

How Could Nurse Practitioners and Physician Assistants Be Deployed to Provide Rural Primary Care?

KEY FINDINGS

After adjusting for varying levels of utilization related to insurance plan type, the 725,000 new (2014) rural enrollees in the five levels of insurance plans available on federal and state exchanges- platinum, gold, silver, bronze and catastrophic- are expected to generate 1.39 million rural primary care office visits.

- At a national level it would require 345 full-time equivalent physicians to provide those visits to new rural enrollees. If only 70 percent of those visits were provided by physicians, 56 additional full-time physician assistants (PA) and 68 additional full-time nurse practitioners (NP) would be required to provide the remainder. If physicians provided half of the new enrollee visits, 93 additional PAs and 113 additional NPs would be required to provide the remainder.
- There is substantial regional variation in the need for rural providers to meet the needs of rural enrollees. Particularly high levels of need were found in the East North Central, West North Central and South Atlantic census divisions.
- Using PAs and NPs to help meet the needs of newly insured populations in rural areas may be an effective strategy to alleviate the effects of physician shortage, especially in states with less restrictive practice environments for non-physician primary care providers.

INTRODUCTION

Access to primary health care is difficult for many people living in rural places, and the growing number of rural residents who gained health insurance coverage as a result of the Affordable Care Act (ACA) will exacerbate this access problem. Prior research has established an association between an individual's level of health care coverage and utilization¹ and the newly ACA-insured population is estimated to increase the use of physicians by up to 7.9%.^{1, 2} For rural populations already experiencing primary care physician shortages,³ consideration must be given to who will provide the additional primary care visits needed to meet this increased demand.

The ratio of primary care physicians to population has been persistently lower in rural areas of the United States than in urban areas.⁴⁻⁸ In addition to physicians, nurse practitioners (NPs) and physician assistants (PAs) provide substantial portions of primary care visits in both rural and urban settings. In fact, NPs and PAs now account for 19% and 7%, respectively, of the primary

care workforce⁹ and contribute substantially to the total supply of primary care visits. While the level of contribution varies somewhat from state to state, and between rural and urban settings,¹⁰⁻¹⁴ NPs and PAs are commonly identified^{10, 12, 13, 15} as well positioned to help alleviate physician shortages, especially in rural areas. While NPs and PAs typically see fewer patients per week than their physician counterparts (63.5, 78.1, and 84.6 visits per week, respectively),¹⁵ patient outcomes are similar and patient satisfaction is high.¹⁶⁻¹⁹ In addition, studies suggest that NPs and PAs have the skills and training necessary to provide 70% or more of office-based primary care visits.^{10, 20, 21} Shifting a larger proportion of primary care services to NPs and PAs is a possible approach to mitigating projected shortages of physician primary care providers, especially in rural places. Another option is to have NPs and PAs care for less-complex patients which would extend physician availability to care for patients with more complex needs. Using hypothetical staffing scenarios, this paper explores how different combinations of NPs and PAs might be used to meet rural demand for primary care office visits resulting from expanded access to insurance on the new health insurance exchanges due to ACA implementation.

METHODS

In order to consider various staffing configurations, an estimate of the expected number of new primary care visits was needed. This calculation depended on the number of new enrollees, the type of insurance plan selected and the state of residence and rural location of the new enrollees.

CALCULATING RURAL/URBAN ACA ENROLLMENT

ACA health insurance enrollment data for 2014 were gathered for all 36¹ states using the federally-facilitated marketplace, healthcare.gov, by ZIP-code.²² ZIP-codes were designated as rural or urban using Rural Urban Commuting Area Codes (RUCAs; 2013 version 3.1 ZIP code approximation).² Of the remaining 15 states and the District of Columbia using state-based marketplaces, 2014 enrollment data were gathered for 8 states³ by county (sources available upon request). Counties were designated as rural or urban using Urban Influence Codes (UIC).⁴

State level rural and urban enrollment counts were determined by summing all urban and all rural ZIP code or county enrollment numbers by state. Rural and urban enrollment estimates for the remaining seven states⁵ with no reported county or ZIP code-level data were estimated by assigning the state's total enrollment, reported to the U.S. Department of Health and Human Services (HHS)^{23, 24} proportionately according to each state's rural and urban population.²⁵

Total enrollment percentages in platinum, gold, silver, bronze and catastrophic plans (referred to here collectively as "metallic plans") were obtained for each state from HHS.²⁴ The metallic plan enrollment percentages were applied to the rural and urban counts for each state to obtain state counts for enrollment in each metallic plan type for rural and urban areas.

CALCULATING RURAL/URBAN VISIT ESTIMATES

State-specific estimates of annual average primary care utilization by rural and urban enrollees in each type of metallic plan based on claims from actuarially equivalent employer-sponsored plans were obtained from HSI Network LLC. Among urban enrollees

¹Alabama, Alaska, Arizona, Arkansas, Delaware, Florida, Georgia, Idaho, Illinois, Iowa, Kansas, Louisiana, Maine, Michigan, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming

²<https://ruralhealth.und.edu/ruca>

³California, Colorado, District of Columbia, Maryland, New York, Oregon, Rhode Island, Washington

⁴<http://www.ers.usda.gov/data-products/urban-influence-codes.aspx>

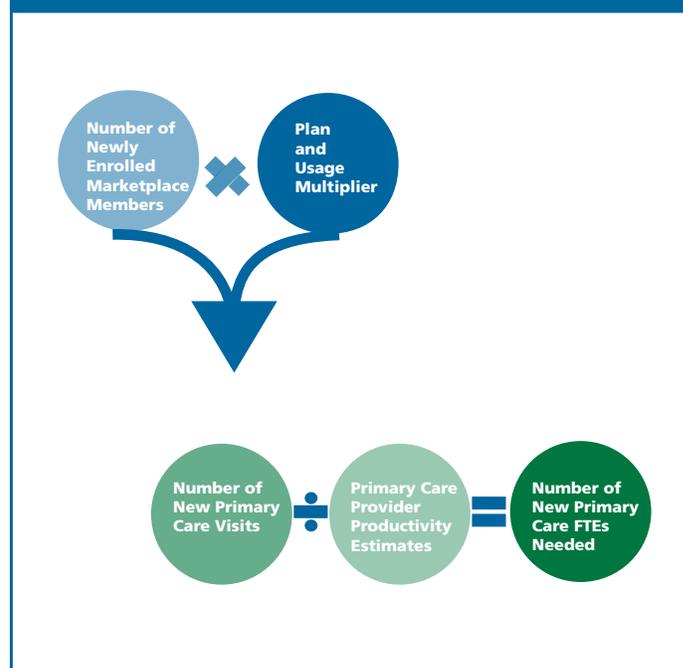
⁵Connecticut, Hawaii, Kentucky, Massachusetts, Minnesota, Nevada, Vermont

average utilization estimates ranged from 1.05 annual visits (in catastrophic plans) to 2.79 annual visits (in platinum plans). Among rural enrollees average annual visits ranged from 0.45 to 3.63. Metallic and catastrophic plan-specific utilization averages were multiplied by enrollment numbers to project the number of new visits due to ACA enrollment.

CALCULATING RURAL/URBAN PRIMARY CARE FTES NEEDED

Additional primary care full-time equivalents (FTEs) needed to meet the needs of new enrollees were calculated by dividing the projected number of new primary care visits by MD/DO/PA/NP productivity estimates developed by Doescher et al.¹⁵ The estimates are measured as expected visits performed per week, for each type of provider¹⁵ (Figure 1). We then applied different staffing scenarios, using different proportions of physicians, NPs and PAs, to estimate the number of providers of each type needed to supply the required number of FTEs. Tables were compiled by U.S. Census Division. State level estimates, grouped by Census Division, can be found in the Appendix.

Figure 1. Calculating additional primary care providers needed to meet ACA-induced new visits



RESULTS

ENROLLMENT AND VISITS

In 2014, 7,847,547 individuals enrolled in metallic or catastrophic level qualified health plans, as shown in Table 1. About 9.2% of those new enrollees were located in rural areas of the nation, however there was substantial variation in the number and proportion of new rural enrollees across U.S. Census Divisions. The two Divisions with the highest number of enrollees, the South Atlantic region and the Pacific region, have a combined total of over 3.5 million new enrollees; however only 4.5% of these enrollees lived in rural areas. In contrast, 24.2% of the new enrollees in West North Central region were rural residents, as were 22.5% of the new enrollees in the East South Central region. After adjusting for expected levels of utilization for the various plan types, new enrollees nationally were expected to generate 14,074,367 visits, or about 1.79 visits per enrollee (not tabled). Rural residents were expected to generate 9.9% of those visits, with an average 1.92 visits per enrollee (not tabled). State level variation in rural/urban enrollment is shown in Figure 2.

