

96075 University of Cincinnati

Kennerly, S.

## NTIA/TIAP Access Grant Project Narrative

### Community Partnerships for a Healthy Ohio: A Distance Education Project

Project Director: Susan M. Kennerly, PhD, RN  
Project Coordinator: Patricia Trangenstein, PhD, RN  
Project Partners: Adams County Hospital, Area Health Education Center, Cincinnati Bell Telephone, Clermont County Education, and University of Cincinnati

#### EXECUTIVE SUMMARY

This is an Access project intended for Higher Education primary application and Health secondary application areas. The College of Nursing and Health (CNH), University of Cincinnati (UC), is submitting this proposal to provide registered nurses access to graduate and baccalaureate nursing education in rural and medically underserved areas of southwest Ohio. Community partners in education, telecommunications, and health care will use the national information infrastructure for distance education to increase the number of future health providers. Disparities in educational access will be addressed using community interactive television sites, public fiber-optic network, Ohio Valley Community Health Information Network, Area Health Education Center (AHEC), OhioLINK, internet, and UC networks (UCNET and Bearcat On-line). Partnering organizations are UC, Adams County Hospital, AHEC, Cincinnati Bell Telephone, and Clermont County Education.

#### 1. PROBLEM DEFINITION

More than 750 registered nurses (RNs) in three rural counties of southwest Ohio do not have local access to baccalaureate (RN/BSN) and graduate (MSN) nursing education programs. To take RN/BSN or MSN courses, RNs must travel significant distances to Cincinnati or relocate. There are no out-reach or distance education initiatives for southwest Ohio. Ninety percent of surveyed RNs are unable to leave employment and relocate for BSN or MSN education. Disparity in educational access makes it very difficult to address the need for adequate numbers of qualified health providers to serve the citizens of southwest Ohio.

The medically underserved counties of southwest Ohio (see Appendix 1) need for more health care providers is well documented in the 1994 report, Access Ohio. Healthy People 2000: National Health Promotion and Disease Prevention Objectives and the Healthy People 2000 Midcourse Review and 1995 Revisions show Ohio's poverty rates at 10-15% and as much as 25% of the population with no specific source of preventive and episodic health care. Advanced practice nurses (MSN) are needed to provide cost-effective health services with the priority of promoting health and decreasing mortality and/or morbidity.

Distance education will provide RNs and BSNs with a reasonably accessible avenue for the BSN and/or MSN degree. RNs with program access in their own geographic area are more likely to remain in practice in that locale. The goals of this project are to:

1. Complete the development of the originating site for interactive television (ITV) at the CNH with connection to existing Cincinnati fiber-optic infrastructure;
2. Prepare faculty teaching courses in the RN/BSN program and MSN core courses to develop and use instructional packages suitable for two-way audio/video interactive television and computer based applications.
3. Offer RN/BSN courses and MSN core courses using the communities' existing remote ITV sites, resource center, and information infrastructure.
4. Provide an effective training and support system for end users.
5. Use evaluative data for the ongoing enhancement of courses/programs, instructional

methods, and user outcomes.

## **2. REDUCING DISPARITIES IN ACCESS TO AND USE OF THE NII**

The project's primary goal is educational access for RNs in Adams, Brown, Clermont, and Hamilton counties of southwest Ohio via distance education using the NII. Interactive television resources, community networks, and university networks are currently underused due to: 1) a lack of knowledge about availability; 2) few faculty with knowledge and skills to design and deliver ITV courses; 3) the unavailability of instructional software; and 4) the few programs currently available. Disparities in educational access and the communities' need for health providers support the project's need (see Problem Definition). Community demographics are in Appendix 2. The information infrastructure is described in Appendix 3.

The project will use a minimum of 2 of Clermont County's 13 ITV sites (DS3 with 12 students/site), Adams County telemedicine ITV site (T-1 with 20 students), Ohio Valley Community Health Information Network (OVCHIN) (NTIA/TILAP funded), OhioLINK, internet, UC networks, and AHEC's audiovisual/text resources. Course offerings will integrate interactive teaching/learning strategies in ITV class sessions, network access to literature and learning packages, and network applications for student/student and student/faculty communication and learning activities. Students will access computers from home, hospitals, libraries, or public access sites. Faculty development activities (Appendix 4) will enable faculty to design and deliver ITV courses and author instructional software for ITV use. End-user training and support will help students take advantage of community networks and resources. The project will enhance community and health professionals' knowledge about networks and resources in their area, increase individuals prepared to teach using the infrastructure, and produce new nursing software.

## **3. TECHNICAL APPROACH**

This project is designed to enhance NII use and affords future opportunities for regional/national outreach. Networks and remote ITV sites are in place (Appendix 5). CNH's use of fiber pathways is the most cost-effective distance mode in this geographic area (Microwave is not cost-effective in southwest Ohio). Fiber based technology is standard for the region and statewide network. Grant funding is needed to support CNH's ITV originating site completion, faculty development, and delivery of BSN and MSN programs.

