Providing the Primary Care Health Workforce for Georgia’s Rural and Medically Underserved Communities

Context: Rural and medically underserved populations remain underserved by primary care physicians, despite various efforts by medical schools and other institutions/organizations to correct this disparity. We examined the literature on factors that influence selection of primary care practice in rural and underserved communities to reveal the opportunities that exist along the entire medical educational pipeline to encourage medical students to select primary care and to retain them in rural areas. A literature review was conducted in the Medline database. Findings reported in the literature favor a multidisciplinary or multifaceted approach which results in more residents and physicians choosing primary care and locating their practices in rural areas. The need to define proven strategies is not the pressing issue; rather, the needs are to define the commitments necessary to implement proven strategies as well as the will to make physician distribution a priority issue in medical education.

The shortage of physicians in rural Georgia, and in other rural areas of the United States, remains a chronic problem. About 11% of all physicians treat the 20% of the US population that resides in rural areas[1]. Georgia ranks 10th in population among the fifty states, but 40th in physician supply per 100,000 population[2]. In 2006 Georgia’s medical student to population ratio was 19 per 100,000, which is significantly lower than the national average of 28 per 100,000[3]. In February 2005 the Association of American Medical Colleges recommended that enrollment at medical schools be increased by 15% over the next 15 years.

Georgia, like many states, is gearing up for a significantly expanded medical education system. One new medical school, Georgia Campus Philadelphia College of Osteopathic Medicine, opened in 2005 bringing the total number of public or private schools in the state to five. Mercer University School of Medicine has opened a new four year branch campus in Savannah. The Medical College of Georgia (MCG), the only public medical school in the state, is expanding its class size on the main campus, and has opened two satellite campuses for 3rd and 4th year students in Albany and Savannah. MCG is planning to open another four year satellite campus in 2009/2010 in Athens.

Simultaneous with the expansion of the medical school pipeline, the state is currently conducting feasibility studies on creating new residency programs with at least four hospitals, and is reviewing possible expansion at some existing residency programs. The new medical school, the proposed new medical school branches and satellites, and the expansion of existing class size at all five schools coupled with the expansion and/or openings of more residency programs offers a unique opportunity to attempt new programming to address physician
discipline and distribution challenges. This opportunity is complimented by the overwhelming supply of qualified applicants who use their state funded HOPE scholarships to stay in state for their undergraduate education but are leaving the state to pursue careers in medicine due to the lack of positions available within medical schools in Georgia.

The disparity in physician supply may become more severe with time. Female physicians are entering the profession, especially family practice, in increasing numbers, but fewer women than men choose rural practice[4]. Research has shown that physicians from rural backgrounds are more likely than their urban counterparts to choose rural practice [5-7]. While medical school admissions requirements aimed at selecting applicants based on their rural upbringing or strong rural attachment is a proven way to increase the number of rural physicians, too few rural students are applying to medical schools to ameliorate the shortage, and too few medical schools utilize this criterion in the admissions process. Fortunately, many other factors appear to influence physicians’ specialty selection and practice location decisions, especially rural practice locations. These factors fall into six general categories: preparation for and recruitment by medical schools, the medical school experience, the residency experience, recruitment of physicians to rural communities, retention of rural physicians, and the cost of education.

Preparation for and recruitment to medical schools

Many medical schools currently offer short summer programs for high school and undergraduate students. Some of these short programs are aimed at minorities or other underrepresented groups and are designed to increase the academic competence and competitiveness of participants. Several states facing severe physician shortages have developed more extensive interventions. These programs generally begin in high school, can last for several months or years and usually feature some combination of physician shadowing, hands-on activities, and classroom learning or tutoring. Many Area Health Education Centers (AHECs) offer such programs or coordinate them with academic medical centers. Reaching students, especially those from rural areas, early in their academic careers can result in increased interest in and preparation for a career in healthcare professions [8-10].

Experiences During Medical School

Examination of published research from schools that have implemented either extended rural clerkships, selective admissions for family medicine or primary care studies, and/or entirely separate educational tracks for primary care show evidence that these programs have proven effective in maintaining and encouraging students’ interests in rural primary care [11].
Experiences During Residency

Residency offers other opportunities to turn new medical graduates either toward or away from primary care practice with rural and/or underserved populations. Family practice residency programs that graduate higher numbers of rural physicians share similar qualities, according to Bowman [12]. These programs had more required rural and obstetrical training months, were located in rural states, and had a full or partial rural mission. Unfortunately, these programs also had fewer residents who were minorities or female, two demographics which are of importance to the rural health workforce.

