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THE SHORTAGE OF PHYSICIANS IN AMERICA'S RURAL COUNTIES
AND HOW FOREIGN-BORN DOCTORS CAN HELP

SEPTEMBER 2015



EXECUTIVE SUMMARY

There is little doubt that the United States healthcare system is currently under an unprecedented level of strain. In the coming years, the share of the population aged 65 and above is projected to increase dramatically. While 35 million Americans were seniors in 2000, that figure will grow to 71.5 million by 2030, making Americans older than age 65 almost one in five members of the population.¹ Given that the average senior spends more than triple the amount on their healthcare each year as the average working-age member of the population,² such demographic trends will place a major stress on U.S. healthcare resources. The Affordable Care Act is expected to pressure a fragile healthcare system still further. An estimated 30 to 34 million previously uninsured Americans are expected to gain health insurance through the act, without a major surge in the number of doctors available to serve them.³

Many policymakers have worried that such demands on the healthcare system are coming at a time when many parts of the country still lack enough physicians and healthcare providers to offer adequate—or even basic—levels of care. In the state of Nevada, a shortage of pediatricians and specialists has reportedly led many families to travel hundreds of miles to other states for surgeries and specialty pediatric care.⁴ In Western North Dakota, where adult patients wait months to see a doctor, small infants often fall behind on their routine checkups and shots because of a paltry supply of physicians.⁵ And in northern Washington State, some clinics report turning away 250 people a week who call in need of primary care.⁶ The American Association of Medical Colleges estimates the United States is already short tens of thousands of physicians—a figure it predicts will grow to more than 90,000

physicians by 2025.⁷ Many experts, however, say that such national figures obscure some of what is going on at the local level, particularly in rural communities, which have historically had trouble attracting and retaining physicians.

In this brief, we use a novel approach to explore the shortage of physicians that is currently plaguing many rural communities in the United States. Using 2015 data from the American Medical Association, we analyze the location of every practicing physician in the country, breaking the data down to the county level to more closely examine local trends. Based on past recruitment patterns and projected retirement age, we also estimate how the distribution of doctors in each county is poised to change in the next five years, along with patient needs. The findings our analysis produces are telling. Despite having potentially greater healthcare needs, our country's rural communities are already facing an acute physician shortage. Without major policy changes, the situation will only worsen by 2020.

Our report, however, also points to a potential way to mitigate this shortage in the near term: Doing more to encourage foreign-born doctors and graduates of international medical schools to practice in rural communities. As data from the U.S. Department of Health and Human Services shows, there are more than 195,000 medical doctors who graduated from foreign medical schools living and working in the United States.⁸ That figure, however, could be higher if our immigration system made it easier to recruit—and retain—such physicians. The majority of foreign-born doctors who study in the United States as medical residents use J-1 visas, a visa category that requires the individual to return home for at least two years after finishing their training.⁹ Foreign-born residents and fellows on the J-1 visa who chose to practice in rural or otherwise

medically needy communities can get a waiver of the requirement that they ultimately return home. Many state officials, however, say the limited number of waivers available to them each year isn't enough to meet their full healthcare needs; the program is also temporary, and must be reauthorized every few years.¹⁰ Efforts to expand and make permanent the Conrad State 30 program, as the waiver initiative is called, have stalled in recent years, caught up in the same polarized politics that are slowing progress toward immigration reform more broadly.

There are many reasons to think that if the Conrad 30 program was expanded—and others were put in place—immigrant doctors could play a valuable role in lessening the dramatic rural healthcare shortages documented here. With fewer ties to the United States, they may be more willing to move to outlying areas for promising positions. And while it can take a decade or more to meaningfully expand the number of physicians trained in America, there are already large pools of immigrants in the United States with training who are not currently practicing medicine. If a more concerted effort was made to support them and give them credit for training abroad, they could also help fill gaps in our healthcare system at minimal cost to the taxpayer—putting their lifesaving skills to use in the communities where they're most needed.

KEY FINDINGS

America's rural counties are currently facing a dire physician shortage.

As of 2014, almost 15 percent of the U.S. population, or 46 million people, were living in rural counties. However, only 6.1 percent of physicians were practicing in those areas. Urban areas in the country boast roughly 205 active physicians for every 100,000 residents, while small, rural counties have less than half as many active physicians covering their populations—or just 82 for every 100,000 residents.

Some states with large swaths of rural areas have been particularly impacted by recent physician shortages.

Looking just at the small rural counties in the state, Florida faces the worst physician shortage in the country, with its rural communities averaging roughly 42 active doctors for every 100,000 residents. Tennessee, Louisiana, and Arizona rank second, third, and fourth worst in that regard. In some other states, large swaths of rural communities have no doctors at all. About one in five counties in both North Dakota and South Dakota have no active physicians. Roughly one in six counties in Nebraska are the same.

The physician shortage issue in rural counties is slated to worsen in the next five years as large numbers of active physicians retire.

The average small, rural community is slated to lose almost one in five of its active physicians to retirement in the next five years. Despite the fact that our country is training more physicians, rural areas will not keep pace with healthcare needs: Between 2012 and

2020, we project the number of doctors per 100,000 people practicing in small, rural areas will grow by just .8 percent. That compares to a growth rate of 9 percent in large urban counties.

Because of the demographics of America's rural communities, residents there will have particularly large medical needs in the future.

Currently, the median age of residents in small, rural counties is 42, while the average person living in a large urban county is just 38.5 years old. Given that the average elderly patient uses considerably more healthcare services than the average working-age individual, the age gap between urban and rural counties could have real implications on the healthcare needs of rural communities in the future. There is also evidence that the age difference is worsening: Between 2000 and 2010, the average urban area's population aged by roughly one year, while in rural counties the population grew 4.5 years older.

Immigrant doctors could help answer future physician shortages.

Currently, doctors who went to foreign medical schools only make up 17 percent of the population of active physicians practicing in small, rural areas, while they account for almost one in four physicians in urban counties. With many rural health systems struggling to find enough physicians, these doctors could play a valuable role filling medical gaps. If just 5 percent of immigrant doctors currently practicing in urban counties could be persuaded to move to small, rural ones, such areas would gain more than 9,000 new doctors, growing the number of physicians practicing in such areas by 35.7 percent.

As this report shows, the physician shortage in rural areas should be of concern to politicians of both parties. Currently, 27 states in the country—ranging from Washington to Kansas—have at least one county that has no doctors at all. Forty states have a county with fewer than 10 physicians for every 100,000 people. Efforts in recent years to tackle medical shortages by expanding the number of medical-school spots in key states have so far not worked in rural communities as well as intended. Between 2000 and 2015, the share of active U.S. physicians choosing to practice in rural counties actually declined, falling from 7.5 to 6.1 percent. Expanding the Conrad State 30 program and taking other steps to encourage foreign doctors to contribute their skills to underserved medical areas wouldn't fix the entire problem facing our unevenly distributed healthcare system. It would, however, give rural areas one more tool to help ensure that their residents have the care they need to meet basic medical needs—both now and into the next decade.

BACKGROUND

In this report, we examine the physician shortages that exist in some parts of the country on a county-by-county basis. Looking at the shortage of doctors on the county level, as opposed to at the state or other larger jurisdiction, is a somewhat novel approach to the question of physician shortages, but a valuable one given the literature. Surveys consistently find that doctor proximity ranks among the most important factors patients consider when choosing a physician.¹¹ Studies have also tied longer commutes to a hospital to higher mortality rates for emergency conditions,¹² as well as greater spending among patients once admitted for planned surgeries.¹³ Rural patients who live further from their doctors have also been shown to receive fewer regular check-up visits,¹⁴ potentially missing the chance to catch illnesses before they turn into more serious conditions.

In this report, we use the U.S. Department of Agriculture Urban-Rural Continuum Codes as a point of reference when discussing rural and urban counties. This breakdown, created by the USDA's Economic Research Service in 1974, classifies every county in the country based on a 1-9 scale, with 1 being the most heavily urban.¹⁵ Areas are also further broken down based on their relative proximity to metro areas, allowing researchers to focus in on more isolated communities. (See Table 1) In this brief, we focus mostly on small, rural communities, or counties whose largest towns have fewer than 20,000 people—defined as categories 6 through 9 on the scale. Our brief also includes some analysis of rural America more broadly (categories 4-9), as well as the smallest rural communities in the country, or counties with no towns with more than 2,500 residents (categories 8 and 9 exclusively.)