Implementation Schedule. (Appendix 6 for Timeline). The project's first 6 months will be devoted to equipment purchase, fiber/equipment installation and testing, hiring and training CNH's technical assistant, student recruitment, begin faculty development, and course redesign for ITV. Guidebooks for faculty, technical assistants, and students will be developed and student orientations planned. In Spring 1997 the first courses will be offered over ITV. Data gathering and evaluation begin and continue as presented in the Evaluation Plan (Appendix 7). Development and refinement of computer based nursing instructional packages and software will be an ongoing part of course redesign throughout the project. Faculty release is provided for course redesign. Only two new courses per quarter beginning Spring 97 will be offered during the grant period. While the implementation of the entire curricula is not possible during the grant period significant progress can be made toward that goal.

Originating ITV Classroom. A CNH classroom, renovated in 1995, is being equipped as an electronic learning environment through state funding for capital improvements (Appendix, Description of Electronic Classroom). The ITV system designed in partnership with Cincinnati Bell Telephone, enables connectivity to ITV remote sites and on-site instruction of 40 students. A DS3 codec and node controller, cameras and their system controller, instructor and student microphones with automatic mixers, and DS3 fiber and T-1

connector will be installed to complete the ITV classroom. Funding for needed equipment and line access fees is requested. Switching and compression services needed for multi-band connectivity, ITV operational software and scheduling is to be accessed via Cincinnati Bell at no cost to CNH. CNH internal computer network, telephone line, internet, and UC networks are already accessible in the electronic classroom. A computer (See budget) with server modems and dedicated phone lines is to be installed as a CNH Web Site Server to allow student dial-in from home, hospital, library, or public sites over standard phone lines.

Faculty Development. Faculty development specific to the development and use of ITV and computer based applications, interactive instructional strategies, and the authoring of instructional software according to faculty nursing expertise is planned (Appendix 4, 6).

Remote Access Computers. Computers are available to end-users in learning centers at Adams County Hospital, AHEC, Clermont Community College, and public libraries. In year two of funding, two of the AHEC and Adams County Hospital computers will require replacement due to end of external funding. Three computers with printers (See budget) will be placed at Adams County Hospital, AHEC, and a site to be identified.

Scalability. With increased student numbers, project expansion to other existing ITV sites is possible without purchase of more equipment or fiber installation. Expansion of service and service area can also be achieved through course scheduling. Completion of the statewide network affords connection to other state regions and the nation. The project's design could also be used for continuing nursing education and health education to high school students, teachers, and general public. Collaborative outreach programs in nursing, business, and medicine are possible throughout the Tri-state area (Ohio, Indiana, Kentucky).

Maintaining the system. Routine maintenance of systems/software/hardware is achieved through the CNH's Computer Network Systems Coordinator and Learning Resource Center, and the university's Center for Academic Technologies and Center for Information Technology Services. Remote site maintenance and upgrading is a site specific responsibility with collaborative planning across sites. CNH's hardware/software holdings are evaluated annually as a part of strategic planning. Funding to upgrade instructional resources comes from student registration fees, state funding for equipment, and external funding.

Protecting the Privacy of End Users. End users participating in the distance education project will be informed of their rights under laws governing intellectual property and privacy. To participate in the ITV sessions, end users will be required to sign waivers 1) authorizing the use of their name, picture, and voice as participants in ITV, and 2) releasing their contributions from "on-camera" participation to the university. ITV tapes will be used only for the educational purpose of ITV participants. Confidentiality will be maintained for all graded assignments, their respective scores, and course grades. Return and/or reporting of such will be handled directly by faculty in person or through restricted mail/e-mail accounts or by the remote site technical assistant. Other issues of privacy or confidentiality will be addressed by direct verbal/written/electronic communication between faculty/student.

#### 4. APPLICANT QUALIFICATIONS

The project's primary sponsor is the UC CNH. The Project Director and Project Coordinator representing the organization are experienced in higher education and nursing practice (see Appendix 9). The Project Director holds an administrative appointment with responsibility for the development, implementation, and evaluation of the baccalaureate, masters, and doctoral academic programs. The Project Coordinator is recognized for expertise in computer based applications and development of instructional programs using information technology. One ITV Technical Assistant will be hired (see Appendix 10).

The CNH has demonstrated a strong commitment to quality educational experiences and is recognized for pioneer efforts in the area of interactive videodiscs. Previous awards and grants to the college and university were effectively used to enhance educational resources for learning experiences. Early planning and development contributed to the college being viewed as a national leader in the use of computer based technology. The college currently serves as the alpha site for development of the Helene Fuld Health Trust's "Nightingale Tracker", an innovative two-way audio/video unit for student/faculty use in remote site patient care visits, patient database management, and monitoring of student clinical practice experiences. See Appendix 11 for a description of the college and faculty expertise.

#### **5. PARTNERSHIPS AND COMMUNITY SUPPORT**

CNH joined in partnership with Cincinnati Bell Telephone (CBT), Clermont County Education (CCE), Adams County Hospital, and the Area Health Education Center (AHEC). Supporting letters are found in Appendix 12. Specific cash and in-kind contributions are noted in the budget and budget justification. Project partnership and sponsorship will be acknowledged in printed materials. The benefits to all partners will include a heightened community awareness of their commitment to the education and health of the community. Partners and residents of outreach counties ultimately benefit from the educational advancement of RNs and the future health services provided.

