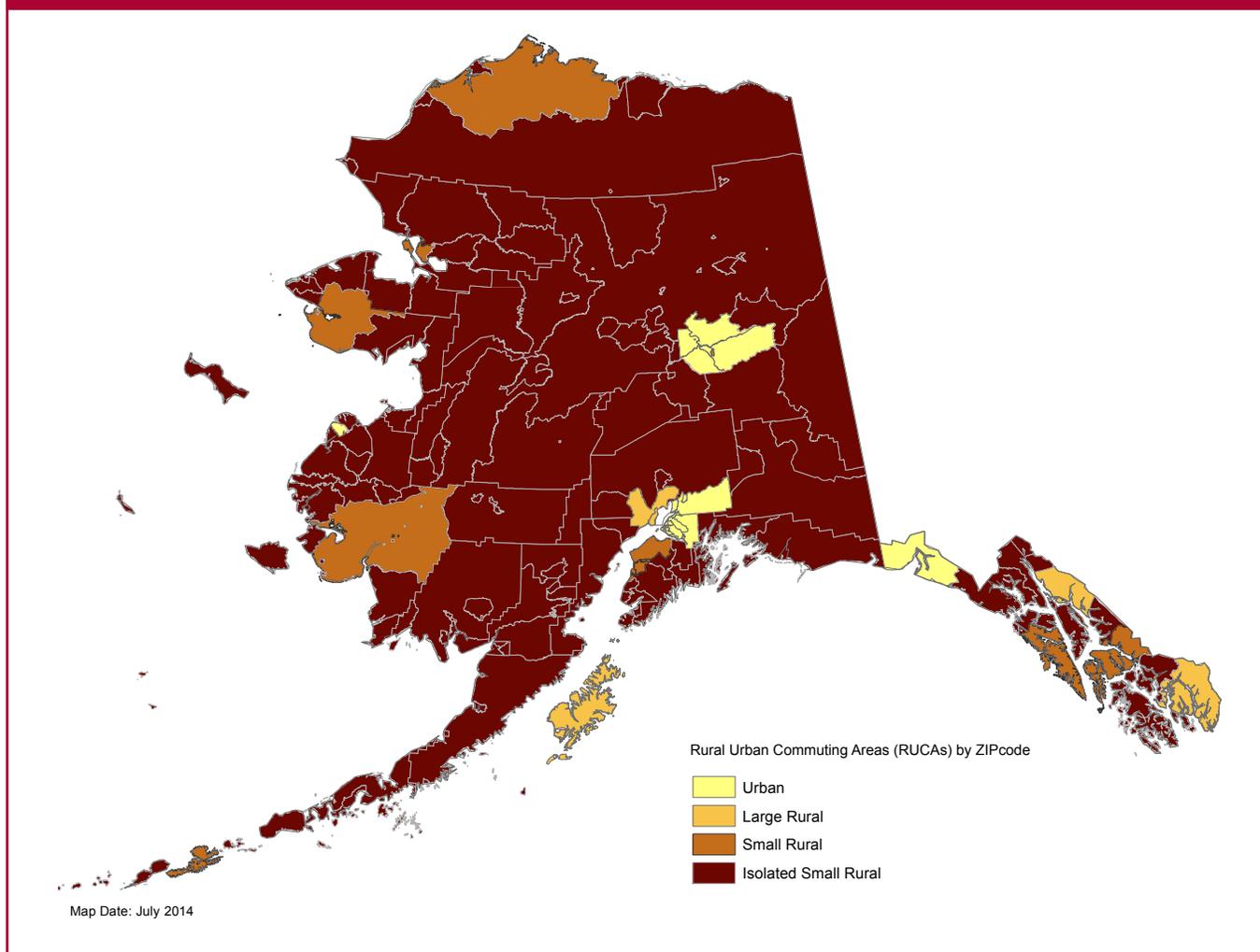
Physicians providing direct patient care*	Urban		Overall Rural		Large Rural		Small Rural		Isolated Small Rural	
	#	#/100,000 population	#	#/100,000 population	#	#/100,000 population	#	#/100,000 population	#	#/100,000 population
Total	1,295	263.3	339	134.5	129	198.2	143	168.1	67	65.8
Primary care	445	90.5	206	81.7	66	101.4	88	103.5	52	51.0
Family medicine	271	55.1	161	63.9	49	75.3	64	75.2	48	47.1
General internal medicine	90	18.3	22	8.7	9	13.8	12	14.1	1	1.0
General pediatrics	84	17.1	23	9.1	8	12.3	12	14.1	3	2.9
Surgeons	157	31.9	32	12.7	13	20.0	15	17.6	4	3.9
General surgery	37	7.5	12	4.8	4	6.1	5	5.9	3	2.9
Obstetrics-gynecology	77	15.7	18	7.1	7	10.8	10	11.8	1	1.0
Other surgery	43	8.7	2	0.8	2	3.1	0	0.0	0	0.0
Psychiatrists	76	15.5	16	6.3	13	20.0	3	3.5	0	0.0
Other Specialists	617	125.5	85	33.7	37	56.8	37	43.5	11	10.8

