

Meeting North Carolina's Health Care Needs Through Interprofessional Education and Practice

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To meet the future health care needs of North Carolinians, health professions students must learn how to work together as part of an interdisciplinary team. This commentary describes how interprofessional education and team-based care can decrease the number of adverse events, improve health care delivery, and support consistent outcomes.

Medicine has experienced dramatic changes since the pre-penicillin era, when doctors could often offer their patients only hope, rather than a cure. Now there are many more diagnoses, more diagnostic modalities, more therapies, and many additional complexities in our systems of care. Patients are living longer but often have more chronic conditions, and these conditions are frequently compounded by mental health comorbidities that make self-management more challenging than ever before.

These facts have not gone unnoticed, and experts have attempted to define the changes in care that will be needed. A 1995 Pew Health Professions Commission report [1] contained these observations:

The system that is emerging will be integrated through delivery of primary care. This will mean that all health practitioners, *generalists and specialists*, must be able to understand the values and functions of coordinated, comprehensive, and continuous care and direct their practices to support such goals...The complexity and acuity of care needs in the emerging system will require the health professional to be able to work effectively as a team member in organized settings that emphasize the integration of care.

Current debate [2] continues to probe and to ask important questions regarding which strategies will best serve the needs of our citizens. Despite this debate, more physicians and other health professionals are clearly needed to care for North Carolinians now and in the future. Explorations have focused on specific components of the health care workforce, such as physicians who practice primary care and direct care workers [3]. There has been no full and objective assessment to evaluate the impact of an interdisciplinary team of individuals who provide care in an integrated manner.

Systems Errors Emerge as the Complexity of Care Changes

Medical errors and concerns about quality of care have risen to the forefront of public attention since the Institute of Medicine of the National Academies' report *To Err is Human* [4] asserted in 2000 that systemic failures of health care delivery are responsible for these problems. Health care of the future must be evidence-based, standardized, reliably delivered, efficient, equitable, and patient-centered. In order for this to happen, we must have models of care that emphasize health care professionals working collaboratively and in partnership with patients, families, and communities [5].

Medicine has historically been based on the autonomous expertise, independence, and self-sufficiency of the physician, but medical knowledge has grown by quantum leaps and can no longer be understood by a single physician. Similarly, more can be done for an individual patient than any one person, or the traditional doctor-nurse pair, is able to do. Therefore medicine can no longer be an individual sport—it must be a team sport. As physician Atul Gwande said in his Harvard Medical School commencement address in 2011 [6], "Medicine no longer needs cowboys. It needs pit crews."

The Core Competencies for Interprofessional Collaborative Practice Report (2011) [7] states that interprofessional collaborative practice is "key to the safe, high quality, accessible, patient-centered care desired by all." The skills acquired through interprofessional team training have been associated with a significant decrease in the number of adverse safety events, especially in high-risk situations [7].

Health Professions Education Must Lead Systems Improvement

Health professions students often receive little instruction in team training or the communication skills needed to support a culture of patient safety and outcomes-based

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care. Traditionally, each discipline is brought up in its own unique culture. Competencies are adjudicated within these discrete environments. Learning to function as a member of a team takes place on the job, and it has been challenging to assess how well such teamwork has been learned.

Contemporary models of education reform focus on the belief that health care professionals who learn together are more likely to develop the competencies needed to work together effectively to care for patients and communities [7]. A key factor for success in accomplishing the magnitude of curricular change needed is the presence of committed faculty members who understand, practice, and can teach future generations of health professionals how to create optimal care environments using effective care teams. According to a recent report on interprofessional education by Headrick and colleagues [8], "a commonly encountered limiting factor . . . was the lack of a critical mass of clinically based faculty members who were ready to teach about the improvement of care."

Faculty-led experiential learning that is aligned with organizational goals for patient safety, quality improvement, and team-based care can help to achieve quality and safety goals and to improve the education and competency of clinical trainees [9]. However, traditionally trained medical educators are not equipped with the knowledge, attitudes, and skills required for teaching these competencies [8, 10]. In particular, few educators have ever participated in interprofessional education or grown comfortable with team-based care programs [10].

