Building a Value-Based Workforce in North Carolina

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Health care in the United States is likely to change more in the next 10 years than in any previous decade. However, changes in the workforce needed to support new care delivery and payment models will likely be slower and less dramatic. In this issue of the NCMJ, experts from education, practice, and policy reflect on the "state of the state" and what the future holds for multiple health professional groups. They write from a broad range of perspectives and disciplines, but all point toward the need for change—change in the way we educate, deploy, and recruit health professionals. The rapid pace of health system change in North Carolina means that the road map is being redrawn as we drive, but some general routes are evident. In this issue brief we suggest that, to make the workforce more effective, we need to broaden our definition of who is in the health workforce; focus on retooling and retraining the existing workforce; shift from training workers in acute settings to training them in community-based settings; and increase accountability in the system so that public funds spent on the health professions produce the workforce needed to meet the state's health care needs. North Carolina has arguably the best health workforce data system in the country; it has historically provided the data needed to inform policy change, but adequate and ongoing financial support for that system needs to be assured.

This decade will bear witness to great changes in the way we pay for health care, the way we organize its delivery, and even our expectations for the health status of the population of North Carolina. What may change less is the professional identity and preparation of the people who work in health care—both health care professionals and those in community-based occupations that support health. We can anticipate what a world of accountable care organizations (ACOs) and patient-centered medical homes (PCMHs) might look like in terms of how they realign the structures of hospitals and clinics. Given what we know about past performance, we can also roughly outline a way to pay for health care based on value. However, we are less able to visualize how a physician, nurse, or social worker—not to mention a community health worker or a family caregiver—will need to adapt to work within new models of care and new payment systems.

What will the shift to value-based care mean for the workforce? In this issue of the NCMJ, experts from education, practice, and policy reflect on the "state of the state" and what the future holds for multiple health professions. They write from a broad range of perspectives and disciplines, but all point toward the need for change—change in the way we educate, deploy, and recruit health professionals. The rapid pace of health system change in North Carolina means that the road map is being redrawn as we drive, but some general routes are evident. To make the workforce as effective as it can be, we need to achieve several goals: broaden our definition of who is in the health workforce; focus on retooling and retraining the workforce to function in a transformed health system; shift resources from training workers in acute settings to training those in community-based settings; and increase accountability in the system so that public funds produce the workforce we need.

Broadening Our Definition of the Health Care Workforce

As we move toward new models of care—including ACOs, PCMHs, and a reformed Medicaid system in North Carolina—we can expect that changes to the health care system will not be confined to changing care delivery and payment incentives. Patients and caregivers will also have to adapt to accommodate reform. Existing health care workers will need to take on new tasks and responsibilities, and the combination of these new tasks and responsibilities will create new roles. Two of the most common roles that are emerging are those that focus on coordinating care within health systems and those that coordinate patient care between health systems and community-based services [1].

Within the health care system, care coordination roles have grown rapidly and have been accompanied by many titles: care coordinators, patient navigators, care managers, case managers, and care transition specialists. These

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roles often overlap in function, and all serve to help patients navigate the complex array of health services needed in acute, ambulatory, and long-term care settings. Some job titles—like patient navigator—have different meanings in different settings. Patient navigators educate patients about resources and help coordinate care, but this title is also used for individuals who assist patients in enrolling into health benefit plans, such as those stipulated in the Patient Protection and Affordable Care Act (ACA).

The heterogeneity and overlap between and within job titles has created role confusion. It is often unclear to members of the health care team what different individuals' job functions are and how they relate to already established roles. Successful integration of new roles into team-based models of care cannot occur unless all team members understand the activities associated with each new role and how the role interfaces with the functions of other health professionals [2, 3]. There are also questions about whether the new systems create impossible jobs where workflows are too complex [4]. Thus, yet another role has evolved—practice facilitators who lead workflow redesign and manage change within practices undergoing transformation [5].