TABLE 1: DESCRIPTION OF COUNTY CLASSIFICATIONS USED BY THE U.S. DEPARTMENT OF AGRICULTURE'S ECONOMIC RESEARCH SERVICE

1	Metro - Counties in metro areas of 1 million people or more
2	Metro - Counties in metro areas of 250,000 to 1 million people
3	Metro - Counties in metro areas of fewer than 250,000 people
4	Nonmetro - Urban population of 20,000 or more, adjacent to a metro area
5	Nonmetro - Urban population of 20,000 or more, not adjacent to a metro area
6	Nonmetro - Urban population of 2,500 to 19,999, adjacent to a metro area
7	Nonmetro - Urban population of 2,500 to 19,999, not adjacent to a metro area
8	Nonmetro- Completely rural or less than 2,500 urban population, adjacent to a metro area
9	Nonmetro- Completely rural or less than 2,500 urban population, not adjacent to a metro area

Source: U.S. Department of Agriculture, Economic Research Rural-Urban Continuum Codes

Rural areas may struggle to recruit physicians for a variety of reasons. Doctors raised in rural communities are more likely to practice in similar areas after graduating from medical school,¹⁶ yet many institutions say few students from such areas actually apply to medical school.¹⁷ In the smallest rural communities, it may also be difficult for doctors to amass enough regular patients to make a practice profitable—a particularly daunting prospect for doctors who may be facing thousands of dollars in debt after lengthy periods of schooling. A poll by Sermo, a physician social networking firm, found that doctors cite a whole host of reasons why they were less attracted to rural practice. Leading the list are concerns about a perceived lack of cultural or educational opportunities for family, followed by worries about a small number of fellow physicians available to help cover after-hour calls.¹⁸ The higher share of medical school graduates made up of women in recent years—and the decision of more doctors to become specialists instead of pursuing primary care—may be exacerbating the shortages that already exist: One study found that both specialists and female doctors tend to gravitate towards urban and suburban communities, instead of more rural ones.¹⁹

THE RURAL VERSUS URBAN PICTURE

In this brief, we quantify the real physician shortage that exists in many rural communities across America. To do so, we analyze how the number of doctors per 100,000 people differs in rural counties in the United States versus more urban ones. The differences we find are quite sizeable. The average county in the United States, regardless of its level of urbanization, has 171 doctors per 100,000 people. The picture, however, looks far different when urban counties and rural counties are viewed separately. Our figures show that the average urban county in the United States has 205 active physicians for every 100,000 people. That figure is more than double the number in small, rural counties, which have 82 doctors for every 100,000 residents on average. In the smallest rural communities—or areas with no city with more than 2,500 people—the figure drops to 52.

Given the many factors that play into local physician demand, such as the mixture of specialists and the unique health needs of a given population, there is no single, accepted figure for the ideal number of physicians per 100,000 people. Still, there are many reasons to believe that the low number of doctors in more rural areas constitutes a severe shortage. One report by the Council on Graduate Medical Education, a federal government group, said that communities should have between 60 and 80 primary care doctors for every 100,000 residents and 85 to 104 specialists.²⁰ On the low end, that would put the number of doctors needed in a given area at 145 full-time equivalent physicians for every 100,000 people—far more than the number of doctors in rural counties that we document here. A more recent report by the same group has estimated that if insurance coverage widens significantly in the

coming years, the country as a whole could need 331 to 361 doctors per 100,000 people by 2020.²¹

The lopsided nature of the distribution of physicians in America has led to dramatic mismatches in the location of the U.S. population and the places where America's physicians choose to practice. According to the U.S. Census, almost 15 percent of the U.S. population—or more than 46 million people—were living in rural counties in 2014. Despite that, our figures show that just 6.1 percent of the nation's physicians practice in such areas. (See Table 2) More troubling, the difference between the haves and have-nots in this regard also appears to be worsening. As recently as 2000, 7.0 percent of all active medical doctors were practicing in rural counties, compared to the 6.1 percent practicing there today.²²

TABLE 2 : MISMATCH BETWEEN U.S. POPULATION AND DISTRIBUTION OF ACTIVE PHYSICIANS, 2014-2015

<i>County</i>	<i># of Active Physicians, 2015</i>	<i>% of Total</i>	<i>Population, 2014</i>	<i>% of U.S. Total</i>
1	576,834	64.9%	173,889,691	54.9%
2	185,674	20.9%	67,741,442	21.4%
3	71,344	8.0%	28,956,842	9.1%
4	18,939	2.1%	13,556,356	4.3%
5	10,099	1.1%	5,030,938	1.6%
6	12,678	1.4%	14,678,800	4.6%
7	10,209	1.1%	8,209,679	2.6%
8	1,069	0.1%	2,126,927	0.7%
9	1,549	0.2%	2,586,414	0.8%
ALL URBAN	833,852	93.9%	270,587,975	85.4%
ALL RURAL	54,543	6.1%	46,189,114	14.6%
SMALL, RURAL	25,505	2.9%	27,601,820	8.7%
TOTAL	888,395	100.0%	316,777,089	100.0%

Source: American Medical Association Physician Masterfile, 2015 and U.S. Census Population Estimates, 2014.

The huge disparity in the level of physician coverage available in different parts of the country bears out when the data is viewed in a variety of different ways. For instance, the urban county with the highest density of physicians, the county that includes Danville, Pennsylvania, has 3,398 doctors for every 100,000 people—a figure almost 20 times the national average. Similarly, when we look at the 300 counties in the country with the lowest physician to population ratios—a group of counties with fewer than 22 doctors for every 100,000 people—the vast majority, or more than 90 percent, are small, rural areas. In the map below, we show visually the size of the physician population in each kind of community—urban ones down to the most rural. The map demonstrates that there is a particular drought in the number of physicians in the center of the country, reaching from North Dakota and Montana all the way down to Texas.

LOOKING AT PHYSICIAN SHORTAGES BY STATE

As the map on the next page demonstrates, some states, particularly in the Western part of the country, are facing fairly dramatic physician shortages at the county level. Many of these states also include physically *large* counties—making it all the more difficult for patients to travel between counties for care. To understand the different picture facing patients in different parts of the United States, we looked at how well each state was doing supplying its counties with sufficient numbers of doctors. Once again, the decision of many physicians to eschew more rural areas in favor of more urban or suburban ones played a large role in the results.

Although the average county in the country has 171 doctors for

every 100,000 people, the states that fare the worst in terms of coverage have nowhere near that level. The average county in North Dakota, regardless of its urban level, has 69 doctors per 100,000 residents, the lowest ratio in the country. Its sister state, South Dakota, comes in second with 71, while five other states—Nebraska, Montana, Kansas, Wyoming, and West Virginia—all have fewer than 100 doctors per 100,000 people in the average county. While these states span the country, they have one thing in common: In all of them, at least 75 percent of the state's counties are rural—with states like Montana, North Dakota, and South Dakota, being particularly so.

