

Partnerships for Training Online Nursing Degree Program Boosts Level of Care in Rural North Carolina

Partnerships for Training: Regional Education Systems for Nurse Practitioners, Certified Nurse-Midwives, and Physician Assistants

SUMMARY

From 1995 to 2000, Duke University-East Carolina University *Partnerships for Training* developed Web-based degree programs for nurse practitioner, certified nurse-midwife and physician assistant students in federally designated Medically Underserved Areas¹ in North Carolina from 1995 to 2002.

The project was part of the Robert Wood Johnson Foundation (RWJF) *Partnerships for Training: Regional Education Systems for Nurse Practitioners, Certified Nurse-Midwives and Physician Assistants* national program.

Key Results

- Sixty-five students—42 nurse practitioners, three certified nurse-midwives and 20 physician assistants—graduated from the programs.
- Eighty-six percent of program graduates were practicing in Medically Underserved Areas; many students were employed by their program preceptors.

Funding

RWJF supported this project through two grants totaling \$1,598,299.

THE PROBLEM

Eastern North Carolina is predominantly rural, poor and medically underserved. The 32-county region has more low-income people, a larger nonwhite population, a higher

¹ **Medically Underserved Area (MUA)**—Similar to a Health Professional Shortage Area, this somewhat more liberal federal designation is for an urban or rural area that does not have enough health care resources to meet the needs of its population.

unemployment rate and fewer college graduates than North Carolina as a whole. The death rates for heart disease and cancer are among the highest in the state and the death rate for stroke is much higher than the state and national death rates. Infant mortality rates are among the worst in the nation. Most primary care physicians start their practices in North Carolina's cities and many physicians in rural areas are retiring.

Duke University is a private university in Durham, N.C. and East Carolina State University is a state university in Greenville, N.C. Both Duke University and East Carolina State University offered extension programs to educate nurse practitioners and nurses in Medically Underserved Areas².

Nurse practitioners are among the primary care practitioners who might help meet the health needs of rural areas. Nurse practitioners are registered nurses with advanced training who provide primary care services usually working in collaboration with physicians (e.g., performing physical examinations and diagnostic testing, interpreting findings, prescribing medications, and conducting patient education and counseling); nurse practitioners practice on their own licenses and in most states are governed by state boards of nursing.

CONTEXT

Increasing access to medical care has been one of RWJF's priorities since its founding in 1972. One of RWJF's strategies to meet this goal is to expand and improve the primary care workforce. In the early 1970s, RWJF began supporting projects to train nurse practitioners and physician assistants. RWJF funded:

- Six nursing schools to train nurse practitioners at the master's degree level.
- The *Nurse Faculty Fellowships Program* to develop a core of nursing educators to train nurse practitioners at the master's degree level.
- Alderson-Broadus College (West Virginia) and Lake Erie College (Ohio) to create undergraduate physician assistant majors.

In the 1980s, RWJF developed four national programs to strengthen the nursing profession:

- The *Clinical Nurse Scholars Program*, which prepared nursing school faculty for careers combining clinical practice, research and management.
- Strengthening Hospital Nursing: A Program to Improve Patient Care, which sought to make hospital nursing a more attractive career choice.

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• The *Nursing Services Development Program* and *Ladders in Nursing Careers*, which sought to increase the number of nurses by attracting and supporting disadvantaged students and health care workers who wanted to pursue nursing careers (see the Program Results on *Ladders in Nursing Careers*).

In addition, RWJF has supported two programs to increase the number of primary care practitioners in underserved areas:

- Practice Sights: State Primary Care Development Strategies (see the Program Results), which supported state efforts to recruit and retain primary care providers, including physicians and mid-level providers (nurse practitioners, certified nursemidwives and physician assistants), and to develop and sustain practice sites in underserved areas.
- *Southern Rural Access Program*, which seeks to increase access to services in eight rural and underserved southern states (for more information see Program Results).