The rapid growth in new roles is not confined to the health care system. An increasing number of health workers are moving into boundary spanning roles that shift the focus of patient care from visit-based to population-based strategies. The definition of who is on the health care team is broadening to include workers who typically practice in community and home-based settings: social workers, community health workers, home health workers, community paramedics, and community-based social service providers. In this issue of the NCMJ, Nelson and colleagues describe North Carolina's efforts to integrate community health workers into the health system [6]. As frontline public health workers who have close and trusted relationships with their communities, community health workers can "serve as a liaison between health/social services and the community to facilitate access to services and improve the quality and cultural competence of service delivery" [7].

A primary task for boundary spanning workers is integrating clinical care with social services. As Secretary Burwell of the US Department of Health & Human Services noted when announcing $157 million in funding for accountable health communities, "we recognize that keeping people healthy is about more than what happens inside a doctor's office…we are testing whether screening patients for health-related social needs and connecting them to local resources like housing and transportation to the doctor will ultimately improve their health and reduce costs to taxpayers" [8]. These "connector" functions are especially important for elderly individuals who often have multiple comorbidities and functional limitations and who may require help with activities of daily living. In his commentary in this issue, Heflin suggests, "North Carolina's plan for the future must include a blueprint for building a larger, smarter workforce that is more diverse in its professional makeup and more connected in its ties to senior citizens and their communities" [9]. However, Dickerson [10] notes that it is not health workforce shortages that prevent many North Carolinians from seeking care; rather, it is lack of insurance coverage. He highlights that access is particularly problematic for non-white individuals living below the federal poverty line who are managing a chronic condition and who do not yet qualify for Medicare.

Also in this issue, Zeng [11] describes how new job roles are needed to support the broad implementation of electronic health records (EHRs). The EHR adoption rate in North Carolina has increased from 9.4% in 2008 to 78.4% in 2014 [12], which has created jobs for informaticians, scribes, and data scientists. Zeng also notes the flip side of workforce transformation—some jobs are lost. For example, the services of medical transcriptionists are no longer needed as we move from paper to digital records.

Retooling the Workforce

Cunningham and coauthors [13] and Newton and colleagues [14] describe ways in which medical school curricula have and need to change to prepare students for new models of care. In addition, Greene writes about the Kenan Primary Care Medical Scholars Program, which was developed at the University of North Carolina School of Medicine to nurture and sustain medical students' interest in practicing in underserved communities in the state [15]. In another sidebar, Hall describes the development of a new psychiatry residency program at Carolinas HealthCare System, which was designed to attract and retain more psychiatrists to the region [16].

These are steps in the right direction, but we need to focus more attention on retraining the workforce already employed in the health care system, since they will be the ones to transform care. Table 1 shows the relative size of new entrants to the workforce compared to the size of the existing workforce for select professions in the United States in 2012. The data suggest that, if we wait for new graduates to transform care delivery processes and assume new roles, we will wait a very long time to realize the change we are seeking.

We need to identify and codify emerging health professional roles and then redesign pipeline and continuing education programs to train health care workers to assume these roles [20]. Because many of these roles have not existed in the health system before (or they have played only a peripheral role in health care delivery), it is difficult to find faculty who can teach students and existing health workers about these new roles.

Another challenge is that our current educational system provides few ways for existing workers to retrain for new roles. More explicit, formal linkages are needed between frontline delivery systems and educators [21]. In their commentary in this issue, Hofler and Thomas discuss how

Vidant Medical Center's nurse residency programs help to bridge skills gained through formal education with the needs of employers [22]. These programs help new graduates gain the competency, confidence, and autonomy needed to successfully transition into practice. Nurse residency programs have been shown to increase retention [23] and improve nurses' confidence and management skills [24].

Better linkages are also needed between 2- and 4-year institutions to promote career laddering; provide continuing education opportunities; and allow health professionals to retrain for different settings, services, and patients. Retraining opportunities must be convenient in timing and location, but a bigger barrier may be the lack of funding to support workers as they take time off from practice to retrain [1]. Many workforce innovations are supported by one-time grant funding, while many others are occurring in closed delivery systems that have a capitated payment model. In contrast, most health care employers are still working in a fee-for-service system. How these employers will reconfigure their workforce as the system moves to value-based payment is uncertain.