FIGURE 1: NUMBER OF DOCTORS PER 100,000 MEMBERS OF THE POPULATION

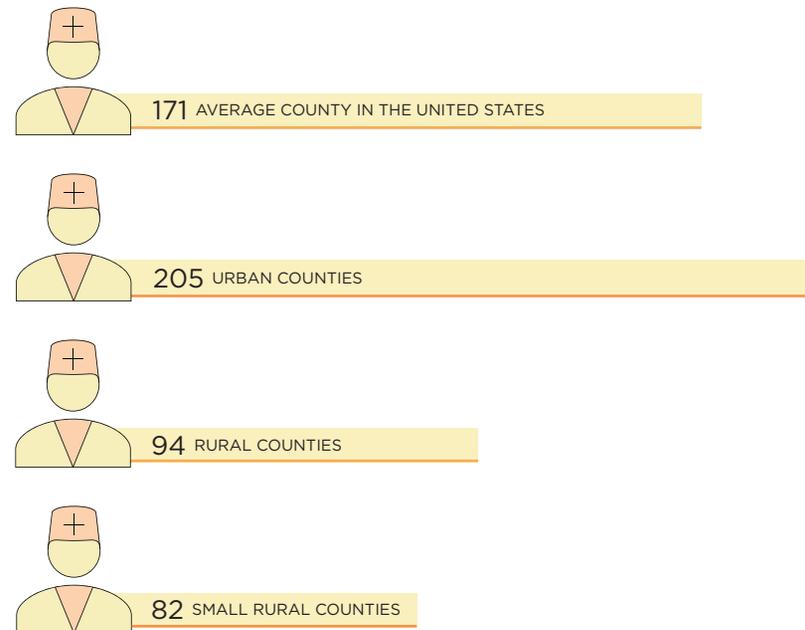
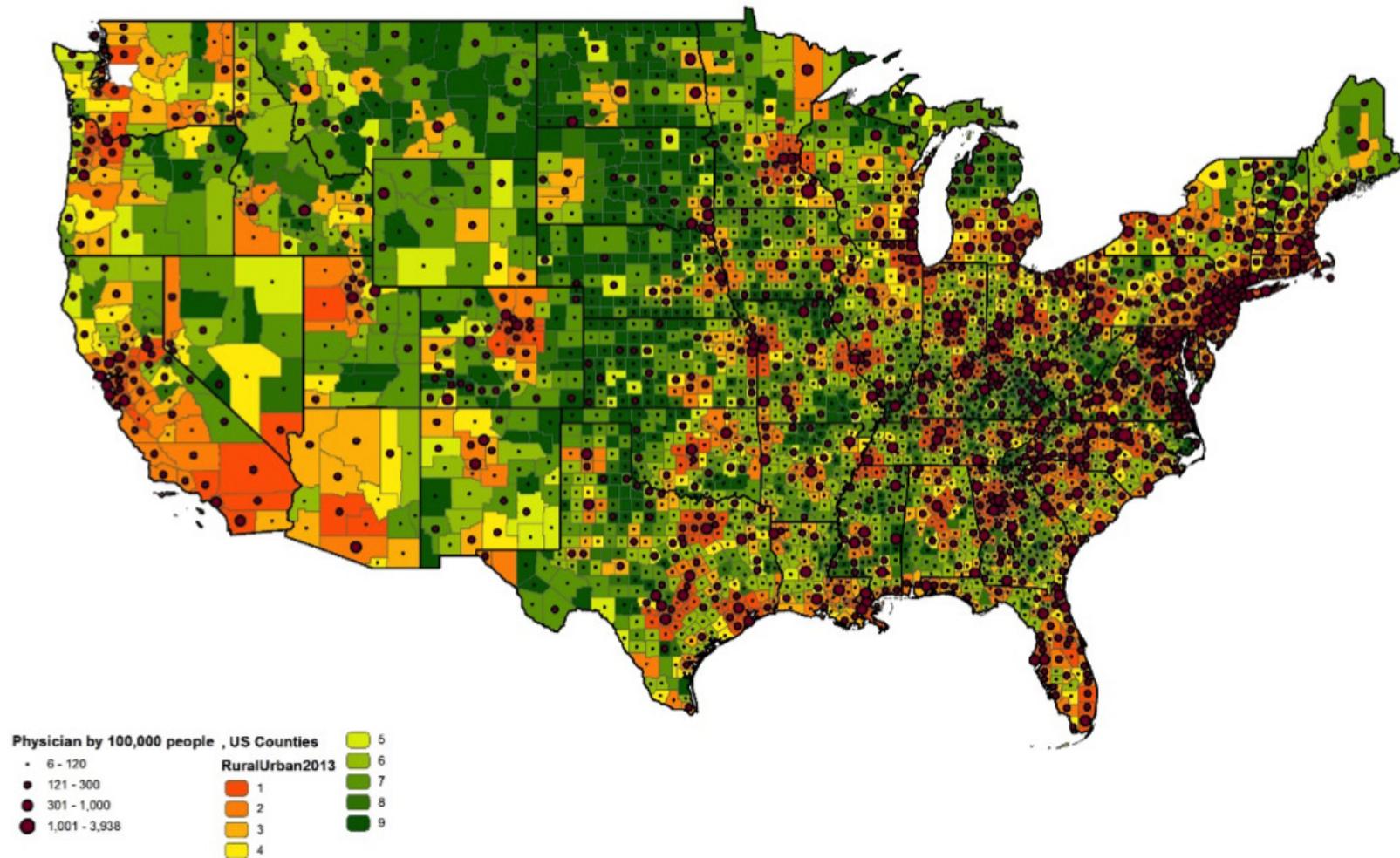


FIGURE 2 : ACTIVE PHYSICIANS PER 100,000 PEOPLE BY URBAN/RURAL LOCATION, 2015

Source: American Medical Association Physician Masterfile, 2015

When we look just at small, rural counties within each state in isolation, a somewhat different picture emerges. In some of these states, particularly in places where counties are small or densely packed together, patients might be more easily able to travel to urban centers for their care. Urban doctors may also regularly visit for secondary, more rural, office locations. Still, the data shows

interesting trends. Florida fares the worst in the country in terms of how well staffed its small, rural counties are with physicians, with such counties averaging just 46.3 doctors for every 100,000 residents. Tennessee, Louisiana, and Arizona follow, all with fewer than 60 doctors in such counties on average. Data on individual states appears in the table below.

TABLE 3 : COUNTY-LEVEL DATA ON ACTIVE PHYSICIANS PER 100,000 RESIDENTS, BY STATE

Note: Data is not tracked for the state of Hawaii

STATE	Small, Rural Counties			Counties Overall		
	MEAN	MIN	MAX	MEAN	MIN	MAX
ALABAMA	61	21	116	101	0	572
ALASKA	128	17	393	111	0	393
ARIZONA	60	32	74	133	32	363
ARKANSAS	72	12	259	92	0	708
CALIFORNIA	107	25	217	200	25	746
COLORADO	122	18	306	151	0	582
CONNECTICUT	182	167	198	280	116	534
DELAWARE	174	137	267	225	159	330
FLORIDA	46	7	90	162	0	922
GEORGIA	70	11	209	103	0	624
IDAHO	89	8	307	96	0	307
ILLINOIS	65	9	236	111	0	587
INDIANA	63	9	148	121	7	809
IOWA	74	10	218	105	10	1,336
KANSAS	85	16	233	98	0	520
KENTUCKY	83	10	323	104	0	694
LOUISIANA	58	10	108	116	0	698
MAINE	182	113	267	226	113	578
MARYLAND	191	58	444	254	54	897
MASSACHUSETTS	184	138	230	359	135	1,233
MICHIGAN	108	18	488	157	18	1,135
MINNESOTA	88	15	231	133	0	2,243
MISSISSIPPI	60	7	203	98	0	605
MISSOURI	66	11	383	104	0	876
MONTANA	94	22	273	100	0	360

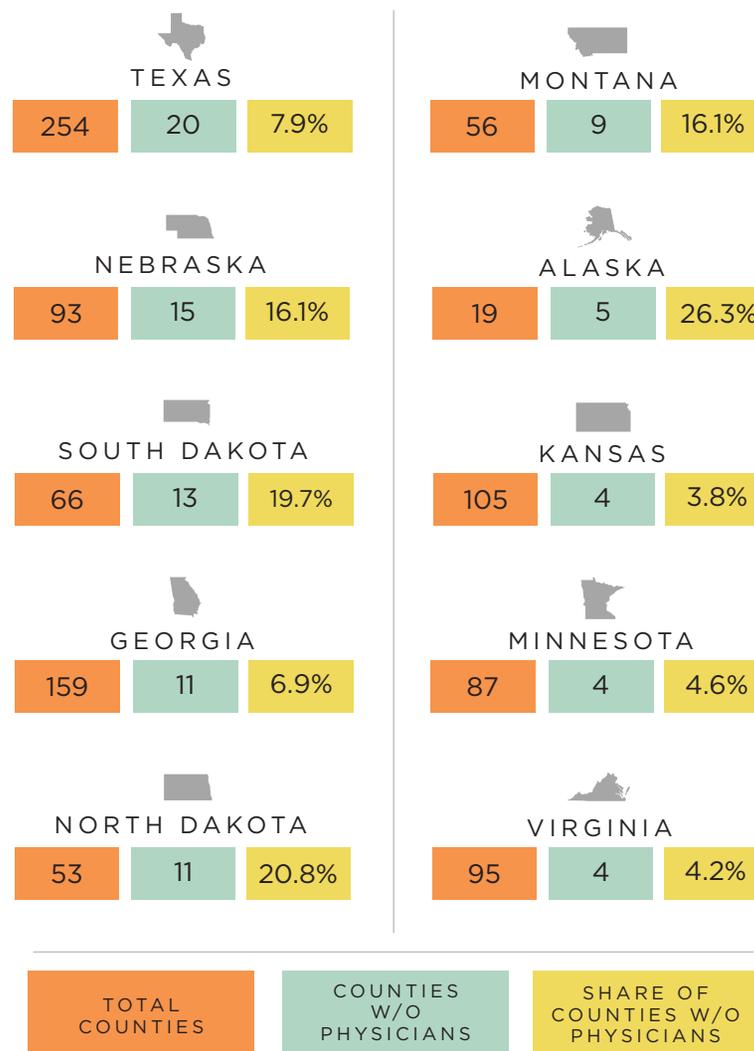
STATE	Small, Rural Counties			Counties Overall		
	MEAN	MIN	MAX	MEAN	MIN	MAX
NEBRASKA	80	10	275	81	0	523
NEVADA	82	33	129	98	0	292
NEW HAMPSHIRE	185	179	193	295	171	1,019
NEW JERSEY	155	91	204	282	91	517
NEW MEXICO	105	22	317	112	0	444
NEW YORK	119	21	510	194	21	639
NORTH CAROLINA	83	9	192	152	0	1,602
NORTH DAKOTA	74	15	461	79	0	461
OHIO	66	7	273	145	7	694
OKLAHOMA	61	8	206	81	8	428
OREGON	138	28	406	163	0	595
PENNSYLVANIA	102	36	379	243	0	3,938
RHODE ISLAND	256	245	348	367	246	577
SOUTH CAROLINA	68	22	114	135	20	801
SOUTH DAKOTA	91	17	335	99	0	656
TENNESSEE	57	14	140	108	0	693
TEXAS	62	8	310	87	0	610
UTAH	79	9	170	112	0	476
VERMONT	204	65	328	240	65	761
VIRGINIA	123	11	893	205	0	2,924
WASHINGTON	90	45	156	136	0	321
WEST VIRGINIA	83	24	339	142	0	933
WISCONSIN	97	15	371	147	0	692
WYOMING	134	34	423	144	34	423