MEETING RURAL DEMAND FOR PROVIDERS

Three staffing scenarios that could provide the primary care visits required by new enrollees were explored. In each scenario, productivity estimates were used to determine how many physicians, NPs, and PAs would be needed to provide the estimated 14 million additional primary care visits required by the 7.8 million new 2014 metallic plan enrollees. As shown in Table 2, if all new visits were provided by physicians, meeting the needs generated by new enrollees would require an additional 3,495 primary care physicians. Providing the visits required for the new rural enrollees would require 346 additional rural primary care physicians. The three regions needing the greatest number of rural providers were the East North Central (53 physicians), East South Central (53 physicians) and South Atlantic (52 physicians). The need for large numbers of additional urban providers was pronounced

Table 1: New enrollees and estimated number of new primary care visits due to implementation of the Affordable Care Act by Census Division, 2014

	New Enrollees			Estimated New Primary Care Visits		
	Urban	Rural	Total	Urban	Rural	Total
Total	7,122,375 (90.8%)	725,172 (9.2%)	7,847,547 (100.0%)	12,683,175 (90.1%)	1,391,192 (9.9%)	14,074,367 (100.0%)
New England	206,212 (78.7%)	55,728 (21.3%)	261,940	410,063 (80.1%)	101,975 (19.9%)	512,038
Middle Atlantic	808,952 (95.1%)	41,507 (4.9%)	850,459	1,613,354 (94.6%)	92,722 (5.4%)	1,706,076
East North Central	790,775 (86.2%)	126,162 (13.8%)	916,937	1,320,260 (86.0%)	214,758 (14.0%)	1,535,019
West North Central	268,223 (75.8%)	85,459 (24.2%)	353,682	471,152 (76.4%)	145,183 (23.6%)	616,335
South Atlantic	2,021,345 (95.4%)	96,727 (4.6%)	2,118,072	3,780,176 (94.7%)	210,872 (5.3%)	3,991,049
East South Central	304,889 (77.5%)	88,574 (22.5%)	393,463	596,370 (73.7%)	213,030 (26.3%)	809,400
West South Central	881,089 (92.9%)	67,113 (7.1%)	948,202	1,611,483 (92.2%)	135,910 (7.8%)	1,747,393
Mountain	431,038 (81.5%)	97,527 (18.5%)	528,565	699,573 (82.3%)	150,661 (17.7%)	850,234
Pacific	1,409,852 (95.5%)	66,375 (4.5%)	1,476,227	2,180,743 (94.5%)	126,080 (5.5%)	2,306,823

in the South Atlantic and Pacific regions. Detailed analyses of each region, including state level estimates, can be found in the Appendix.

The second staffing scenario that was explored assumed a mix of primary care providers, with physicians providing 70 percent of the estimated visits required by the new enrollees and NPs and PAs each providing 15% of the estimated visits. The results of that analysis are presented in Table 3. In this scenario the overall number of physicians required to provide 14.0 million visits dropped to 2,447, with a new requirement for 563 PAs and 685 NPs. Meeting rural demand would require 242 physicians, 56 PAs and 68 NPs. A third staffing scenario assumed that 50% of the expected new visits would be provided by physicians, with PAs and NPs each providing 25% of the visits. Nationally, under this scenario (shown in Table 4), the number of physicians required to meet new visit requirements drops to 1,748 with the visit gap filled in by 939 PAs and 1,142 NPs. Rural areas would require 173 physicians, 93 PAs and 113 NPs.

Table 2: First staffing scenario to meet the increased primary care demand: 100% of new primary care visits provided by an MD/DO, 2014

	Urban	Rural	Total
	MD/DO		
Total	3,149.5	345.5	3,495.0
New England	101.8	25.3	127.2
Middle Atlantic	400.6	23.0	423.7
East North Central	327.9	53.3	381.2
West North Central	117.0	36.1	153.1
South Atlantic	938.7	52.4	991.1
East South Central	148.1	52.9	201.0
West South Central	400.2	33.7	433.9
Mountain	173.7	37.4	211.1
Pacific	541.5	31.3	572.8

Figure 2: Urban and Rural Metal Plan Enrollment by State, 2014

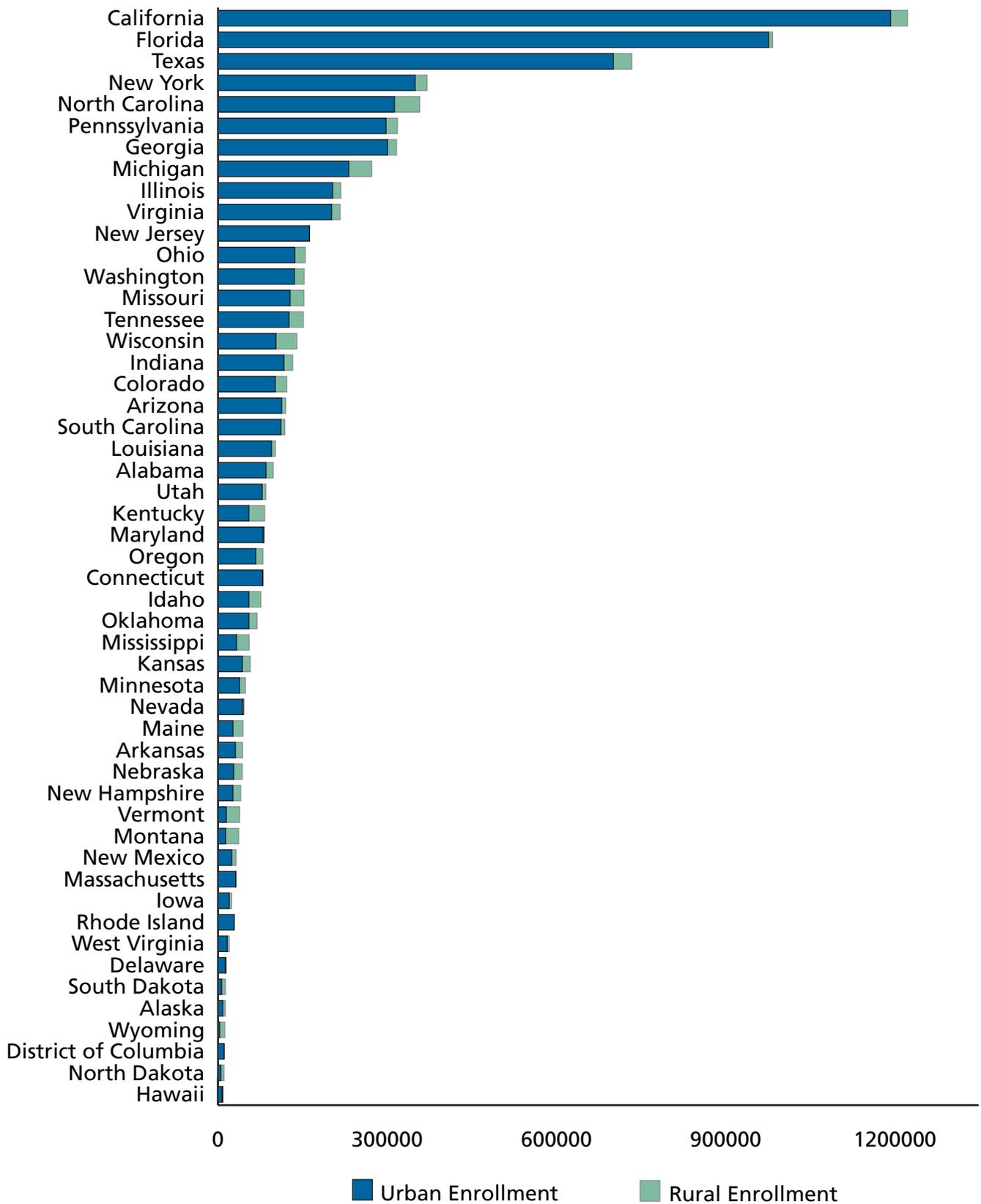


Table 3: Second staffing scenario to meet the increased primary care demand: 70% of new primary care visits provided by MD/DOs, 15% provided by PAs and 15% provided by NPs, 2014

	Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Total	2,204.7	507.5	617.7	241.8	55.7	67.8	2,446.5	563.1	685.4
New England	71.3	16.4	20.0	17.7	4.1	5.0	89.0	20.5	24.9
Middle Atlantic	280.4	64.6	78.6	16.1	3.7	4.5	296.6	68.3	83.1
East North Central	229.5	52.8	64.3	37.3	8.6	10.5	266.8	61.4	74.8
West North Central	81.9	18.9	22.9	25.2	5.8	7.1	107.1	24.7	30.0
South Atlantic	657.1	151.2	184.1	36.7	8.4	10.3	693.8	159.7	194.4
East South Central	103.7	23.9	29.0	37.0	8.5	10.4	140.7	32.4	39.4
West South Central	280.1	64.5	78.5	23.6	5.4	6.6	303.7	69.9	85.1
Mountain	121.6	28.0	34.1	26.2	6.0	7.3	147.8	34.0	41.4
Pacific	379.1	87.3	106.2	21.9	5.0	6.1	401.0	92.3	112.3

Table 4: Third staffing scenario to meet the increased primary care demand: 50% of new primary care visits provided by MD/DOs, 25% provided by PAs and 25% provided by NPs, 2014

	Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Total	1,574.8	845.8	1,029.5	172.7	92.8	112.9	1,747.5	938.5	1,142.4
New England	50.9	27.3	33.3	12.7	6.8	8.3	63.6	34.1	41.6
Middle Atlantic	200.3	107.6	131.0	11.5	6.2	7.5	211.8	113.8	138.5
East North Central	163.9	88.0	107.2	26.7	14.3	17.4	190.6	102.4	124.6
West North Central	58.5	31.4	38.2	18.0	9.7	11.8	76.5	41.1	50.0
South Atlantic	469.4	252.1	306.8	26.2	14.1	17.1	495.5	266.1	323.9
East South Central	74.0	39.8	48.4	26.5	14.2	17.3	100.5	54.0	65.7
West South Central	200.1	107.5	130.8	16.9	9.1	11.0	217.0	116.5	141.8
Mountain	86.9	46.7	56.8	18.7	10.0	12.2	105.6	56.7	69.0
Pacific	270.8	145.4	177.0	15.7	8.4	10.2	286.4	153.8	187.2

SUMMARY

This study explored provider staffing scenarios that could be used to meet the primary care office visit requirements of the rural population enrolling in “metallic plans” established under the ACA. Estimates indicate that about 7.8 million Americans enrolled in “metallic plans” in 2014 who were projected to generate about 14 million office visits (adjusted for varying levels of utilization among plan types). Approximately 725,000 of those enrollees are residents of rural areas and are expected to generate

1.39 million office visits. Providing those rural visits (using average productivity estimates) would require 346 MD/DO full-time equivalents (FTEs). If only 70% of those visits were provided by MD/DOs, a realistic estimate given the current composition of the primary care workforce,²⁶ providing the additional visits would require 56PAs and 68 NPs. If MD/DOs provided half of the visits, providing the other half would require 93PAs and 113NPs. Substantial regional variation in need for providers was observed, with particularly high levels of provider need in the East North Central, South Atlantic and East South Central census divisions. (State-level provider requirements are reported in the Appendix).

