UAMS Regional Program’s Response to Arkansas Healthcare Workforce: A guide for policy action

By: Mark B. Mengel, MD, MPH
Ann B. Bynum, Ed D
Robin A. Howell, BA

March 2013, UAMS Regional Programs has noted a number of issues that if addressed might improve the accuracy, comprehensiveness, and validity of the findings in the said report. With appreciation for the authors and their shared passion to improve Arkansas’ healthcare workforce, our observations and comments are extended for consideration in the future revision or reinvention of the aforementioned policy guide (subsequently referred to as “the report.”) Even though maldistribution of the primary care workforce is rightly noted as the state’s greatest problem, we disagree with a core premise of the report that “The total supply of primary care providers (PCP) approaches the current demand estimates for the underlying population,” (p 11). We challenge this statement because:

1) it is inconsistent with findings of other major reports, including our own UAMS Healthcare Workforce Vacancy Study (Bynum, Irwin, & Jarry, 2011).
2) it overestimates the current supply and future production of PCPs in Arkansas;
3) it underestimates Arkansas’ current need for PCPs, and the increasing demand due to insurance expansion and the emerging Patient Centered Medical Home (PCMH) model.

Our rationale is discussed below.

Defining Primary Care
First, it is worthwhile to note that the term “Primary Care” is not always defined consistently in different contexts. The American Academy of Family Physicians (AAFP) defines it as care provided by physicians specifically trained for and skilled in comprehensive first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern (the “undifferentiated” patient) not limited by problem origin (biological, behavioral, or social), organ system, or diagnosis. According to this definition, Primary Care might arguably include only Family Medicine, General Internal Medicine, and General Pediatrics. However, other specialties often included are Geriatrics, Obstetrics/Gynecology, and occasionally, Emergency Medicine. The ACHI report defines the “Primary Care workforce” to include not only Family Medicine, Internal Medicine, Pediatric, and Geriatric physicians, but also physician assistants (PAs) and advanced practice nurses (APNs). While APNs and PAs are legitimate providers of primary care, their inclusion in the report’s overall supply and demand calculations results in some seemingly inconsistent findings when compared to other studies that tend to quote workforce numbers based solely on the physician population as the main primary care providers, especially in rural Arkansas.

With increasing awareness that the nation faces a severe shortage of primary care physicians, the specific composition of the medical workforce has become a prominent concern. Even though internal medicine and pediatric residency graduates are counted in the report among the future production of primary care physicians, only 20-25% of internists (West & Dupras, 2012) and 30-40% of pediatricians can actually be expected to remain in primary care (Schweitzer, 2013). When looking at this data, the overall primary care workforce is trending toward and below 30% of the total physician workforce, much lower than the
Council on Graduate Medical Education's recommended 40% primary care workforce (Schwartz, 2012). Consequently, the routine inclusion of Internal Medicine and Pediatric residents and providers optimistically inflates primary care workforce numbers. For a more accurate measurement of actual primary care workforce production, the number of general internal medicine and pediatric practitioners should be based on data five years post-medical school graduation (i.e., two years post residency), after subspecialty or primary care practice choices have moved from intent to reality.

Findings from other health care workforce studies

According to a recent survey sponsored by the independent congressional agency MedPAC, finding a primary care doctor is highly problematic, even for Americans with good health insurance. Existing residency programs are producing 40 percent fewer new primary care doctors than are needed, even to replace those now in practice who are nearing retirement or changing fields. The increased demands on our healthcare system, due to extending coverage to thirty-two million more Americans through the Affordable Care Act alone, are expected to increase the need for primary care physicians from 25,000 to an estimated 45,000 by 2020. Studies also predict that the aging of the Baby Boom generation will leave the country short another 35,000 to 44,000 physicians (Longman, 2013).

The Annals of Family Medicine (Petterson, Liaw, Phillips, Rabin, Meyers, & Bazemore, 2012) predicted that after incorporating insurance expansion, the United States would require nearly 52,000 additional primary care physicians by 2025. The Association of American Medical Colleges reports that the United States is projected to confront a shortage of 91,500 doctors by 2020 (Association of American Medical Colleges, 2012). Underserved populations will likely continue to bear the greatest burden, as half of that workforce shortage is comprised of primary care physicians, which are the front-line providers for our general population.