CBT, the primary Cincinnati carrier, worked closely with CCE to design, equip, and pilot 13 ITV sites in Clermont County during 1994-95. Experienced CBT staff and technical assistants at Grant Vocational Career Center and Goshen School will perform their customary roles in operating their respective ITV sites and in their job responsibilities when nursing courses are offered. A Technical Support Fee (\$25/day/site) will be paid to CCE. CCE will contribute ITV network and lab use at no additional charge as a community service. Similarly, CBT has provided educationally discounted access fees and contributes technical training and scheduling. CBT participant benefits include payment of line access fees and marketing visibility through community service.

Adams County Hospital, while new to ITV (1996), will contribute the use of its ITV classroom, line access, and technical assistant for nursing courses. The hospital is well established and has a collaborative telemedicine relationship with University Hospital Medical Center in Cincinnati. The Roseland Rural Health Consortium provides a hospital library computer for student use.

The Area Health Education Center (AHEC) located in Georgetown serves as an educational resource for health professionals in 8 southwestern Ohio counties. AHEC is a well known central resource to nurses in the project area. In addition to their current audio-visual and computer (OVCHIN) resources, AHEC will serve as a repository for text resources and contribute a portion of its staff support to facilitate student access to and maintenance of resources as a part of AHEC job responsibilities.

#### **6. SUPPORT FOR END USERS**

RN end users will be adult learners with demonstrated success in associate degree, diploma, and/or BSN programs. Based on the rural population distribution, end users will be primarily caucasian females approximately 28 years of age with a primarily Appalachian or African American minority representation. End users will be typically employed in hospitals, physician offices, clinics, and health departments. Potential end users are identified via the Ohio Board of Nursing list of RNs. Recruitment information will be mailed to RNs and posted at health care agencies. Application material will be mailed upon request. CNH



faculty/staff will respond to inquiries by telephone, mail, or e-mail and periodically hold remote site group meetings for potential end users. Admissions and financial aid counseling and academic advising will be accessible.

End user training will be based on audience analysis and assessment of knowledge and skills in use of technology. Students enrolling in their first tele-system course will be assessed with regard to knowledge and proficiency in use of computer based applications. Student training sessions will orient them to basic computer applications, use of audio-visual equipment, interactive devices/networks, and computer navigational skills. New students will receive an orientation to learning over interactive television. Each student will receive a CNH guidebook to distance education. Techniques and strategies for out-of-classroom interactivity will primarily include computer based applications, such as e-mail, bulletin board, internet, University Campus-wide Networks (UCNET, Bearcat), OVCHIN, and other public access networks. UCNET connects students to e-mail, internet, World Wide Web, Gopher/Veronica, and full text resources. End users will have privileges for a variety of networks and resources accessible by computer from home, at health care agencies, or public access centers such as AHEC. Library resources will be available through local health care agencies, the AHEC, the OVCHIN, and interlibrary loan using Ohio Link, a computerized statewide library and information network. General end user support services will be coordinated by the Project Coordinator. Trips to remote sites will be regularly scheduled to assess project implementation and facilitate end user support. Technical assistants at remote sites will also serve as contact persons for receipt and distribution of course related materials and test proctoring. Course faculty, faculty advisors, and staff will also be accessible by telephone, mail, and electronic mail. Support services include admissions counseling, academic advising, financial aid, on-line telephone registration, and credit transfer. CNH's Office of Student Affairs will coordinate these services. Special learning assistance, such as tutors, will be available according to customary university provisions for all students.

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**7. EVALUATION AND DISSEMINATION**

The project's purpose is to provide RNs in rural and medically underserved areas of southwest Ohio access to MSN and BSN programs. Project goals are integral to fulfilling that purpose and the basis for project evaluation. Longterm indirect community benefits such as increased number of health providers, enhanced health promotion and prevention services cannot be derived in the grant period. However, RN enrollment in distance programs will serve as early indicator. The detailed evaluation plan (includes goals, outcomes, indicators and dissemination plans) is Appendix 6. Components specific to instructional effectiveness, adequacy of resources, cost-effectiveness, and areas for enhancement are included. The Project Director and Coordinator are responsible for implementation.

**8. SUSTAINABILITY**

The CNH plans implementation of nursing programs through distance education beyond the grant period. Grant funding will position CNH for continuation as a result of the technological resources in place, the knowledge and skills gained by faculty regarding interactive instructional strategies, and evaluation strategies developed. Funding to sustain the project will come from 1) student registration fees collected to support student instruction, 2) Ohio Board of Regents Instructional Equipment Funds for up-grading instructional equipment, 3) marketing and distribution of CNH authored nursing software created as a part of ITV course redesign, and 4) new external funds as needed. Partnerships created for this project reflect the communities' commitment to outreach education and the project continuation.