LIMITATIONS

Available data regarding the urban/rural status of new metallic plan enrollees was not consistent across all states and therefore rural and urban status was assigned to metallic plan enrollees using different methodologies in different states. Although using ZIP codes and county codes to determine enrollees' rural/urban status does not yield identical designations, the differences are small. RUCA codes define 16.55%²⁷ of the U.S. population as rural, while county level Urban Influence Codes define 14.99%²⁷ of the U.S. population as rural. Additionally, estimating rural/urban enrollment numbers based on the state's rural/urban population may introduce some error in our estimates of rural and urban visits for the 7 states where neither ZIP code nor county level data were available. However, this method provides a general view of overall enrollment patterns which can be used to explore alternative staffing models.

Our calculations of the numbers of additional primary care providers required to meet needs arising from enrollment in health insurance exchanges assume that the exchange enrollment data measures a net increase in insurance enrollment. These data may over-estimate true net enrollment, since some exchange enrollees may have been previously insured. In addition, the estimates of primary care need assume that those previously uninsured did not access primary care.

Finally, we did not have access to Medicaid enrollment data split by rural/urban status for those states that expanded Medicaid and therefore Medicaid enrollment numbers are not included in our estimates. Had our visit estimates included expanded Medicaid enrollees the estimated number of new visits in both rural and urban places would be much larger. New Medicaid enrollees outnumbered new metallic marketplace enrollees in Washington DC and 24 of the 28 states that expanded Medicaid.²⁸

POLICY IMPLICATIONS

Having a sufficient health provider workforce to meet the needs of citizens newly insured under the ACA is a particularly daunting and complicated problem in rural areas of the United States. The increase in the number of insured rural people is occurring against a backdrop of a long-standing problem of rural primary care physician shortages.²⁷ An increase in the number of people with insurance will likely result in more people wanting to see a health provider, straining already limited workforce resources. Finding ways to meet this increased demand will require creative solutions, including finding ways to improve and expand the utilization of the rural NP and PA workforce.

Using NPs and PAs to address increased utilization and alleviate provider shortages may be advantageous for a number of reasons. The cost and time required to train NPs and PAs for primary care practice is substantially less than for primary care physicians. NP and PA programs typically require two to three years of training to complete, compared to the seven years of post-baccalaureate training required for a primary care physician. In addition, there is evidence that primary care PAs are more likely to locate in rural areas than MD/DOs²⁹ so they may be somewhat easier to recruit to rural practices. PAs and NPs may also devote much of their patient time to less complicated patients and to activities such as patient education and prevention, thus preserving physician

resources for more complex patients. In addition, and perhaps most importantly, the quality of care delivered by PAs and NPs is high.^{4, 18, 19, 30} There is accumulating evidence that having NPs and/or PAs as part of primary care teams contributes to greater efficiency, high overall quality of care, and lower per visit costs.^{11, 14}

While increased utilization of NPs and PAs in rural primary care is likely to improve the availability of care to both newly and previously insured rural residents, there are some barriers that limit the contributions they can make in many states. Scope of practice for NPs and PAs varies from state to state^{31, 32} and evidence suggests that a less restrictive practice regulation environment is associated with an increase in the likelihood of patients receiving primary care from NPs.^{12, 33} Kuo et al.³³ found that enhanced prescriptive authority in particular was strongly associated with an increase in the number of patients being treated by NPs. Similarly, Hooker and Muchow¹² estimated that adoption of the American Academy of Physician Assistants (AAPA) model scope of practice legislation in a state with a more restrictive practice environment would lead to PAs and NPs growing to 41% of the primary care workforce in 9 years, from a baseline of 33%. Policy-makers in states with relatively restrictive practice environments for PAs and/or NPs^{31, 32, 34} may wish to consider modifying those restrictions to increase access to care, especially in light of both the expansion of the insured population resulting from implementation of the ACA and the growing health care needs of an aging American population.³⁵

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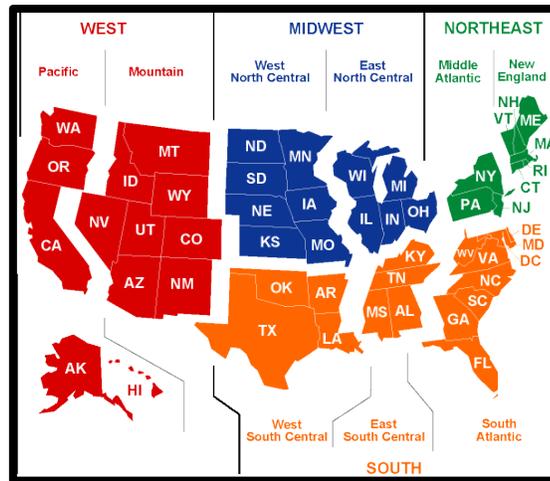
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Appendix: State-Level Data Presented by U.S. Census Division



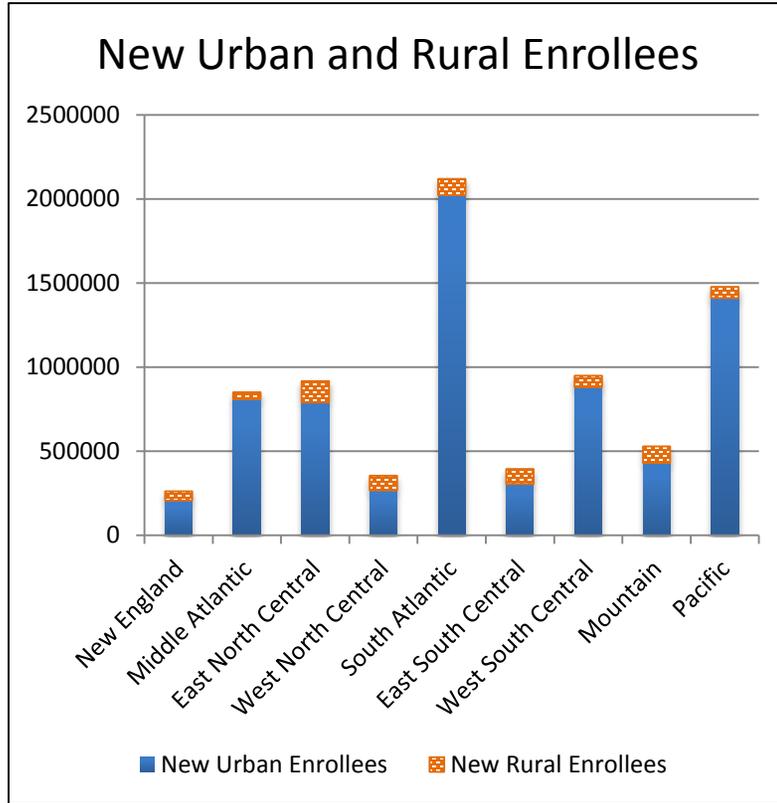
The following pages provide state-level estimates of new urban and rural Affordable Care Act (ACA) health insurance enrollee counts, additional new urban and rural primary care visits, and three possible staffing options for providing these visits to newly insured patients. The three staffing options explored include 100% of visits provided by physicians (MDs/DOs), 70% of visits provided by physicians and 15% each provided by physician assistants (PAs) and nurse practitioners (NPs) and 50% of visits provided by MDs/DOs and 25% of visits provided by both PAs and NPs.

Federally-Facilitated Marketplace States: ZIP-code level ACA health insurance enrollment data was provided by the U.S. Department of Health and Human Services (HHS) for the following states: Alabama, Alaska, Arizona, Arkansas, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Michigan, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia, Wisconsin, and Wyoming

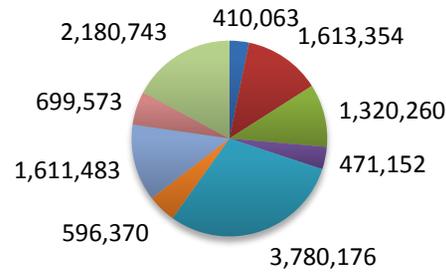
State-Based Marketplace States: County-level ACA health insurance enrollment data was provided by individual states (sources available upon request) including: California, Colorado, District of Columbia, Maryland, New York, Oregon, Rhode Island, and Washington

State-Based Marketplace States who did not provide rural/urban specific enrollment data: Rural/urban ACA health insurance enrollment data was estimated by assigning state level enrollment data (provided by HHS) proportionally to the state's rural/urban population. States include: Connecticut, Hawaii, Kentucky, Massachusetts, Minnesota, Nevada, and Vermont

United States of America by Census Division

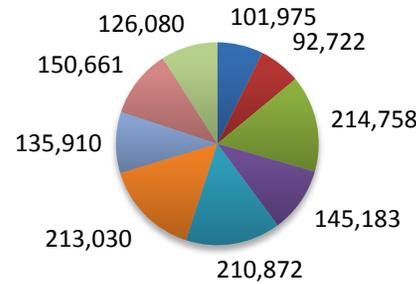


Estimated New Urban Primary Care Visits (Total: 12,683,175 visits)



