

ACHI is a nonpartisan, independent, health policy center that serves as a catalyst to improve the health of Arkansans.

## Supply and Demand of Primary Care Clinicians

• April 2013

*Does Arkansas have enough primary care providers for our citizens in all parts of the state now? Will we have enough to meet future demand? What role are advanced practice nurses and physician assistants fulfilling in various parts of the state?*

*This issue brief describes study results showing that although there is an overall primary care physician shortage, much of it is mitigated by physician extenders—advanced practice nurses and physician assistants—who provide direct patient care often under the supervision of a physician. The result is an overall estimated shortfall of about four percent in the statewide supply of primary care clinicians. However, maldistribution of primary care clinicians—both primary care physicians and physician extenders—is a significant problem related to access and availability of care with critical shortages in some rural areas and potential oversupply in urban areas. Although supply of primary care clinicians is increasing and may approach demand requirements statewide by 2020, maldistribution will continue to cause access problems unless effective interventions are found to make rural practice more enticing.*

### INTRODUCTION

Although a number of studies have indicated severe shortages of primary care providers statewide, some have remained skeptical about reported shortages. Despite this skepticism, a group of health, higher education, and workforce professionals developed the *Arkansas Health Workforce Strategic Plan: A Roadmap to Change*. Delivered to Governor Mike Beebe in April 2012, the *Strategic Plan* contained more than 50 recommendations, some of which were aimed at addressing the severe statewide primary care shortage issues suggested by the various studies.

*Arkansas Health Care Workforce: A Guide for Policy Action* was developed by ACHI with funding from the Blue and You Foundation for a Healthier Arkansas in response to questions about access to health care providers across the state. The report challenges the findings of previous studies and brings together data to more clearly portray the statewide availability of primary care and specialty care providers, including location, office capacity, acceptance of patients covered by Medicare and Medicaid, and patient experience, as well as current supply and demand needs and future estimates on a county level.

This issue brief summarizes the findings about current and future primary care supply and demand and should be considered in the context of additional analyses found in *Arkansas Health Care Workforce: A Guide for Policy Action*, which is available at [www.achi.net](http://www.achi.net).

## CURRENT SUPPLY AND DEMAND

### Methods

Licensing board information supplemented with public and private payer data enabled ACHI to generate a master file of practicing clinicians. After initial assessments of clinician supply, estimates of the existing clinician supply and current demand were modeled using micro-simulation techniques based upon validated national utilization profiles. These results incorporated underlying health care needs of individuals at the county level including age, health risks, existing conditions, education, and income.

### Results

The initial supply of primary care clinicians in this analysis included 2,077 physicians, 1,081 advanced practice nurses, and 101 physician assistants. Each APN or PA counted as 0.8 physician in the final estimates of primary care clinicians,<sup>1</sup> resulting in a *weighted* total estimate of 3,023 primary care clinicians statewide. Table 1 reflects the weighted totals for APNs and PAs and shows regional clinician supply relative to demand based on national utilization of providers and underlying health of the population.<sup>2</sup>

**Table 1: Regional Adequacy of Primary Care Supply (2012)**

	Region					State Total
	Central	Northeast	Northwest	Southeast	Southwest	
<b>Physicians</b>						
Supply	761	340	684	145	148	2,077
Demand	621	465	869	217	266	2,437
Difference	140	-125	-185	-72	-118	-360
Percent Difference	23%	-27%	-21%	-33%	-44%	-15%
<b>Advanced Practice Nurses</b>						
Supply	319	173	242	59	73	865
Demand	130	98	182	45	55	510
Difference	189	75	60	14	18	355
Percent Difference	145%	77%	33%	31%	33%	70%
<b>Physician Assistants</b>						
Supply	27	15	27	2	10	81
Demand	52	42	75	20	25	214
Difference	-25	-27	-48	-18	-15	-133
Percent Difference	-48%	-64%	-64%	-90%	-60%	-62%
<b>Total Primary Care Supply</b>						
Supply	1,107	528	953	206	231	3,023
Demand	803	605	1,126	282	346	3,161
Difference	304	-77	-173	-76	-115	-138
Percent Difference	38%	-13%	-15%	-27%	-33%	-4%

Note: A positive difference shows an estimated oversupply; a negative difference shows an estimated shortage. State totals may be slightly off due to rounding.

<sup>1</sup> While there is little published research to suggest the degree to which APNs and PAs offset the workload of a primary care physician, productivity data from the Management Group Medical Association's annual Productivity Survey supports using a weight of 0.8. Medicare reimburses APNs at 0.85 of the reimbursement rate for primary care physicians when the APN provides care in the absence of a supervising physician.

