

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

AREA HEALTH EDUCATION CENTERS

**A Role in Enhancing
the Rural Practice Environment**



**JUNE GIBBS BROWN
Inspector General**

**MAY 1995
OEI-01-93-00570**

OFFICE OF INSPECTOR GENERAL

The mission of the Office of Inspector General (OIG), as mandated by Public Law 95-452, as amended, is to protect the integrity of the Department of Health and Human Services' (HHS) programs as well as the health and welfare of beneficiaries served by those programs. This statutory mission is carried out through a nationwide network of audits, investigations, and inspections conducted by three OIG operating components: the Office of Audit Services, the Office of Investigations, and the Office of Evaluation and Inspections. The OIG also informs the Secretary of HHS of program and management problems and recommends courses to correct them.

OFFICE OF AUDIT SERVICES

The OIG's Office of Audit Services (OAS) provides all auditing services for HHS, either by conducting audits with its own audit resources or by overseeing audit work done by others. Audits examine the performance of HHS programs and/or its grantees and contractors in carrying out their respective responsibilities and are intended to provide independent assessments of HHS programs and operations in order to reduce waste, abuse, and mismanagement and to promote economy and efficiency throughout the Department.

OFFICE OF INVESTIGATIONS

The OIG's Office of Investigations (OI) conducts criminal, civil, and administrative investigations of allegations of wrongdoing in HHS programs or to HHS beneficiaries and of unjust enrichment by providers. The investigative efforts of OI lead to criminal convictions, administrative sanctions, or civil money penalties. The OI also oversees State Medicaid fraud control units which investigate and prosecute fraud and patient abuse in the Medicaid program.

OFFICE OF EVALUATION AND INSPECTIONS

The OIG's Office of Evaluation and Inspections (OEI) conducts short-term management and program evaluations (called inspections) that focus on issues of concern to the Department, the Congress, and the public. The findings and recommendations contained in these inspection reports generate rapid, accurate, and up-to-date information on the efficiency, vulnerability, and effectiveness of departmental programs.

This report was prepared under the direction of Mark R. Yessian, Ph.D., Regional Inspector General, and Martha B. Kvaal, Deputy Regional Inspector General, Boston Region, Office of Evaluation and Inspections. Participating in this project were the following people:

Boston

Headquarters

Russell W. Hereford, Ph.D., *Project Leader*
Dana L. Miller

Alan Levine

*For additional copies of this report, please contact the Boston regional office
by telephone at (617) 565-1050, or by fax at (617) 565-3751.*

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

AREA HEALTH EDUCATION CENTERS

**A Role in Enhancing
the Rural Practice Environment**



**JUNE GIBBS BROWN
Inspector General**

**MAY 1995
OEI-01-93-00570**

EXECUTIVE SUMMARY

PURPOSE

The purpose of this inspection is to assess the role that Area Health Education Centers play and can play in providing support services to enhance the practice environment for health care practitioners in rural areas.

BACKGROUND

The goal of the Area Health Education Center (AHEC) program is to link health professions education with service delivery in underserved areas by bringing together the academic resources of a university health sciences center with local clinical resources. The FY 1994 appropriation of \$22,203,000 supports 19 basic AHEC programs and 13 model State-supported programs. The FY 1995 appropriation is \$24,625,000.

During our background work on this inspection, we met with staff from the Division of Medicine within the Public Health Service (PHS) to discuss an inspection focusing on AHECs' provision of continuing education. They expressed a desire that we broaden the focus of our inspection. Consequently, we expanded our inquiry to include library resources and telecommunications, and to consider ways in which AHECs could play a lead role in helping rural health professionals practice in a changing health care system.

Our methodology uses AHEC-reported information from four primary data sources: (1) funding applications submitted to the Bureau of Health Professions (BHPPr) from 13 AHEC programs for a 3-year period ending in 1994 and from 10 model AHEC programs for FY 1994; (2) data on continuing education activities from all AHEC programs, submitted to BHPPr for FYs 1991-92 and 1992-93; (3) telephone interviews with directors of 19 AHEC programs; and (4) site visits to 4 AHEC programs in 3 States, during which we met with more than 30 rural practitioners.

FINDINGS

AHECs are enhancing rural practitioners' access to health care information by linking them with medical library resources.

- AHEC-provided library resources include professional staff, computer equipment (both hardware and software) for data base searches and document distribution, practitioner training, and books, journals, and audio-visual tapes.
- As special incentives to attract community-based faculty for their students, AHECs provide additional training on using data bases, free use of medical library resources, and computer hardware and software to access these resources.

AHECs are responding to the needs of many types of practitioners for continuing education on clinical topics.

- AHECs' continuing education courses cover a wide range of topics in the health care field.
- In developing their continuing education agendas, AHECs try to be particularly responsive to community-based practitioners in order to encourage their involvement with AHEC-affiliated students and residents.
- On average, more than two-thirds of participants in AHEC-sponsored continuing education programs in 1993 were nonphysician practitioners, including nurse practitioners, physician assistants, nurses, and allied health professionals.

For the most part, however, AHECs are missing opportunities to educate practitioners about innovations in health care delivery, such as clinical practice guidelines or managed care.

- Although clinical practice guidelines are intended to help practitioners make clinical decisions about patient care, most AHECs have not included these topics in their continuing education courses.
- Despite the potential impact of managed care on rural practice, most AHECs have not included courses on this topic in their continuing education programs.

AHECs are beginning to use telecommunications to provide support to isolated practitioners, but they are not yet taking advantage of the full potential of this technology.

- AHECs' most common use of telecommunications is to provide additional education for professional advancement of local nurses. Except for this purpose, however, few AHECs utilize regularly scheduled telecommunications programming.
- Constraints on greater AHEC use of telecommunications include AHECs' lack of ownership of the technology, its capital and operating costs, and lack of practitioner familiarity or comfort.

OPPORTUNITIES: LOOKING TO THE FUTURE

AHECs are well positioned to help practitioners address emerging issues that impact health care delivery in rural areas.

We recommend that the Public Health Service strengthen the role of AHECs by facilitating their ability to focus support services on three areas: clinical practice guidelines, managed care, and telecommunications.

- ***Clinical practice guidelines***

AHECs could facilitate adoption of clinical practice guidelines in rural practice by:

- Including guidelines as part of continuing education courses
- Ensuring guidelines are available in their medical libraries
- Helping adapt guidelines to rural conditions

The PHS, working through the Agency for Health Care Policy and Research, could encourage guidelines' adoption by:

- Involving AHECs in the development of guidelines
- Encouraging AHECs to disseminate guidelines
- Assessing rural practitioners' concerns
- Examining the use of guidelines in rural areas

- ***Managed care***

AHECs could inform rural practitioners about managed care by:

- Sponsoring informational symposia for rural practitioners
- Assisting practitioners in negotiating contracts
- Participating in State-level planning

The PHS could assist AHECs in this effort by:

- Disseminating information on managed care
- Taking advantage of its ongoing communications with AHECs

- ***Telecommunications***

AHECs could lead efforts to take greater advantage of telecommunications' potential to facilitate rural practitioner access to information by:

- Actively participating in State telecommunications initiatives, such as those involving State offices of rural health
- Training practitioners, students, and primary care residents

The PHS could facilitate these efforts by:

- Encouraging the Federal AHEC Program and the Federal Office of Rural Health Policy to work closely together
- Considering the extent of AHEC collaboration with telecommunications networks in its review of funding applications

COMMENTS ON THE DRAFT REPORT

We received comments on the draft report from the Public Health Service (PHS) and the Assistant Secretary for Planning and Evaluation (ASPE) within the Department. We also received comments from the National Organization of AHEC Program Directors (NOAPD). We include the full text of all comments in Appendix A. Below we summarize the comments of the respondents and, in italics, offer our responses.

PHS Comments

The PHS concurs with our recommendations. The agency identifies a plan of action that it will undertake to implement those recommendations.

- The PHS plans to convene a work group with staff from HRSA and AHCPR to address our recommendation on the use of clinical practice guidelines.
- The PHS has already established a task force within HRSA to identify steps that could be taken to assist its customers and constituents in responding to the growth of managed care throughout the nation.
- The PHS notes that HRSA will undertake efforts to increase interaction between the AHEC program and the Office of Rural Health Policy as one approach to strengthening development of telecommunications systems.

We appreciate the positive response from PHS, and we are encouraged by the plan of action that the agency has adopted in response to our recommendations.

ASPE Comments

The ASPE generally agrees with our recommendations, particularly those that address clinical practice guidelines and managed care. However, ASPE suggests that we might wish to emphasize grantee involvement in efforts to explore the use of telecommunications. *We agree that this is an emerging field in which a consensus has not yet been reached on how to take full advantage of advanced technology. However, we believe that an indication that AHECs are exploring telecommunications would not be sufficient for assessing their actual involvement in that field. Instead, we have revised the language supporting our recommendation to emphasize that the Federal AHEC program could consider "the extent to which AHECs are involved in linking with State efforts to develop telecommunications" in its rating of applicants for AHEC funding.*

NOAPD Comments

The NOAPD made a number of technical and editorial comments. The one area of particular concern to NOAPD is our recommendation on clinical practice guidelines. The NOAPD questions whether these guidelines are pertinent topics for continuing education in communities where local practitioners have not requested such information. *We urge AHECs not only to take advantage of existing opportunities to educate practitioners about the information contained in these guidelines, but also to play a proactive role in making practitioners aware of their potential use. In addition, one important thrust of our recommendation is to involve the expertise residing in AHECs to make these guidelines more relevant and useful to rural practitioners.*

TABLE OF CONTENTS

	PAGE
EXECUTIVE SUMMARY	
INTRODUCTION	1
FINDINGS	
● Medical Library Resources	5
● Continuing Education Courses	6
● Missed Opportunities	9
● Telecommunications	10
OPPORTUNITIES: LOOKING TO THE FUTURE	
● Strengthening the AHEC Role	13
● Clinical Practice Guidelines	13
● Managed Care.	15
● Telecommunications	16
COMMENTS ON THE DRAFT REPORT	17
APPENDIX	
A: Text of Comments on the Draft Report	A-1
B: AHEC Support Services in Three States: Case Descriptions	B-1
C: Endnotes	C-1

INTRODUCTION

PURPOSE

The purpose of this inspection is to assess the role that Area Health Education Centers play and can play in providing support services to enhance the practice environment for health care practitioners in rural areas.