- New England
- East North Central
- South Atlantic
- West South Central
- Pacific
- Middle Atlantic
- West North Central
- East South Central
- Mountain

Estimated New Rural Primary Care Visits (Total: 1,391,192 visits)



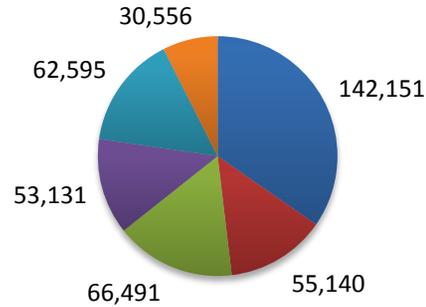
Staff Scenario 1: All visits provided by MD/DO (in FTEs)

Census Division	Urban	Rural	Total
New England	101.8	25.3	127.2
Middle Atlantic	400.6	23.0	423.7
East North Central	327.9	53.3	381.2
West North Central	117.0	36.1	153.1
South Atlantic	938.7	52.4	991.1
East South Central	148.1	52.9	201.0
West South Central	400.2	33.7	433.9
Mountain	173.7	37.4	211.1
Pacific	541.5	31.3	572.8
Total	3149.5	345.5	3495.0

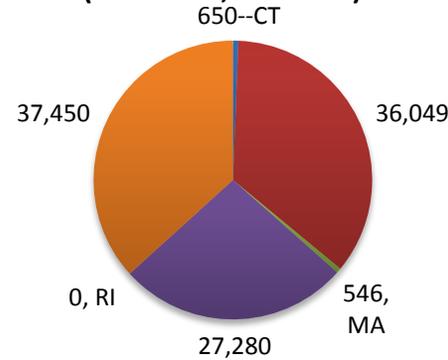
Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
New England	71.3	16.4	20.0	17.7	4.1	5.0	89.0	20.5	24.9	50.9	27.3	33.3	12.7	6.8	8.3	63.6	34.1	41.6
Middle Atlantic	280.4	64.6	78.6	16.1	3.7	4.5	296.6	68.3	83.1	200.3	107.6	131.0	11.5	6.2	7.5	211.8	113.8	138.5
East North Central	229.5	52.8	64.3	37.3	8.6	10.5	266.8	61.4	74.8	163.9	88.0	107.2	26.7	14.3	17.4	190.6	102.4	124.6
West North Central	81.9	18.9	22.9	25.2	5.8	7.1	107.1	24.7	30.0	58.5	31.4	38.2	18.0	9.7	11.8	76.5	41.1	50.0
South Atlantic	657.1	151.2	184.1	36.7	8.4	10.3	693.8	159.7	194.4	469.4	252.1	306.8	26.2	14.1	17.1	495.5	266.1	323.9
East South Central	103.7	23.9	29.0	37.0	8.5	10.4	140.7	32.4	39.4	74.0	39.8	48.4	26.5	14.2	17.3	100.5	54.0	65.7
West South Central	280.1	64.5	78.5	23.6	5.4	6.6	303.7	69.9	85.1	200.1	107.5	130.8	16.9	9.1	11.0	217.0	116.5	141.8
Mountain	121.6	28.0	34.1	26.2	6.0	7.3	147.8	34.0	41.4	86.9	46.7	56.8	18.7	10.0	12.2	105.6	56.7	69.0
Pacific	379.1	87.3	106.2	21.9	5.0	6.1	401.0	92.3	112.3	270.8	145.4	177.0	15.7	8.4	10.2	286.4	153.8	187.2
Total	2204.7	507.5	617.7	241.8	55.7	67.8	2446.5	563.1	685.4	1574.8	845.8	1029.5	172.7	92.8	112.9	1747.5	938.5	1142.4

New England Census Division

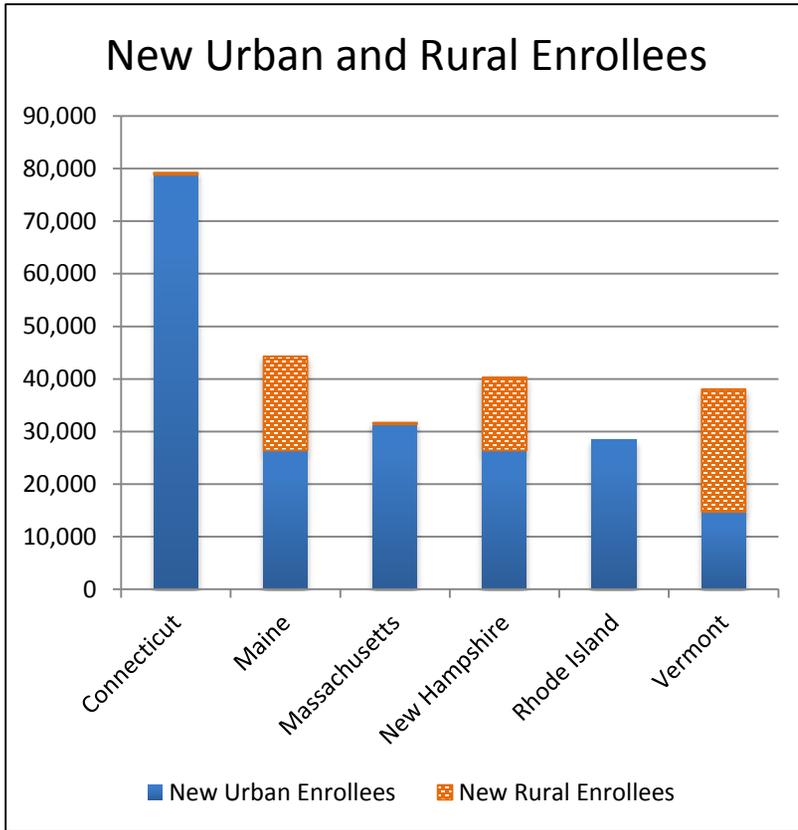
Estimated New Urban Primary Care Visits (Total: 410,063 visits)



Estimated New Rural Primary Care Visits (Total: 101,975 visits)

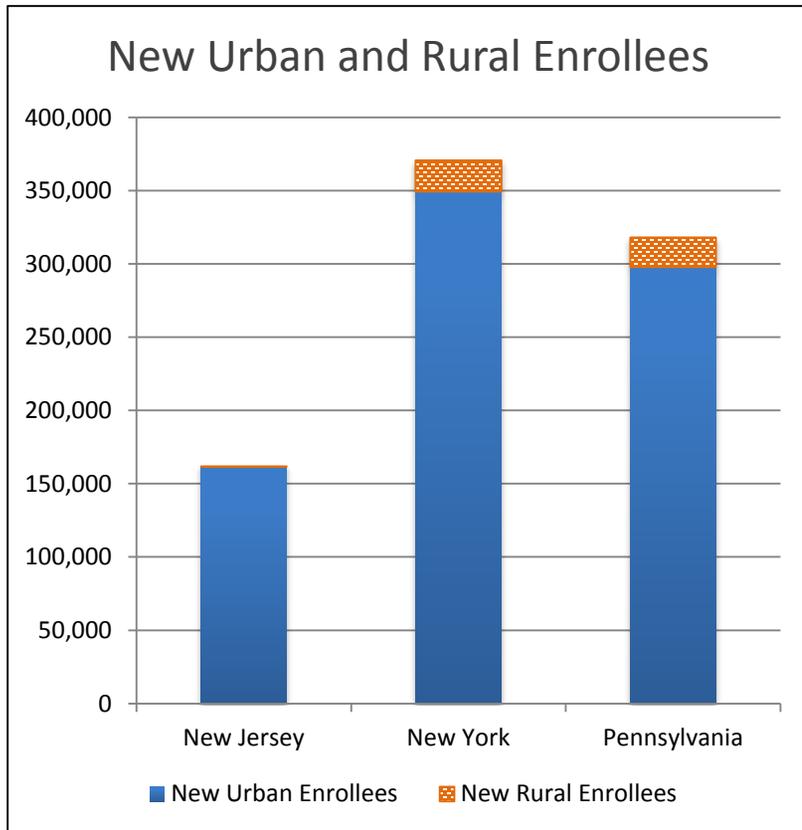


	Urban	Rural	Total
Connecticut	35.3	0.2	35.5
Maine	13.7	9.0	22.6
Massachusetts	16.5	0.1	16.6
New Hampshire	13.2	6.8	20.0
Rhode Island	15.5	---	15.5
Vermont	7.6	9.3	16.9
Total	101.8	25.3	127.2

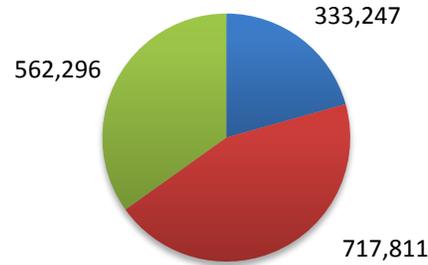


Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Connecticut	24.7	5.7	6.9	0.1	0.0	0.0	24.8	5.7	7.0	17.6	9.5	11.5	0.1	0.0	0.1	17.7	9.5	11.6
Maine	9.6	2.2	2.7	6.3	1.4	1.8	15.9	3.6	4.4	6.8	3.7	4.5	4.5	2.4	2.9	11.3	6.1	7.4
Massachusetts	11.6	2.7	3.2	0.1	0.0	0.0	11.7	2.7	3.3	8.3	4.4	5.4	0.1	0.0	0.0	8.3	4.5	5.4
New Hampshire	9.2	2.1	2.6	4.7	1.1	1.3	14.0	3.2	3.9	6.6	3.5	4.3	3.4	1.8	2.2	10.0	5.4	6.5
Rhode Island	10.9	2.5	3.0	---	---	---	10.9	2.5	3.0	7.8	4.2	5.1	---	---	---	7.8	4.2	5.1
Vermont	5.3	1.2	1.5	6.5	1.5	1.8	11.8	2.7	3.3	3.8	2.0	2.5	4.6	2.5	3.0	8.4	4.5	5.5
Total	71.3	16.4	20.0	17.7	4.1	5.0	89.0	20.5	24.9	50.9	27.3	33.3	12.7	6.8	8.3	63.6	34.1	41.6