Spending large amounts of time in rural areas during residency reinforces practitioners’ affinity for those areas. Rural training tracks (RTTs), which are "one-two" programs that require residents to spend one year in urban-based residency and two years in a rural community, have a high number of graduates who remain in rural areas to practice. Rosenthal [13] studied 13 RTT programs that collectively produced 67% of graduates with a primary office ZIP code in a rural community, and 61% that practiced in a designated Health Professional Shortage Area (HPSA).

Recruitment of physicians

A strong correlation exists between the state or region in which a physician is practicing, and the geographic area in which he or she 1) lived during pre-adulthood, 2) attended medical school and 3) completed a residency [14]. Interpersonal relationships also play a major part in a physician’s practice location decision. A good interpersonal match with future colleagues can be a strong indicator of a satisfactory practice location. If the physician has a partner or spouse, both must determine whether a community is a good fit for them. These relationships consistently rank among the highest influences in surveys of rural physicians.

Retention

What is the relationship between the various aspects of physicians' training, the physicians' self-preparedness for rural life, and retention? Pathman et al collected data to study how prepared physicians felt themselves to be for the requirements of medical practice when they began working in their first rural practice, and how prepared they were for the “realities of living” there (rural area) [15]. Physicians were also asked to identify the single training experience that had best prepared them for rural practice. 54% reported that growing up in a rural area had best prepared them. Also, those who had spent three or more months in rural areas during medical school, or had participated in rural rotations as residents, felt better prepared for small-town life as well. Physicians’ assessments of their most valuable training experience cited clerkships and rotations in rural areas as the activities that provided them with the best
preparation for rural practice. According to Pathman’s research, physicians who felt more prepared for rural life were twice as likely as unprepared physicians to remain in practice six years later.

According to research conducted by Rabinowitz, Diamond et al, the typical primary care physician remains in rural practice in the same area for approximately seven years [16]. This is the same amount of time it takes to educate a new physician to replace that one. The net result is one of replacement, but as the number of physicians intending to practice family medicine declines, the overall effect will not maintain the current rural physician supply, much less increase it.

Cost of Education
The cost of obtaining an education in medicine is the final factor that must be recognized and addressed. According to the AAMC Reporter in January 2008, “Medical school graduates in 2006 found they owed about $130,000 on average when their educational bills came due. This figure is daunting even for those earning an estimated mean physician income of $216,000, and it can take years for young doctors to reach that income level. On average, primary care providers earn 30% less than the mean income of all physicians. However, Rosenblatt and Andrilla [17] found that total student debt was associated with a lower likelihood of choosing a primary care career, but that factors such as gender and race appeared to have more explanatory power. State Loan Forgiveness and Scholarship Programs as well as the National Health Service Corps provide three excellent examples of interventions designed to address this financial reality, but none are available at the levels actually needed to address shortages. Research reviewed of 10 return-of-service (ROS) agreements conducted by Sempowski revealed that while most studies showed effective recruitment, little evidence was available about long term retention of the recipients of such funds [18].

POLICY ISSUES:
The search to find effective solutions to the problem of physician geographic distribution is not new, as evidenced by the wealth of published research. The need to define “what works” is not the pressing issue; rather, the needs are to define the commitments necessary to implement proven strategies as well as the will to change the status quo. Academic health centers are pressured to perform on many stages, including providing care for the indigent, educating highly trained practitioners, and producing voluminous research findings to add to the body of knowledge influencing clinical practice. Graduate practice location choice is, at best, a minor agenda item for most schools and residency programs. As long as the largest funding streams available to academic health centers are based on research, the primary agenda will remain research excellence as defined by procurement of grant and research dollars. The historic triad mission of most academic health centers, (education, clinical care, and research) does not speak to the more specific need to graduate physicians who will choose to practice in rural and/or underserved communities.
To encourage innovative changes in medical education that includes attention to physician distribution issues, a funding priority or a funding expectation must be articulated to propel and support medical schools and residency programs to “think outside the box.” The move toward outcome measures as a condition of state funding is a potential opportunity to leverage programs toward graduate geographic distribution goals within their educational programs. Providing financial incentives or recognition to programs that produce graduates at a defined level who choose practice in a rural or underserved area would encourage faculty buy-in and creativity in addressing this challenge.