BACKGROUND

- **The Area Health Education Center Program**

Recruiting and retaining health care practitioners in rural areas remains a vexing national concern. The Area Health Education Center (AHEC) program represents one strategy that the Federal government has adopted to address this concern.¹ The goal of the AHEC program is to link health professions education with service delivery in underserved areas by bringing together the academic resources of a university health sciences center with local clinical resources. This linkage facilitates recruitment and training of health professions students for work in underserved areas, and it helps to retain health professionals practicing in those areas by enhancing the rural practice environment through continuing professional education and support services.

The primary mission of AHECs is to support training for medical students and medical residents. Under the Federal program, funding is provided directly to an AHEC project, a cooperative arrangement that operates through a medical school. The AHEC project oversees an effort encompassing multiple AHEC centers at sites remote from the medical school. Each AHEC must maintain preceptorship educational experiences for health sciences students. At least 10 percent of all undergraduate medical clinical education must be conducted in an AHEC or in AHEC-sponsored sites. AHECs must also maintain or be affiliated with primary care residency programs for a minimum of four residents in each year. Each AHEC project must be responsible for a program for training physician assistants or nurse practitioners, and for at least two programs involving other health professions, such as dentistry or mental health practice.

The Federal government has supported the AHEC effort since 1971. The Federal AHEC Program is operated by the Division of Medicine in the Bureau of Health Professions (BHPr), Health Resources and Services Administration (HRSA), within the Public Health Service (PHS). The FY 1994 appropriation of \$22,203,000 supports 19 AHEC projects under the basic program and 13 projects funded under a new model State-supported AHEC program that includes at least a 50 percent State match.² The FY 1995 appropriation is \$24,625,000. More than 100 AHEC centers now operate, including both those that are supported currently with Federal funding and those that have graduated from Federal AHEC support and rely on State funding. Since the Federal program's inception in 1971, AHECs have operated in 35 States.

The Federal government also supports other efforts to encourage the development of health delivery capacity in rural areas. One such effort is HRSA's Federal Office of Rural Health Policy (ORHP). The ORHP provides funding for individual State offices of rural health and funds a Rural Health Outreach Grant program that supports innovative strategies for delivering health care in rural areas, such as mobile clinics for prenatal care and development of telecommunications systems.

- **The Role of Support Services in Enhancing the Rural Practice Environment**

In this inspection, we use the term support services to describe three types of activities:

- ▶ **Medical library resources** that provide rural practitioners with access to journals, data bases, and document delivery services.
- ▶ **Continuing education courses** that share clinical information with community-based practitioners (such as updates on new diseases and treatments); that assist practitioners to provide care in a changing practice environment (such as skills needed to practice in a managed care setting); and that enhance the educational process of health professions students (such as courses to improve community-based practitioners' ability to be preceptors for medical students).
- ▶ **Telecommunications technologies** that link rural practitioners with clinical resources, such as those available at the academic health center. These interactions include computer-based information exchange to foster consultation and long distance educational courses for isolated practitioners.

These support services are only one facet of AHECs' responsibilities. Other important AHEC activities include educating medical and other health professional students, maintaining primary care residency programs, and carrying out recruitment programs for the health science professions among minority elementary and secondary school students from medically underserved areas.

AHECs use these support services for two basic purposes. First, they seek to enhance the knowledge base and skills of community-based practitioners by providing information that will be useful in the local setting, in response to the needs of those practitioners. Second, AHECs use support services to help recruit community-based practitioners who teach AHEC-sponsored health professions students and residents. AHECs consider their principal overall mission to be basic education of health professionals. Recruiting and retaining high quality preceptors and faculty in community-based settings is an ongoing task for AHECs. By focusing their support services on these faculty and affiliated staff in their practice settings, AHECs are able to provide some additional benefit to these faculty, many of whom practice in isolated or other underserved areas.

Despite medical education programs such as AHEC, initial practitioner training and recruitment appear to be only partial solutions to assuring their ongoing availability in rural areas. A 1994 study by the General Accounting Office states that although the number of primary care physicians providing patient care rose 75 percent between 1975 and 1990, "the increased supply did not improve--and even slightly exacerbated--the uneven distribution between urban and rural areas that already exists."³ The Congressional Office of Technology Assessment (OTA) notes, "health professionals may be dissuaded from choosing a rural practice location due to either a perceived or an actual lack of professional opportunities and benefits [such as] opportunities for career advancement and ability to meet continuing education requirements for recertification."⁴

The OTA captured the implications of this problem when it noted that "rural primary care physicians may infrequently treat many conditions, and rural technical personnel may find it difficult to maintain competence in skills they rarely practice. . . . Many rural health professionals do not have easy access to professional colleagues, consultations and second opinions, medical libraries, or continuing education."⁵

Because of their link between health sciences centers and community practitioners, AHECs are in a unique position to provide ongoing support services to rural practitioners. The director of one AHEC summarized this task when he noted, "AHECs should examine their current models of support for life-long learning. *Models that bring relevant, timely information closer to the user's point of need should receive priority attention.* AHECs are ideally positioned to address the need for individualized learning and self-directed inquiry. Such information delivery systems could become the foremost criteria by which AHECs will be judged in the years ahead."⁶

FOCUS OF THIS STUDY

During our background work on this inspection, we met with staff from the Division of Medicine to discuss an inspection focusing on AHECs' provision of continuing education services. The PHS staff expressed a desire that we broaden our inspection beyond continuing education. Consequently, we expanded our inquiry to include library resources and telecommunications services, and to consider ways in which AHECs could play a lead role in helping rural health professionals practice in a changing health care system.

This inspection assesses support services provided by all AHECs, both those receiving current Federal AHEC support and those not receiving such support. Consequently, we do not intend for this study to report on the use of Federal AHEC funds only. Even among those AHECs that currently receive Federal AHEC funds, this support may comprise only a small portion of their budgets. Other AHECs are no longer dependent at all on Federal funding.

METHODOLOGY

Our methodology relies upon AHEC-reported information, drawn from four primary sources:

- 1) We reviewed funding applications submitted to BHP_r for 13 AHEC programs for a 3-year period ending in 1994. Each application included reports on AHEC activities for the prior year. We also reviewed applications for funding from 10 model AHEC programs submitted in FY 1994.
- 2) We analyzed data on continuing education activities from all AHEC programs that had been submitted to BHP_r for FYs 1991-92 and 1992-93.
- 3) We conducted telephone interviews with directors and/or staff from 19 AHEC programs.
- 4) We conducted site visits to four AHEC programs in three States. Each site visit included discussions with staff and practitioners at the AHEC program and at AHEC centers. During these site visits, we met with more than 30 rural practitioners, in addition to AHEC staff members. We selected these sites based on our review of the AHEC program files and discussion with staff from the AHEC Program Office in HRSA. We chose programs that had been operating for at least three years. In Appendix B we describe the support services of these AHECs in detail. These sites were:
 - Arkansas AHEC Program, University of Arkansas for Medical Science, Little Rock, Pine Bluff AHEC Center, and Fayetteville AHEC Center;
 - South Texas AHEC Program, University of Texas Health Science Center, San Antonio, and Lower Rio Grande Valley AHEC Center, Weslaco;
 - Nova Southeastern University AHEC Program, North Miami, and Central Florida AHEC Center, Apopka; and
 - North Florida AHEC Program, University of Florida Medical School, Gainesville, and Big Bend AHEC Center, Tallahassee.

We conducted this study in accordance with the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

FINDINGS

AHECS ARE ENHANCING RURAL PRACTITIONERS' ACCESS TO HEALTH CARE INFORMATION BY LINKING THEM WITH MEDICAL LIBRARY RESOURCES.

- *AHEC-provided library resources include professional staff, computer equipment (both hardware and software) for data base searches and document distribution, practitioner training, and books, journals, and audio-visual tapes.*

AHECs make available a sophisticated array of library services to rural practitioners, including books, journals, and videotapes. In our review of applications for Federal AHEC program funding, interviews with AHEC program directors, and site visits to AHEC programs we found that AHECs have put substantial commitment into facilitating practitioner access to medical library resources. These efforts have expanded the range of materials and information available to isolated practitioners.

By virtue of their relationship with academic health sciences centers, AHECs have access to the full range of medical collections that are available in these teaching settings. In addition, AHECs have undertaken major commitments to link practitioners with other resources, such as computerized literature and data bases. In late 1994, HRSA's National AHEC Program Office surveyed the 32 AHEC programs that receive Federal funds. The survey found that all the programs are utilizing Internet and National Library of Medicine (NLM) telecommunications resources. Each AHEC utilizes the NLM's Grateful Med program (for medical literature searching) and Loansome Doc program (for document distribution). Most AHECs also access other data bases such as CINAHL (Cumulative Index on Nursing and Allied Health Literature), either via computer modem-based searches or periodic updates on CD-ROM disks. Eighteen AHECs are linked with AHECNet, a system established by the Montana AHEC. Some AHECs also use methods that are less high-tech in nature, such as distributing journal tables of contents to practitioners, and photocopying articles in response to requests.

In addition to searching for and distributing literature to practitioners, AHECs put substantial effort into training practitioners about how to use the library resources that are available. This training takes place through on-site instruction, for example, in a local hospital. Some AHECs use a "circuit riding librarian," who visits physicians' offices, clinics, hospitals, and other practice sites, actively marketing the AHEC's library services. The circuit rider trains practitioners on how to use services such as Grateful Med, but also performs searches on site for the practitioners.

- *As special incentives to attract community-based faculty for their students, AHECs provide additional training on using data bases, free use of medical library resources, and computer hardware and software to access these resources.*

AHECs use library training strategies to help strengthen their ties with preceptors. AHEC students and residents take equipment--computers, modems, and software--with them on their rotations in the field where they use them as part of their ongoing work with practitioners. One AHEC director summarized this approach by noting that "Our students at a rural rotation dial in, do a work up, and search on-line for information, so that they can illustrate for themselves and for their preceptors how these systems work. We structure this to make it part of the learning process."

In addition to providing free data base searches and access to documents, some AHECs purchase and donate equipment to practitioners who serve as preceptors. AHEC staff we interviewed told us that providing this equipment is important for rural practitioners. They noted that most rural practitioners have computers and modems in their offices, but that they use them almost exclusively for billing. Consequently, placing computer systems in these preceptors' offices meets both an educational need for students and provides access to library services for the practitioners.