Middle Atlantic Census Division

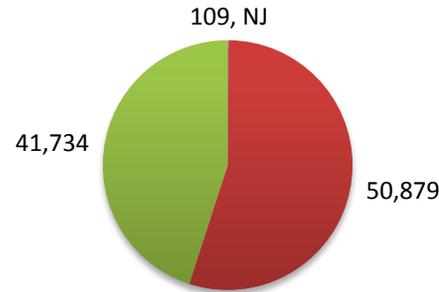


Estimated New Urban Primary Care Visits (Total: 1,613,354 visits)



- New Jersey
- New York
- Pennsylvania

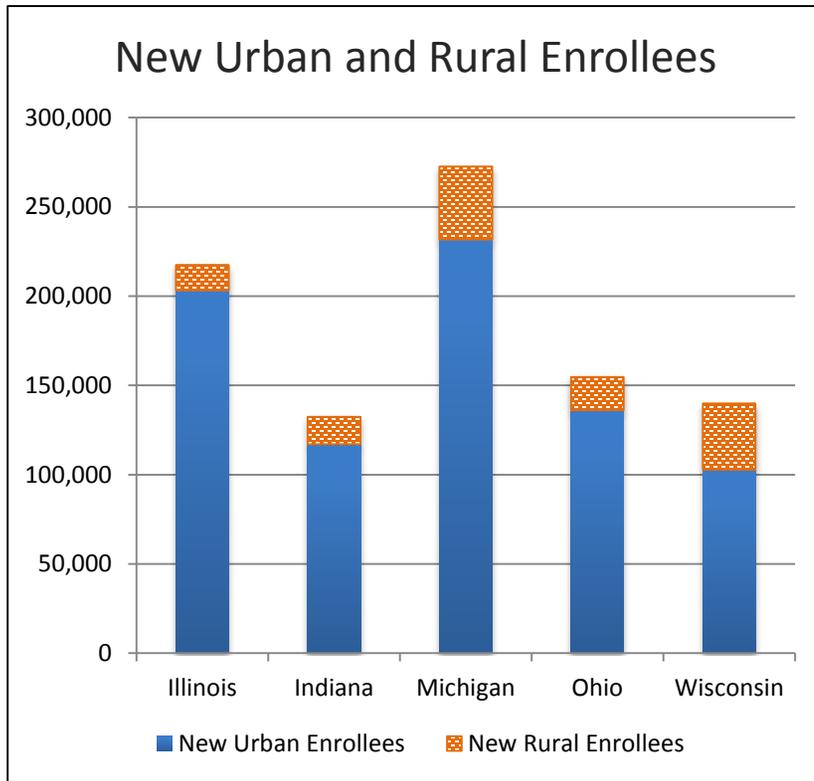
Estimated New Rural Primary Care Visits (Total: 92,722 visits)



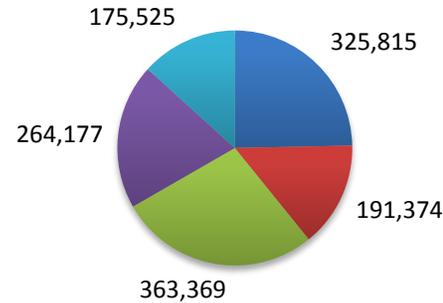
	Urban	Rural	Total
New Jersey	82.8	0.0	82.8
New York	178.2	12.6	190.9
Pennsylvania	139.6	10.4	150.0
Total	400.6	23.0	423.7

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
New Jersey	57.9	13.3	16.2	0.0	0.0	0.0	57.9	13.3	16.2	41.4	22.2	27.0	0.0	0.0	0.0	41.4	22.2	27.1
New York	124.8	28.7	35.0	8.8	2.0	2.5	133.6	30.8	37.4	89.1	47.9	58.3	6.3	3.4	4.1	95.4	51.3	62.4
Pennsylvania	97.7	22.5	27.4	7.3	1.7	2.0	105.0	24.2	29.4	69.8	37.5	45.6	5.2	2.8	3.4	75.0	40.3	49.0
Total	280.4	64.6	78.6	16.1	3.7	4.5	296.6	68.3	83.1	200.3	107.6	131.0	11.5	6.2	7.5	211.8	113.8	138.5

East North Central Census Division

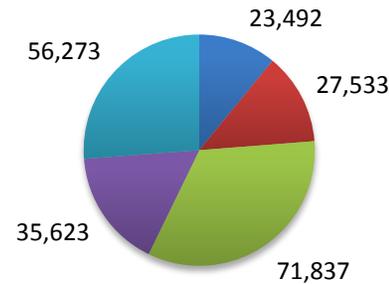


Estimated New Urban Primary Care Visits (Total: 790,775 visits)



- Illinois
- Indiana
- Michigan
- Ohio
- Wisconsin

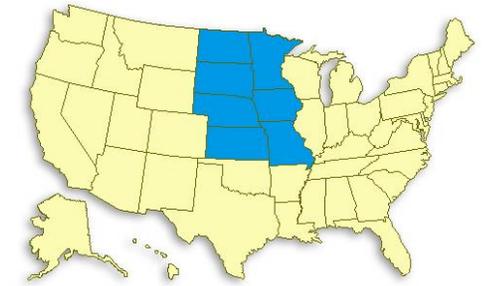
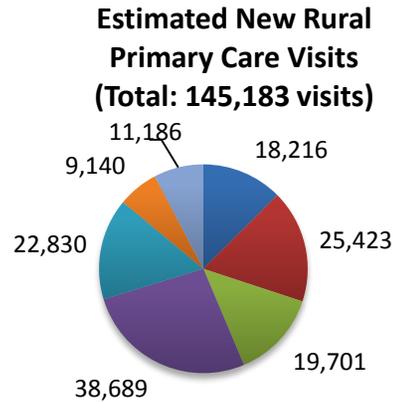
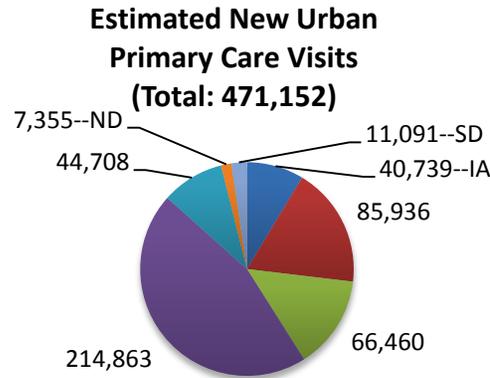
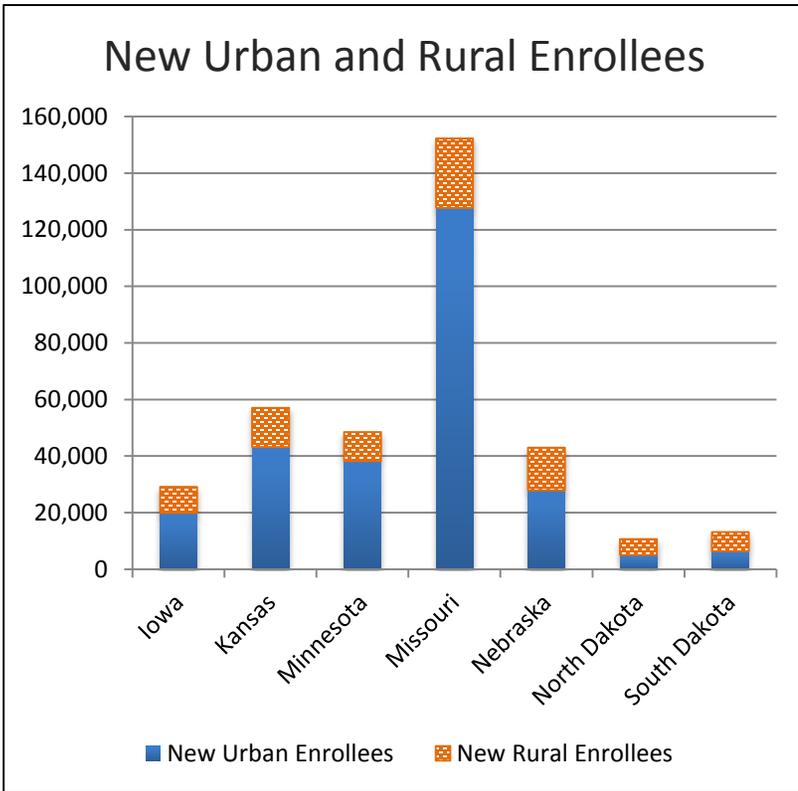
Estimated New Rural Primary Care Visits (Total: 214,758 visits)



Staff Scenario 1: All visits provided by MD/DO (in FTEs)			
	Urban	Rural	Total
Illinois	80.9	5.8	86.7
Indiana	47.5	6.8	54.4
Michigan	90.2	17.8	108.1
Ohio	65.6	8.8	74.4
Wisconsin	43.6	14.0	57.6
Total	327.9	53.3	381.2