Regulatory systems also need to adapt and change to new roles. As Dower and colleagues [25] have noted, "The workforce innovations needed to implement ACA programs require an adaptable regulatory system capable of evolving with the health care environment. The health professions regulation system in place today does not have the flexibility to support change." Some of the most contentious battles in the state legislature involve proposed scope-of-practice changes and new roles. In many cases, these debates are proceeding with limited empirical evidence about whether the proposed change will be better for patients, either because the evidence base is lacking or because we do not know where to look to see how other states have addressed similar changes. We need to develop an evidence base to support role changes so we can evaluate whether these interventions improve health, lower costs, and enhance patient satisfaction.

TABLE 1.
Number of Health Professionals in the Workforce Versus New Entrants to the Workforce, Select Professions, 2012

Profession	Total workforce	New entrants	New entrants as a percentage of total workforce
Physicians	835,723	21,294[a]	2.5%
Physician assistants	106,419	6,207	5.8%
Registered nurses	2,682,262	146,572	5.5%
Licensed practical nurses and licensed vocational nurses	630,395	60,519	9.6%
Dentists	157,395	5,084	3.2%
Chiropractors	54,444	2,496	4.6%
Optometrists	33,202	1,404	4.2%
Social workers	724,618	41,769	5.8%
Physical therapists	198,400	10,102	5.1%
Occupational therapists	90,483	6,227	6.9%

[a]The number of physician graduates includes those completing medical and osteopathic schools in the United States; it does not include graduates of foreign medical schools who enter the pipeline at the graduate medical education level, also known as residency training.
Sources: 2012 professions data were taken from the Health Resources and Services Administration (HRSA) publication *Sex, Race, and Ethnic Diversity of US Health Occupations* [17]. All new graduate data (except registered nurses) are from our analysis of the National Center for Education Statistics' Integrated Postsecondary Education Data System [18]. Data on registered nurses were taken from the 2013 HRSA publication *The U.S. Nursing Workforce: Trends in Supply and Education* [19]. The most recent available estimate of NCLEX passers was from 2011. To calculate total 2012 registered nurse new entrants, we added the average number of nurses from the prior 2 years to the 2011 estimate.

In this issue, Weintraub and colleagues [26] note that, to increase access to oral health services in rural and underserved communities, some states are proposing new oral health roles such as dental therapists, advanced dental hygiene practitioners, and community dental health coordinators. Research supporting these roles includes evidence about the percentage of procedures that could be taken on by midlevel practitioners in safety-net settings under different scope-of-practice assumptions [27]. In 2014, Maine passed a law recognizing dental hygiene therapists. Alaska and Minnesota have also implemented dental therapist roles, which are targeted toward rural and underserved populations [28, 29].

Shifting From Acute to Community-Based Workers

As health care shifts from expensive inpatient settings to less costly outpatient settings, the health workforce will increasingly shift to ambulatory and community-based settings. However, most training is still done in acute inpatient settings. Physicians, nurses, and other health professionals traditionally employed in hospitals will need to retrain to develop the skills to practice in ambulatory settings. For example, nurses will be expected to serve as care coordinators, case managers, patient educators, and chronic care specialists in outpatient settings [30].

The jobs of nurses and other health professionals will increasingly bring them into contact with a host of social service providers with whom they may not have collaborated previously. Efforts to develop interprofessional, team-based models of education and practice will therefore need to reach outside the walls of academia to include community-based providers, so that both health care professionals and social service providers can understand each other's roles and how they fit into the patient's care pathway. In this issue, Nester [31] highlights how new models of care such as accountable care organizations will require "well trained, well organized care teams comprised of members practicing at the full scope of their licenses," but she is realistic about the challenges of implementing team-based care. The bigger and more diverse the team, the harder it is for providers to communicate, especially when caring for patients with complex health care needs. Another challenge is the dearth of model practices in which to place learners so they can experience how high-functioning interprofessional teams work.

