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STATEMENTS

Addressing Rural Health Disparities Through Pharmacy Curricula

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Approximately 75% of the United States is rural.[1] While 20% of the US population lives outside of urban areas, only 9% of physicians and 12% of pharmacists practice in rural areas.[2,3] This lack of access to primary care is compounded by the significant need for primary care by citizens in rural areas. More than 1 in 3 adults living in rural America is in poor to fair health, with nearly half having at least 1 major chronic illness.[4] Individuals in rural areas have higher rates of smoking as well as obesity, diabetes, and other chronic diseases.[5] In its 2005 report on rural health care, the Institute of Medicine asserted that many of the challenges faced by those living in rural areas can be attributed to the lack of access to basic health care services. Furthermore, this report described 5 strategies to address the lack of care in rural areas, and 1 strategy was to increase the supply of primary care health professionals in rural areas through improved education and training.[4] Although the report did not specify types of providers, specially trained pharmacists may be able to address the health care disparities found in rural areas.

Although the shortage of primary care clinicians has persisted for decades, there is evidence that medical education has made progress in eliminating deficiencies in access to rural health care.[6-8] The following universities, in addition to Jefferson Medical College, all have histories of a strong curricular commitment to rural health care: Alabama, Arizona, Illinois-Rockford, Minnesota, and Washington. Much of the University of Washington's involvement in rural health care has been through a coalition of the University's School of Medicine and 5 states in the Northwest, entitled WWAMI (Washington, Wyoming, Alaska, Montana, and Idaho). With regard to rural health, pharmacy education is in its infancy and can be described as trailing medical education in its efforts. Based on a survey of Web sites of accredited pharmacy colleges and schools,[9] 3 were found that promote programmatic and longitudinal curricular offerings in education and training in rural pharmacy health.[10-12] If less than 3% of accredited pharmacy colleges and schools are promoting and providing formal curricular programming in rural pharmacy health, pharmacy education is probably not meeting the need for qualified pharmacy practitioners in rural areas.

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RURAL-FOCUSED PHARMACY PROGRAMS

When considering creation of a rural-focused pharmacy curriculum, the UNC Eshelman School of Pharmacy first looked to local resources such as the statewide Area Health Education Centers (AHEC) Program. The AHEC system is designed to train and retain health care professionals across the state and has met this objective to an extent; therefore, AHEC could be a vital partner in a rural health-based pharmacy curriculum. Across the state of North Carolina, additional allies were identified who were willing to engage in the education of pharmacists with a rural health interest.

The school also researched several programs throughout the country and surveyed prospective students. The information gathered suggested that the approach to fulfilling the rural health education need must be multifaceted, including aspects of recruitment, admission processes, curricular innovation, and rural experiential training.

Medical educators have found that a medical school applicant from a rural area is more likely to practice in a rural area.[6,7,13] This trend is juxtaposed with deficits in educational resources for rural areas that may place such applicants at a disadvantage compared to counterparts from metropolitan areas. Students with an interest in rural pharmacy practice may be encouraged to participate in rural health programs through tuition waivers, early admission, or the chance to obtain an additional designation or certification. Additionally, pharmacists are now included in the National Health Service Corps (NHSC) State Loan Repayment Program which gives grants to states to operate their own loan repayment programs for primary care providers in medically underserved areas.[14]

Partnerships with community colleges have proven successful for programs such as the one at the University of Nebraska Medical Center.[12] Similarly, UNC operates the Carolina Student Transfer Excellence Program to engage students enrolled in some of the state's community colleges to transfer and graduate from UNC; this program may prove to be a future partner with a rural health pharmacy program.[15] To highlight the unique characteristics of a rural applicant, use of a unique supplemental application in addition to a school's standard application should be considered. When determining the ideal applicant to a rural health program, the following factors should be considered: previous experience in a rural setting, an expressed commitment to rural health, leadership experience, and community service.

When examining the demands on rural health primary care providers, pharmacists practicing in these areas may require an additional knowledge and skill set to meet the needs specific to these areas. Although the skills required may differ by community, there are a number of skills and competencies that are critical in any remote or rural practice setting. What type of skills might these pharmacists need? Many skills that are useful in any practice setting may have particular significance in rural areas. For example, if a pharmacist working in a rural community is one of only a handful of health professionals serving a rural population, they may be called on to step outside of the roles usually assigned to a pharmacist and take on additional tasks, or transform the typical workflow entirely to meet the needs of their patients. Increased expectations in physical assessment, leadership, practice management, communication, languages, cultural competency, and interprofessional activities would likely benefit students and should be considered for integration into rural health pharmacy curricula. As leaders in their communities, rural health practitioners should have a commitment to community service and the ability to create innovative pharmacy practice models.

There is a great need for new business models to support the development of innovative practices in rural areas, and students will need training in both the practice and business components of pharmacy to be successful. Incorporation of material focused on rural health throughout the classroom and experiential curriculum rather than in 1 course might reinforce the importance of the topic as well as highlight opportunities available in rural practice.

Positive and extensive exposure to rural health care early and throughout the pharmacy curriculum can have a major impact on students' career decisions.[6,13] Exposure should come in the form of lectures on rural health as well as experiential training that immerses the student in a rural community and in rural practice. Examples of experiential learning that should be considered include interactive onsite visits to rural practice sites, practice experiences with a focus on advanced rural health, participation in rural community-based research, and service learning. Engaging students from different health disciplines with a common focus of rural health in the classroom and at practice sites would likely encourage interprofessional dialogue that is particularly crucial in situations where providers are lacking. Students interested in rural health may be hindered from pursuing rural health education because of constrained housing opportunities, so provision of housing for students on practice experiences in rural areas may remove these barriers and encourage interest in rural experiences. Through direct observation, monitored integration into rural healthcare teams, and participation in rural community events, students in a rural health program may be more likely to become vested in the program and in rural pharmacy practice.