THE PROJECT

Duke University and East Carolina State University formed the Duke University-East Carolina University *Partnerships for Training* to develop and implement a Web-based educational program for nurse practitioner, certified nurse-midwife and physician assistant students in Medically Underserved Areas³ in North Carolina. Duke University's institutional and technological resources complemented East Carolina State University's knowledge of rural primary care. The project's 13 community partners were Area Health Education Centers⁴, professional associations and medical centers (see the Appendix for a list of the partners). The project was housed at the Duke University School of Nursing.

During the planning grant (ID# 027995), participants set up the project's infrastructure, including:

- Creating partnerships with rural hospitals that would help identify, recruit and support students.
- Developing supply and demand models for mid-level practitioners (nurse practitioners, certified nurse-midwifes and physician assistants) in the target area (which projected a substantial demand for them).
- Creating a common core curriculum and developing online courses.

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- Developing methods for distance education (e.g., instructional templates for use in developing distance-based courses and a computer-based case studies application).
- Training faculty in the use of Web technology and resources.
- Developing a preceptor program.
- Establishing a recruitment and retention plan that included computer-based tracking
 of students, four regional information sessions for prospective students at partner
 hospitals (April and May 1997), a brochure and video to promote the nurse
 practitioner, certified nurse-midwife and physician assistant professions, and a
 program brochure and a resource guide for potential students.

Project staff also assisted Pembroke College, an historically Native-American institution, and the University of North Carolina-Fayetteville, an historically African-American university, in obtaining undergraduate nursing program accreditation in order to establish a minority pipeline for the *Partnerships for Training* program.

During the implementation grant (ID# 032603), Duke University-East Carolina University *Partnerships for Training* recruited and began enrolling students. Recruitment activities focused on the counties around four partner hospitals (Martin General Hospital, Sampson Regional Medical Center, Carteret General Hospital and Southeastern Regional Medical Center), with open houses at each location and key personnel at each hospital identifying potential students and helping them enroll. Other recruitment efforts included: working with key individuals at historically African-American and Native-American institutions who provided one-on-once counseling and encouragement to potential candidates; and contacting nursing programs, including through personal visits.

The partnership originally targeted 32 eastern North Carolina counties; in 2000 it expanded to the entire state. The project also raised \$1 million in additional funding from the Duke Endowment (\$864,495) and the North Carolina Area Health Education Center⁵ (\$160,000).

RESULTS

Duke University-East Carolina University *Partnerships for Training* achieved the following results, according to project staff in reports to RWJF and interviews:

• The *Partnerships for Training* project developed a Web-based, three-year, part-time, interdisciplinary nurse practitioner, certified nurse-midwife and physician

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assistant degree program for students in Medically Underserved Areas⁶ in North Carolina. Students could choose from one of four programs:

- Duke University: family nurse practitioner program.
- East Carolina University: family nurse practitioner program.
- East Carolina University: nurse midwifery program.
- East Carolina University: physician assistant program.
- Students could take most of their classes online, accessing them through with computers at home or at hospitals or local Area Health Education Centers.
 Students without a high-speed Internet connection could receive course materials on a CD. The curriculum included:
 - A two-day orientation: Students and their families and faculty met each other and students attended sessions on time management, cultural diversity, learning styles and navigating coursework online.
 - 10 Web-based courses: four interdisciplinary courses that nurse practitioner, certified nurse-midwife and physician assistant students could take and six courses that nurse practitioner and certified nurse-midwife students could take. Each course included an online discussion forum and used Web capabilities. For example, Robin Webb Corbett, a professor at East Carolina University, developed a reproductive physiology course for certified nurse-midwife students in which she played the sound of a fetal heartbeat and showed animation of fetal circulation. The interdisciplinary courses were:
 - Pharmacology
 - Diagnostic Reasoning and Assessment
 - Interdisciplinary Roles Seminar
 - Health Promotion/Disease Prevention.