The UAMS Center for Rural Health (CRH) Healthcare Workforce Vacancy Study (Bynum, Irwin, & Jarry, 2011) was based on the stated demand for providers as reported by healthcare professionals' employers in a survey of 4,212 health facilities in Arkansas. The study found that in 2011 there were 514 actual vacancies for Primary Care Physicians in Arkansas' health facilities, with 282 (55%) of that number being for Family Medicine physicians; 104 (20%) for General Internists, 89 (17%) for Pediatricians, and 36 (7%) for OB/GYNs. By 2016, the number of vacancies was expected to increase to 860 Primary Care physicians statewide.

Several of our observations here are not directly stated in the report's main conclusions. However, we feel that some of the underlying data and simulation models upon which the report's findings and conclusions were ultimately based bear closer scrutiny.

PCP Estimations

According to the Health Resources and Services Administration (Health Resources & Services Administration, 2013), 500,000 Arkansans live in areas designated as Primary Care Health Professional Shortage Areas (HPSAs), including 36 full county designations, representing nearly half of the state.

The ACHI report lists the current number of primary care physicians in practice in Arkansas at 2,077 (p 7); however, in approximately one-third of cases where two specialties were listed for a provider, the authors could not clearly identify which specialty those physicians practiced (e.g., Internal Medicine vs. Cardiology). Because of this, the author's methodology split and assigned those physicians into two or more practice specialties, which may have resulted in overestimating the number of physicians actually in primary care practice. To support this finding, the Arkansas Blue Cross/Blue Shield survey of primary care physicians (p 47) noted that 17 percent of physicians listed as primary care were not actually practicing primary care, even though their identifying files indicated they were. Moreover, there are a large number of primary care physicians in administrative positions in Arkansas, especially in Pulaski County, home of the state's only academic health sciences center, which may contribute to the apparent "oversupply" of primary care physicians in that region.

Consequently, we believe that the estimated PCP calculations in the report may be as much as 20% too high. When stating that "The total supply of primary care physicians approaches the current demand estimated for the underlying population," the report combines numbers from all five sections of the state; i.e., the central, northeast, northwest, southeast, and southwest areas (Table B, p viii). The inclusion of many central Arkansas academicians, trainees, and practitioners in statewide calculations, creates an appearance of less severe shortages overall, with implication that a central area oversupply may somehow lessen the severity of shortages in the other four regions. Thus, we believe that a truer depiction of Arkansas' physician shortage can be calculated by adding together the shortages in the four deficit areas, which would result in a current overall deficit of 500 primary care physicians. The Regional Program's Workforce Vacancy study (Bynum, Irwin, & Jarry, 2011) reported 514 primary care physician vacancies statewide, closely mirroring the needs then identified by ACHI's report in these four regions.

Maldistribution of primary care providers across Arkansas is indeed THE most troublesome and persistent aspect of our healthcare workforce concerns. Outside Central Arkansas and other urban centers, the rest of the state suffers from critical shortages of physicians. The University of Arkansas, Division of Agriculture (UA Division of Agriculture, Research & Extension, 2013) recently reported that Rural Arkansas averages only 64 primary care physicians per 100,000 people (down from 78 in 2011), compared to 139 per 100,000 persons in urban Arkansas (up from 133 in 2011). The greatest disparity is seen in Delta counties where there are only 52 primary care physicians per 100,000 people (down from 59 in 2011). This data is clearly trending toward increasingly severe shortages in our rural areas.

Demand Projections

Arkansas' total population is expected to grow by 13% between 2010 and 2020, and our elderly population of persons 65 years of age and over is projected to grow 68%
during that same period (UALR Institute for Economic Advancement, 2013). The increased provider demand needed to care for an aging population is amplified by the dire toll of chronic diseases that consistently ranks Arkansas among the bottom ten unhealthiest states in the nation; one of the worst five states for 8 of the last 10 years (United Health Foundation, America’s Health Rankings, 2012). Arkansans have higher incidence of diabetes mellitus and high blood pressure than the nation as a whole, and death rates from cancer, diabetes, heart disease and stroke are consistently higher than national rates.