A far more subtle change must also occur. Currently, the leadership in academic medicine speaks about distribution and shortage challenges, but most continue to provide larger resources and priority access to specialty and sub-specialty departments and faculty. Further, the constant pressure to obtain outside funding from federal and private grantors is a disadvantage for primary care oriented departments for whom access to such funds is limited. Individual faculty prestige, promotion, and monetary rewards are largely tied to the ability to procure funds through research or clinical revenue rather than the ability to mentor students into needed disciplines, implement community oriented curricula, and shepherding students / residents towards practice in HPSAs and /or rural areas.

AHEC VISION

The Georgia Statewide AHEC Network was created to provide local community based resources to address health workforce needs. Our most enduring partners have been from academia, and the five medical schools are vital partners in our efforts. There is often a misconception that AHECs were created to support medical education. This is not true. Partnerships with medical education institutions, while one of our most successful strategies in bringing potential future providers into rural and underserved communities, is but one component of our efforts. We look forward to continuing these collaborations and would like to expand them to include other innovative ideas and programming designed to increase our primary care workforce and to impact the geographic distribution of these providers. To this end, we have crafted a set of opportunities for collaboration and partnership expansion and offer these to the five medical schools in Georgia for discussion. We believe that not one partner can address our primary care shortages in a vacuum and that all of us must pull together our intellectual as well as financial resources in a targeted manner to successfully address the State’s needs.
OPPORTUNITIES FOR POTENTIAL COLLABORATION AND EXPANDED PARTNERSHIP:

1. **Admissions Opportunities:**
   a. Create a sense of priority around graduate practice location choice and practice specialty choice and reflect this by amending each medical school's mission to embrace the need to provide physicians for all communities in Georgia and to reflect this by adding primary care to every school's mission statement.
   b. Identify funding to support pilot projects of proven interventions, such as selective admissions processes favoring applicants from rural/underserved communities and/or who indicate an interest in primary care. Create a pilot program in one or more Georgia medical schools modeled on the Physician Shortage Area Program (PSAP)* at Jefferson Medical College in Pennsylvania. Designate 20-30 student slots for this program at the participating institutions.

2. **Curriculum Opportunities:**
   a. Identify funding to support pilot projects of proven interventions such as implementation of required rural and/or primary care clerkships.
   b. Explore methods to more effectively manage community based faculty resources needed to support expanded medical student education.

3. **Student Incentive Opportunities:**
   a. Identify funding to create an “AHEC Scholars” project to provide targeted support to select rural medical students to complete all appropriate third year clerkships within a designated AHEC region. Support would/could include housing, travel stipends, and cash incentives upon the completion of identified milestones (e.g. completion of second/fourth/sixth rotation in the region, selection of a primary care residency program, selection of a residency program within the AHEC region, establishment of practice within sponsoring AHEC region, etc.)
   b. Create defined linkages between selective admissions, completion of a rural primary care clerkship, participation as an AHEC Scholar, selection of local residency programs and/or loan forgiveness programs. Students selecting to pursue a track modeled on PSAP could be offered free tuition. Loan forgiveness and/or scholarships could be preferentially offered to current and future students who select primary care residencies in Georgia. Bundling of existing services coupled with new incentive packages for participants should create longer retention of rural primary care providers.

4. **Pipeline Opportunities:**
   a. Expand the current *Pathways into Medicine* project in Southwest Georgia to encompass the state. This is a program targeted to assist rural students become competitive applicants to Georgia
medical schools. While only in its third year of operation, it has begun to produce data indicating its potential significant contribution to increasing the number and quality of rural applicants applying to medical school.

b. Create a statewide training curriculum designed to better educate and equip college and university pre-med advisors. This should be modeled on the TEACH Academy project currently offered by the AHECs to middle and high school math and science teachers. Training could be mandatory for USG institution pre-med advisors every three years and should be open to private institution pre-med advisors as well.

* The PSAP is a special admissions program that was developed in 1974 to identify medical student applicants who would eventually practice family medicine in underserved areas [19]. Qualified applicants were given high priority for the program only if they had lived in or had strong family ties to an area in or adjacent to a physician shortage area of Pennsylvania. Upon admission, students were required to take several family medicine clerkships. Rabinowitz has found that these students are five times as likely as their peers to enter family medicine, and almost twice as likely to enter this specialty as non-PSAP students who entered Jefferson Medical College with the desire to become family physicians.