Library services can also be valuable resources for AHECs in enhancing their relationships with their parent institution. One AHEC director's comments summarized how "these services constitute a win-win relationship. Making library services available is part of the marketing strategy of any health sciences center. They use it to build up the referral network for the hospital. AHEC enhances this approach for the medical center, because we get out into the rural community more. AHEC's marketing goal is to have practitioners take students, and we use library services to help reach that goal."

AHECS ARE RESPONDING TO THE NEEDS OF MANY TYPES OF PRACTITIONERS FOR CONTINUING EDUCATION ON CLINICAL TOPICS.

- *AHECs' continuing education courses cover a wide range of topics in the health care field.*

Drawing primarily on our review of funding applications, but also on our site visits, it is clear that the preponderance of courses are clinical in nature.⁷ Examples of topics that appear frequently in the lists include: issues related to HIV infection; emergency care, cardio-pulmonary resuscitation, and cardiac life support; identification and treatment of substance abuse; identification of domestic abuse; prenatal and perinatal care; and management of chronic diseases such as diabetes and asthma. Some AHECs also provide continuing education courses on social issues (e.g., cultural sensitivity, language training), management (e.g., quality assurance and risk management), and human resources (e.g., avoiding burnout).

The AHECs generally view their role in continuing education as meeting specific needs and filling a void left by other sources of continuing education. Most continuing education programming is provided through formal courses. Courses may be provided in large scale settings (e.g., cosponsorship of a statewide conference on rural health), in a particular geographic area, or for a small group of eight to ten staff members at one rural health clinic. In addition to courses, several AHECs sponsor mini-residencies or fellowships at the health sciences center in response to an individual physician's need for special training on a particular subject. Some AHECs also conduct specialty clinics in rural communities; at these clinics, a specialist from the health sciences center sees patients, while also providing training for local practitioners.

- *In developing their continuing education agendas, AHECs try to be particularly responsive to community-based practitioners in order to encourage their involvement with AHEC-affiliated students and residents.*

Our interviews and site visits showed that AHECs use several basic strategies to identify practitioners' continuing education needs. Some AHECs convene advisory boards comprised of local practitioners and staff from health care facilities; other AHECs conduct written needs assessments of local practitioners. Less structured methods of seeking provider input include ongoing contacts with practitioners, and course evaluations from practitioners who have attended continuing education classes.

AHECs reported making special efforts to solicit ideas for continuing education programs from faculty and staff in those settings in which students and residents are placed. These efforts can meet practitioners' needs for continuing education, while also providing basic education for the students.

We identified six strategies that AHECs have adopted toward this end. First, AHECs take programs to the practice setting, so that all the staff can participate. Second, an AHEC may use its preceptors as the sampling frame for needs assessments surveys.

Third, some AHECs have developed special courses to train their preceptors on clinical issues, but also, importantly, on how to be effective teachers and mentors.⁸ Fourth, AHECs offer "noon courses" as part of their primary care residency training. On a regular schedule--daily in some programs, weekly or biweekly in others--practicing physicians from the clinic or local area provide lectures for residents and other staff. Although these programs are targeted at the residents, other local practitioners are invited, as a way of facilitating professional interaction and learning.

Fifth, some AHECs provide "dividends" or credit to preceptors. These preceptors may exchange these dividends for free registration at AHEC programs. Finally, AHECs encourage practitioners to view teaching as an important means of receiving continuing education. One physician at a community health center explains how this works: "It is stimulating at all levels of the profession. Students force you to push yourself, because they are up on the latest literature and research. It also gives

providers in an underserved community a sense of credentialing and their own worth, as they can think, 'If I'm a teacher I must be good.'"

- *On average, more than two-thirds of participants in AHEC-sponsored continuing education programs in 1993 were nonphysician practitioners, including nurse practitioners, physician assistants, nurses, and allied health professionals.*

Even though AHECs are based in medical schools, nonphysician practitioners make particular use of their continuing education programs. We reviewed data submitted by 19 AHECs to BHP for fiscal year 1993. In 14 of these 19 AHECs, physicians comprised less than 25 percent of participants, and in 9 of these AHECs they comprised 10 percent or less. In 14 of those 19 AHECs, nurses, nurse practitioners, and physician assistants--who often are direct providers of primary care services in rural areas--comprised more than 25 percent of participants. Other participants in these programs include dentists, pharmacists, and allied health professionals such as medical technologists, x-ray technicians, and medical records administrators.

AHECs fill a niche in providing continuing education programming for nonphysician health care professionals. Of particular benefit, this programming can focus on the specific needs of staff in an individual clinic or practice site in a rural area. Because of the AHEC's flexibility, it can design continuing education that may not be readily available elsewhere for these practitioners.

We heard four additional explanations for this level of participation by nonphysician practitioners. First, rural practice sites tend to be multidisciplinary, with a team orientation that includes nurses, physicians, and allied health professionals. As a consequence, rural practitioners' continuing education needs also are multidisciplinary.

Second, rural sites need continuing education that is locally provided. One physician summarized this need when she told us, "Clinic staff are place-bound. A nurse may be the only one in the rural clinic, and she can't get away. You simply can't shut down a small county health unit for a day to go to a meeting."

Third, an obvious reason for this level of participation is that nurses and allied health professionals comprise the largest proportion of health professionals. Consequently, they would be expected to consume a greater share of continuing education. Fourth, although continuing education is widely provided elsewhere for physicians, it often is unavailable for many rural nonphysician practitioners.

FOR THE MOST PART, AHECS ARE MISSING OPPORTUNITIES TO EDUCATE PRACTITIONERS ABOUT INNOVATIONS IN HEALTH CARE DELIVERY, SUCH AS CLINICAL PRACTICE GUIDELINES OR MANAGED CARE.

- *Although clinical practice guidelines are intended to help practitioners make clinical decisions about patient care, most AHECs have not included these topics in their continuing education courses.*

In our review of applications, interviews, and site visits, we sought specific information on whether AHECs have provided continuing education on the use of clinical practice guidelines developed by the Agency for Health Care Policy and Research (AHCPR).⁹

No AHEC mentioned in its application that it had been involved in dissemination of guidelines. Of our 19 interviews, 2 AHEC directors told us that they had disseminated practice guidelines. One director told us that the AHEC had sent HIV guidelines to "hundreds of people through their AIDS Clinical Newsletter," saying that "AHECs are a natural entity to do this." The director of another AHEC told us that practice guidelines are frequently presented as part of their continuing education programs, and he expects that these will be even more commonly used in future programs. Several other AHEC directors told us that the guidelines are available in their medical library collections. As one AHEC director summarized, however, "We get the information from AHCPR, but haven't done much with it. I'm not sure why."

On our site visits, staff from the South Texas AHEC told us that although continuing education courses for physicians have not explicitly addressed AHCPR guidelines, the school of nursing had used pain management guidelines in their continuing education program. The Arkansas AHEC conducted a study to examine different methods of disseminating asthma practice guidelines through AHECs. The project report concludes that "AHECs are in a position to play an important dissemination role. Continuing education has always been a priority. . . . and as such [AHECs] can serve as an effective dissemination vehicle."¹⁰

During our site visits, rural practitioners raised a number of questions about practice guidelines and the constraints that rural practice imposes on their applicability. One difficulty they identified was a perceived need for sophisticated diagnostic equipment that might not be available in rural areas. Other practitioners identified lengthy travel time in rural areas as a barrier to following what they see as rigid guidelines. They also expressed frustration that practice guidelines are developed by academic experts who do not understand the constraints on the practice of medicine in rural areas.

Yet practitioners we spoke with thought that there was a need for this information, perhaps best expressed by the medical director of a community health center in Florida. "Traditional performance is based on quality assurance. Insurers now have measurement criteria--numbers of immunizations or pregnant teenagers seen in first trimester. We need to be able to move to statistically sound outcome based practice.

AHEC can help provide the expertise, software, education on how to do this, and on how we can hook in with CQI."

- *Despite the potential impact of managed care on rural practice, most AHECs have not included courses on this topic in their continuing education programs.*

In our interviews and site visits, we asked AHEC directors specifically about whether they had sponsored programs to educate practitioners about managed care. Four of the 19 AHEC directors we interviewed told us that their AHEC had provided some type of educational programming on managed care. During our site visits, we were told that the Florida AHEC programs sponsored a 2-day statewide program on contracting with Medicaid managed care providers.

Only one AHEC director told us that managed care comprised an important part of continuing education programs. The AHEC responded to physician requests for information on how to practice as a gatekeeper and how to form managed care organizations. A second AHEC director noted that a few of their offerings had begun to address managed care. Two AHEC directors stated that they had been involved with setting up public hearings as part of State efforts to educate providers about Medicaid initiatives that were encouraging managed care organizations.¹¹

Even though they have not provided continuing education on managed care, several AHEC directors cited concerns about the impact that managed care could have on their own operations. Foremost among their concerns was whether managed care, with greater demands for physician productivity, would leave community-based physicians with less time for teaching students.

Rural practitioners we interviewed during our site visits also indicated the need for information on how managed care will affect their practice. They cited, for example, AHECs' experience in negotiating with physicians, which could be helpful as rural practitioners consider and review provider agreements. One director of a county health department summarized these views when he said, "Rural health providers know nothing about contracting with providers and physicians. We need courses on how to work with HMOs as government providers, and how to work with them as private practitioners."

AHECS ARE BEGINNING TO USE TELECOMMUNICATIONS TO PROVIDE SUPPORT TO ISOLATED PRACTITIONERS, BUT THEY ARE NOT YET TAKING ADVANTAGE OF THE FULL POTENTIAL OF THIS TECHNOLOGY.

- *AHECs' most common use of telecommunications is to provide additional education for professional advancement of local nurses. Except for this purpose, however, few AHECs utilize regularly scheduled telecommunications programming.*

In our review of funding applications, interviews with AHEC program directors, and site visits, 10 AHECs reported that they have a career ladder program to enable

nurses to advance professionally.¹² The classroom portion of their training is provided through a long distance interactive format by faculty from the school of nursing at the health sciences center. The classroom expands beyond the immediate four walls, as lectures are transmitted live to students in a classroom at a remote site, such as a community college or local AHEC center. Using video-audio systems, students in the remote site are able to interact with the instructor in virtually the same way as those in the immediate classroom. The hands-on clinical training that the students require takes place in a local setting, such as a rural hospital or clinic. This approach helps the distant students by letting them remain in their communities while advancing professionally. It also can be an important retention tool. Several AHEC directors with whom we spoke noted that hospitals spent a great deal of money recruiting nurses from more urban areas to rural areas, only to find that they tend to leave after a relatively short time. By providing training for local nurses, AHECs expect that they will upgrade their skill level and ability to take on more responsibility, and will remain in the local area after completing their training.