The report's authors relied on current utilization patterns to estimate future demand for PCPs, noting the growing demands of our aging population. However, we feel a need to more fully consider the impact of insurance expansion under the Affordable Care Act (ACA) and new statewide exchanges, in addition to the widespread implementation of the Patient Centered Medical Home (PCMH) model of care rolling out across Arkansas. The report estimates that only 60 more primary care providers will be needed due to expanded health insurance, even though 357,000 adults are projected to gain medical coverage. Using an average PCP "patient panel" size of 2,500 patients (i.e., the number of patients managed by each provider), insurance expansion would actually translate to need for an additional 143 PCPs, rather than the modest projection of 60. And this number may still be conservative; in another footnote, the report states that 450,000 new Arkansans could gain insurance. Under the patient panel assumptions quoted above, this higher estimate would create need for an additional 180 providers.

The new PCMH model, to which many primary care practices are now transitioning, embraces five key attributes: Comprehensive Care, Patient-Centered Care, Coordinated Care, Accessible Services, Quality and Safety. This comprehensive model engages the primary care physician as “team leader” and requires more time to be spent per patient. Data from various PCMH pilots cited in the Annals of Family Medicine (Altschuler, Margolius, Bodenheimer, & Grumbach, 2012) suggest that patient panel sizes of physicians will have to be reduced. Group Health Cooperative in Seattle, upon implementing their PCMH model of care, reduced panel sizes from 2,400 to 1,800. The highest estimated panel size seen in literature recently for a PCMH model is 1,947, which would require PCPs to delegate 77% of their chronic illness tasks and 47% of their prevention tasks to other team members. This suggests that existing patient panel sizes would need to be reduced by a minimum of 23%. Their study from Duke University also estimated that physicians who delegate 60% of chronic illness tasks and 30% of prevention tasks to team members would result in an estimated panel size of 1,523. Those that delegate 50% of chronic illness and 25% of prevention tasks would result in a panel size of 1,387. Since these emerging models require considerably more PCPs than noted in the report, they are expected to significantly exacerbate the primary care physician shortage in Arkansas.

Production Estimations

The report states that 188 new primary care physicians are licensed in the state annually (Appendix, p 7). This number admittedly includes many residents and fellows in training at UAMS, as well as locum tenens physicians, who will neither become PCPs nor remain in the state. The authors go on to estimate that Arkansas will be able to attract 76 new family physicians per year from other states, which is roughly 1% of the total production of "primary care" physicians in the entire nation, including ALL internal medicine, pediatric, and family medicine residents. We do not think this is realistic for Arkansas, since historically most of our physicians come from within our own borders.

According to the report, UAMS Regional Programs’ Family Medicine residency programs would add six residency slots annually from 2013-2017, supported by federal funding from four Primary Care Residency Expansion grants and one Teaching Health Center grant from the Health Resources and Services Administration. While the total number of 30 slots is correct, these residency slots are being added over three years (roughly 10 per year) because a family medicine residency is a three year program. This means the expansion will produce a total of only 10 new family medicine physicians annually starting in 2014, which is five less than the report estimated. Furthermore, if these new grant funded positions are not renewed by 2015, then Regional Programs’ resident numbers will have to be reduced back to our pre-expansion baseline of 40 graduates per year.

In 2013, 53% of UAMS College of Medicine (COM) graduates reportedly matched to a primary care residency, which included family medicine, internal medicine, pediatrics, and OB/GYN. However, as stated earlier, only a small percentage of internal medicine (20-25%) and pediatric physicians (30-45%) ultimately practice in primary care (Schwartz, 2012). Additionally, only a percentage of them can be expected to remain in Arkansas to practice. Thus, we feel the report overestimates the production of primary care providers produced by UAMS.

The report’s Baseline Supply scenario projects that the Arkansas physician workforce will expand from 80 to 95 new PCP entrants annually by 2017 (Appendix, p 8). However, UAMS Regional Programs estimates less than half that amount, as illustrated in Table 1.

<table>
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<th>Discipline</th>
<th>AR 2013 Graduates</th>
<th>Primary Care</th>
<th>Stay in AR</th>
<th>Total</th>
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<td>.65</td>
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<td>Internal Med</td>
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<td>.25</td>
<td>.58</td>
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<tr>
<td>Pediatrics</td>
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<td>.45</td>
<td>.30</td>
<td>3.10</td>
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<tr>
<td>Geriatrics</td>
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<td>.45</td>
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<td>New PCPs</td>
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<td>40.58</td>
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Table 1. Estimated annual PCP production in Arkansas beginning in 2014, based on actual 2013 UAMS resident production.