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Illinois	56.6	13.0	15.9	4.1	0.9	1.1	60.7	14.0	17.0	40.5	21.7	26.4	2.9	1.6	1.9	43.4	23.3	28.4
Indiana	33.3	7.7	9.3	4.8	1.1	1.3	38.1	8.8	10.7	23.8	12.8	15.5	3.4	1.8	2.2	27.2	14.6	17.8
Michigan	63.2	14.5	17.7	12.5	2.9	3.5	75.7	17.4	21.2	45.1	24.2	29.5	8.9	4.8	5.8	54.0	29.0	35.3
Ohio	45.9	10.6	12.9	6.2	1.4	1.7	52.1	12.0	14.6	32.8	17.6	21.4	4.4	2.4	2.9	37.2	20.0	24.3
Wisconsin	30.5	7.0	8.5	9.8	2.3	2.7	40.3	9.3	11.3	21.8	11.7	14.2	7.0	3.8	4.6	28.8	15.5	18.8
Total	229.5	52.8	64.3	37.3	8.6	10.5	266.8	61.4	74.8	163.9	88.0	107.2	26.7	14.3	17.4	190.6	102.4	124.6

West North Central Census Division



- Iowa
- Kansas
- Minnesota
- Missouri
- Nebraska
- North Dakota
- South Dakota

Staff Scenario 1: All visits provided by MD/DO (in FTEs)

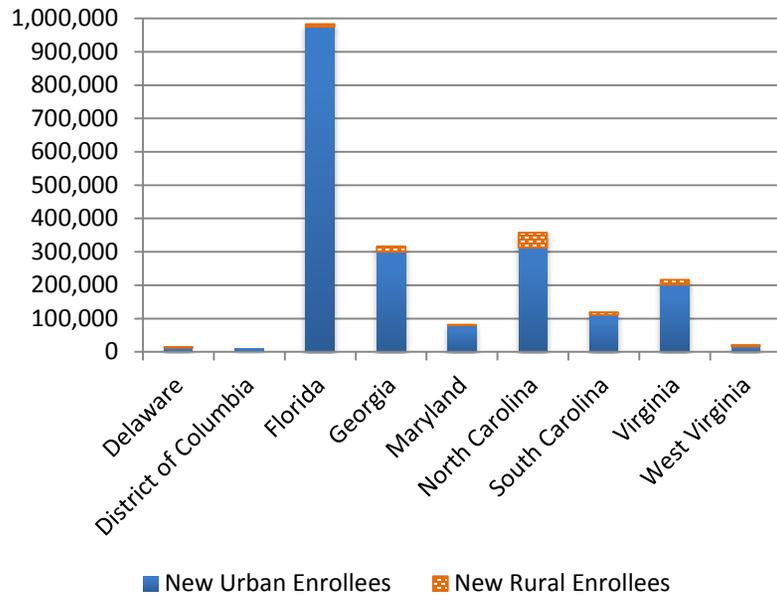
	Urban	Rural	Total
Iowa	10.1	4.5	14.6
Kansas	21.3	6.3	27.7
Minnesota	16.5	4.9	21.4
Missouri	53.4	9.6	63.0
Nebraska	11.1	5.7	16.8
North Dakota	1.8	2.3	4.1
South Dakota	2.8	2.8	5.5
Total	117.0	36.1	153.1

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Iowa	7.1	1.6	2.0	3.2	0.7	0.9	10.2	2.4	2.9	5.1	2.7	3.3	2.3	1.2	1.5	7.3	3.9	4.8
Kansas	14.9	3.4	4.2	4.4	1.0	1.2	19.4	4.5	5.4	10.7	5.7	7.0	3.2	1.7	2.1	13.8	7.4	9.0
Minnesota	11.6	2.7	3.2	3.4	0.8	1.0	15.0	3.4	4.2	8.3	4.4	5.4	2.4	1.3	1.6	10.7	5.7	7.0
Missouri	37.3	8.6	10.5	6.7	1.5	1.9	44.1	10.1	12.3	26.7	14.3	17.4	4.8	2.6	3.1	31.5	16.9	20.6
Nebraska	7.8	1.8	2.2	4.0	0.9	1.1	11.7	2.7	3.3	5.6	3.0	3.6	2.8	1.5	1.9	8.4	4.5	5.5
North Dakota	1.3	0.3	0.4	1.6	0.4	0.4	2.9	0.7	0.8	0.9	0.5	0.6	1.1	0.6	0.7	2.0	1.1	1.3
South Dakota	1.9	0.4	0.5	1.9	0.4	0.5	3.9	0.9	1.1	1.4	0.7	0.9	1.4	0.7	0.9	2.8	1.5	1.8
Total	81.9	18.9	22.9	25.2	5.8	7.1	107.1	24.7	30.0	58.5	31.4	38.2	18.0	9.7	11.8	76.5	41.1	50.0

South Atlantic Census Division

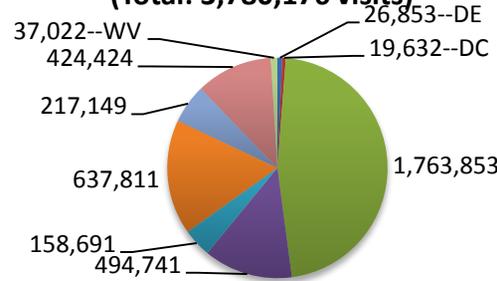


New Urban and Rural Enrollees



Estimated New Urban Primary Care Visits

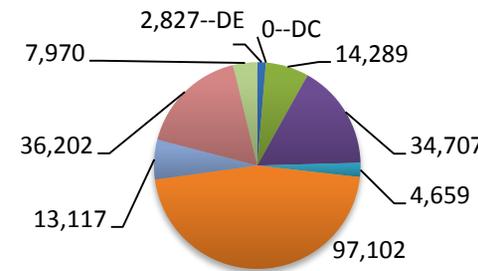
(Total: 3,780,176 visits)



- Delaware
- Florida
- Maryland
- South Carolina
- West Virginia
- District of Columbia
- Georgia
- North Carolina
- Virginia

Estimated New Rural Primary Care Visits

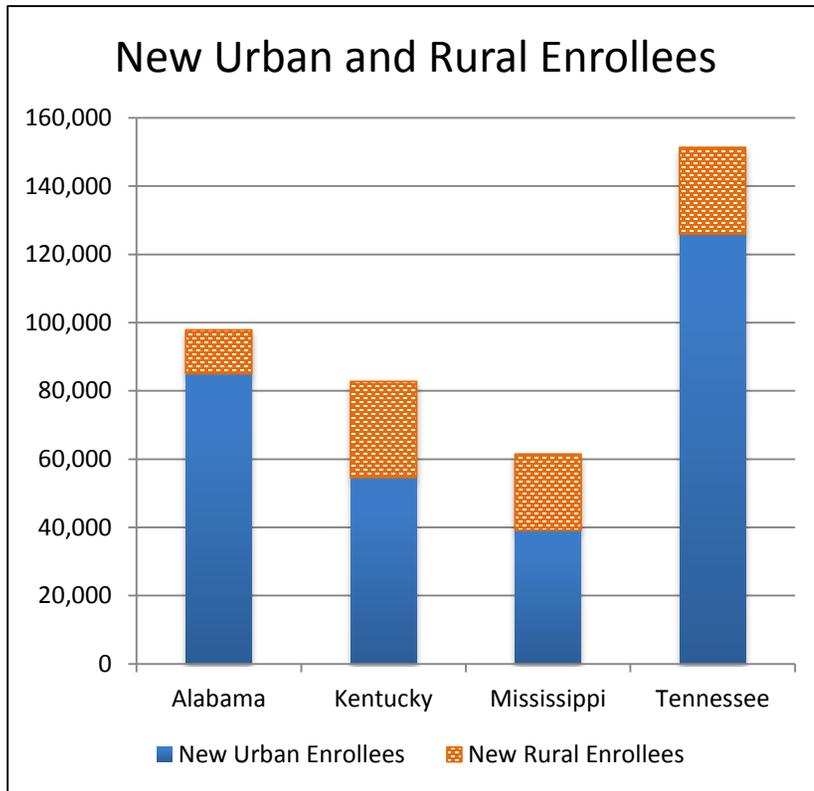
(Total: 210,872 visits)



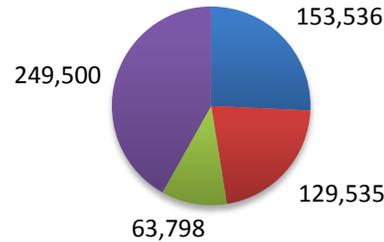
Staff Scenario 1: All visits provided by MD/DO (in FTEs)			
	Urban	Rural	Total
Delaware	6.7	0.7	7.4
District of Columbia	4.9	0.0	4.9
Florida	438.0	3.5	441.6
Georgia	122.9	8.6	131.5
Maryland	39.4	1.2	40.6
North Carolina	158.4	24.1	182.5
South Carolina	53.9	3.3	57.2
Virginia	105.4	9.0	114.4
West Virginia	9.2	2.0	11.2
Total	938.7	52.4	991.1