Using Interprofessional Education and Practice to Improve Health in North Carolina

Because the residents of Eastern North Carolina demand and deserve the very best health outcomes, East Carolina University (ECU) has implemented a multidimensional, cross-disciplinary approach to health professions education (see Table 1). Several large grants are helping to propel the curriculum forward in the areas of patient safety, qual-

TABLE 1.
Selected Active Interprofessional Programs and Projects at East Carolina University (ECU)

Educational program	Departments (Leaders)	Goal
AMA Accelerating Change in Medical Education	Brody School of Medicine at ECU (Elizabeth G. Baxley, MD, and Luan Lawson, MD, MAEd)	To implement an integrated, comprehensive curriculum in health care quality improvement, patient safety, and interprofessional education and team-based care.
Enhancing the Care of Women throughout the Lifespan Using Virtual Technology in Interprofessional Education ^a	ECU College of Nursing (Pamela Reis, PhD, MSN, CNM)	To evaluate clinical and interprofessional competencies of nurse midwifery students and third-year medical students and to examine students' attitudes toward interprofessional teams and interprofessional education.
Integrated Behavioral Health Care Social Work Project ^b	ECU School of Social Work; Brody School of Medicine's Department of Family Medicine (Nancy Pierson, MSW, LCSW)	To address disparities and inefficiencies in the health care system.
Leadership Development Learning Module	ECU College of Allied Health Sciences (Emilie Walter Cellucci, PhD)	To make available self-paced online learning that focuses specifically on the topic of interprofessionalism in the allied health professions.
ECU medical, dental, and social work students join adult gerontology nurse practitioner and family nurse practitioner students in clinical learning experiences ^c	ECU College of Nursing (Bobby Lowery, PhD, MN, FNP-BC)	To promote interprofessional collaboration.
Office of Clinical Skills Assessment and Education	ECU Division of Health Sciences (Maria C. Clay, PhD, and Patrick A. Merricks, MBA)	To promote interdisciplinary and interdepartmental collaboration in health professions education by providing a variety of performance-based activities and physical examination labs in which students from multiple health sciences disciplines can learn together, and to provide interprofessional educational material for specific courses and extramurally funded projects.
Medical Simulation and Patient Safety Program, Interprofessional Clinical Simulation Program	Brody School of Medicine at ECU (Walter C. Robey III, MD, FACEP)	To provide a collaborative environment in which health professionals learn, train, work, and rehearse together in a reality-based simulated environment.
Library Liaison Program	William E. Laupus Health Sciences Library (Katherine Rickett, MSLS, MSed)	To train students to efficiently locate evidence-based information and to facilitate participation in interdisciplinary programs.
Food Literacy Partners Program	Department of Public Health, Brody School of Medicine at ECU (N. Ruth Little, MPH, project director; supported by Libby Baxley, MD, and Kerry Littlewood, PhD, MSW)	To offer interdisciplinary community engagement opportunities for public health, medical, and social work students who are interested in providing hands-on nutrition and health education programming throughout Pitt County.

Note. AMA, American Medical Association.

^aFunded with a Health Resources and Services Administration grant for interprofessional education.

^bThe collaborative internship program at ECU was 1 of 28 in the nation selected for the Integrated Behavioral Health Care Social Work Project.

^cFunded with a grant from the Health Resources and Services Administration.

ity improvement, team-based care, and population health. These training grants involve curricular changes that will bring health professions students together for portions of their training in more formalized and deliberate ways.

In addition, an interprofessional chapter of the Institute for Healthcare Improvement's Open School was established at ECU in June 2012. This is a learning community of more than 170,000 health professions students worldwide who meet in local chapters to learn more about the competencies listed above and about how they can improve health care systems together. An Interprofessional Alliance for the Health Sciences has also been formed within ECU's Division of Health Sciences, and it is strategically planning to create a model of interprofessionalism that can be used for medical practice, service, education, and research.

North Carolina needs more health care providers. The physician shortage has been well documented and has been defined in workforce projections. However, even if our medical schools continue to graduate more and more physicians and these graduates are geographically distributed in the areas of North Carolina with the greatest health disparities, we will still not meet the needs of North Carolinians if we do not intentionally change the model of health professions training. This new model must include the training and graduation of students from all of our health professions schools, such that graduates leave the educational environment knowing how to work in teams with the ability to recognize and value the skills of each team member. Only through this type of educational transformation can we realize the potential to create a healthier group of citizens who can actively participate in their own health care and who can engage with teams of health professionals working together on behalf of our communities. That is the goal of our educational programs at ECU, and we are preparing to bring about this change for a better future.

Forecasting the Future

No one can convincingly forecast all of the changes that will be needed to create a more effective health care system. However, our payment system is clearly changing; we have been transitioning from a volume-based fee schedule to a value-and-outcome-based fee schedule, and such changes are likely to continue. It has also become clear that the traditional, iterative approach to team care will need to become more efficient, so priority is being given to metrics that assess team performance rather than individual performance.

A number of questions remain unanswered: What organizational structure will promote the best practice in a clinical setting? How will we fully maximize the partnerships that will be required in the future? In what ways will the transfor-

mation of our educational practices close the communication gap between providers and patients? And in what ways should we deploy technological advances to the benefit of these initiatives?

Discovering the answers to these questions is the collective imperative of our educational institutions and health care systems throughout North Carolina and the United States. Only after we have answered these questions we will be able to enjoy a health care system that truly promotes health. NCMJ

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