Source: American Medical Association Physician Masterfile, 2015

By a variety of measures, many Nevada counties face a critical physician shortage. Within the state, however, Lander County stands out as an area facing particular challenges. The county is located in the north-central area of the state and mostly rural and isolated with mining, ranching, and agriculture as the primary industries. Two counties without any physicians surround it, Pershing and Eureka Counties. As of December 2013, the population in Lander County was estimated to be 6,050, with the population is projected to grow by 8.0 percent by 2020.²³ However, there are only 33.4 physicians per 100,000 people in the area—or two physicians altogether. The Health Resources and Services Administration, a division of the U.S. Department of Health and Human Services, has classified the area as a Health Professional Shortage Area. The situation also looks poised to worsen in the near term. One of the county’s two physicians is over the age of 66, indicating that the area could soon see its population of doctors completely depleted due to retirement.

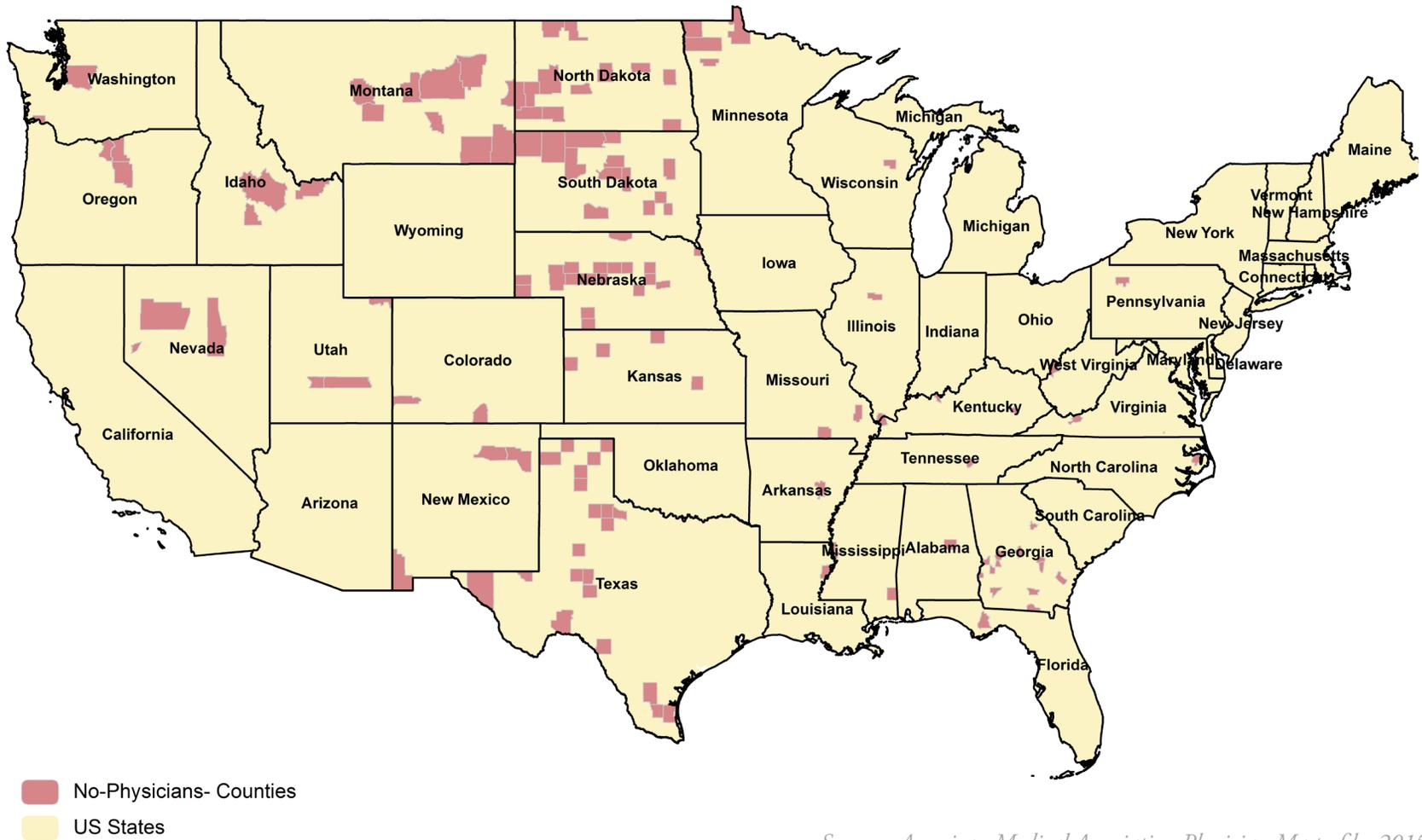
The severest cases of shortage, however, are in counties with no physicians at all. There are 135 counties with no doctors in the United States, which is roughly 4.5 percent of all the counties in the country. These areas span 27 states. As we can see on the map on page 12, there tends to be a clustering of counties without physicians in the country, often covering wide areas of land and situated in states with a generally weak physician-to-population ratio overall. Texas, Nebraska, and South Dakota have the highest number of counties with no physicians. (See Figure 3) In both South Dakota and North Dakota, roughly one in five counties are without physicians. In Montana and Nebraska, that number is roughly one in six.

FIGURE 3 : TOP 10 STATES WITH THE LARGEST NUMBER OF COUNTIES WITHOUT ACTIVE PHYSICIANS, 2015



Source: American Medical Association Physician Masterfile, 2015

FIGURE 4 : COUNTIES WITHOUT ANY PHYSICIANS, 2015



Source: American Medical Association Physician Masterfile, 2015

As the map shows, giant swaths of middle and northern South Dakota have little or no physicians to speak of. One of these counties is Harding County, which is located just south of the border of rural North Dakota. As of the 2010 U.S. Census, the population was 1,255 people making it the second-least populous county in South Dakota. Harding County hasn't had a physician since 1995. Some neighboring counties also have few or no permanently staffed physicians, potentially forcing patients to travel extensively to obtain medical treatment. Many of the surrounding rural counties that do have doctors have very high rates of physicians bound to retire in the next five years.

PHYSICIANS TURNING GRAY

In some ways, the United States is already facing an aging population of physicians. For the country as a whole, physicians average around 50 years of age. More than one in six U.S. doctors, or 17.6 percent, are also older than age 65 and therefore very likely to retire in the near future.