DEVELOPMENT OF A RURAL HEALTH CERTIFICATE PROGRAM

The following is clear and cannot be disputed: health care disparities in rural populations exist and pharmacy colleges and schools, in general, are not providing curricular programming to address and eliminate these disparities. The concepts learned from medicine, other pharmacy programs, and our network in North Carolina were used to develop a proposal for a certificate program in rural pharmacy that will be delivered to interested students attending the school's satellite campuses, both of which are located in or near rural areas.

The program proposal outlines specific criteria for evaluating applicants to the rural health certificate program and incorporates the use of a select group of advisors with rural health expertise to provide additional screening of candidates. Once admitted to the program, students complete all of the coursework required for the doctor of pharmacy program as well as additional coursework and experiential training specific to the certificate. The bulk of the lecture-based rural health curriculum will be delivered via a weekly seminar that uses rural-based cases and guest speakers to foster exploration of rural health disparities and to promote discussion regarding pharmacist-led initiatives. Additional training in physical assessment, research, communication, and business plan development will also be included. Students will be required to attend longitudinal, on-site experiential training at a variety of rural health sites throughout the curriculum. Examples of onsite training include rural hospital, community, and clinic pharmacist and non-pharmacist practices, agriculture-based communities, and veterinary

clinics. Students will be required to complete a portion of their elective coursework in areas with a rural health focus and a majority of their experiential practice experiences at rural sites. Our expectations are that the program will produce graduates with a unique skill set that will prepare them for pharmacy practice in rural areas.

CONCLUSIONS

We believe that locating pharmacy instruction in a rural area at which pharmacy students can learn is not enough to ensure that graduates remain in that area to practice after graduation. Integration of rural concepts into recruitment and admissions practices, classroom coursework, and experiential offerings is necessary to affect the graduate's ability to meet the needs of patients in rural America. We propose that colleges and schools of pharmacy take significant steps to incorporate rural pharmacy health in their curricula and to produce graduates with the knowledge and skill set to excel as clinicians and leaders in rural America.

REFERENCES

1. United States Department of Agriculture Economic Research Service. Rural economy and population. http://www.ers.usda.gov/emphases/rural/. Accessed June 21, 2012.
2. Kavilanz P. Doctor-starved: America's heartland in crisis. http://money.cnn.com/2010/03/26/news/economy/health_care_rural_care_country_doctors/index.htm. Accessed June 13, 2012.
3. Recruitment and Retention of a Quality Health Care Workforce in Rural Areas. Number 3: pharmacists and pharmacy technicians. National Rural Health Association Issue Paper. May 2005. http://www.ruralhealthweb.org/go/left/policy-and-advocacy/policy-documents-and-statements/issue-papers-and-policy-briefs/. Accessed June 14, 2012.
4. Institute of Medicine Committee on the Future of Rural Health Care. *Quality through Collaboration: The Future of Rural Health.* Washington, DC: The National Academies Press; 2005:2-3.
5. North Carolina's Rural Health Research & Policy Analysis. Rural Health Snapshot 2010. Cecil G. Sheps Center Web site. http://www.shepscenter.unc.edu/research programs/ruralprogram/pubs/other/RuralhealthSnapshot2010.pdf. Accessed June 13, 2012.
6. Quinn KJ, Kane KY, Stevermer JJ, et al. Influencing residency choice and practice location through a longitudinal rural pipeline program. *Acad Med.* 2011;86(11):1397-1406.
7. Glasser M, Hunsaker M, Sweet K, et al. A comprehensive medical education program response to rural primary care needs. *Acad Med.* 2008;83(10):952-961.
8. Halaas GW. The rural physician associate program: Successful outcomes in primary care and rural practice. *Rural Remote Health.* 2005;5(2):453. Accessed June 19, 2012.
9. Thrasher KA, O'Connor SK, Joyner, PU. Review: rural health in pharmacy curricula. *Am J Pharm Educ.* 2012;76(9):180.
10. University of Arizona College of Pharmacy. Rural health professions program. http://www.pharmacy.arizona.edu/programs/rotations/rural-health. Accessed June 13, 2012.
11. University of Illinois at Chicago College of Pharmacy. The doctor of pharmacy program at our Rockford Campus. http://www.uic.edu/pharmacy/rockford/index.php. Accessed June 13, 2012.
12. University of Nebraska Medical Center, College of Public Health Rural Health Education Network. Rural health opportunities program. http://www.unmc.edu/rhen/RHOP_Programs.htm. Accessed June 13, 2012.
13. Henry JA, Edwards BJ, Crotty B. Why do medical graduates choose rural careers? *Rural Remote Health.* 2009;9(1):1083.
14. Pharmacists now included in loan repayment program. American Pharmacists Association. http://www.pharmacist.com/pharmacists-included-loan-repayment-program-0. Accessed November 16, 2012.
15. University of North Carolina, Chapel Hill. Carolina Student Transfer Excellence Program (C-STEP), www.admissions.unc.edu/CSTEP/. Accessed June 20, 2012.