* Not federally employed, age <75 years, in Alaska

** Rural-urban determined using ZIP code RUCA taxonomy. Overall rural is a combination of the three rural subcategories.

fewer physicians were identified as providing direct patient care per 100,000 population in rural compared with urban areas of Alaska, although there was more rural-urban parity (measured by the number of physicians per population) among those identified as practicing primary care physicians (Figure 2). Table 2 details the rural-urban distribution of the state's physicians, overall and by specialty, and in addition shows their distribution among three sub-rural area types: large rural, small rural and isolated small rural. Figure 3 shows where rural and urban areas (as defined using RUCAs) are located in Alaska. The majority of Alaska's land mass is designated as "isolated small rural" and is very sparsely populated. As expected, specialists are found to be congregated in urban areas where there are larger hospitals and more specialty care services are provided.

Figure 3. Location of urban and rural areas in Alaska



Alaska is not organized into counties but instead has 19 boroughs and 10 census areas. For this report we refer to all of these areas as boroughs. As Figure 4 shows, in 2016, 7 of the 29 Alaska boroughs had no practicing physicians and another 9 boroughs had per capita overall physician supply rates of fewer than 100 physicians per 100,000 population. Twenty one boroughs had fewer than 100 or no practicing primary care physicians per 100,000.

Figure 4: Alaska physicians per 100,000 population in 2016, by borough

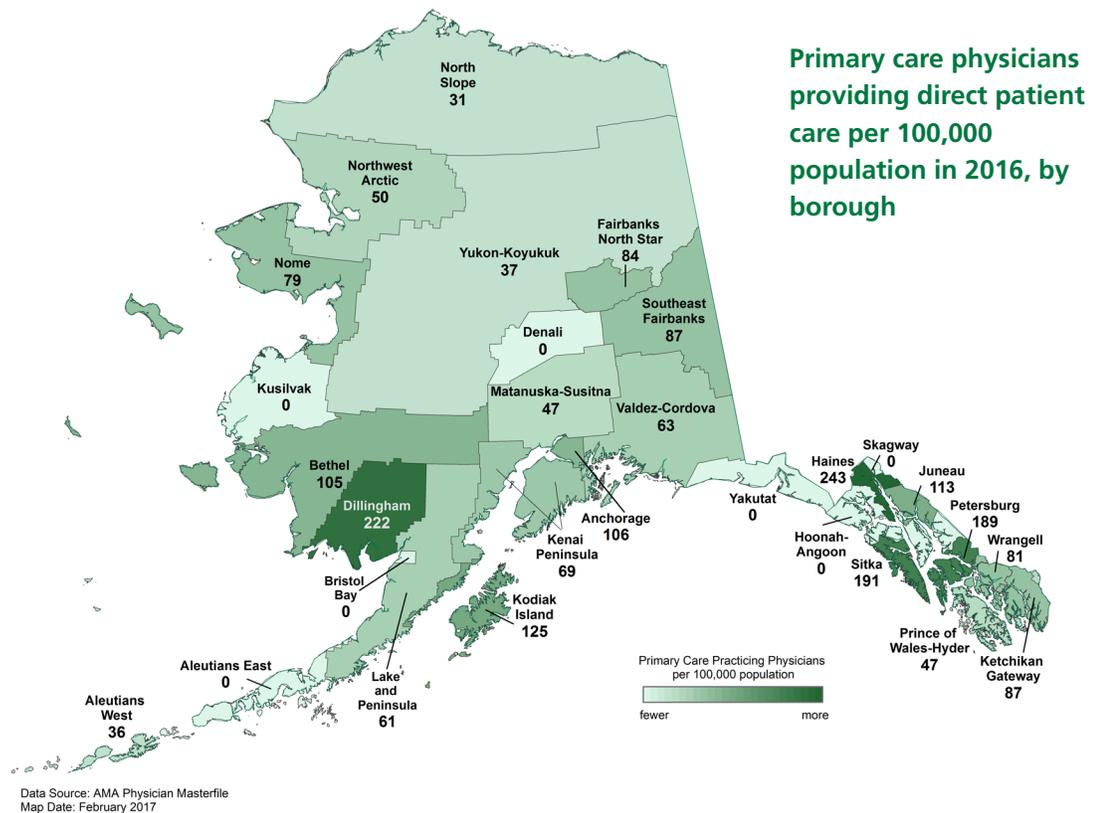
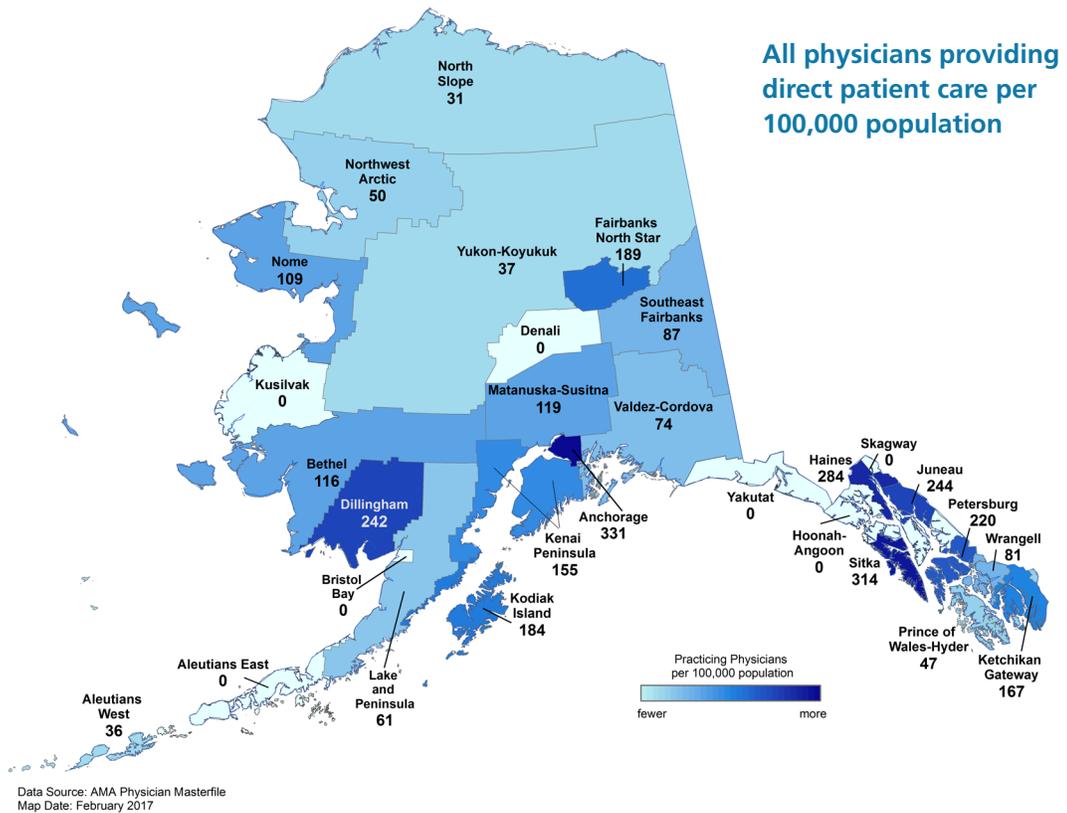
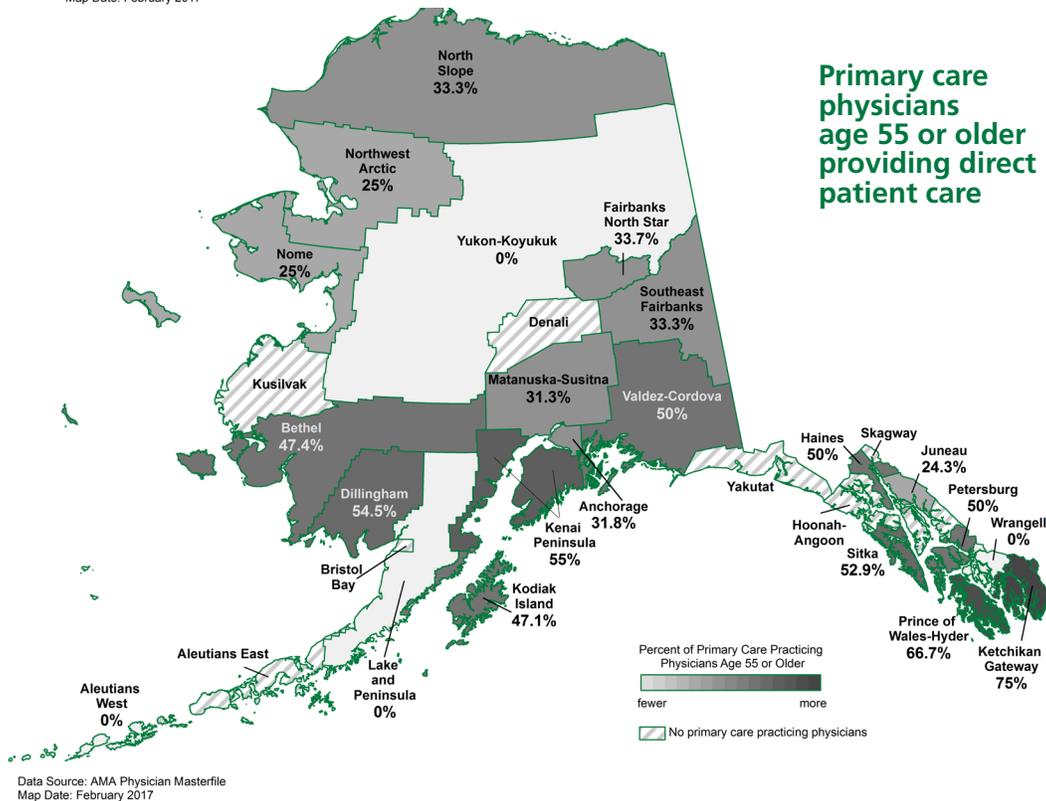
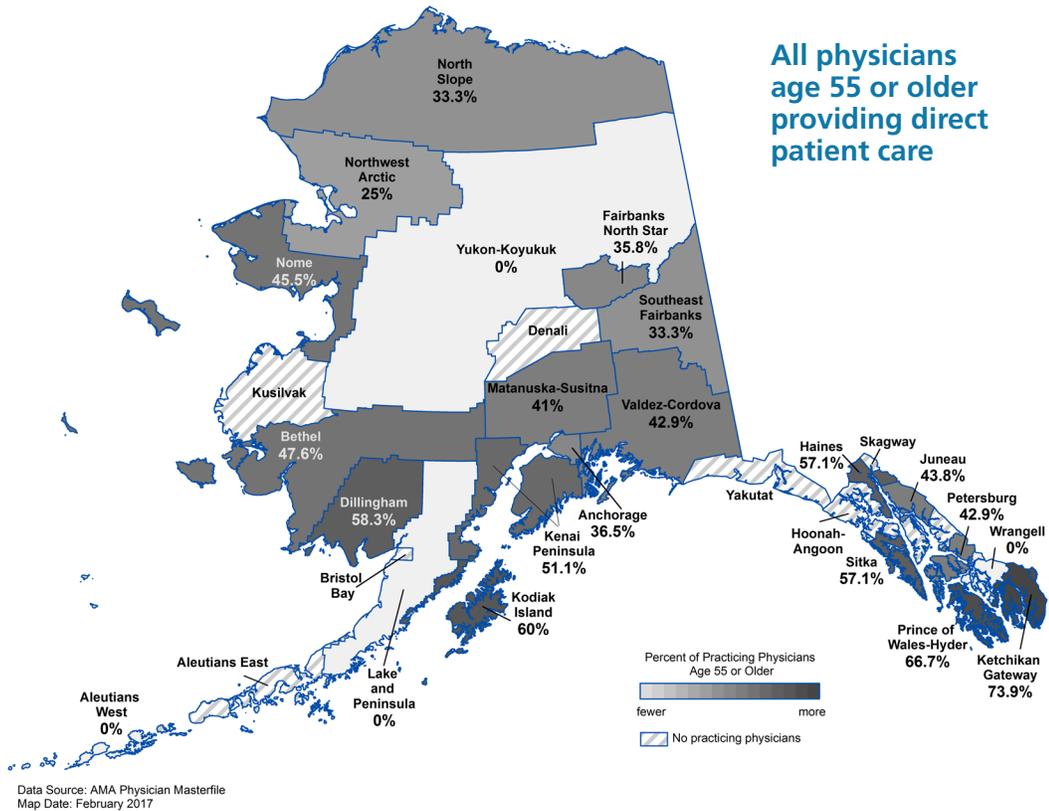