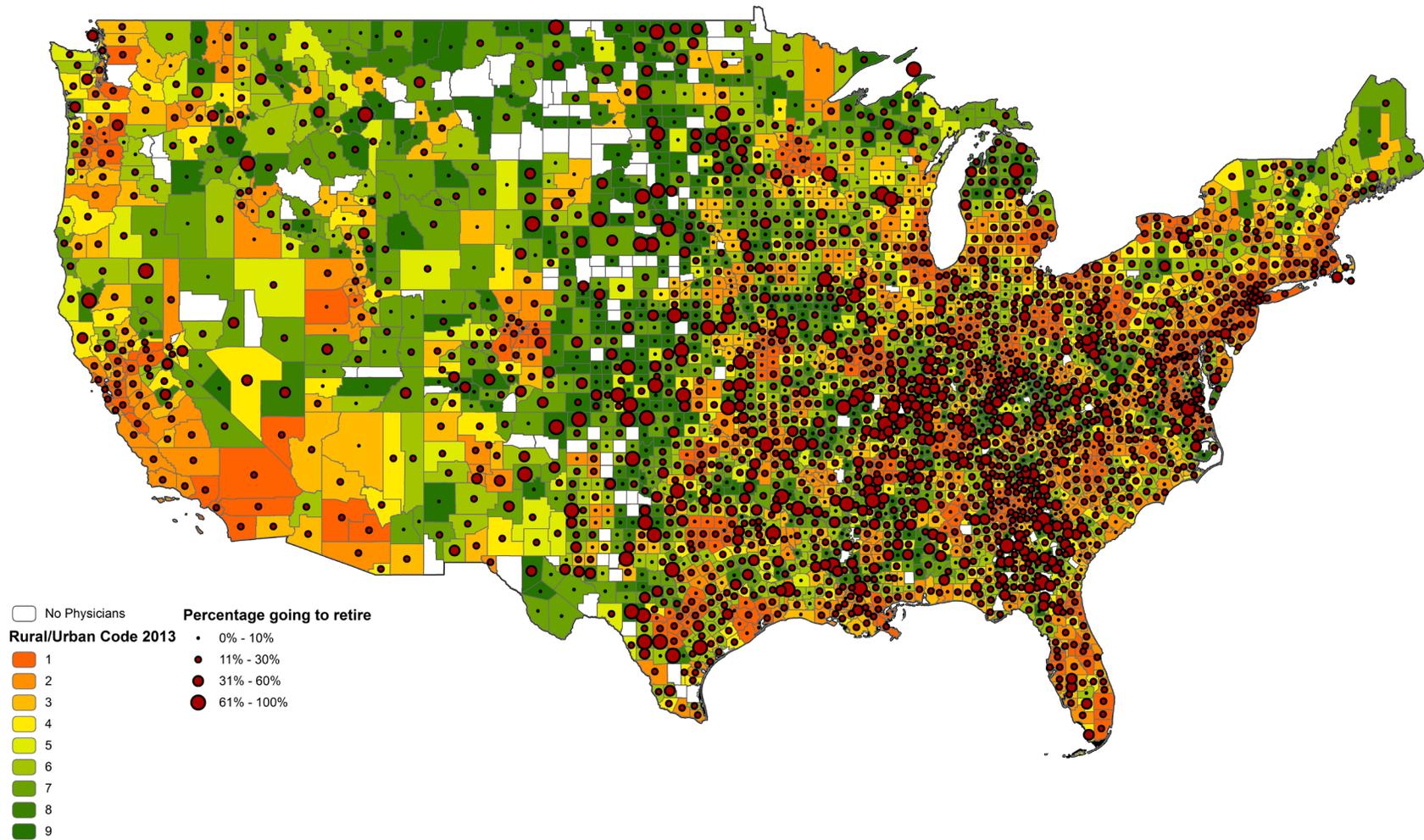
When we drill down into the data on the age of physicians, and consider how older doctors are distributed across the country, it becomes clear that the shortage of doctors in rural areas is likely to continue to worsen in the next few years. Assuming the average physician retires at age 65, the average small, rural community is slated to lose almost one in five of its doctors, or 19.6 percent, to retirement in the next five years. In the smallest rural communities, or areas with no town of more than 2,500 people, that figure rises to 22.0 percent. In comparison, only 14.1 percent of the urban counties' physicians will retire by 2020. As we can see on the map on the following page, the situation is particularly severe for the

center region of the United States, where in many counties, more than 60 percent of physicians are already older than age 65.

North Dakota is one of the states facing a severe shortage of physicians in the coming years partially due to physician retirement. Almost 45 percent of North Dakota's 53 counties have fewer physicians per 100,000 people than the national average, while nine counties have no physicians at all. This situation is aggravated even more by the high percentage of counties that face the imminent retirement of much of their physician workforce. There are three counties in North Dakota slated to lose all of their physicians to retirement in the next five years, and another eight counties that will lose half of their doctors. Of the 18 physicians practicing in Ramsey County, a sprawling county in the northeastern part of the state, nine will most likely retire by 2020. Such a development will be very dramatic for the counties' 11,451 inhabitants and the wider region, as the physician-to-population ratio in the surrounding counties is also very low. Five counties surrounding Ramsey County will lose between 50 and 100 percent of their doctors in the coming years.

Altru Health, a large health system and network of clinics in North Dakota, has done a lot in recent years to cope with physician shortages and prepare for doctor retirement, including at their clinic in Ramsey County. Joel Rotvold, the Executive Director of Physician Recruitment for Altru, says the 210-doctor system currently has 30 searches underway—some of them to fill current vacancies and others to prepare for the inevitability of older doctors retiring. "Retirement is a real and very pressing issue for us," Rotvold says. Altru is currently looking for everything from a bread-and-butter cardiologist to a rheumatologist. They also have several physicians—including a pathologist and a dermatologist—

FIGURE 4 : PERCENTAGE OF PHYSICIANS THAT WILL RETIRE IN THE NEXT 5 YEARS BY URBAN/RURAL LOCATION



Source: American Medical Association Physician Masterfile, 2015

who are older than age 70. Rotvold says as many as 25 Altru doctors could retire this year.²⁴

Given that situation, Altru is finding creative ways to provide care to patients in more isolated communities. Specialists within the system often travel an hour or more from Grand Forks, North Dakota, a city of roughly 60,000, to visit patients in smaller, rural clinics. Altru's doctors also did 3,000 visits with patients via telemedicine connections last year. "We used to run into more situations where we'd have rural patients who wouldn't drive all the way to Grand Forks for treatment, even for something as critical as wound care," says Marsha Waind, Manager of Regional Services for Altru. She says telemedicine is helping to bring those patients into the system—and also provide doctors a way to easily follow up with those who come to the city for surgery. Still though, it's hardly the perfect fix: In some of the more sparsely populated areas, clinics don't have enough patient volume or providers to be open to patients Monday through Friday.²⁵

It is interesting to think about what the coming wave of doctor retirements means for the current rural physician population in practice. With so many physicians likely to retire soon, there is a lot of pressure on the existing rural workforce. As one 2008 study in *The Journal of Rural Health* showed, rural physicians tend to work more hours per week and also for more years past standard retirement age. They also see more patients and cover a greater variety of physical problems.²⁴ This can be problematic given the fact that they are rather isolated from learning and training opportunities.

