Developing Health Care Faculty to Address the Needs of North Carolina's Diverse Populations

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Addressing community needs improves population health and the well-being of health care providers. The development of the health care workforce requires faculty to address the needs of North Carolina's diverse and rural populations. This can be best accomplished by building interdisciplinary and cross-functional service-learning experiences and developing community-academic partnerships and coalitions.

Introduction

The demand for health care services and the associated increased need for health care workers was a critical concern prior to the COVID-19 pandemic. The need to increase the supply of health care workers stems from several factors, including decrease in the supply of providers and the public's increasing demand for services. The compounded emotional, physical, and mental strain is resulting in health care workers retiring at a faster rate than predicted, while at the same time the demand for health care services continues to escalate. The pandemic exacerbated the existing shortage, adding another layer due to the burnout of the health care workforce. Another critical factor is faculty shortage, which limits further the supply of health care workers by reducing the number of new health care providers who can enter the health care disciplines.

Critical Need in North Carolina's Rural and Economically Distressed Communities

Protecting the health of rural residents is not new as evidenced by the establishment of the Office of Rural Health. Rural areas have unique demographic and cultural characteristics as well as distinctive health problems, resource limitations, and economic stressors that combine to influence health care design and implementation, thus driving health outcomes. According to the North Carolina Rural Center, 78 of North Carolina's 100 counties are classified as rural, having 250 people or fewer per square mile [1]. Rural residents are more likely to be older, poorer, less educated, and a member of a minority group than the state's general population, and many have less access to high-speed internet [1]. In addition to the drivers of health noted here, rural residents have less available, accessible, and affordable health care. Although North Carolina has a significant enrollment and participation in Medicaid services and programs, 63 of North Carolina's 80 rural counties are designated as health professional shortage areas (HPSA) [2]. During the past 15 years, North Carolina's rural hospitals have experienced an increase in closures, reduction in services, and increasing financial distress [2]. Yet, the rural populations in North Carolina are anything but homogenous. They differ in many ways, but especially in the areas of economics, health outcomes, and clinical care.

North Carolina's Department of Commerce annually reviews and ranks each of the 100 counties based on economic well-being and relevant economic distress. The purpose is to encourage economic activity in the less prosperous areas of the state. Four factors are used for the assessment, including: average unemployment rates, median household income, percentage of growth in population, and adjusted property tax base per capita. The 40 counties experiencing the most economic distress are classified as Tier 1, with the 20 counties experiencing the least distress receiving the classification of Tier 3 [3]. Tier 1 counties have been aggregated in the southeastern and northeastern parts of the state since 2014 (Figure 1). Thirteen counties consistently appear as the most distressed; all of these are rural (Figure 1, Table 1).

The improvement of health and health outcomes is not listed among the purposes of the Department of Commerce's Tier ranking, nor are grants and incentives available based on a county's economic distress, though these things impact the drivers of health. For example, an increase in tax base may be an indirect indicator of public versus private health insurance coverage or educational expansion. Medium household income may serve as an indicator of disposable income and access to resources such as healthy food, recreational facilities, and post-secondary educational attainment. Percent growth in population indicates a county that is growing versus one with a decreasing population.

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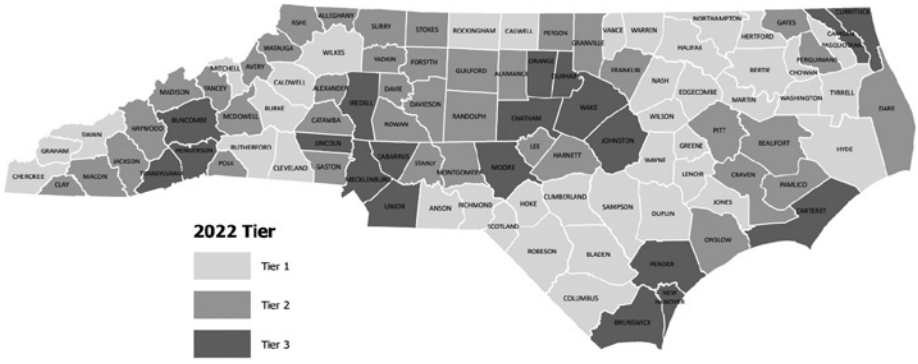
FIGURE 1.
2022 County Tier Designations