Figure 5: Percentage of Alaska physicians age 55 or older in 2016, by borough



As shown in Figure 5, some of Alaska’s boroughs have high percentages of physicians age 55 and older. In particular, in Dillingham Census Area, Haines Borough, Kenai Peninsula Borough, Ketchikan Gateway Borough, Kodiak Island Borough, Prince of Wales-Hyder Census Area, and Sitka City and Borough, more than 50% of all physicians providing direct care were age 55 and older. More than 50% of all primary care physicians providing direct patient care in five of 29 Alaska boroughs were age 55 or older in 2014. Those boroughs were Dillingham Census Area, Kenai Peninsula Borough, Ketchikan Gateway Borough, Prince of Wales-Hyder Census Area, and Sitka City and Borough. The percentage of primary care physicians age 55 or older (36%) was similar to the percentage of this age group among overall physicians (40%).

The University of Washington School of Medicine led the list of medical schools from which Alaska’s physicians graduated. The highest percentage (just over 10%) of Alaska’s overall physician workforce completed a residency in California.

EDUCATION AND TRAINING

The University of Washington School of Medicine led the list of medical schools from which Alaska’s physicians graduated (slightly over 11% compared to the next highest school from which just under 3% of the state’s physicians graduated) (Table 3). The highest percentage (just over 10%) of Alaska’s overall physician workforce completed a residency in California, followed by 8% in Washington and Texas, 6% in Alaska and 4% in New York (Table 4).

As shown in Table 5, 16% of all practicing physicians and 29% of primary care physicians completed a residency in a WWAMI state, including Alaska. Nearly a quarter (23%) of Alaska’s family medicine physicians completed a residency in Alaska, and more than 37% completed a residency in one of the five WWAMI states.

The percentages of physicians who completed a residency in Alaska is higher among those who graduated from medical school in 2000 or later (Figure 6). The percentages of the younger cohorts completing residencies in-state were more than double for both physicians overall and for primary care physicians. It is not clear if this is the result of an increase in the number of available residencies, a trend toward higher rates of post-residency retention by the more recent physician cohorts compared with older cohorts, if there is a pattern for some physicians to remain in the state for a few years after completing residencies before migrating to other locations, or possibly a combination of all of these factors.

Table 3: Top 5 medical schools from which Alaska physicians graduated*

School	State	#	% of AK physicians who graduated from school
University of Washington School of Medicine	WA	186	11.4%
Uniformed Services University of the Health Sciences F. Edward Hébert School of Medicine	MD	47	2.9%
University of Colorado School of Medicine	CO	42	2.6%
University of Minnesota Medical School	MN	38	2.3%
Oregon Health and Sciences University School of Medicine	OR	36	2.2%

*Among Alaska physicians in 2016 providing direct patient care, not federally employed, age <75 years

Table 4. Top 5 states where Alaska physicians completed a residency*

State	#	% of AK physicians who completed a residency in the state
CA	164	10.4%
WA	132	8.4%
TX	127	8.1%
AK	97	6.2%
NY	66	4.2%

*Among Alaska physicians in 2016 providing direct patient care, not federally employed, age <75 years

Table 5. Alaska physicians in 2016 who graduated from the University of Washington School of Medicine (UW SOM) and/or completed a residency in Washington or in any WWAMI* state

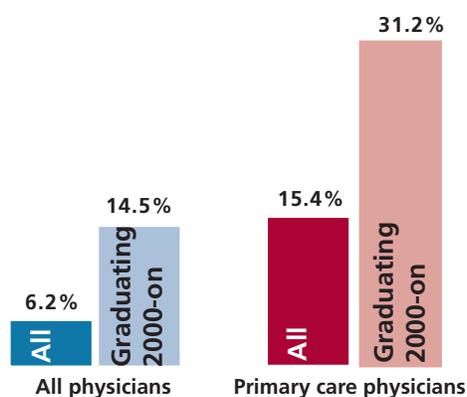
Physicians providing direct patient care**	Graduated from UW SOM		Completed a residency in AK***		Completed a residency in a WWAMI state	
	#	%	#	%	#	%
Total	191	11.7%	97	6.2%	250	15.9%
Primary care	94	14.4%	96	15.4%	177	28.5%
Family medicine	67	15.5%	95	23.2%	153	37.4%
General internal medicine	11	9.8%	1	0.9%	11	10.1%
General pediatrics	16	15.0%	0	0.0%	13	12.5%
Surgeons	23	12.2%	0	0.0%	15	8.2%
General surgery	10	20.4%	0	0.0%	7	14.6%
Obstetrics-gynecology	11	11.6%	0	0.0%	3	3.2%
Other surgery	2	4.4%	0	0.0%	5	11.9%
Psychiatrists	5	5.4%	0	0.0%	6	6.5%
Other Specialists	69	9.8%	1	0.1%	52	7.7%