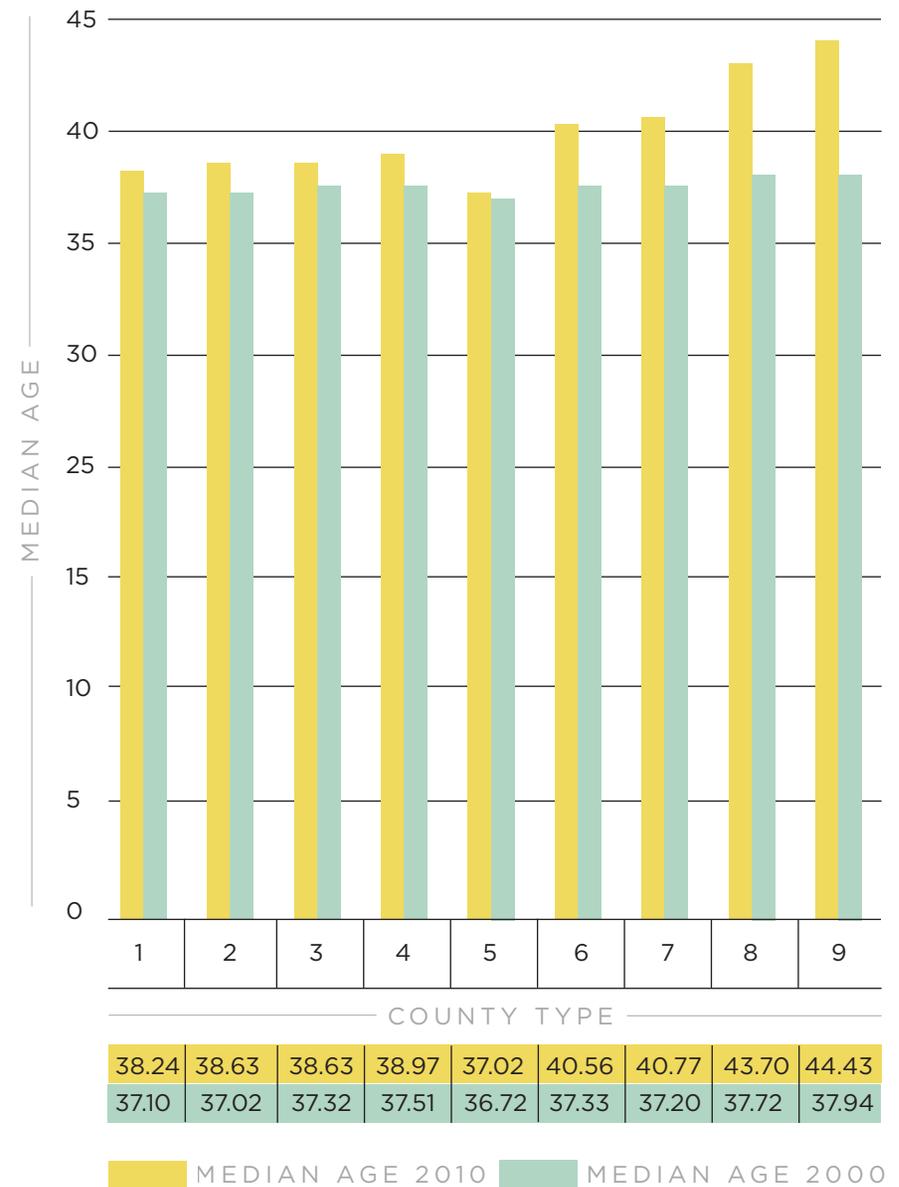
POPULATION TURNING OLDER

Rural areas—facing the most retirement of doctors—also tend to be places with a rapidly aging population, adding more strain to the existing supply. In recent years, the share of the population in rural areas that is elderly has grown, as older residents have gravitated towards such communities and younger ones have moved out. While the aging Baby Boomer population means the median age has increased for the entire nation, the trend is clearly accelerated in more rural areas. Between 2000 and 2010, the average urban area's population aged by just over one year. In small, rural communities, however, the equivalent figure was 4.5 years. This has contributed to a growing age gap. While in 2000, the median age was 37.2 in the largest urban counties and 37.5 in small, rural ones, those figures had spread by 2010—reaching 42.0 and 38.5, respectively. (See Figure 5)

This research is notable because the aging of a population has been shown to have real and demonstrated impact on overall health spending. A 2012 paper by the Administration on Aging at the U.S. Department of Health and Human Services found that while more than one in five adults ages 75 and older reported visiting doctors or other health care professionals 10 or more times in the last 12 months, just 14 percent of individuals ages 45 to 64 saw health care professionals with such frequency.²⁷ Another 2004 study found that the average elderly individual spent \$11,089 per year on their healthcare. That was more than triple the healthcare expenditure among the working age population, ages 19 to 64, which spent just \$3,352 per person.²⁸

With one of the fastest growing populations in the nation, Georgia is facing a critical physician shortage. The U.S. Census Bureau ranks Georgia as the ninth most populous state and estimates that it will add nearly 3 million new residents by 2020. In Metro Atlanta alone, the population has more than doubled to nearly 4.4 million over the last three decades. Along with this dramatic population growth, Georgians are also aging and demanding greater levels of care. Georgia's elderly population is expected to increase from 9.6 percent to 15.9 percent of the state's total population by 2030. One particular area in the southern part of the state, Clinch County, is facing severe limitations when it comes physician access. While the county had roughly 60 physicians per 100,000 people between 2003 and 2008, that figure today has fallen to 29 doctors per 100,000 residents. At the same time, the population is rapidly aging, largely due to Clinch County becoming a popular destination for retirees. While 11 percent of the 6,878 people living in Clinch County were 65 years of age or older in 2009, by 2015, almost one in six residents had reached that age.

FIGURE 5 : CHANGE IN THE MEDIAN AGE OF RESIDENTS FROM 2000-2010

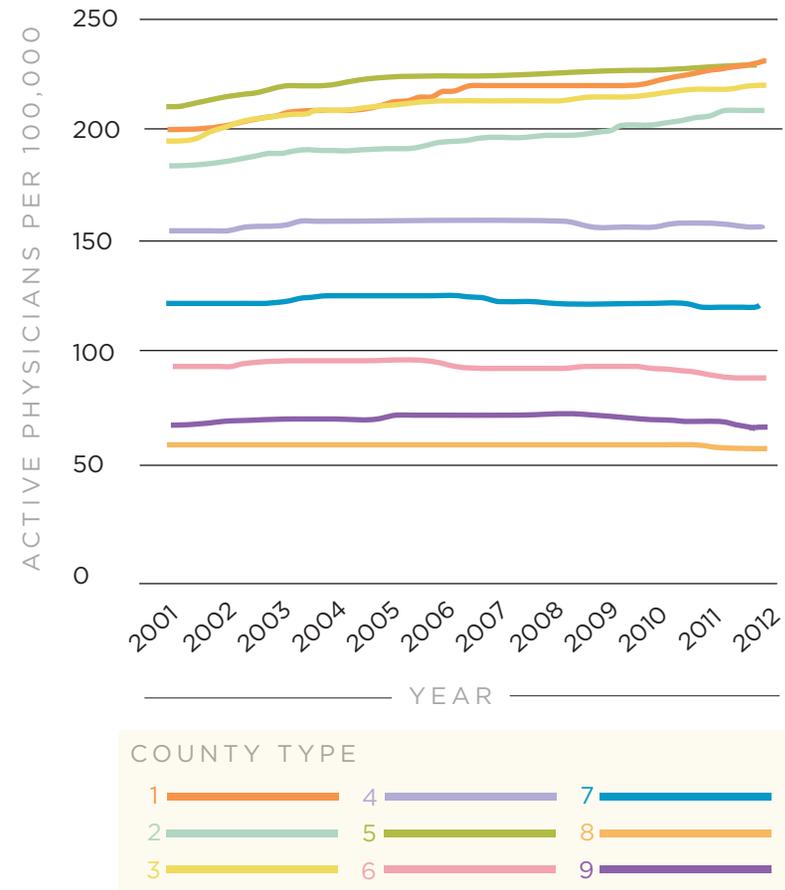


THE CURRENT SHORTAGE IN RURAL AREAS IS LIKELY TO WORSEN BY 2020

While rural areas are clearly already facing real physician shortages, our data shows that in the coming years, the gap between the level of physician services available in rural versus more urban counties is likely to widen. To get a sense of how the supply of physicians in both rural and urban areas might change by 2020, we used data from the Area Health Resource Files (AHRF), published by the U.S. Department of Health and Human Services. The data shows specific demographic data on medical doctors dating back to 1995. Using information on physician supply in different areas and how it changed over the 1995-2012 period, we then projected what the distribution of doctors would look like in 2020 if current recruitment and retirement patterns continue.²⁹

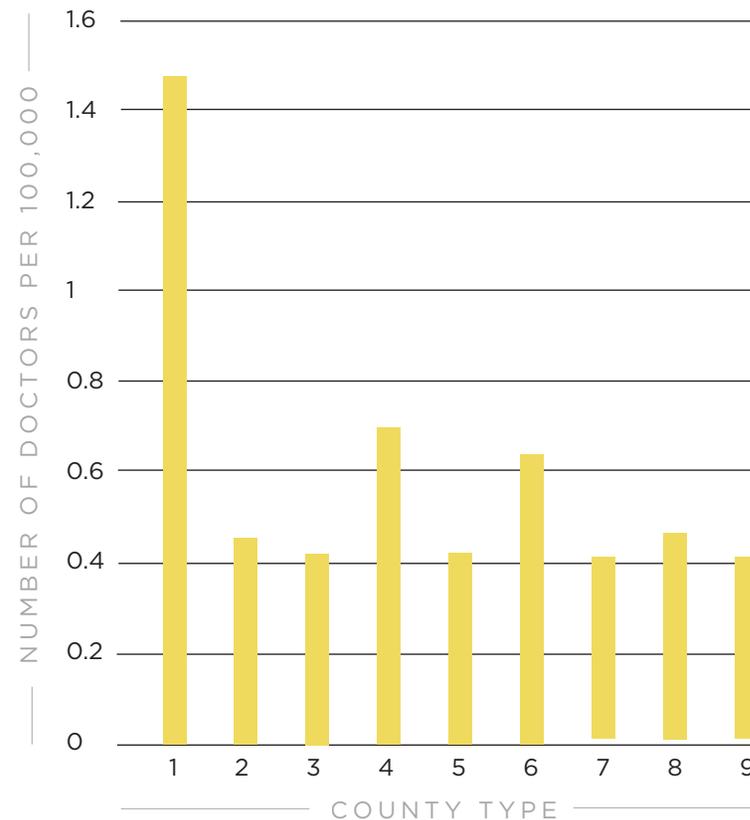
As discussed already in the brief, in recent years, the gap between physician coverage in rural counties versus more urban areas has been steadily widening. This, once again, plays out in the data. In Figure 6, we show how the ratio of medical doctors to population changed in counties of different sizes between 2001 and 2012. The figure shows that in small, rural counties (areas 6-9), the number of doctors available for every 100,000 people held relatively stable during the period. In urban areas (1-3), however, the number of MDs for every 100,000 people grew by roughly 20 additional physicians, expanding already existing gaps.