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Delaware	4.7	1.1	1.3	0.5	0.1	0.1	5.2	1.2	1.4	3.3	1.8	2.2	0.4	0.2	0.2	3.7	2.0	2.4
District of Columbia	3.4	0.8	1.0	0.0	0.0	0.0	3.4	0.8	1.0	2.4	1.3	1.6	0.0	0.0	0.0	2.4	1.3	1.6
Florida	306.6	70.6	85.9	2.5	0.6	0.7	309.1	71.1	86.6	219.0	117.6	143.2	1.8	1.0	1.2	220.8	118.6	144.3
Georgia	86.0	19.8	24.1	6.0	1.4	1.7	92.0	21.2	25.8	61.4	33.0	40.2	4.3	2.3	2.8	65.7	35.3	43.0
Maryland	27.6	6.3	7.7	0.8	0.2	0.2	28.4	6.5	8.0	19.7	10.6	12.9	0.6	0.3	0.4	20.3	10.9	13.3
North Carolina	110.9	25.5	31.1	16.9	3.9	4.7	127.7	29.4	35.8	79.2	42.5	51.8	12.1	6.5	7.9	91.2	49.0	59.7
South Carolina	37.7	8.7	10.6	2.3	0.5	0.6	40.0	9.2	11.2	27.0	14.5	17.6	1.6	0.9	1.1	28.6	15.4	18.7
Virginia	73.8	17.0	20.7	6.3	1.4	1.8	80.1	18.4	22.4	52.7	28.3	34.4	4.5	2.4	2.9	57.2	30.7	37.4
West Virginia	6.4	1.5	1.8	1.4	0.3	0.4	7.8	1.8	2.2	4.6	2.5	3.0	1.0	0.5	0.6	5.6	3.0	3.7
Total	657.1	151.2	184.1	36.7	8.4	10.3	693.8	159.7	194.4	469.4	252.1	306.8	26.2	14.1	17.1	495.5	266.1	323.9

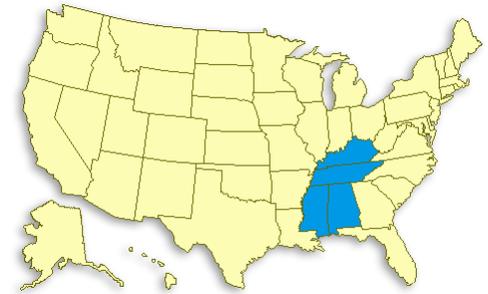
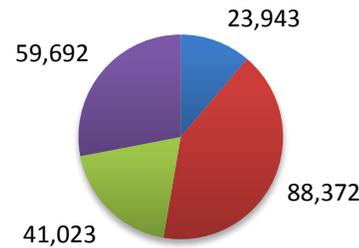
East South Central Census Division



Estimated New Urban Primary Care Visits (Total: 596,370 visits)



Estimated New Rural Primary Care Visits (Total: 213,030 visits)



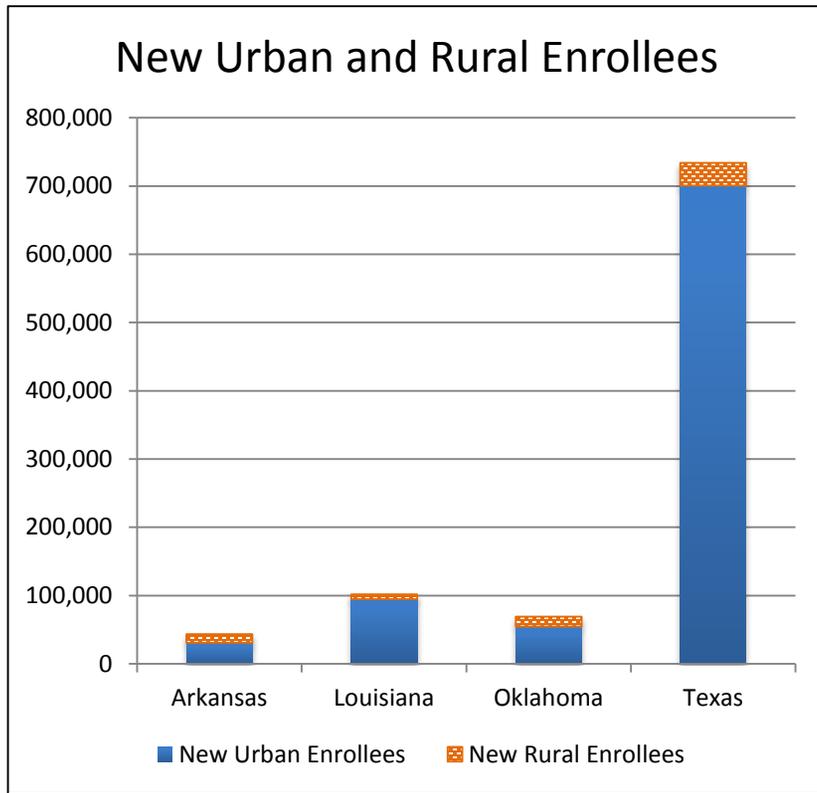
Alabama Kentucky
Mississippi Tennessee

Staff Scenario 1: All visits provided by MD/DO (in FTEs)

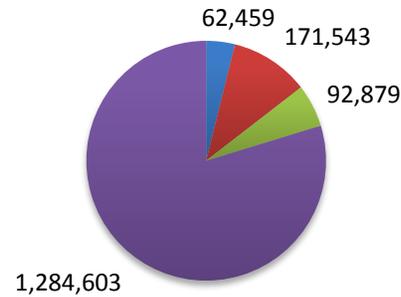
	Urban	Rural	Total
Alabama	38.1	5.9	44.1
Kentucky	32.2	21.9	54.1
Mississippi	15.8	10.2	26.0
Tennessee	62.0	14.8	76.8
Total	148.1	52.9	201.0

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Alabama	26.7	6.1	7.5	4.2	1.0	1.2	30.9	7.1	8.6	19.1	10.2	12.5	3.0	1.6	1.9	22.0	11.8	14.4
Kentucky	22.5	5.2	6.3	15.4	3.5	4.3	37.9	8.7	10.6	16.1	8.6	10.5	11.0	5.9	7.2	27.1	14.5	17.7
Mississippi	11.1	2.6	3.1	7.1	1.6	2.0	18.2	4.2	5.1	7.9	4.3	5.2	5.1	2.7	3.3	13.0	7.0	8.5
Tennessee	43.4	10.0	12.2	10.4	2.4	2.9	53.7	12.4	15.1	31.0	16.6	20.3	7.4	4.0	4.8	38.4	20.6	25.1
Total	103.7	23.9	29.0	37.0	8.5	10.4	140.7	32.4	39.4	74.0	39.8	48.4	26.5	14.2	17.3	100.5	54.0	65.7

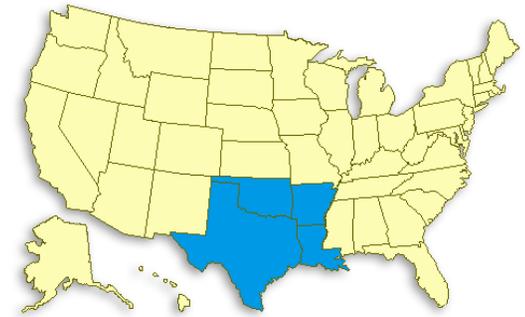
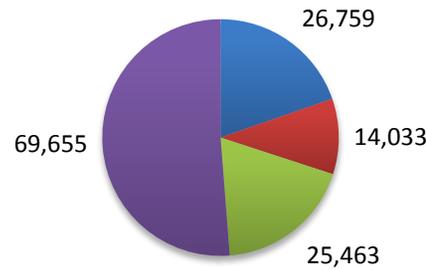
West South Central Census Division



Estimated New Urban Primary Care Visits (Total: 1,611,483 visits)



Estimated New Rural Primary Care Visits (Total: 135,910 visits)



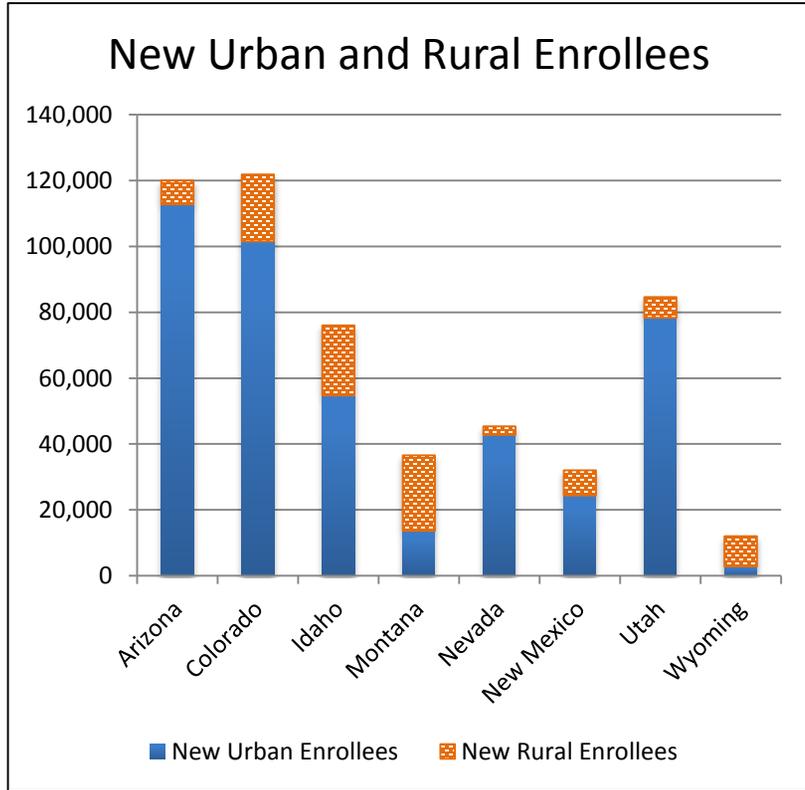
Arkansas Louisiana
Oklahoma Texas

Staff Scenario 1: All visits provided by MD/DO (in FTEs)