The report includes two groups of non-physicians in its Primary Care workforce numbers; estimating that 49 to 62 new Advanced Practice Nurses (APN) will be added in the state by 2017, and that new primary care Physician Assistants (PA) will go from 8 to 13, once Harding University and UAMS PA programs fully expand to 40
Policy Recommendations

The report suggests a call to action emphasizing the following policy issues that might help ameliorate our state’s shortages and maldistribution of primary care providers. ACHI Report Recommendations are listed below, with UIAMS Regional Programs’ comments following each bullet:

1) PCMH initiatives that offer team-based efficiencies to provide improved capacity in rural areas.
   Response: Implementing the PCMH model of care is expected to improve the quality and continuity of patient care, but overall we expect it to exacerbate provider shortages, especially in rural areas, due to the additional time required per patient and resulting panel size reductions.

2) Exploring financial arrangements to promote the use of APNs and PAs in remote locations.
   Response: We agree that stronger financial incentives are key to encouraging primary care providers to practice in rural areas and alleviating maldistribution. (See recommendation below.)

3) Improve health information technology capabilities for telemedicine and electronic health records (EHRs) to extend reach for urban and to further promote team-based care.
   Response: HIT represents an important vehicle to improve health care quality and delivery. While telemedicine technology is often helpful in extending subspecialty consultations (e.g., high risk obstetrics, radiology, and stroke care) to remote areas suffering from a shortage of specialists, there is a lack of evidence that it could help ameliorate primary care provider shortages, as these providers have not embraced the technology. Again, EHRs are helping to improve quality and efficiency of patient care, but are again unlikely to impact any shortage or maldistribution.

4) Better utilization of local healthcare resources such as pharmacists, health units, and EMTs.
   Response: More efficient utilization of existing local resources is always recommended.

5) Explore transportation opportunities.
   Response: Transportation is consistently a key issue and barrier to healthcare, especially among poor and rural populations, so any efforts to improve transportation options for rural residents is always recommended. PCPs, however, are unlikely to become “circuit riders” as their services are in demand and they usually prefer to stay in one location. Further, mobile medical units have been explored over the years, and have usually been determined as not cost effective.

UAMS Regional Programs offers the following additional policy recommendations:

- Increasing reimbursement for primary care providers, which is among the lowest of all medical specialties, would accomplish much to attract more medical students to primary care as a financially viable option. Commercial insurance companies and Medicaid have set coverage of case management fees for PCMH activities very low within the Comprehensive Primary Care Initiative (CPCI) project. These fees are unlikely to be significant enough to develop the infrastructure needed for robust PCMHs in primary care practices and improve physician salaries. Widespread implementation of the PCMH model has the potential to result in substantial savings in health care costs. Group Health in Seattle saved $1.50 for every $1 invested, but not without adequate infrastructure. The number of medical students selecting primary care specialties is at an all-time low in this country and low reimbursement
is a factor. Multiple considerations compel medical students to abandon primary care, even if it was initially their plan when they entered medical school. With many of today’s medical students accumulating more than $200K in school loans, a real and legitimate concern among students is earning potential (Hoban, 2013). Substantially increasing reimbursements to PCPs by 50% is needed to encourage more medical students to pursue careers in primary care.

- **Loan forgiveness** can also help address the shortage. The report states that this aspect of policy would likely not have a significant effect; however, our experience in physician recruitment has indicated that loan forgiveness does indeed have a significant effect on encouraging PCPs to practice in rural parts of the state, due to the afore-mentioned debt load that medical students face. Over the past three years, Regional Programs has advocated for a substantial increase in the Rural Practice Loan and Scholarship Program at UAMS, increasing from half to full tuition reimbursement, and increasing the number of awards to encourage more students to enter rural practice. Similarly, the Community Match Rural Physician Recruitment Program, which only matched three providers to rural communities last year, needs a substantial increase in support. We have strongly recommended that an additional $2M annually be channeled into these programs, considering the current contribution from the state is less than $500K. In order to minimize the likelihood for student default, it is recommended that greater emphasis be placed on offering loan repayment awards to medical students in their junior year, when they are making specialty, residency and practice plans, rather than at the beginning of medical school, when their ultimate practice intentions are more likely to change over the course of time. Further, as the report states (p 47), medical students from a small rural community, are more than twice as likely as those from non-rural communities to practice in rural communities. Consequently, the importance of continued recruitment and enrollment of students from small towns and across all regions of Arkansas cannot be overemphasized.