(Note: May include this sentence: Each county is ranked from 1 to 100 on each of variable making the highest possible sum of 400 with the lowest possible score as 4).
County Distress Rankings (Tiers). North Carolina Department of Commerce. https://www.commerce.nc.gov/grants-incentives/county-distress-rankings-tiers

Rankings and Roadmaps report provides an annual snapshot of populations' overall health as well as factors that influence how well and how long we live. The model uses more than 30 measures to aid in the understanding of health outcomes and what influences health in the future while acknowledging that policies and programs at the local, state, and national level are foundational to communities' health and well-being. These health factors are divided into four categories, each weighted according to influence on health. The most influential category is Social and Economic Factors (40%), followed by Health Behaviors (30%), Clinical Care (20%), and Physical Environment (10%) [4]. The North Carolina Department of Health and Human Services and North Carolina Institute of Medicine's "Healthy North Carolina 2030: A Path Toward Health" task force and report adapted the RWJF framework to provide future recommendations and goals related to 21 health indicators [5]. The context and analysis in this report and recommendations begins to provide an understanding of the challenges faced by health care providers when practicing in distressed areas.

TABLE 1.
Fifteen Counties With Greatest Economic Distress in North Carolina, 2020-2022

	2020		2021		2022	
	Score	Ranking	Score	Ranking	Score	Ranking
Anson	134	25	103	14	90	12
Bertie	**49**	**6**	**96**	**13**	**50**	**6**
Columbus	**55**	**8**	**63**	**6**	**49**	**5**
Edgecombe	**14**	**1**	**28**	**1**	**35**	**3**
Halifax	**29**	**4**	**46**	**4**	**41**	**4**
Hertford	49	6	84	10	58	9
Martin	**226**	**59**	**127**	**22**	**81**	**11**
Northampton	**80**	**10**	**106**	**15**	**95**	**14**
Richmond	**59**	**9**	**78**	**8**	**55**	**8**
Robeson	24	2	33	2	19	1
Rockingham		**29**	**94**	**12**	**125**	**22**
Scotland	**45**	**5**	**33**	**2**	**21**	**2**
Tyrrell	**102**	**15**	**80**	**9**	**95**	**14**
Vance	**80**	**10**	**67**	**7**	**51**	**7**
Warren	**95**	**14**	**93**	**11**	**91**	**13**
Washington	**35**	**3**	**56**	**5**	**65**	**10**

Adapted from County Distress Ranking. NC Department of Commerce, , https://www.commerce.nc.gov/grants-incentives/county-distress-rankings-tiers e of Commence and County Health Rankings and Roadmaps. Robert Wood Johnson Foundation. https://www.countyhealthrankings.org/.

The unique health care needs of rural areas—especially those with large underserved (including high-poverty, low-educational attainment) populations—are compounded by critical shortages in providers of primary and specialty care. According to the American Medical Association, while the need for more medical providers will be felt everywhere, the rural and historically underserved areas may experience the health workforce shortages more acutely [6]. To address these shortages, North Carolina must intentionally recognize the roles that education and faculty play in addressing the health care needs of these special populations and in developing programs and educational strategies to expand the rural health care workforce.

Innovations that Address the Health Workforce Faculty Supply

Healthy communities depend on proper preparation, supply, and support of the health workforce. Supply issues should be addressed by increasing the numbers of providers, distributing of health care workers across geographic and specialty areas, supporting those in practice, and preparing the future provider workforce. However, the preparation of the future provider workforce is strongly dependent on the availability of qualified, well-prepared, well-supported, well-compensated, and diverse faculty. Over the past two decades, faculty shortages continue to be an issue, and concerns about the recruitment and retention of faculty have grown. These shortages are widespread across institutions, affecting nearly every type of health profession school [7–11].