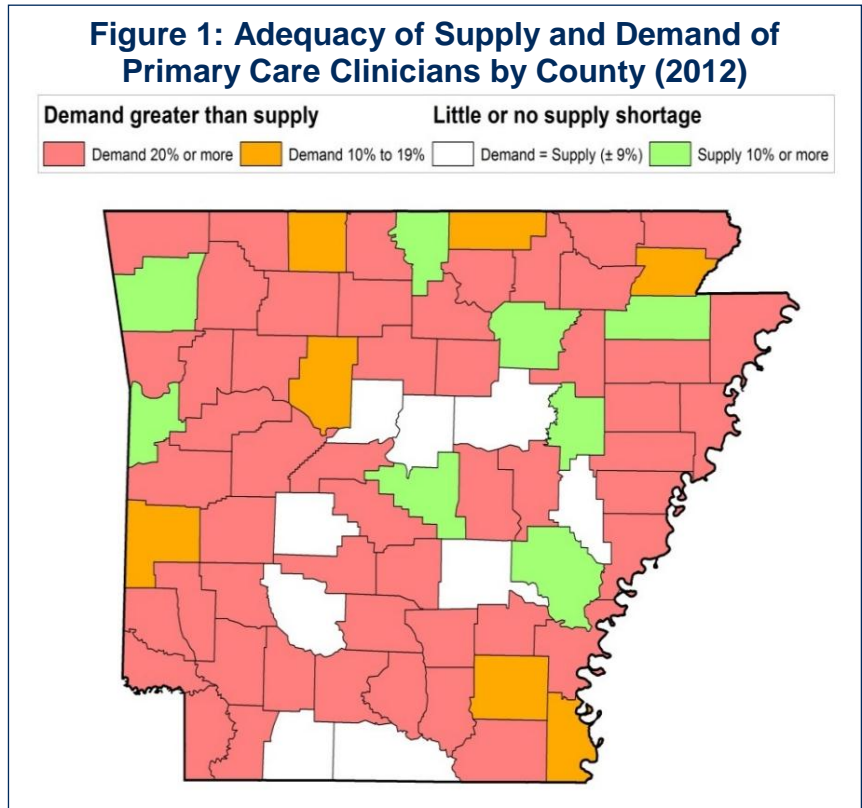
<sup>2</sup> Because of the lack of independently verifiable information on active FTE status, the estimates for APN and PA availability may overestimate their contribution to the available workforce.

These results provide important insights into the state’s current challenges and offer more nuanced estimates relative to other studies that are unable to account for demand in the population.

- Currently, the statewide primary care clinician supply approaches the population’s estimated demand.
- There is a substantial maldistribution of primary care clinicians with a concentration (and excess supply) in central Arkansas, moderate undersupply in the Northwest and Northeast regions, and marked undersupply in the Southeast and Southwest regions.

The counties with the most adequate supply or excess supply are primarily the more urbanized counties with larger populations, with rural counties having the most inadequate supply (Figure 1).

Only 14 of 75 counties in Arkansas have an adequate or excess supply of primary care clinicians—e.g., Pulaski, Faulkner, Sebastian, Craighead, and other counties with metropolitan areas. For the remaining 61 counties, demand far exceeds the current clinician supply. The shortage is most severe for people living in Newton, Calhoun, Lafayette, Cleveland, and Scott counties where demand outpaces supply by 75 to 85 percent.



## FUTURE SUPPLY AND DEMAND

### Methods

Future supply projections are based on individual clinician characteristics (age, gender, specialty, and national retirement patterns) and on the assumption that current patterns of retirement and hours worked will remain unchanged within a given age group and gender. These projections also consider information and patterns unique to the state, such as Arkansas’s high retention rate of medical school graduates in family medicine residency programs within the state.

Future demand projections rely on similar methods by accounting for underlying health care needs of individuals at the county level. Projected demand for primary care is based on national utilization profiles that encompass provider productivity, full-time status, and type of provider. The demand estimated reflects actual care-seeking behavioral patterns of Americans reflected in the Arkansas population and is not based on how often people with certain conditions “should” use providers.

## Results

Under a scenario of expanded health care coverage in 2014 through the Affordable Care Act (ACA), the available workforce is projected to *not* meet demand. Approximately 60 providers (a one-time 2.5 percent increase) will be needed to meet future demand projections with an extension of health care coverage eligibility to more than 500,000 Arkansans under the ACA.

Importantly, a majority of the projected overall growth in demand is from increased health risks and disease burden of the existing population, not from demand by newly insured individuals. Because of Arkansas's relatively unhealthy and aging population, approximately 261 providers, or an increase of 7.7 percent, will be required to meet estimated demand by 2020.

While the statewide physician shortage is expected to continue through 2020, the large number of APNs and PAs being trained suggests that the state's overall supply may converge on demand over the next decade. Substantial geographic imbalances in supply, however, will continue to exist throughout the state.

## CONCLUSIONS

APNs and PAs are significant contributors to the primary care workforce. Unfortunately, APNs and PAs are no more likely to serve in rural, underserved areas than their physician counterparts. Thus, while APNs and PAs help close the gap in Arkansas's provider shortage, they have not to date helped resolve access to care issues caused by maldistribution of clinicians. The geographic concentration of physicians in urban and suburban areas is mirrored for APNs and PAs, resulting in the same excess supply in urban areas and shortages in rural parts of the state for these clinicians.

Estimates show that the current rate of production and retirement patterns among primary care clinicians could result in a statewide supply that approaches future demand, even under a full health care coverage expansion scenario through the ACA. It is imperative, however, that the maldistribution of these clinicians be addressed to ensure all citizens have adequate access to care. To address these maldistribution issues, the state cannot rely on traditional solutions. Simply producing more physicians, APNs, and PAs is not a long-term solution.

Counter to previous primary care workforce studies, the results from ACHI's analysis demonstrates that Arkansas has the existing workforce assets to meet the needs of Arkansans. The state has a prime opportunity to address maldistribution with patient-centered medical home initiatives that offer team-based efficiencies to provide improved capacity in rural areas. These initiatives should be optimized by exploring financial arrangements that will promote the use of APNs and PAs in remote locations. Health information technology capabilities should also be continued to improve upon for telemedicine and common electronic health record systems to extend reach for urban providers and to further promote team-based care. Better utilizing existing local health care resources such as pharmacists, local health units, and emergency medical technicians should be a priority. Transportation opportunities should also be explored—either transporting primary care teams from urban areas to rural locations on a daily basis or transporting patients to urban areas—to improve access where problems persist.