Increasing Accountability for Health Workforce Investments

Hundreds of millions of taxpayer funds are spent each year on health workforce education, recruitment, and retention programs in North Carolina. How do we know that these are value-based investments? Newton and colleagues [14] note that nearly $400 million in taxpayer dollars are spent every year in North Carolina on graduate medical education, but the current system has few accountability measures to ensure that these funds produce the types of physicians we need or that these physicians practice where we need them. The ratio of primary care physicians to population in health professional shortage areas is about one-third the ratio observed in well-supplied North Carolina counties, and 14 North Carolina counties have faced persistent shortages of primary care physicians since 2004. In addition to the maldistribution of primary care practitioners, half of North Carolina's counties qualify as mental health professional shortage areas, and 24 counties have no general surgeons [32].

If, as Newton and colleagues suggest, "the whole health care system is moving toward paying for quality and outcomes," how can we measure quality and outcomes without investing in data collection and analysis? The good news is that North Carolina has a very robust data system to understand the health care workforce. Since the mid-1970s, the Cecil G. Sheps Center for Health Services Research, in cooperation with state licensure bodies, has collected and reported detailed demographic, practice, and educational information for 19 health professions [33]. These data, housed in the North Carolina Health Professions Data System (HPDS), have been used to great effect to inform workforce policy.

To name just a few examples, HPDS data were used to document the need to open a new dental school at East Carolina University in 2007, and they were used more recently by Campbell University to emphasize the need for a new osteopathic medical school that could train more rural primary care physicians. On the other side of the ledger, HPDS data have also saved the state millions of dollars by giving decision makers the information they needed to opt against other expansions. Specifically, leaders decided against opening a new pharmacy school at the University of North Carolina Greensboro in 2010 and, more recently, they opted to forgo opening a new school of optometry.

HPDS data are also used for evaluation, and they form the basis of the annual report to the North Carolina legislature about the number of medical students retained in primary care in the state. Indeed, nearly every article in this issue cites data from the HPDS to make the case for why their program is important or why attention to their discipline is critical. Despite the HPDS's contributions to state health workforce policymaking, funding for the data system has decreased 30% in the past 10 years.

North Carolina HPDS data have been essential for documenting disparities in access to health care in rural areas. The North Carolina Office of Rural Health uses these data to support health professions shortage area designations, which can bring federal funds into the state. For example, as Collins discusses in her commentary, the state received more than $5.6 million in National Health Services Corps funds to place providers in shortage areas [34].

This issue also highlights how HPDS data have been used to increase accountability and document uncomfortable truths about the health workforce, including its lack of racial and ethnic diversity. In her Running the Numbers column in this issue, Spero [35] notes that only 3.8% of the North Carolina physician workforce is comprised of black males. While one-quarter of black males in the North Carolina physician workforce graduated from an instate medical school, the remaining three-quarters graduated from a foreign medical school or were educated out of state, suggesting that we depend on other states and countries to generate the limited diversity we do have. We must therefore develop and recruit more local and regional talent. The lack of diversity is not limited to physicians. African Americans make up 22% of the state's population, yet they comprise only 2.5% of optometrists, 11% of registered nurses, 4% of physical therapists, 8% of occupational therapists, and 6% of pharmacists [35].

Building on these data, Valentine [36] discusses the many reasons we need to be accountable for producing a workforce that matches the racial and ethnic diversity of our population, including ensuring equity in access to health professional employment. Although the lack of providers in rural communities is most often identified as a problem that creates disparities in access to health care, it also reflects a lack of employment opportunities for rural citizens. As Collins notes, the North Carolina Institute of Medicine identified 6 priority strategies for improving health in rural communities, one of which is job creation [34].

Conclusion

After reviewing the commentaries and sidebars in this issue, readers may be left wondering whether the state can produce a workforce that represents our population in terms of racial and ethnic diversity, ensures access to health providers and health care jobs in rural and underserved areas, and produces the mix of providers needed to meet the state's health care needs. These questions are especially important as we redesign our Medicaid system. A very large part of Medicaid redesign will involve the adoption and adaptation of new roles and the development of new professions. Our state needs to carefully plan for the human element of the equation, as well as develop the structure and payment components of Medicaid redesign. NCM

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