DATA & TRENDS – *Byrd* SIDEBAR

Further worsening of faculty shortages will threaten the nation's health professions educational infrastructure, and consequently exacerbate the existing health care workforce shortage and negatively impact health care outcomes [12]. Over the past two decades several factors have been identified to account for the widespread faculty shortages across multiple disciplines, including low level of interest in academic careers among those entering the health professions, the disparities in salaries between academia and private practice or industry, limited pool of qualified faculty who meet programmatic accreditors' criteria, aging of the faculty workforce, heavy faculty workloads, late points of entry into faculty careers, and lack of adequately qualified staff prepared to undertake the academic role [13-17].

Strategies to Address Faculty and Health Care Workforce Shortages

Strategy 1. Grow your own. Grow-Your-Own programs are place-based efforts designed to attract, develop, support, and retain workers to create a sustainable pipeline [18]. Local residents of rural and/or underserved communities are most often aware of and familiar with the culture, needs, and resources of their communities. [19].

A successful model for this type of program in North

Carolina is the Regionally Increasing Baccalaureate Nurses (RIBN) program that serves as an educational pathway between community colleges and universities to increase nurses by delineating a clear, economically feasible pathway for high school students to obtain a baccalaureate degree. This program decreased the time between earning an associate-baccalaureate degree, decreased the age of nurses in RN-BSN completion programs, and increased the pool of nurses who could earn advanced degrees [20].

The American Dental Education Association (ADEA) developed a model of multiple pathways for students, graduates, and fellows to prepare for and enter the faculty role. This model addresses the need to have dentists begin the career path into academy at an earlier age, expose them to the role of faculty and provide financial support.

Another successful model is the North Carolina Teaching Fellows Program, established by the North Carolina General Assembly, which is designed "to recruit, prepare, and support students residing in or attending institutions of higher education located in North Carolina for preparation as highly effective STEM or special education teachers in the State's public schools" [21]. This loan forgiveness program is designed to support individuals interested in teaching and who are well distributed across the state, including rural and

underserved areas. It is time for North Carolina to institute similar programs for the development of health professional faculty.

Another type of place-based effort is to attract health professional faculty to move to communities of need. Historically, the vast majority of health professionals are educated in academic medical and health centers. These each have an array of specialized services, availability of advanced technology, and the latest research [22]. However, rural and economically distressed communities often lack the supportive services and activities one becomes accustomed to during training. The North Carolina Area Health Education Centers (NC AHEC) comprise a model program designed to support educational activities and services with a focus on primary care in rural communities to recruit, train, and retain the health care workforce. This mission is accomplished through post-graduate medical education programs, educational mobility programs, continuing educational offerings, and library services [23]. To better fulfill its current mission, NC AHEC funding and resources should increase to allow even more focus on recruiting, training, and retaining the faculty workforce for rural and non-academic health centers across North Carolina.

Strategy 2. Impactful interprofessional education facili-

tated by interactive engagement within community settings. Delivery of high-quality patient-centered care requires collaboration and teamwork among several health professionals. There is a robust body of research showing interprofessional collaboration in clinical practice may improve patient care and outcomes, reduce medical errors and costs, improve patient experience, and enhance job satisfaction and retention [24, 25]. The ability to work in interdisciplinary teams is considered a core competency that all health professionals must possess. Therefore, future generations of health professionals must be prepared to successfully function in a culture that recognizes the skills and competence of each member of the interprofessional teams. Moreover, to better align health professions curricula with the continuously evolving health services models, interprofessional education (IPE) is being required by nearly all the national health professional prelicensure accrediting bodies [26]. The Health Professions Accreditors Collaborative, which started with six members representing Pharmacy, Nursing, Medicine, Dental, Osteopathic, and Public Health, has expanded to 25 entry level health professions education accrediting boards. Twenty-two of the 25 members have or "are developing interprofessional education [IPE] standards and assessment, evaluation of simulation, Team Observed Structured Clinical Encounters [TOSCEs] and planning future projects [e.g., research, consensus documents], and educational sessions)" [26].