FIGURE 6 : ACTIVE PHYSICIANS, 2000-2012



If those patterns continue into 2020, rural counties will see their physician shortage continue to worsen. We project that in the entire 1995-2020 time period, the biggest urban counties, or cities with more than a million people, will more than double their number of active physicians practicing in their communities, growing their doctor populations by a factor of 1.5. Much of this growth has already happened. Small, rural areas, however, will see their physician population grow by just 40 percent during the same period. (See Figure 7) While that may sound like a promising development, it does not substantially change the number of doctors available per capita to rural patients. Between 2015 and 2020, the number of active physicians per 100,000 people in small, rural areas will grow by just .8 percent. That compares to a growth rate of 9 percent in cities of more than a million people. Already-advantaged urban counties, in fact, are the only communities poised to see real and substantial growth in the availability of doctors per 100,000 people in the next five years.

FIGURE 7 : ESTIMATED CHANGE IN THE NUMBER OF DOCTORS, 1995-2020



IMMIGRANT PHYSICIANS COULD HELP ANSWER THE PHYSICIAN SHORTAGE

In the coming years, it is clear that a variety of different inventions will likely be necessary to address the dramatic shortage of physicians that is currently plaguing rural communities. Between 2002 and 2016, American medical schools are projected to expand the number of students they train each year by 30 percent.³⁰ To meaningfully increase the number of doctors trained in the United States, however, the number of residency slots in the country must grow as well, especially in more rural communities.³¹ For the last 18 years, Congress has capped the number of residencies that receive funding by the Medicare program, a factor that has hindered the ability of hospitals to add more positions.³² A provision in the Affordable Care Act that created 550 new medical and dental residency slots in underserved urban and rural areas also experienced major funding cuts this year, leaving it with an uncertain future.³³ Many experts say that fixing such issues will be key to helping the United States meet its increased medical needs, particularly as baby boomers age and more Americans gain health insurance.

Such policy changes, however, are not likely to come about quickly, and they certainly won't have an immediate impact on the supply of physicians, considering that training a new doctor can take as long as 10 years. Given this situation, foreign-born physicians and trainees already studying in the United States represent a valuable resource that could help combat current physician shortages, at least in the near term. There are currently roughly 195,000 doctors with medical degrees from foreign countries practicing in the United States. These doctors make up a substantial portion of the

overall active physician workforce, comprising close to one in four active physicians practicing in the country overall. In some small, rural communities, such foreign-educated doctors—large portions of whom are foreign born—fill valuable gaps in the physician workforce, helping to at least partially offset painful rural physician shortages in this brief. Many policymakers, however, argue that more could be done to encourage such doctors to practice in rural areas, or make it easier for foreign-born physician to come to the United States and settle here for the long term.

Foreign-born doctors, for many reasons, are particularly well suited to combat the severe physician shortage currently plaguing America's rural counties. With fewer established ties, new immigrants, or those in the country for less than five years, are considerably more likely to move states for a job or position.³⁴ As more and more U.S.-trained doctors gravitate towards specialist professions,³⁵ international medical school graduates also continue to be most commonly found in primary care fields such as family medicine, internal medicine, and pediatrics. Currently, 34.5 percent of international medical school graduates practice in a primary care field, compared to just 27.8 percent of U.S.-trained doctors.³⁶ Such frontline, generalist doctors are particularly important to rural areas, which often refer patients out for specialized care and surgeries. Yet rural areas often struggle to find enough doctors to work in their areas in such fields. As recently as 2005, the federal government had classified more than three out of four rural counties in America as Health Professional Shortage Areas due to their lack of primary care doctors.³⁷ In recent years, many say the situation has only worsened.

Despite the role that foreign-born doctors could play in answering rural medical shortages, however, such physicians are underutilized in this capacity. Data shows that the vast majority of physicians

trained in foreign countries practicing in the United States are doing so in urban areas. Currently, 68.8 percent of all international medical school graduates practicing in the United States are based in the largest urban centers, or cities of more than 1 million people. Almost 95 percent of foreign-educated doctors are in urban counties of any size. Although such doctors have a presence in rural areas, they make up a smaller portion of the active physician population there than they do in other parts of the country. In 2012, 24 percent of all physicians in urban counties were graduates of foreign medical schools. In small, rural communities, however, they made up just 17 percent of all active physicians, and in the smallest rural areas, or counties with no towns larger than 2,500 people, they made up just 13.2 percent. (See Table 4)

TABLE 4 : DISTRIBUTION OF INTERNATIONAL MEDICAL SCHOOL GRADUATES IN THE UNITED STATES, 2012

	GRADUATES OF US MEDICAL SCHOOLS	INTERNATIONAL GRADUATES	TOTAL DOCTORS	SHARE INTERNATIONAL
1	379,402	134,329	518,254	25.9%
2	134,156	36,714	172,121	21.3%
3	52,139	14,247	67,180	21.2%
4	14,957	3,571	18,752	19.0%
5	8,586	1,811	10,535	17.2%
6	10,376	2,342	12,884	18.2%
7	8,496	1,738	10,388	16.7%
8	924	119	1,058	11.2%
9	1,372	237	1,630	14.5%
TOTAL	610,408	195,108	812,802	24.0%

If small, rural counties could do a better job recruiting internationally trained physicians to work in their communities, they could go a long way towards alleviating their current physician shortages. The shift would not need to be dramatic. For instance, if just 5 percent of international medical school graduates currently practicing in urban areas could be convinced to relocate to small, rural communities, such areas would gain almost 9,300 new physicians, growing their population of active physicians from roughly 26,000 to more than 35,000 people. That increase would grow the physician population in such areas by almost 36 percent. Some of this shift could be achieved through the implementation of more sophisticated visa programs reflecting the country's medical needs. In countries such as Canada and Australia, individual regions are able to directly sponsor immigrants for expedited permanent residency if they fill gaps in the local workforce.^{38,39} Given that more than one in three foreign-born physicians and surgeons in the United States are originally from India or China—countries with among the longest waits for green cards—a similar U.S. program could be an attractive incentive for many physicians already here.⁴⁰

Beyond shifting already active physicians to rural areas, more could also be done to expand programs designed to encourage foreign-born medical residents to practice in rural areas after graduation. In 2015, almost 5,900 non-U.S. citizen graduates of international medical schools were given positions in either first-year residency or fellowship programs in the United States.^{41,42} Despite the fact that U.S. educational institutions and academic medical centers invest heavily in training such individuals, our immigration system does not make it easy for them to remain in the country after graduation. The majority of international students who come into the United States for residency or fellowships do so on the J-1

visa, a visa administered by the U.S. Department of State for those doing short academic stints in America. Almost 8,900 medical residents and fellows were sponsored for the visa in the 2013-2014 school year alone.⁴³ Although the J-1 provides many promising medical graduates the opportunity to come to America, it requires visa holders to return to their home countries for at least two years after completing their training.