The six other courses were:

- Advanced Health Assessment/Physical Diagnosis
- Foundation of Advanced Nursing Practice
- Issues in Health Care Organization
- Nursing Informatics

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- Physiology/ Pathophysiology
- Research Methods.
- Five inter-institutional courses for all nurse practitioner students:
 - Management of Common Health Problems I
 - Management of Common Health Problems II
 - Child Health in Family Care
 - Sexual and Reproductive Health
 - Family Nurse Practitioner Residency.
- Technical support: A student computer tutorial and a "Help-line" of computer technicians who were available on evenings and weekends.
- Hands-on training: Students attended Saturday on-campus programs for hands-on training in techniques such as physical assessment and suturing.
- Clinical experience: After the first year of the program, students were placed with preceptors in their field of study near their homes. Area Health Education Center staff recruited and evaluated qualified preceptors.
- Mentors: Three professional organizations—North Carolina Academy of Physicians Assistants, North Carolina Nurses' Association's Nurse Practitioner Council and the North Carolina Regional Chapter of the American College of Nurse Midwives—recruited members to counsel and support students.
- The Duke University-East Carolina University Partnerships for Training enrolled 86 students, most of whom were already working in health care jobs in rural areas. About 20 percent of the students were minorities.
- Sixty-five students—42 nurse practitioners, three certified nurse-midwives and 20 physician assistants—graduated from Duke University-East Carolina University Partnerships for Training educational programs. Twenty-one students (24 percent) withdrew from their programs.
- Eighty-six percent of program graduates were practicing in Medically Underserved Areas⁷. Many students were employed by their program preceptors.

Participants

Veronica Stevens was a nurse educator and registered nurse when she first learned about the Partnerships for Training program. It was an opportunity

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she could not pass up. "I had always wanted to be a nurse practitioner," says Veronica, "But with a job and a family, I didn't have time to pursue it. Partnerships for Training made this dream a reality for me." As a nurse practitioner, Veronica provides care for adult populations experiencing complex alteration in health under the supervision of Rodney K. Sessoms, M.D., an internal medicine physician. "I see a lot of patients," says Sessoms, "I don't have the time I need to educate them. Veronica has added to our capacity. Our wait time has decreased, and when emergencies happen, things can keep moving." See full Profile.

Sharon Knotts is a nurse practitioner student in the Duke University-East Carolina University Partnerships for Training project: Knotts enrolled in the program while working full-time, and balancing a home life that included a husband and two teenagers. Living in a Wadesboro, about an hour-and-a-half away from the nearest university, Knotts could not have completed her master's degree without the program. She was working the second shift at a local hospital emergency room and would arrive home after midnight. She often began her class work at 2 a.m. The flexibility and other attributes of the online formula made a difficult process more manageable for her. "I could listen to the lectures at home and replay them as many times as I wanted to catch something, whereas in class you only have notes," she said. "You are treated as an adult. You don't have to sit in classroom for two hours and listen to lectures while someone regurgitates something you could get on your own. When we did come to class we knew we would do things like physical assessment."

Communications

Project staff published two journal articles in *Federation of American Societies for Experimental Biology* and *T.H.E. Journal* and reports about the project. Staff developed a project Web site (no longer available) and a recruitment video, and made presentations about the project, including at the annual meeting of the Human Factors and Ergonomics Society and to local health care providers. See the Bibliography for details.

LESSONS LEARNED

The project director offered six lessons for the field.

1. **To ensure a project's success, always focus on its ultimate goal.** The Duke University-East Carolina University *Partnerships for Training* was a difficult project that succeeded because project staff and partners always focused on the ultimate goal—increasing access to primary care. Project directors had to bring together three disciplines and two universities, which required an enormous amount of coordination. Focusing on their goal, rather than the problems, helped participants work through many logistical and institutional barriers. (Project Director)