Other than these career ladder courses, AHECs' use of telecommunications is in the early stages. Few AHECs use telecommunications to deliver regularly scheduled routine continuing education courses. A more common use of this technology is local coordination for special national or State programs on major topics, such as AIDS awareness and treatment.

For the most part, AHECs' use of long distance telemedicine--clinical diagnosis and treatment through telecommunications--is still in the demonstration phase. Some AHECs reported that they were facilitating the use of teleradiology. This technology permits practitioners at rural hospitals to send digitized x-rays via telecommunications to a contracted radiologist at a central location, such as the health sciences center. The radiologist interprets the x-rays and provides a diagnosis for the rural practitioner. A few AHECs reported that they use telemedicine for dermatology. A local practitioner (such as a physician, physician assistant, or nurse practitioner) sees the patient at a remote site, while a dermatologist at the health sciences center examines the patient via specially transmitted televised pictures. The specialist is able to diagnose the condition and prescribe appropriate treatment. If hands-on contact is needed, the local practitioner can provide that contact in conjunction with the specialist's instructions.

Because it can be brought on site, telecommunications obviates the need for practitioner travel to distant sites for continuing education and other training. This technology can address the time constraints facing busy professionals, and can be provided at a relatively affordable cost in many areas. By linking practitioners with resources available from great distances, telecommunications can readily expand the range of course offerings beyond what is available locally.

It is not clear how rapidly telemedicine will expand, or indeed whether it will expand at all without additional funding. AHEC directors in a number of States reported to us about *plans* to implement limited demonstrations that utilize telemedicine. In most

cases, these plans were developed as part of funding applications to obtain necessary equipment or external support.

- *Constraints on greater AHEC use of telecommunications include AHECs' lack of ownership of the technology, its capital and operating costs, and lack of practitioner familiarity or comfort.*

Every AHEC we spoke with and reviewed has had some involvement with long distance learning, telemedicine, and telecommunications. The logic of using these technologies for rural medicine seems self-apparent. In our interviews and site visits, we found that a number of constraints are inhibiting its growth and use by AHECs.

Lack of ownership of the technology means that AHECs are not able to control access to it or to have primary use of it. In only a few instances did we find that the health care community was a major partner in controlling the technology needed to provide telecommunications and long distance learning. Even in those instances, the AHECs--and especially their continuing education and support services--take second place. In many States, telecommunications is the property of the higher education system, particularly junior colleges or community colleges. In at least one State, it is controlled by the criminal justice system. As a consequence, AHECs must take their turn along with all the other interested parties to use the technology.

Telecommunications equipment can be costly. A relatively inexpensive satellite dish can be used for receiving programming in a one-way transmission. For two-way, interactive audio and video, however, we heard prices ranging from \$38,000 to \$100,000 for the necessary equipment, money that the AHECs claim is not a priority in their spending plans.

There also is resistance to these technologies among some practitioners. AHEC directors told us that practitioners think that telemedicine could be a good idea, but only in very rural areas where there are no physicians or hospitals. Older physicians appear to be uncomfortable with these new technologies, probably because of unfamiliarity. This concern implies that one AHEC role is training practitioners on how to use these technologies.

Despite these constraints, AHEC directors foresee greater use of and reliance on long distance telecommunications as a means of delivering continuing education, gathering research and data, and providing consultation and diagnostic services for isolated rural practitioners. They anticipate that entry into practice of a younger generation of practitioners, who are familiar with computers and electronic transmission as standard ways of doing business, will lead to wider acceptance and more frequent use of these technologies. At the same time, the AHEC directors stress that face-to-face contact and interaction with colleagues will continue to be important.

OPPORTUNITIES: LOOKING TO THE FUTURE

Clearly AHECs will continue to emphasize basic medical education as their primary mission. Indeed, AHECs appear to be well-positioned to play a leadership role in supporting the increasing national emphasis on primary care. AHEC directors we interviewed believe that emerging medical education policy supports the basic AHEC approach: linking medical schools and community-based practitioners to train students in primary care.

How do AHECs' support services fit into this future? AHECs not only help practitioners maintain their skill levels by providing medical library resources and continuing education, but these services can also reduce a sense of professional isolation. These support services complement the AHECs' role as a provider of basic education, and, indeed, offer ways through which AHECs can strengthen their performance in that role.

On a strategic level, providing support services can play an important role in enhancing AHECs' relationships with State officials. AHECs recognize that their long term viability depends on support from their State governments, predicated on their acceptance within the broader medical community. The success of AHECs will be measured by the number of primary care students, residents, and other practitioners that they produce. At the same time, an AHEC's support services provide ongoing interaction with local practitioners that can help to secure its place within the local medical community. By meeting the needs of local practitioners for the services they provide, AHECs are able to build a constituency for their services, particularly among legislators representing rural and underserved areas.

WE RECOMMEND THAT THE PUBLIC HEALTH SERVICE STRENGTHEN THE ROLE OF AHECS BY FACILITATING THEIR ABILITY TO FOCUS SUPPORT SERVICES ON THREE AREAS: CLINICAL PRACTICE GUIDELINES, MANAGED CARE, AND TELECOMMUNICATIONS.

Our recommendation identifies opportunities to take advantage of AHECs' potential for assisting practitioners in the emerging health care environment. We also provide some options for how PHS can facilitate AHECs' ability to take advantage of these opportunities. We encourage and welcome other approaches that PHS staff and the various AHEC programs may develop on their own to reach this goal.

● *CLINICAL PRACTICE GUIDELINES*

Variations in clinical practice among different physicians and hospitals, and in different geographic areas have long been observed.¹³ With the growing awareness of these variations, concern has developed about adverse patient outcomes and financial costs

associated with inappropriate medical care. Clinical practice guidelines have been developed as part of a larger effort to reduce unwarranted variations in care and the costs associated with them. As part of this effort, PHS has invested in the development of guidelines and their use by practitioners through the Agency for Health Care Policy and Research (AHCPR).

▶ ***AHECs could facilitate adoption of clinical practice guidelines in rural practice by:***

- **Including guidelines as part of continuing education courses**

In their continuing education courses, AHECs could disseminate guidelines, explain how they can be applied, and identify issues of particular concern in rural practice.

- **Ensuring guidelines are available in their medical libraries**

AHECs could ensure that the guidelines are available in their medical library resource collections. AHECs could see that practitioners are made aware of the guidelines and how to access them.

- **Helping adapt guidelines to rural conditions**

AHECs could identify how and under what conditions clinical practice guidelines need to be adapted to the specific needs of rural communities.

▶ ***The PHS, working through AHCPR, could encourage the guidelines' adoption by:***

- **Involving AHECs in the development of guidelines**

The AHCPR could ensure that rural viewpoints are reflected in practice guidelines by including representation from AHECs in a consultative role as the guidelines are formulated.

- **Encouraging AHECs to disseminate guidelines**

The AHCPR now includes AHECs on its routine distribution list for the guidelines. As part of its marketing strategy, AHCPR could utilize AHECs' expertise in providing continuing education to see that rural practitioners are made aware of the guidelines. For example, AHCPR might wish to consider using some of its dissemination funding to assist AHECs in developing continuing education courses on practice guidelines.

- **Assessing rural practitioners' concerns**

The AHCPR could determine whether those concerns noted in this report, and any other concerns, need to be addressed in the guidelines. If its assessment identifies problem areas for rural practice, AHCPR could draw on AHECs' expertise to identify ways of addressing these concerns.

- **Examining the use of guidelines in rural areas**

The AHCPR could determine where and how extensively guidelines have been applied in rural communities, and what problems practitioners have encountered with them in practice. The AHCPR might wish to identify lessons learned from these experiences and consider how guidelines can be applied elsewhere.

- **MANAGED CARE**

Even without enactment of national health reform legislation, numerous changes are taking place in the health care system. Foremost among these is the development of managed care systems, which could pose particular difficulties in rural communities. Analysts have projected that managed care could well exacerbate existing problems in the availability of primary care practitioners in rural areas, as urban managed care networks recruit additional primary care physicians from the limited number that are available.¹⁴ Others have cited the difficulties that a system relying on managed competition would hold for rural communities where there are few practitioners, limiting the competition that could take place.¹⁵ In addition, managed care may develop more slowly in rural areas than in urban ones, and it is likely to encounter more resistance in those areas.¹⁶

- ▶ ***AHECs could inform rural practitioners about managed care by:***

- **Sponsoring informational symposia for rural practitioners**

AHECs could develop and provide information for rural practitioners on multiple topics, such as the role of the gatekeeper, clinical patient management in a system with different economic incentives, or standards for practitioner participation in different managed care plans.

- **Assisting practitioners in negotiating contracts**

AHECs could assist rural practitioners in negotiating contracts with existing managed care organizations, or they could even help practitioners develop and organize their own managed care plans.

- **Participating in State-level planning**

In those States that are undertaking their own health care reform initiatives, AHECs could play an active role to ensure that the needs of rural areas are addressed in that debate.

- ▶ ***The PHS could assist AHECs in this effort by:***

- **Disseminating information on managed care**

The PHS role in helping AHECs address managed care is likely to be primarily an educational one. The PHS, through the Federal AHEC Program or some other entity, could disseminate materials on managed care for rural practitioners. These materials could address how AHECs have been involved in the development of managed care.

- **Taking advantage of its ongoing communications with AHECs**

The Federal AHEC Program could encourage the inclusion and discussion of these issues at annual meetings of AHEC program directors, or as part of routine newsletters (e.g., the *AHEC Bulletin*) that the AHEC community publishes.

● **TELECOMMUNICATIONS**

Telecommunications has the potential to become a central focus of efforts to reduce the professional isolation of practitioners. This technology holds multiple benefits for rural practitioners, such as overcoming travel distance and reducing time away from the practice setting. By taking a leading role in efforts to expand the use of telecommunications technology, AHECs can help assure that the needs of rural practitioners are met. Significant changes in telecommunications and its applicability for health care are on the horizon.¹⁷ These changes include emergence of the "information superhighway," the evolution of a new generation of practitioners who have used computers and other technologies as a routine way of doing business for some time, and likely improvements in the technology in both its capabilities and its "user-friendliness."