- **Expanded use of APNs and PAs.** Many states allow APNs to practice independently, either immediately after graduation or after some years of experience, which has worked successfully and not proven detrimental (the report offers extensive coverage of APN and PA considerations nationally and in Arkansas, pp 51-73). If Arkansas hopes to create a more favorable environment for APNs and PAs to pursue primary care practice in rural Arkansas communities where physician shortages have been chronic and needs are the greatest, then an ongoing dialogue is needed to examine and reconsider licensure restrictions related to both independent and team-based practice parameters, combined with financial and other incentives specifically to encourage these practitioners to pursue primary care practice in rural communities.

In Summary

With respect for the authors’ work, UAMS Regional Programs believes the report understimates the current shortage and future demand of primary care providers, and overestimates the expected production of new primary care providers in Arkansas. The report’s future demand projections fail to fully take into account new utilization patterns that will likely result from the combined impact of our aging population, insurance expansion, and implementation of the PCMH model. Moreover, there is concern that the quality and access to care for all Arkansans could be compromised if future policy decisions regarding our state’s primary care workforce are based strictly on the initial findings and recommendations of this report. Consequently, we felt a need to offer additional perspective to bring broader balance and understanding to these critical issues, and we hope to see strategic policies come forth to help circumvent what we foresee as a potential perfect storm in our state’s healthcare system which, if underestimated and not addressed intentionally and strategically, could result in a crippling shortage of primary care providers across Arkansas, especially in our most rural and underserved communities and among our state’s most vulnerable populations.

References


Hoban, R. (2013, March 26). Medical
COMMENTARY BY THE ARKANSAS ACADEMY OF FAMILY PHYSICIANS BOARD OF DIRECTORS

The preceding article was submitted by the UAMS Regional Programs Office (formerly known as the AHEC system) for publication in the Journal of the Arkansas Academy of Family Physicians, and was a response to the findings of a primary care workforce study in our state that was performed by the Arkansas Center for Health Improvement (ACHI).

Having reviewed the submitted article as well as the original study by ACHI, our commentary follows with regard to the issues addressed in both, and reflects the opinion of the Board of Directors of the Academy.

We agree with the UAMS Regional Programs response on the following issues:

- The existing primary care workforce is probably overestimated in the ACHI study, for reasons stated
- The existing primary care workforce is maldistributed and numerous healthcare shortage areas exist in our state
- Primary Care Physicians (PCPs) will continue to be mal-distributed unless new financial incentives to practice in healthcare shortage areas are established or existing incentives are increased
- Mid-level Providers such as Advanced Practice Nurses and Physician Assistants (APNs/PAs) are no more likely to choose primary care practice than medical school graduates, and they tend to locate in patterns geographically identical to their physician counterparts, and have therefore not solved the workforce shortage issues we continue to face
- Medical School Graduates will continue to choose to sub-specialize rather than practice in Primary Care fields unless there are increased financial incentives for them to choose Primary Care. Increasing reimbursement for Primary Care and loan forgiveness programs are two ways that this can be accomplished

While we agree with most of the findings in the response from UAMS Regional Programs, we cannot disagree more with their recommendation for an expanded role for APNs/PAs. Mid-level providers such as APNs/PAs play a vital role in the physician-led healthcare team, the Patient Centered Medical Home (PCMH). We value their contribution to the care of the patient population as a whole.

However, we believe that existing practice parameters for mid-level providers are adequate and an expansion of the role of mid-level providers (i.e., independent practice) will not correct the mal-distribution issue. On the contrary, we believe that an expansion of mid-level practice would actually be highly detrimental to the other goals stated in the response to the workforce study.

It is our contention that an expanded role for mid-level providers would actually exacerbate the trend of medical school graduates choosing sub-specialization over primary care, as they would view the option of primary care training as practically equivalent to the training and practice of mid-level providers. Having invested to such a large degree both financially and temporally in their medical education, we predict that medical students would further be driven in the direction of sub-specialty care. This would actually lead to further shortages of PCPs, not correction of the existing deficit.

We stand firmly on the recommendation of our national organization, the American Academy of Family Physicians, that the Patient Centered Medical Home (PCMH) is an entity that should be led by a Primary Care Physician.