Critics of the revolving door the J-1 visa creates say the United States could encourage more academic centers and health facilities hospitals hosting such students for residency to sponsor them for H-1B visas, a more expensive visa without the requirement that students return home. Policymakers could also grant green cards to needed health care graduates or expand programs that exempt J-1 visa holders from the requirement that they leave after graduation. Currently, some international residency or fellowship graduates who opt to work for three years in a medically underserved area or with underserved patients can get a waiver of the requirement that they go home.⁴⁴ The program that makes that possible, the Conrad 30 Waiver Program, however, is highly limited and cumbersome. Each state gets 30 such waivers each year. While some states, such as West Virginia, routinely use all 30 of their waivers and say they could use more⁴⁵ - others like Wyoming, South Dakota, and Mississippi often fail to use their full allotment.⁴⁶ Keri Wagner, Healthcare Workforce and Primary Care Office Manager with Wyoming's Department of Rural Health, says she thinks a combination of legal fees and a fear of the unknown keep many rural areas in her state from actively recruiting J-1 physicians. Most years, she says, two-thirds of the state's Conrad 30 slots go unused.⁴⁷

Some policymakers also argue that the U.S. medical licensing process as a whole could be revisited in a way that could help rural

communities. Currently, doctors who immigrate to the United States from another country—even prestigious, mid-career specialists from advanced countries like the United Kingdom or Japan—must go through an arduous licensing and accreditation process that often takes more than a decade, if it's successful at all. Immigrant doctors must first prove they speak English and pass multiple licensing exams. Then, they must earn a spot in an accredited U.S. or Canadian residency program—a feat that has become more difficult in recent years, due to the fact that U.S. medical schools have added seats while the number of residency slots has remained relatively stable. (Only Canadian residents are exempt from this requirement.) Once in a program, doctors in residencies often work grueling, 80-hour weeks—often for fairly low pay.⁴⁸

While maintaining quality is incredibly important, some have questioned whether such dramatic hurdles are necessary. The Welcome Back Initiative, a program established to help immigrant physicians and medical professionals through the licensing process, estimates that more than 5,000 doctors have been through its program since 2001 but only about 136 made it successfully into U.S. practice.⁴⁹ Other countries also do more to tap into their immigrant physician workforce, particularly if it can serve communities in need. In Canada, for instance, some immigrant physicians can practice family medicine without Canadian postgraduate training if they completed residencies in the United States, Australia, Ireland, or the United Kingdom.⁵⁰ Canada also allows some specialists who successfully completed residencies in certain prestigious programs abroad to obtain a waiver of the Canadian residency requirement altogether.⁵¹ If the United States were to pursue such options—particularly for doctors willing to work in rural communities—fewer immigrant physicians would live

in our country without putting their needed lifesaving skills to good use.

Dr. Manish Sharma, a neurosurgeon originally from northern India, is one physician who has made a notable difference in the lives of underserved, rural healthcare patients. In 2012, Sharma began practicing in Mankato, Minnesota, a city with a population of 41,000. Although the community where he is based is not itself rural, the hospital where he works, which is affiliated with the Mayo Clinic, serves a segment of Southwestern Minnesota that is drastically underserved. Neighboring Faribault County, for instance, has just nine physicians—or 11 for every 100,000 residents. Jackson County, another nearby area, has only four, half of whom will likely retire in the next five years. Patients also come to Sharma's hospital from rural counties in northern Iowa, an area facing similar physician shortages.

When Sharma arrived, he already had a strong track record of success. Back home in India, he earned one of 11 spots available at his medical school, even though the school received more than 10,000 applications. In the years after school, he published more articles in two internationally acclaimed journals, *Journal of Neurosurgery* and *Neurosurgery*, than any of his peers. After coming to America to do a fellowship in peripheral nerve surgery with the Mayo Clinic in Rochester in 2010, he could tell his services were needed in the hospital system's Mankato location. Back then the two neurosurgeons in Mankato weren't able to provide continuous call, so patients with serious head or spinal injuries were often transported to hospitals in Rochester, almost 100 miles away. "As neurosurgeons, we are careful about how much imaging or other tests we order, because a patient's condition can change so quickly, even in the elevator," Sharma says. The long, cold winters

made trips for care all the more difficult. “When winter gets brutal here, choppers don’t fly,” Sharma says, “And road transport can be dangerous, delaying care for hours.”

Once Sharma joined the hospital in Mankato, the neurosurgeons were able to provide call 24 hours a day. While they once focused mostly on lower-risk spinal surgeries, Sharma trained the surgical technicians and staff to support brain surgery as well. Sharma says he’s very proud of the work the hospital’s neurosurgery department is doing today. In the last seven months, he and his team have performed four major surgeries that had never been done in Mankato before. “With the intensity of some of the head injuries, we wouldn’t have expected all these patients to survive, but they all returned home following surgery,” Sharma says, “I’m so grateful to Mayo that I had the opportunity to really build something here.” With Mayo’s help, Sharma used a J-1 visa waiver to practice in Mankato. He’ll be applying for a green card in the coming year.⁵²

In another part of the country, Justin Turner, director of physician recruitment for the Logan Regional Medical Center in West Virginia, says it is hard to imagine his hospital functioning without international doctors. He says his hospital, which is based in a town of 1,200 people, often has trouble recruiting U.S.-born doctors unless they already have a tie to the town of Logan or the Appalachian community more broadly. In the last several years, however, Turner has been able to bring in 28 foreign-born doctors using the Conrad 30 State Waiver program. “We really have the United Nations here now,” Turner says, “Our physicians are from everywhere—from Lebanon to Nigeria to Egypt.”⁵³

One doctor Turner says has contributed heavily to the hospital is Dr. Ashu Dhanjal, an invasive cardiologist originally from India.

When Dhanjal arrived in 2013, Logan had just one cardiologist on staff. Many of the patients in the area were traveling to Charleston or Huntington for their care. “My colleague had built up a large practice, but there was so much need here, one person couldn’t take care of it all,” Dhanjal says. That was especially true given the unique health challenges Logan and the surrounding area face. Many young people left the region when coal industry jobs dried up, leaving a largely elderly population. The incidence of conditions like diabetes, high blood pressure, and black lung is also high, as well as financial challenges that hinder patient care. “I was initially seeing so many patients here who had a heart attacks four, five, or even 10 years ago, got treated in an emergency room, and then never had any follow up care,” Dhanjal says, “It was just too far and too expensive for them to drive.”

Once Dhanjal began working in the hospital full time, the number of heart attack patients being transferred from emergency rooms to cardiology practices in bigger cities decreased dramatically. She and her partner also helped the hospital grow its cardiology services to a point that most major procedures can be done in house. “Now the community feels comfortable that when they come to our emergency room with a heart issue that they will be taken care of—and the care will be *really* good,” Dhanjal says. She’s also made promoting a healthy lifestyle a real focus of her work, trying to prevent heart problems before they start. “You get really attached to the Appalachian community,” Dhanjal says, “And I want to do everything I can to help.”

Dhanjal says she will likely remain in West Virginia for the long term, and she wants to become an American citizen as well. “I tell my daughter that the United States is a place where if you are willing to work hard and put in your best, the sky is truly the limit,”

Dhanjal says, “That’s what really drew me here.” Like many foreign doctors in the United States, however, her path has been long. After practicing medicine for several years in India, she came to the United States in 2007 and essentially repeated six years of residency and fellowship training so she could practice cardiology in the States. After all that work, Dhanjal then faced a risk she might have to leave if she didn’t find a rural hospital willing to sponsor her for a waiver of the J-1 visa requirement that she return home. Being on a J-1 instead of an H-1B visa during residency also lengthened her time to a green card by several additional years.⁵⁴

CONCLUSION

As this brief demonstrates, the shortage of doctors in rural counties across America is a real and pressing issue facing our healthcare system. Currently, there are only 94 physicians for every 100,000 people in rural counties, and just 82 in small, rural areas. That compares to 205 physicians per 100,000 people in urban counties in the country. This huge disparity has been growing in recent years, and will likely only worsen in the next five to 10 years, particularly as the population ages and almost 20 percent of physicians in small, rural counties retire.

The Conrad State 30 Waiver Program discussed in this brief will once again come before Congress for reauthorization this fall. As this brief demonstrates, despite the small number of slots available, the program is a critical avenue for rural communities, many of which have used it to recruit sorely needed physicians and specialists. It also ensures that the roughly 8,900 foreign-born medical residents and fellows in the United States currently on J-1 visas will not all have to leave the country immediately after completing their training. Given that residencies and fellowships are

quite costly—through subsidies for salaries and other expenses, the federal government contributes roughly \$100,000 per resident or fellow each year— anything done to keep more of these graduates on U.S. soil is a valuable, and financially sound, initiative.⁵⁵

Beyond reauthorizing the Conrad 30 State Waiver Program, there is more the government could do to better support immigrant doctors hoping to practice in the United States. A bipartisan bill introduced in the Senate this May by Senators Amy Klobuchar and Jerry Moran, among others, would automatically grant more J-1 visa waiver to states if they used all or more of their slots the previous year. Students pursuing residency or fellowships in the United States would also be granted dual intent, meaning some could begin applying for a permanent residency before even graduating from their programs.⁵⁶ Another bill, introduced in the House by Rep. Lucille Roybal-Allard, would create grants to support foreign-trained doctors and other medical professionals going through the lengthy process of becoming relicensed in the United States.⁵⁷ Comprehensive immigration reform could additionally give individual areas or states the ability to offer permanent visas to the physicians or healthcare workers they need. Given the real challenges the United States will have finding enough doctors to treat aging patients in rural areas in the coming years, all these measures deserve serious consideration. Small, rural communities are already facing major challenges in the race to provide care to rapidly aging baby boomers. Congress should take action to improve the situation before it worsens further.

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