▶ ***AHECs could lead efforts to take greater advantage of telecommunications' potential to facilitate rural practitioner access to information by:***

- **Actively participating in State telecommunications initiatives, such as those involving State offices of rural health**

Efforts to expand telecommunications are under way in some States (e.g., efforts led by State offices of rural health or departments of education). An AHEC's role could be to see that the needs of practitioners in isolated rural areas are met. Where such efforts are not yet under way, AHECs could take the lead in convening consortia of telecommunications users to encourage broader application of this technology.

- **Training practitioners, students, and primary care residents**

This education could take place in the basic training that AHECs provide to health professions students. For current practitioners, AHECs could include training on telecommunications in their continuing education programming.

▶ ***The PHS could facilitate these efforts by:***

- **Encouraging the Federal AHEC Program and the Federal Office of Rural Health Policy to work closely together to overcome barriers**

Within PHS, the Federal AHEC Program within BHP could facilitate this effort by working closely with the Federal ORHP and with State offices of rural health to develop strategies for overcoming the barriers to broader utilization of telecommunications. The Federal AHEC Program and ORHP could distribute available information and training materials on expanding utilization of telecommunications.¹⁸

- **Considering the extent of AHEC collaboration with telecommunications networks in its review of funding applications**

The Federal AHEC program could consider the extent to which AHECs are involved in linking with State efforts to develop telecommunications in its rating of applicants for AHEC funding. Current guidelines address linkages to State initiatives, such as a State office of rural health and statewide training consortia. These guidelines, however, do not specifically address an applicant's participation in efforts to expand the utilization of telecommunications.

COMMENTS ON THE DRAFT REPORT

We received comments on the draft report from the Public Health Service (PHS) and the Assistant Secretary for Planning and Evaluation (ASPE) within the Department. We also received comments from the National Organization of AHEC Program Directors (NOAPD). We include the full text of all comments in Appendix A. Below we summarize the comments of the respondents and, in italics, offer our responses.

PHS COMMENTS

The PHS concurs with our recommendations. The agency identifies a plan of action that it will undertake to implement those recommendations. *We are pleased that PHS concurs with our recommendations, and we welcome its implementation plan. In particular, we look forward to achievement of those goals that the agency indicates can be accomplished within existing staff and resource constraints.*

The PHS plans to convene a work group with staff from HRSA and AHCPR to address our recommendation on the use of clinical practice guidelines. The objective of this effort is to develop a process for increasing the involvement of AHECs in the dissemination of existing guidelines and in the development of new guidelines as a way of providing input from rural providers. *We believe that this work group, plus the agency's planned involvement of AHEC program directors and AHEC center directors, should be able to address the issues raised in our report.*

The PHS acknowledges that a more formal process could be used to incorporate current information on managed care. The PHS has already established a task force within HRSA to identify steps that could be taken to assist its customers and constituents in responding to the growth of managed care. *The HRSA's establishment of a task force to identify steps that could be taken in this area is recognition of its importance. We would welcome receiving a copy of the report and action plan that this task force produces.*

The PHS notes the recent increase in the awareness and use of telecommunications among rural practitioners. The HRSA will undertake efforts to increase interaction between the AHEC program and the Office of Rural Health Policy as one approach to further strengthen development of telecommunications systems. The agency raises caution about costs associated with initial linkage and maintenance of telecommunications systems.

We appreciate the information that HRSA has provided on the use of the Internet and the Montana AHEC's AHECNet, and we have incorporated this information into the text of our report. We believe that increased interaction between the AHEC program and the Office of Rural Health Policy will strengthen development of telecommunications systems. We are aware of the expense involved in developing and maintaining telecommunications systems. We urge HRSA to continue to monitor developments in this rapidly evolving field. We encourage HRSA to continue to work with other Federal agencies, State

governments, and private organizations involved in telecommunications to help develop this technology's potential for delivery of health care services in underserved rural areas.

ASPE COMMENTS

The ASPE generally agrees with our recommendations, particularly those that address clinical practice guidelines and managed care. The ASPE suggests that we might wish to emphasize grantee involvement in efforts to explore the use of telecommunications as a criterion in scoring grant applications. *We are pleased that ASPE concurs with our recommendations. We believe that an indication that AHECs are exploring telecommunications would not be sufficient for assessing their actual involvement in that field. But we have revised the language supporting that recommendation to emphasize that the Federal AHEC program could consider "the extent to which AHECs are involved in linking with State efforts to develop telecommunications" in its rating of applicants for AHEC funding.*

NOAPD COMMENTS

The NOAPD made a number of technical and editorial comments. The organization notes, *and we indicate in the introduction*, that this report examines only one segment of the total AHEC mission. *We have included in the text language suggested by the organization that AHECs' view their role in continuing education as filling a void not met by other sources of continuing education. We have also made some editorial changes in the case descriptions in Appendix B.*

The NOAPD questions whether the AHCPR guidelines may be pertinent topics for continuing education in some communities served by AHECs because they have not been requested by local practitioners. *We urge AHECs to not only take advantage of existing opportunities to educate practitioners about the information contained in these guidelines, but to also play a proactive role in making practitioners aware of their potential use. In addition, we note that an important thrust of our recommendation is to involve the expertise residing in AHECs to make these guidelines more relevant and useful to rural practitioners.*

The NOAPD recognizes the role that AHECs could play in providing information on changes in the health care system. The organization questions whether one such role is negotiating contracts with managed care organizations. *We believe that this is a potential role for some AHECs. We offer it as one example of ways in which AHECs can help keep rural practitioners informed about managed care. We agree that AHECs also have an important role in sponsoring informational symposia on managed care topics.*

The NOAPD supports efforts to encourage AHECs to take an active role in the advancement of telecommunications technology, but cautions that AHECs' role in this development will vary among States. The NOAPD also notes that developing telecommunications requires substantial financial effort. *We recognize the variation among States in how this development is proceeding, and we are aware of the expense involved. We are not suggesting that funds be subtracted from the AHEC program for this purpose, but rather that funding applications pay explicit attention to how AHECs are involved in linking with State efforts to develop telecommunications.*

APPENDIX A

DETAILED COMMENTS ON THE DRAFT REPORT



Memorandum

APR 11 1995

Date

From Assistant Secretary for Health

Subject Office of Inspector General (OIG) Draft Report "Area Health Education Centers: A Role in Enhancing the Rural Practice Environment," OEI-01-93-00570

To Inspector General, OS

Attached are the Public Health Service comments on the subject OIG report. We concur with the report's recommendations. Our comments delineate the actions taken or planned to implement these recommendations.

A handwritten signature in cursive script, reading "Philip R. Lee".

Philip R. Lee, M.D.

Attachment

PUBLIC HEALTH SERVICE (PHS) COMMENTS ON THE OFFICE OF
INSPECTOR GENERAL (OIG) DRAFT REPORT "AREA HEALTH EDUCATION
CENTERS: A ROLE IN ENHANCING THE RURAL PRACTICE ENVIRONMENT,"
OEI-01-93-00570

General Comments

We believe that achievement of the goals and tasks outlined in the subsequent PHS comments is possible over a three-year period if sufficient resources are available. Some of the tasks described can be accomplished through existing staff and resources. However, other tasks will require additional resources.

OIG Recommendation

We recommend that the PHS strengthen the role of Area Health Education Centers (AHEC) by facilitating their ability to focus support services on three areas:

A. Clinical Practice Guidelines

The AHECs could facilitate the adoption of clinical practice guidelines by including guidelines as part of continuing education courses, ensuring that guidelines are available in their medical libraries, and helping adapt guidelines to rural conditions.

In addition, the PHS, working through the Agency for Health Care Policy and Research (AHCPR), could encourage guidelines' development by: involving AHECs in the development of guidelines, encouraging AHECs to disseminate guidelines, assessing rural practitioners' concerns, and examining the use of guidelines in rural areas.

PHS Comment

We concur with this recommendation. Routinely, AHCPR's Center for Research Dissemination and Liaison (CRDL) sends clinical practice guidelines to AHEC directors urging guideline dissemination. As the guidelines on various clinical issues have been developed, AHEC programs have distributed some of these guidelines to health care practitioners participating in continuing education programs. AHEC staff received feedback that some of the guidelines could be made more relevant to rural practice settings.

In October 1990, PHS' Health Resources and Services Administration (HRSA) awarded a contract to the Arkansas AHEC to compare three dissemination modalities. The AHCPR contributed the funding for this contract. The project examined the use of different educational interventions to

achieve cognitive and behavioral changes in physicians in primarily rural settings. Three areas in Arkansas received tailored interventions, while a fourth control area received routine notification of the 1991 asthma treatment guidelines issued by the National Heart, Lung, and Blood Institute. The three tailored strategies used a standard continuing medical education conference with peer academic detailing; computer conferencing and computer teaching modules to highlight key aspects of the guidelines; and multiple facsimile transmissions of executive summaries, along with posters and audio and video tapes.

A review of the project's results did not reveal great differences in the performance and cognitive knowledge of physicians; although the multimedia, repetitive exposure strategy showed some clinical and cognitive impact. It was also found that the success of various strategies was correlated with physician and practice characteristics. This suggests the importance of designing disseminations that are appropriate for the target audience.

We believe that worthwhile objectives are the development of (1) a process for the dissemination of existing guidelines to AHEC programs, centers, and trainees; and (2) a strategy to increase the involvement of local AHEC staff and trainees, and a range of rural health care providers, in the development of new guidelines. Staff from both HRSA and AHCPR will form a work group to develop a plan to achieve these objectives. The work group will consult with AHEC program directors and center directors in the development of this plan.

The goals of this effort are to:

- o ensure existing guidelines are available in hard copy in the libraries of the schools associated with ongoing AHEC programs, and also in local community-based AHECs and affiliated learning resource training sites,
- o ensure that a representative number of local AHEC staff and rural health care providers are added to existing AHCPR advisory groups charged with the development of guidelines, and
- o explore the use of INTERNET and/or AHECNET to enhance the dissemination of AHCPR guidelines.

In a related effort, AHCPR is testing a prototype of AHCPR Clinical Practice Guidelines on CD-ROM. This prototype version of the 15 current AHCPR guidelines is expected to be available at the May 1995 annual meeting of the Medical

Library Association. If this proves successful, this version of the guidelines can be made available to the AHEC libraries.