Interprofessional education offers students the opportunity to practice interprofessional teamwork through different instructional events that expose students to experiences that are carefully planned and developed [27]. With health professions education linked inseparably with social service responsibility, use of clinically based IPE can strengthen students, own professional identity and would enable health professions students to develop professional and interprofessional skills facilitated by interactive engagement with community partners. The community-based IPE (CBE model), often used in rural areas, is recognized as a model that provides meaningful learning by providing students: a) a deeper understanding of health and illness in rural or other contexts, considering the impact of social and environmental factors on health; b) improvement of interpersonal skills and acquisition of more than mere disciplinary expertise or technical knowledge; and (c) encouragement to practice in more socially responsible ways by taking into consideration the unique problems of rural areas [28]. IPE simulations provide an additional avenue for students to see their respective faculty members working together in a collegial way and appreciate the importance of mutual respect and reliance among health professionals. Using CBE opportunities and targeted community-academic partnerships can also increase the intrinsic motivators that drive healthcare practitioners to academic careers.

Strategy 3. Community-academic partnerships. Communities partnering with educational institutions and policy-makers to recruit and retain members to enter the health professions. These partnerships can allow for the development of community-specific health care delivery models through the merging and sharing of knowledge and expertise, creating systems that enable translation research findings and inform policy and decision-making. Community-academic partnership can be strengthened by the integration of advisory boards that facilitate communication, understanding, and trust. These partnerships have traditionally been developed to engage students in service-learning with the emphasis on both student outcomes and beneficial to populations and communities [29]. However, with innovation, intentionality, and the right resources, these partnerships can also provide a venue for faculty recruitment, engagement, and retention.

Joint appointments of faculty at academic institutions and clinical facilities create a synergy between practice, education, and applied research. Therefore, these types of appointments have the potential to address faculty recruitment, engagement, and retention concerns. Through these types of appointments, faculty do not have to choose between practice and higher education. In addition, these types of appointments provide an excellent opportunity for faculty practitioners to engage in applied research, integrating research into clinical practice, and thus advancing their field.

For professional education such as medicine, allied health and nursing, faculty members often come from practitioner roles and lack classroom management and curriculum development skills. The frustrations of learning quickly to work productively within a very different environment can result in qualified individuals with strong potential to return to more financially lucrative clinical positions. Therefore, another tactic to address the retention of faculty in health profession programs is to develop, through community-academic partnerships, new models to identify health professionals in the field who may be interested in academia and "ease" them into the educator role through mentoring programs, offering short-term training related to classroom management, curriculum design, and assessment (micro-credentials or badges) while they continue their clinical practice. A similar approach to this recommended tactic is the proposed Nursing Partnership Program (NPP) by NC AHEC [23]. In this new program NC AHEC will support up to 15 nursing schools and their practice partners to build a NPP with the goal of developing clinical faculty without leaving the practice. If this proposed model is successful, it can be used to develop similar models in other health disciples that continue to experience faculty shortages.

Community leaders, academic programs, and policy makers must identify and develop opportunities for healthcare facilities and academic institutions to attract and retain health professionals to practice and teach in rural settings. A national survey of practitioners and educators identified the unique challenges and opportunities of working in rural com-

munities [30]. The proposed competency framework can be used by educational programs to prepare health care professionals for practice and subsequent faculty opportunities, in rural settings. Additionally, it is critical that communities develop programs that increase acclimation and facilitate transition of professionals to rural settings and to a more autonomous practice with less resources. Rural settings create a perfect storm of challenges to attracting and retaining health professionals, stemming from factors like increased health care and social needs, poor health outcomes related to drivers of health, less access to services due to shortage of health care professionals, and fewer incentives for the existing professionals to stay and practice in these areas due to low reimbursement, increase workload, professional isolation, and overall burnout. Policymakers should also develop stronger financial incentives for health care professionals to practice in rural areas and to advocate for a reform of federal payment policies for professionals who practice and teach in rural settings. Examples include financial incentives through a state income tax, higher reimbursement for services provided, and loan assistance programs at both federal and state levels.

Conclusion

Faculty shortages that are experienced across all health professional disciplines carry the risk of impacting the very infrastructure of the future health care workforce. Therefore, different strategies and approaches must be investigated continuously to prevent potential negative impacts. The strategies suggested in this article need to be considered not independent from one another, but as interconnected. Together these strategies have the potential to produce home-grown health care professionals who are truly collaborative, community oriented, compassionate, cognizant of the social determinants of health of North Carolina's diverse population, committed to the health of the public, and motivated to be part of a health educators' community dedicated to sustaining a life-long learning environment for future generations of health professionals. NCMJ

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