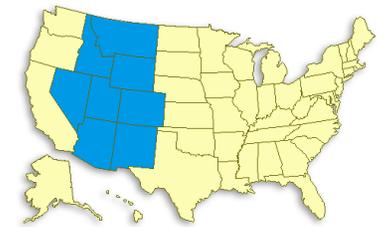
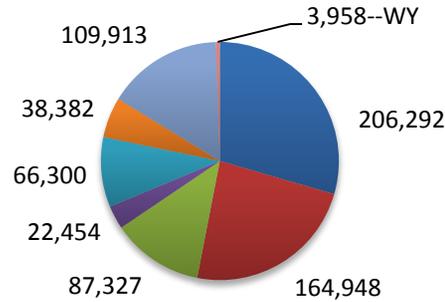
	Urban	Rural	Total
Arkansas	15.5	6.6	22.2
Louisiana	42.6	3.5	46.1
Oklahoma	23.1	6.3	29.4
Texas	319.0	17.3	336.3
Total	400.2	33.7	433.9

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Arkansas	10.9	2.5	3.0	4.7	1.1	1.3	15.5	3.6	4.3	7.8	4.2	5.1	3.3	1.8	2.2	11.1	5.9	7.2
Louisiana	29.8	6.9	8.4	2.4	0.6	0.7	32.3	7.4	9.0	21.3	11.4	13.9	1.7	0.9	1.1	23.0	12.4	15.1
Oklahoma	16.1	3.7	4.5	4.4	1.0	1.2	20.6	4.7	5.8	11.5	6.2	7.5	3.2	1.7	2.1	14.7	7.9	9.6
Texas	223.3	51.4	62.6	12.1	2.8	3.4	235.4	54.2	66.0	159.5	85.7	104.3	8.6	4.6	5.7	168.1	90.3	109.9
Total	280.1	64.5	78.5	23.6	5.4	6.6	303.7	69.9	85.1	200.1	107.5	130.8	16.9	9.1	11.0	217.0	116.5	141.8

Mountain Census Division

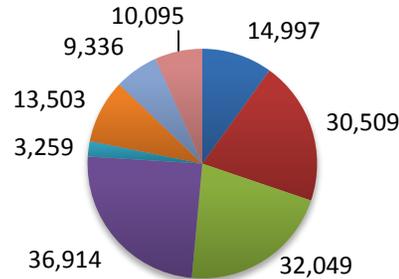


Estimated New Urban Primary Care Visits (Total: 699,573 visits)



- Arizona
- Colorado
- Idaho
- Montana
- Nevada
- New Mexico
- Utah
- Wyoming

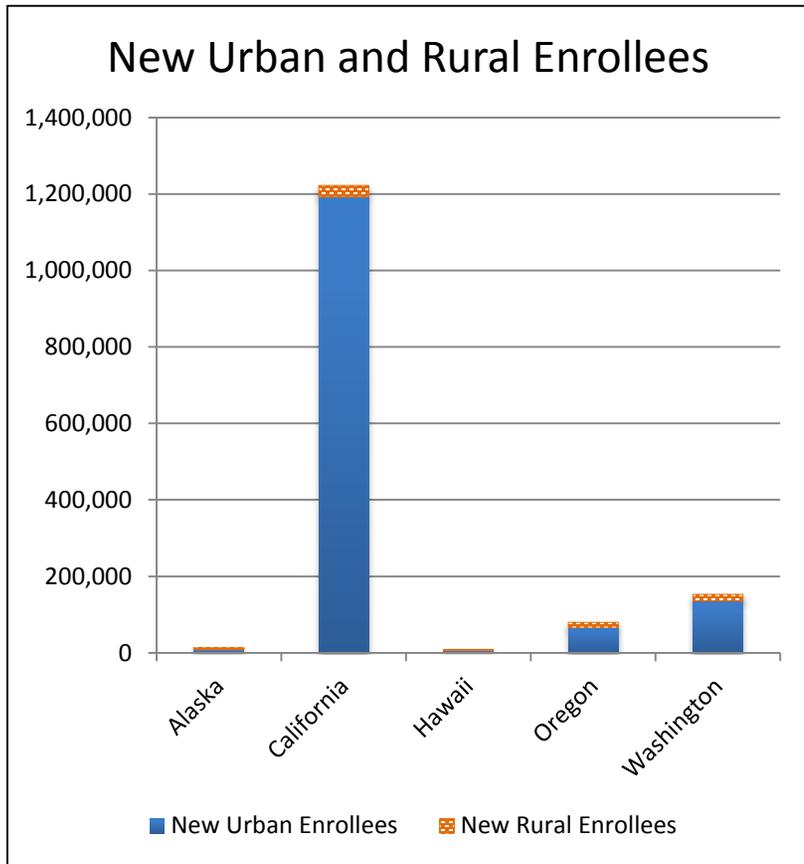
Estimated New Rural Primary Care Visits (Total: 150,661 visits)



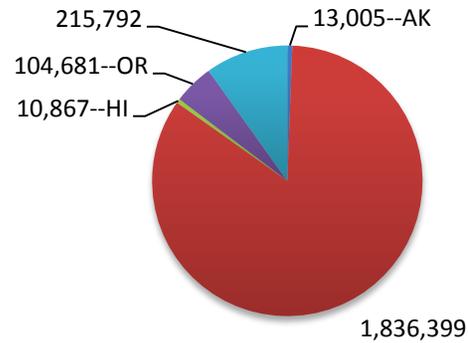
Staff Scenario 1: All visits provided by MD/DO (in FTEs)			
	Urban	Rural	Total
Arizona	51.2	3.7	55.0
Colorado	41.0	7.6	48.5
Idaho	21.7	8.0	29.6
Montana	5.6	9.2	14.7
Nevada	16.5	0.8	17.3
New Mexico	9.5	3.4	12.9
Utah	27.3	2.3	29.6
Wyoming	1.0	2.5	3.5
Total	173.7	37.4	211.1

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Arizona	35.9	8.3	10.0	2.6	0.6	0.7	38.5	8.9	10.8	25.6	13.8	16.7	1.9	1.0	1.2	27.5	14.8	18.0
Colorado	28.7	6.6	8.0	5.3	1.2	1.5	34.0	7.8	9.5	20.5	11.0	13.4	3.8	2.0	2.5	24.3	13.0	15.9
Idaho	15.2	3.5	4.3	5.6	1.3	1.6	20.8	4.8	5.8	10.8	5.8	7.1	4.0	2.1	2.6	14.8	8.0	9.7
Montana	3.9	0.9	1.1	6.4	1.5	1.8	10.3	2.4	2.9	2.8	1.5	1.8	4.6	2.5	3.0	7.4	4.0	4.8
Nevada	11.5	2.7	3.2	0.6	0.1	0.2	12.1	2.8	3.4	8.2	4.4	5.4	0.4	0.2	0.3	8.6	4.6	5.6
New Mexico	6.7	1.5	1.9	2.3	0.5	0.7	9.0	2.1	2.5	4.8	2.6	3.1	1.7	0.9	1.1	6.4	3.5	4.2
Utah	19.1	4.4	5.4	1.6	0.4	0.5	20.7	4.8	5.8	13.6	7.3	8.9	1.2	0.6	0.8	14.8	8.0	9.7
Wyoming	0.7	0.2	0.2	1.8	0.4	0.5	2.4	0.6	0.7	0.5	0.3	0.3	1.3	0.7	0.8	1.7	0.9	1.1
Total	121.6	28.0	34.1	26.2	6.0	7.3	147.8	34.0	41.4	86.9	46.7	56.8	18.7	10.0	12.2	105.6	56.7	69.0

Pacific Census Division

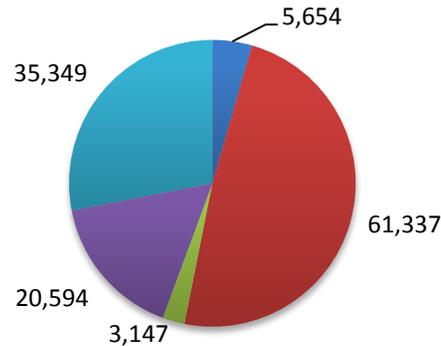


Estimated New Urban Primary Care Visits (Total: 2,180,743 visits)



- Alaska
- California
- Hawaii
- Oregon
- Washington

Estimated New Rural Primary Care Visits (Total: 126,080 visits)



Staff Scenario 1: All visits provided by MD/DO (in FTEs)			
	Urban	Rural	Total
Alaska	3.2	1.4	4.6
California	456.0	15.2	471.3
Hawaii	2.7	0.8	3.5
Oregon	26.0	5.1	31.1
Washington	53.6	8.8	62.4
Total	541.5	31.3	572.8

Staff Scenario 2 & 3:	70% of visits provided by MD/DO, 15% PA, 15% NP (in FTEs)									50% of visits provided by MD/DO, 25% PA, 25% NP (in FTEs)								
	Urban			Rural			Total			Urban			Rural			Total		
	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP	MD/DO	PA	NP
Alaska	2.3	0.5	0.6	1.0	0.2	0.3	3.2	0.7	0.9	1.6	0.9	1.1	0.7	0.4	0.5	2.3	1.2	1.5
California	319.2	73.5	89.4	10.7	2.5	3.0	329.9	75.9	92.4	228.0	122.5	149.1	7.6	4.1	5.0	235.6	126.5	154.0
Hawaii	1.9	0.4	0.5	0.5	0.1	0.2	2.4	0.6	0.7	1.3	0.7	0.9	0.4	0.2	0.3	1.7	0.9	1.1
Oregon	18.2	4.2	5.1	3.6	0.8	1.0	21.8	5.0	6.1	13.0	7.0	8.5	2.6	1.4	1.7	15.6	8.4	10.2
Washington	37.5	8.6	10.5	6.1	1.4	1.7	43.7	10.0	12.2	26.8	14.4	17.5	4.4	2.4	2.9	31.2	16.7	20.4
Total	379.1	87.3	106.2	21.9	5.0	6.1	401.0	92.3	112.3	270.8	145.4	177.0	15.7	8.4	10.2	286.4	153.8	187.2