OIG Recommendation

B. Managed Care

The AHECs could inform practitioners about managed care by: sponsoring informational symposia for rural practitioners, assisting practitioners in negotiating contracts, and participating in State-level planning.

The PHS could assist AHECs in this effort by disseminating information on managed care, and taking advantage of ongoing communications with AHECs to encourage the inclusion and discussion of this issue at annual meetings of AHEC program directors.

PHS Comment

We concur. In the past, managed care has been a focal point of several AHEC programs and a part of a continuing education program. These efforts were often in response to requests by provider groups, many of whom are being asked to join managed care organizations.

We acknowledge, however, that a more formal process could be developed to incorporate current information on managed care issues into ongoing AHEC dissemination efforts. In January 1995, the HRSA established a task force to explore the steps that could be taken to assist customers and constituents of HRSA to respond to the dynamic growth of managed care organizations throughout the nation. One task of this task force on managed care will be to analyze the dissemination role of the AHEC and other HRSA programs. Once this task force's assignment is completed, HRSA will determine whether efforts like those envisioned by the OIG will be undertaken to assist AHECs in disseminating information on managed care.

OIG Recommendation

C. Telecommunications

The AHECs could lead efforts to take greater advantage of telecommunications' potential to facilitate rural practitioner access to information by actively participating in State telecommunications initiatives, such as those involving State offices of rural health; and training practitioners, students, and primary care residents.

The PHS could facilitate these efforts by encouraging the Federal AHEC Program and Office of Rural Health Policy (ORHP) to work closely together, and considering the extent of AHEC collaboration with telecommunications networks in its review of funding applications.

PHS Comment

We concur. In the past few years there has been a significant increase in the awareness and use of telecommunications technology and electronic media among rural practitioners. A recent survey of 32 AHEC programs that currently receive Federal funds indicates that all 32 are utilizing INTERNET and National Library of Medicine telemedicine resources. The AHECNET (established by the Montana AHEC) is used to a lesser extent, with 18 of the AHEC programs surveyed reporting a linkage to AHECNET. Also, six AHEC programs report a linkage with a telecommunications awardee of the ORHP.

The HRSA will undertake efforts to increase interaction between staff from the AHEC and ORHP programs. A goal is enhanced staff communication and familiarity with the respective programs by sharing information regarding current awardees, participating in merit review sessions of the respective programs, and following up with awardees of each program to encourage the use of ORHP supported telecommunications systems.

A second goal is to explore the feasibility of linking each of the 124 community-based AHECs to AHECNET, INTERNET, or an ORHP supported telecommunications system. It would be possible to accomplish this goal over a three-year period if sufficient resources were available. To date, AHEC program resources have been used to support the establishment of community-based training programs, and to enhance learning resources and the development of preceptors in local areas. Funds have not been sufficient to support the cost of the initial linkage to telecommunications systems in many States, or the costs of maintenance.



MAR 13 1995

TO: June Gibbs Brown
Inspector General

FROM: Assistant Secretary for
Planning and Evaluation

SUBJECT: Review of OIG Draft Report: "Area Health Education
Centers: A Role in Enhancing the Rural Practice
Environment," OEI-01-93-00570

Thank you for giving me the opportunity to review your draft report on area health education centers (AHECs). We are pleased to see that your inspection shows that AHECs are enhancing rural practitioners' access to health care information and providing needed continuing education.

We generally agree with your recommendations, particularly those focused on strengthening AHEC activities in the areas of clinical practice guidelines and managed care. While we also agree that AHECs should become increasingly involved in efforts to develop the use of telecommunications in health care, it may be premature for PHS to consider the extent of AHEC collaboration with telecommunications networks in its review of funding applications (as recommended at the bottom of page 16). Telemedicine is a rapidly evolving field, and many complex technical, medical, and financing issues need to be resolved before there will be any consensus on the appropriateness of its use in rural health care. While AHECs certainly could (and should be encouraged to) play a key role in exploring and resolving these issues, it may not be advisable at this point to include "the extent to which telecommunications are utilized" as a criterion on which grant applicants are scored. Perhaps this recommendation could be reworded to emphasize the level of the grantee's involvement in efforts to explore the use of telecommunications in health care, rather than the level of its utilization of telemedicine.


David T. Ellwood *uef*

PREPARED BY: ASPE/HP:THertz:245-7779:3-13-95



**Area Health Education
Centers Program**

Office of the
Executive Director

University of Arkansas
for Medical Sciences
4301 W. Markham, Slot 599
Little Rock, Arkansas 72205
(501) 686-5260
Fax: (501) 686-8506

AHEC FORT SMITH
612 South 12th Street
Fort Smith, AR 72901
Phone: (501) 785-2431

AHEC PINE BLUFF
4010 Mulberry
Pine Bluff, AR 71603
Phone: (501) 541-6010

AHEC SOUTH ARKANSAS
490 West Faulkner
El Dorado, AR 71730
Phone: (501) 862-2489

AHEC NORTHWEST
2907 East Joyce Street
Fayetteville, AR 72703
Phone: (501) 521-8269

AHEC NORTHEAST
223 East Jackson
Jonesboro, AR 72401
Phone: (501) 872-0063

AHEC SOUTHWEST
600 Walnut Street
Texarkana, AR 75502
Phone: (501) 774-7236

March 21, 1995

June Gibbs Brown
Inspector General
Department of Health and Human Services
Washington, DC 20201

Dear Ms. Brown:

Thank you for the opportunity to comment on the draft inspection report entitled, "Area Health Education Centers: A Role in Enhancing the Rural Practice Environment". The National Organization of AHEC Program Directors believes that the report accurately reflects the need for expansion of support services provided through Area Health Education Centers. The National Organization of AHEC Program Directors is especially concerned that the report clearly specify that it addresses only one segment of the total mission of Area Health Education Centers. The report was not a comprehensive review of the AHEC Program, but rather, was an assessment of the role that the Program is currently performing or could perform in providing support services to enhance the practice environment for health care practitioners in rural areas.

In the Executive Summary of the report at the top of page ii, we suggest that a statement be added which says, "AHECs generally view their role in continuing education as one of meeting specific needs and filling voids that may be left by other sources of continuing education without duplicating these other sources". This same mission of AHECs should be included on page 6, paragraph 4 or 5. Also, the same theme should be carried forward to the recommendations on page 13 and 14 considering clinical practice guidelines.

The development of continuing education programs based on specific identified needs in the community served by the AHEC may not include the topics covered by the clinical guidelines developed by AAHCPR. AHECs should not be required to provide continuing education courses simply because guidelines have been developed by AAHCPR. Continuing education courses are not well received by the audience unless topics are covered that have been specifically requested or seem to be extremely relevant at the time of presentation.

An important role for AHEC is to make providers aware of the practice guidelines and to make them available to constituents located within their respective areas. AHECs should be encouraged to include the guidelines as resource material anytime a program is conducted that would encompass the

scope of a published guideline. The adoption of practice guidelines often requires significant cultural change by practitioners. Continuing education courses may not alone accomplish these changes, but they are an important way of providing information to practitioners.

An appropriate role for AHECs is to provide information regarding the numerous changes that are taking place in the health care system. However, the statement on page 15, paragraph 3, which says that "AHECs could assist rural practitioners in negotiating contracts" suggests a role for AHECs that would not be widely adopted. Special skills are needed in these areas that do not occur frequently in the AHEC staff. The appropriate role for AHECs in this area should be more precisely stated by recommending that AHECs should provide sponsorship and coordination of workshops and conferences to inform and teach practitioners and administrators how to work within managed care systems.

It is an appropriate role for AHECs to actively pursue the development of telecommunications linkages, and to be the community facilitator for groups that wish to pursue development of telecommunications. Every effort should be made to encourage AHECs to take an active role in the advancement of this technology. Although AHECs are aware of the usefulness and potential for telecommunications in bridging the information gap from academic health centers to remote and rural practitioners, these efforts require substantial financial backing generally by state governments, and certainly significant commitment of large medical centers. The role of the AHEC Program will vary from state to state. In some, the AHEC will be only a facilitator; in others the AHECs will play a lead role in developing telemedicine. The specific activity should be carefully reviewed because of the great variability in regional needs and resources. Because telemedicine is an extremely expensive operation, special funding would be required to assist in the development of these networks, funding that would not subtract from the funding that is needed to develop the general infrastructure of a balanced AHEC Program.

Some specific editorial comments are suggested. (Note: strikethrough = delete, underline = add.)

Page A-7, last paragraph, first sentence:

The Nova Southeastern University AHEC Program has provided computers to 12 CHCs and County Public Health Units where ... significant ... student training takes place. ~~Along with the~~

Ms. June Gibbs Brown
March 21, 1995
Page 3

computers ... In order to utilize these computers to conduct literature searches, the AHEC Program ...

Page A-8

CONTINUING EDUCATION COURSES

2nd paragraph, add a bullet: • Tuberculosis and Other Infectious Diseases

Page A-8, last paragraph, first sentence:

... courses were provided ... for health care professionals employed ... in CHCs ...

Page A-9

TELECOMMUNICATIONS

2nd paragraph, add second sentence:

All of the AHEC Centers in Florida took an active role in conducting the conference.

Page A-10, last paragraph, last sentence:

... and enteric diseases:

Page B-3, last paragraph:

... Four ... Five of the 19 counties in the Nova Southeastern University ... University AHEC program area ... ~~15~~ ... 14 have partial county ...

SOUTH TEXAS AREA HEALTH EDUCATION CENTER: RECOMMENDED CHANGES/ADDITIONS

Note: changes/added text is underlined.

OVERVIEW

1st sentence:

... based at The University of Texas ...

MEDICAL LIBRARY RESOURCES

1st paragraph:

Based at the AHEC program office in San Antonio ... are a consortium of hospitals and health care providers ...

3rd paragraph:

... and Valley Baptist Medical Center, hosts of primary care residency rotations and student preceptor programs which the AHEC sponsors.

CONTINUING EDUCATION COURSES

1st paragraph:

Each UTHSCSA professional school -- medicine, nursing, dentistry, and allied health -- as well as UT-Austin's extension pharmacy program, has its own office of continuing education.

2nd paragraph:

Add sentence at end: Instructional development programs are also routinely conducted for new preceptors or community-based clinical faculty.