- 2. **To ensure project success, pick passionate partners.** Duke University and East Carolina University staff picked passionate partners, such as members of Area Health Education Centers⁸ and hospital officials, who could articulate the urgency and importance of the Duke University-East Carolina University *Partnerships for Training* project for the people of rural North Carolina. "We involved the Area Health Education Centers, which are powerful here. They gave an urgency that the academics might not have," said Susan Yaggy, who worked on the planning project at Duke University. "These folks really needed the people and the training now." (Project Director)
- 3. Web-based distance learning can provide a quality education, but students should gather on campus occasionally to interact with faculty and each other. The Duke University-East Carolina University *Partnerships for Training* project was able to provide quality education for nurse practitioner, certified nurse-midwife and physician assistant students using a Web-based program. However, program staff felt that it was important to bring students to campus occasionally. "It makes a difference to have students come to campus once or twice a semester," said Corbett. "You see a difference in grades, commitment to the university and comfort level. They met us. They had our names and could e-mail us. There is a connection there." (Project Director)
- 4. **To be successful in teaching online, faculty must have ample technical and teaching support.** Project staff used two strategies to help faculty gain expertise in teaching online: support from technical staff; and one-on-one support from faculty members who were "early adopters" and had a strong interest in online teaching and technological expertise. (Project Director)
- 5. Faculty interaction with students is a critical component of Web-based teaching, but electronic "office hours" need to be set for responding to e-mails, forums and other types of ongoing dialogue. At the beginning of the Duke University-East Carolina University *Partnerships for Training* project, students expected their professors to be available 24 hours a day. To address this problem, the project required all faculty to post and maintain specific electronic office hours, and to be available to students during online tests. (Project Director)
- 6. **In Web-based learning, find ways to create a sense of community among students.** For example, the Duke University-East Carolina University *Partnerships for Training* project created a student e-forum where they could blow off steam and chat as if they were in the halls of the school. "It's a time for students to gripe about things.... It's connectedness. It's community," said Mary Champagne, project director and dean of the Duke University School of Nursing. (Project Director)

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AFTERWARD

Duke University and East Carolina University are continuing the Web-based programs developed under the Duke University-East Carolina University *Partnerships for Training* project. In 2002, East Carolina University enrolled 22 distance-learning students in its physician assistant program. East Carolina University has also made the online classes available to on-campus students and its nursing school is now serving as a leader in developing online classes. As of May 2004, East Carolina University offered about 1,250 classes or sections of classes online, according to Tom Irons, technical support administrator at East Carolina University.

With an \$80,000 grant from the Duke Endowment, Duke University has replicated the *Partnerships for Training* model in a master of science in nursing program with a major in nursing education for nurses from rural areas and a similar program to educate geriatric nurse practitioners to work in rural areas. Under a \$1.5 million grant from the federal Health Resources Service Administration, Duke University developed a distance-learning genetics education program for faculty from nurse practitioner, physician assistant and nurse midwifery programs nationwide.

Faculty who participated in the Duke University-East Carolina University *Partnerships for Training* project, and other faculty at both schools, are using online capabilities to enrich their on-campus courses (e.g., Web-based resources and forums for activities such as team-based problem solving and journal clubs) and to deliver Web-based programs with other academic and community partners (e.g., Duke University has a contract with the Southern Regional Area Health Education Center to deliver online education modules for health professionals).

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APPENDIX 1

Duke University-East Carolina University *Partnerships for Training* **Community Partners**

(Current as of the time of the grant; provided by the grantee organization; not verified by RWJF.)

- Association of Certified Nurse Midwives, North Carolina Chapter
- Carteret General Hospital, Morehead City, N.C.
- Fayetteville Area Health Education Center, Fayetteville, N.C.
- Fayetteville State University, Fayetteville, N.C.
- Greenville Area Health Education Center, Greenville, N.C.
- Martin General Hospital, Williamston, N.C.
- North Carolina Academy of Physician Assistants, Durham, N.C.
- North Carolina Medical Society Foundation, Raleigh, N.C.
- North Carolina Nurse Practitioner Council
- North Carolina Nurses Association, Raleigh, N.C.
- Sampson Regional Medical Center, Clinton, N.C.
- Southeastern Regional Medical Center, Lumberton, N.C.
- State Office of Rural Health and Resource Development

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PROFILE LIST

• Veronica Stevens, Clinton, N.C.