* WWAMI = Washington, Wyoming, Alaska, Montana, and Idaho

** Not federally employed, age <75 years, in Alaska

*** Percentages are calculated based on physicians for which residency state data were available. There were 63 records (3.9%) that were missing residency state (0 were missing medical school info).

Figure 6. Alaska physicians* in 2016 who completed a residency in Alaska



* Not federally employed, age <75 years, in Alaska, and providing direct patient care

SUMMARY AND POLICY IMPLICATIONS

In 2016 Alaska's physician supply, on a per capita basis, was slightly higher than national averages as measured by this study based on AMA physician Masterfile data. Slightly more primary care physicians were identified as practicing in urban areas (91 per 100,000 population) compared with rural areas (82 per 100,000 population). Relatively few physicians were identified as working in isolated small rural areas of Alaska (66 per 100,000 population). Attributing a single practice location to Alaska physicians may be somewhat misleading, however, because it is not uncommon for providers to travel to rural sites for short periods of practice, and/or to provide telemedicine to more remote sites while based in urban locations. As a result, these results may over- or under-estimate physician supply in more sparsely populated areas where each physician constitutes a significant percentage of the overall supply.

Medical students from Alaska have been supported by the state to attend the WWAMI program since 1971. These analyses of the AMA Physician Masterfile found about 11% of Alaska's total practicing physician supply in 2016 graduated from the University of Washington School of Medicine. Analyses by the Alaska Medical Society in 2015 found over 14% of Alaska's practicing physicians graduated from University of Washington School of Medicine (unpublished source). These differences in estimates are likely attributable to the completeness of different data sources and exclusion criteria. For example, the analyses for this report excluded federally employed physicians.

Residency is known to be highly associated with the location where a physician eventually chooses to practice and of the population he or she prefers to serve, and is therefore a useful recruitment tool.³ In 2015 Alaska ranked second among states for retaining physicians who complete a residency in-state.⁴ The state, however, has only one residency program; the Alaska Family Medicine Residency, developed in the 1990s, with 12 residents per year. So even with a high residency retention rate, only 6% of all practicing Alaska physicians completed an in-state residency in 2016. While not an easy task, creating more residencies in locations and for specialties that serve the populations where shortages are greatest could be an effective tool to reduce disparities in the distribution of Alaska's physicians. As was found in the 2014 study of Alaska's physician workforce,² this study again showed that a higher percentage of primary care physicians who were more recent medical school graduates (since 2000) completed a residency in-state. Efforts specifically designed to retain these young physicians could be a useful health workforce development strategy for Alaska.

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APPENDIX A: METHODS

The Alaska state physician supply data for this study came from the American Medical Association (AMA) Physician Masterfile, accessed in November, 2016. Changes in physician supply and characteristics for 2014-2016 were assessed using a prior study that used data from 2014 AMA Physician Masterfile.² There were 1,802 total allopathic and osteopathic physicians with Alaska license records in the dataset. Those selected for these analyses were the 1,634 with 1) an in-state practice address (or mail address, when practice was not available), 2) who were age 74 or younger, 3) provided direct patient care, and 4) were not a federal employee. Physicians were assigned specialties using the AMA dataset's "primary" and "secondary" specialty fields. The primary specialty was reassigned to the secondary specialty for about 5% of physicians when there was indication from the listed secondary specialty that the physician was likely to practice more specialized medicine than the primary specialty indicated. Physician specialties were grouped into "Primary care" (family medicine, general internal medicine and general pediatrics specialties), "Surgeons" (general surgery, obstetrics-gynecology, and other surgery), and "Other Specialists". Data for psychiatrists were analyzed and reported separately. State population data came from the Research and Analysis, Alaska Department of Labor and Workforce Development.⁵ Rural-urban status was determined using Rural Urban Commuting Area (RUCA) taxonomy.⁶ and the population data for the various rural-urban categories came from a custom-prepared file of selected 2014 population data with ZIP codes cross-referenced to boroughs.⁷

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