CONCLUSIONS (TELECOMMUNICATIONS)

Addendum:

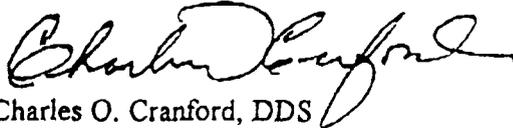
The South Texas AHEC utilized the knowledge gained by the demonstration activity to develop a plan, finance the acquisition of equipment, and implement the South Texas Distance Learning and

Ms. June Gibbs Brown
March 21, 1995
Page 5

TeleHealth Network which currently links ten community clinical training sites with the UTHSCSA campus. (NOTE: This activity was in process at the time of the initial visit in June, 1994. Installation of the equipment began in January, 1995.)

Thank you for the opportunity to provide comments on the draft of the report. We believe that the report contains very positive recommendations for the AHEC Program as it addresses new technology and new opportunities that are now being presented.

Yours most sincerely,



Charles O. Cranford, DDS
Vice Chancellor for Regional Programs
Executive Director, AHEC Program

COC:he

cc: Ocie Harris, M.D.
Lou Coccodrilli
Cherry Tsutsumida

APPENDIX B

AHEC SUPPORT SERVICES IN THREE STATES: CASE DESCRIPTIONS

TABLE OF CONTENTS

INTRODUCTION	B-2
CASE DESCRIPTIONS	
● Arkansas	B-3
● Florida	B-7
● South Texas	B-11

INTRODUCTION

This appendix reports on support services provided by four Area Health Education Centers (AHECs) in three States: Arkansas AHEC, a statewide program based at the University of Arkansas for Medical Sciences, Little Rock; Nova Southeastern University AHEC Program, based in Miami Beach, which serves southern and central Florida and the University of Florida's North Florida AHEC Program, which serves northern Florida; and South Texas AHEC Program, based at the University of Texas Health Science Center at San Antonio, one of three AHEC programs in that State. Our intent in selecting these sites was to provide information on a range of activities that AHECs might undertake to make the rural practice environment more attractive for health care professionals and to help them keep their clinical skills up to date.

We visited each of these AHECs for two-to-three days in June 1994. During our visits, we interviewed administrative personnel from the central AHEC program office and from individual AHEC centers affiliated with each program. Our visits included a review of documents and records kept by the AHEC. We also interviewed practitioners--physicians, nurse practitioners, nurses, and allied health personnel--who use these services, in an effort to get an assessment of their views.

In this appendix, we describe how individual AHECs provide support services, which we recognize are only one facet of an AHEC's operations. Each AHEC also provides clinical clerkships and training opportunities for medical and other health sciences students, such as nurses, nurse practitioners, pharmacists, and allied health professionals. Each AHEC either maintains or is affiliated with a primary care residency program for physicians. Each of these AHECs also has in place programs to recruit high school students to health careers, for example through summer health career opportunities camps.

To select the AHECs for our case studies, we relied on our review of Federal AHEC Program Office files and discussions with officials in that office to identify sites that might be instructive to us. To make our final selection, we relied on our own judgements about programs that would provide information to benefit our study and provide illustrative examples of how AHECs can help to meet the needs of rural practitioners.

We report on each AHEC using the same format. Following a background section, we describe what each AHEC is doing in medical library resources, continuing education courses, and telecommunications. We then draw some conclusions about the role that support services play for the AHEC and assess their responsiveness to practitioner needs.

ARKANSAS AREA HEALTH EDUCATION CENTER

OVERVIEW

Arkansas AHEC is a statewide program that has operated since 1973. Initially funded by State appropriations, Arkansas AHEC received its first federal AHEC support in 1985. Arkansas AHEC now operates on an annual budget of about \$14 million with 325 employees (including clinical faculty, residents, and administration). The AHEC program is coordinated through the University of Arkansas for Medical Sciences (UAMS) in Little Rock, the State's only medical school. Six AHEC centers operate in Arkansas. This case study is based on site visits to the AHEC program office in Little Rock, and to two AHEC centers in Pine Bluff and Fayetteville.¹⁹

Each Arkansas AHEC center operates as a group practice in family medicine. Each center provides a residency program for graduate medical students and preceptorships for undergraduate medical students, in addition to other services. The AHEC group practices are mainstream health care providers that compete with other private practitioners in their communities, while providing training opportunities for medical students and residents in a "real world practice environment."

MEDICAL LIBRARY RESOURCES

Each AHEC center maintains its own library that is linked to the UAMS medical library, the State's primary source of medical research literature. The UAMS library enables the centers to link with a five state regional library network and the National Library of Medicine (NLM). Four libraries have CD-Rom technology for accessing documents, and two have been designated as NLM access libraries. The six AHEC libraries served 65,000 patrons and conducted 24,000 searches.²⁰

Fayetteville AHEC library served over 6,000 users in 1992-93, 80 percent of whom were health professionals. According to data provided by the AHEC, 60 percent of these health professionals were physicians; about 16 percent of that subset were rural practitioners from Northwest Arkansas. Pine Bluff AHEC's data show that the library had more than 30,000 users in 1992-93. Health professionals accounted for 42 percent of the users; 48 percent were students and residents, and 10 percent were members of the general public. The AHEC librarian told us that 34 percent of the practicing professionals were from rural communities.

Pine Bluff AHEC has established the Southeast Arkansas Medical Information Center (SEAMIC), a consortium of 11 rural hospitals. The SEAMIC makes audio-visual materials available to staff at these member hospitals. These materials are available to a wide range of users--including x-ray technicians, medical records administrators,

hospital managers, dietitians, and housekeepers; in practice, nurses and nursing students account for about three-fourths of the 3,400 users.

CONTINUING EDUCATION

Each AHEC center in Arkansas determines the amount of continuing education that it will provide. The AHEC centers we visited offer only limited continuing education for physicians other than "noon conferences" for AHEC family practice residents. These noon conferences are daily training sessions at the affiliated hospital that feature lectures and discussions, led by local physicians and AHEC staff. Although the noon conferences are open to all local practitioners, in most cases only those leading the session are in attendance. In addition to these noon conferences, Pine Bluff AHEC hosts a monthly continuing medical education lecture series for local physicians, combined with a dinner meeting, and Fayetteville AHEC sponsors 18 to 20 courses for physicians from the AHEC service area, often in conjunction with a cosponsor such as a hospital or pharmaceutical company.

Arkansas' AHECs fill the need for local nonphysician continuing education to a limited extent. During the 1992-93 fiscal year, SEAMIC offered 29 courses on 13 different topics to member hospitals. These courses were attended by 620 individuals. These courses are directed primarily at nurses, but also are open to hospital managers and other staff. Pine Bluff AHEC also sponsored 19 emergency medical service training courses for cardiac life support.

Fayetteville AHEC sponsored 45 nonphysician practitioner continuing education courses, attended by 338 people in 1992-93. Nurses accounted for 74 percent of these participants. Nursing staff at the Fayetteville AHEC also took the lead in conducting a statewide survey and needs assessment that provides some instructive views on the types of continuing education that nurses are interested in. Staff nurses and hospital directors of nursing differed in their priorities. The directors ranked most highly the need for nurse training on:

- documentation and record keeping;
- motivating others;
- communication skills; and
- basic assessment.

Staff nurses, on the other hand, expressed the most interest in topics such as:

- care of patients with HIV;
- legal aspects of practice;
- ethical concerns; and
- clinical topics.

The two AHEC centers we visited focus their continuing education within disciplines, rather than on multidisciplinary education.²¹ The views of one of the AHEC center directors we spoke with provides an explanation. He told us that "doctors teach

doctors and nurses teach nurses. CE courses offered by nursing are open to other disciplines, but doctors rarely go to them."

TELECOMMUNICATIONS

Arkansas AHEC utilizes interactive video at two centers (Fayetteville and El Dorado) to give registered nurses an opportunity to advance educationally to a bachelors or masters degree. The UAMS School of Nursing purchased the video equipment with grant funds from the State Department of Higher Education.²² This program electronically links nursing students in the two centers with other students and instructors at the UAMS School of Nursing in Little Rock. Students receive theory and research courses directly from Little Rock through interactive video. The local AHEC center director of nursing education supervises the students' clinical education. The BSN completion course enrolls 30 students, and the MSN course enrolls 15.

This system is used for continuing education on a very limited basis. The nursing school staff cite three primary obstacles to its broader application. First, the grant used to purchase equipment was provided for nursing education, so that education naturally takes precedence over other activities. Second, the equipment requires a dedicated classroom; to use it for activities such as continuing education means that substantial advance planning and scheduling is needed to avoid conflicts. Third, at this time the equipment is available in only two AHEC centers, so it would not be accessible to practitioners elsewhere in the State.

CONCLUSIONS: The Role of Support Services in Arkansas

AHEC centers in Arkansas operate physician group practices, so support services play a limited role (with the notable exception of medical library resources which are seen as important for all local practitioners). Because the AHEC centers employ physicians directly, they already have preceptors on staff; the centers do not need to use support services to attract physicians to teach students.

▶ Medical Library Resources

Medical library resources clearly are the most important support services provided through Arkansas's AHECs. The AHEC libraries are an important source of overall medical information for practitioners throughout Arkansas, both those in the AHEC practice and those not affiliated with it.

The Arkansas AHEC program's medical library system provides widespread access to practitioners throughout the State to medical research literature. One practitioner we interviewed explained the significance of this system for practicing physicians, when he told us, "Sometimes it is good to get away [for continuing education], but what you really need is answers to questions that come up on a day-to-day basis." The AHEC center directors we spoke with cited the availability of medical library resources as an important attraction recruiting new physicians.

- ▶ Continuing Education Courses

Providing continuing education courses for physicians is not a major focus of these AHEC centers. Physicians indicated that continuing education courses are readily available elsewhere, either through local meetings (*e.g.*, the local medical society) or at major conferences out of state.²³ In addition, as a staff model group practice, each AHEC center can reduce the isolation of the center's physicians.

There does appear to be a need for continuing education for allied health professionals. Arkansas AHECs, however, are primarily physician-focused organizations. Consequently, continuing education for allied health professionals is not strongly institutionalized as part of the basic mission for this AHEC, meaning that it could be vulnerable in times of budgetary constraints.

- ▶ Telecommunications

The Arkansas AHEC program has taken initial steps toward expanding telecommunications through long distance interactive video education for nurses. This initiative appears to be well supported and liked by those who use it. It holds promise for use in continuing education programs, particularly for allied health practitioners and nurses. We were informed by allied health faculty we spoke with, and by nursing faculty in the AHEC center without interactive video, that they wished it were available for them. The AHEC should be well positioned to help advance telecommunications because it has direct access to and involvement with the system used in nursing education.

Nurses enrolled in the interactive video course in Fayetteville (roughly 200 miles from Little Rock) told us about two major advantages. First, they are able to continue living at home, rather than having to move to Little Rock. Second, they are able to continue their current nursing practice while pursuing a degree, rather than becoming full-time students.

We discussed this approach with faculty for allied health programs in both Pine Bluff and Fayetteville. Those at Fayetteville told us that the technology greatly facilitated education when they had been able to use it. Those at Pine Bluff thought that it would be very useful to have interactive video, both for initial training of allied health professionals and for continuing education.

The AHEC physicians, however, were skeptical about its potential for continuing education. Long distance technology is not used in the Arkansas AHECs for consultative or diagnostic purposes at this time. However, they are making plans to establish a telemedicine program in the future. One physician told us that compressed video would be a waste of time for physicians' education. He agreed that it might be useful for consultation--but he, personally, "would rather just pick up the phone and call someone" he knew.

FLORIDA AREA HEALTH EDUCATION CENTERS

OVERVIEW

Four AHEC programs operate in Florida. We visited two of these programs,²⁴ where we met with staff from two centers within each program, as well as providers affiliated with community and migrant health centers (CHCs), county public health departments, and practitioners in private practice. It is in these clinical sites that AHECs provide the bulk of their student training and the substantial share of their support services. Although there are four different AHEC programs in Florida, from a statewide basis they may be viewed as a single network. The State of Florida appropriated \$6.5 million for AHEC programs in fiscal year 1994.

Nova Southeastern University AHEC Program, based in North Miami, received its initial Federal AHEC funding in 1985. This program includes two AHEC centers. Everglades AHEC Center, based in West Palm Beach, serves ten counties in Southern Florida. Central Florida AHEC Center, based in Apopka, covers nine counties.²⁵

The University of Florida's North Florida AHEC Program, based in Gainesville, received its first Federal AHEC award in 1992. Two North Florida AHEC centers are fully operational: Suwannee River AHEC Center, based in Alachua, covers a 12 county area in north central Florida, and Big Bend AHEC Center, based in Tallahassee, covers 14 counties in the Florida Panhandle. Two additional centers are in the early stages of operation, and one more is in the planning stage.²⁶

MEDICAL LIBRARY RESOURCES

► Medical Library Resources at Nova Southeastern University AHEC Program

The focal point of this AHEC's "library without walls" is a dissemination service for learning resource materials. The AHEC distributes the tables of contents from about 40 journals to 80 practice sites in which it places students and residents.²⁷ In addition, it distributes texts and other materials from the AHEC's clearinghouses on HIV/AIDS, child abuse, and ethnocultural issues in health care. Nova Southeastern data show that the library delivered 3,152 information requests in the July 1992-June 1993 fiscal year, and 4,291 from July 1993 to June 1994.

The Nova Southeastern University AHEC Program has provided computers to 12 CHCs and county public health departments where significant student training takes place. In order to utilize these computers to conduct literature searches, the AHEC program provides Grateful Med software and on-site training in its use to preceptors and other staff in those sites.

► Medical Library Resources at the North Florida AHEC Program

North Florida AHEC emphasizes a computerized reference service using CD-ROM technology through the Florida Health Information Network (FHIN), in the University of Florida School of Medicine. The FHIN is available to any physician or health services provider in Northern Florida on a subscription basis at \$200 per year. As an incentive to work with its students, AHEC gives its preceptors a free subscription. The AHEC provides computer terminals for its permanent teaching sites--those in which students are regularly placed--so that practitioners can access this service directly.²⁸ In the 15-month period ending in June 1994, the AHEC had interactions with 173 individuals, 55 percent of whom were medical students.

CONTINUING EDUCATION COURSES

These AHECs target their continuing education courses at CHCs and county public health departments, the settings on which they focus for clinical placements. The AHECs have used formal needs assessments to identify continuing education needs, but the staff believe that more useful insight comes from less formal methods, such as recommendations made in written evaluations of other continuing education programs.²⁹ In addition, the statewide association representing community health centers works with the AHECs to identify multidisciplinary training needs of staff in those centers.

AHEC staff we spoke with indicated that topics related to AIDS and HIV are of paramount interest to practitioners. Other topics of interest frequently mentioned included:

- pesticide exposure;
- early breast cancer detection;
- tuberculosis and other infectious diseases;
- procedural skills (e.g., joint injection and aspiration, or colposcopy training);
- identification of domestic abuse;
- cultural sensitivity in providing care to members of immigrant and minority groups;
- training in a second language (primarily Spanish and Creole); and
- avoiding staff burn out.

AHEC-sponsored continuing education is important for nurses and allied health professionals. From 1991 through 1993, almost 11,000 participants attended continuing education programs sponsored by these 2 AHEC programs. Nine percent of participants were physicians, 37 percent were nurses and nurse practitioners, 40 percent were allied health professionals, and 15 percent were other health professionals.³⁰

Data from Nova Southeastern show that 58 percent of continuing education courses were provided for health care professionals employed in CHCs or county public health departments in 1992-93. The North Florida AHEC does not maintain data in this

format; qualitatively, though, during our site visit we met with a number of CHC and health department physicians and staff in North Florida who noted that the AHEC had sponsored continuing education courses in their practice sites.

TELECOMMUNICATIONS

AHECs' use of telecommunications in Florida is still in an early stage, with little telemedicine or long distance education provided. The Florida AHECs joined with the State Department of Health and Rehabilitative Services (DHRS) in the Spring of 1994 to coordinate a teleconference on current treatment for tuberculosis.

Because of its proximity to the DHRS central office in Tallahassee, Big Bend AHEC Center took on a prominent role in coordinating conference details. All of the AHEC centers in Florida took an active role in conducting the conference. The program utilized a case presentation method, with a pre-conference instructional guide. Prior to the actual televised program, staff solicited questions from conference registrants by fax. The speaker reviewed these questions and attempted to address them in his presentation. The teleconference ran for one and one-half hours. Teleconference sites included CHCs, county public health departments, nursing homes, and community colleges. Requirements were a satellite dish (\$5,000-\$7,000), TV monitor with a special unit, and a hand held telephone set. The result was a conference that reached 1,080 participants at 77 sites at a delivery cost of about \$2 per person.

CONCLUSIONS: The Role of Support Services in Florida

Support services play an important role in these AHECs' overall operations. The AHECs use support services to develop and solidify relationships with the community-based practitioners who serve as preceptors for AHEC students. These clinicians--practicing in community health centers, county health departments, and private practice--are an important educational resource for the AHECs, because they practice in the sites in which AHEC students are trained.

The AHECs target their preceptor and training sites for special attention with library resources and continuing education. By providing support services in these sites, AHECs are able to help these practitioners maintain their skills. In addition, these support services provide a way through which AHECs can provide tangible assistance to those practitioners who form their educational base in the community.

► Medical Library Resources

In both AHECs we visited, practitioners told us about the usefulness of these types of services. One county health officer rated medical library resources as the most useful service that AHEC provides. The medical director of a community health center told us that having access to a medical library was critical in her practice. Another physician said that access to medical library resources is important to her because she often feels cut off from academic medicine. The medical director of a county public

health unit challenged all the practitioners associated with the department to use the tables of contents services, because they "would really be stupid not to use these resources." The staff took him up on this challenge, and that one unit now accounts for 20 percent of the total information requests received by the AHEC.

▶ Continuing Education Courses

We did not formally evaluate continuing education's impact on practitioner retention; however, physicians we met with told us of its importance. An AHEC preceptor in private practice typified the views shared by others when he said that "Once you're out in the community, you're it. This is not the kind of training that you get on grand rounds at a teaching hospital, but giving the local hospital staff something to keep current is critical." Another physician we spoke with went so far as to credit the availability of AHEC-sponsored continuing education in his rural CHC as a key factor in attracting two new physicians to the area. From the point of view of the CHCs, the AHECs fill an important need. The director of a group of CHCs told us that "AHEC is our training arm. Without AHEC we couldn't put this training on."

▶ Telecommunications

Practitioner reactions to telecommunications are not clear cut. According to those involved with coordinating the TB program, evaluations showed that participants liked it as a learning mode. As one physician told us, this was a "good example of how to use technologies at the site. Everyone got to watch it; the course came to us, and we were too busy to go out of town for it." But for other practitioners, this technology has not been completely accepted. Despite the apparent success of the TB televideo conference, one physician expressed concern about potential problems with the equipment. She also complained that "even if it all works fine, it still requires a time commitment and it won't be as personal" as more traditional programming.

State officials told us that Florida is the only State to have a dedicated network for public health professions. The DHRS owns this network and plans to utilize it for additional state-activated "Clinical Hot Topics" series. The four Florida AHECs have formed a Statewide educational programming committee to address the need for additional teleconferences. Three additional teleconferences are planned for the 1994-95 fiscal year on topics of domestic violence, and ethnocultural sensitivity.

SOUTH TEXAS AREA HEALTH EDUCATION CENTER

OVERVIEW

The South Texas AHEC Program (STAHEC), based at The University of Texas Health Science Center at San Antonio (UTHSCSA), began operation in October 1990. South Texas is one of three AHEC programs in the State.³¹ This AHEC program serves a 48,000 square mile area from San Antonio to the Texas-Mexico border. During our visit, we met with staff from the STAHEC program office and the Lower Rio Grande Valley AHEC Center in Weslaco, and with practitioners served by that AHEC center. This center was the first established in this program and has been in operation since January 1991.³² Its service area contains a population of about 800,000 people in the 4 southernmost counties of Texas. Three community/ migrant health centers and one State-designated rural health clinic are located in this area.

MEDICAL LIBRARY RESOURCES

In addition to facilitating access to the medical library at UTHSCSA, South Texas AHEC Program uses a circuit rider librarian to take medical library resources to practitioners. Based at the AHEC program office in San Antonio, the circuit rider's primary clients are a consortium of hospitals and health care providers in the Lower Rio Grande Valley area served by the AHEC center. Consortium members pay a membership fee that covers a portion of the cost of the service.³³

The librarian spends one week each month visiting the consortium members and other providers in the Rio Grande Valley. During her circuit, she provides training on how to access various data bases.³⁴ The librarian conducts searches for practitioners, using a lap top computer with fax-modem capability. When not riding circuit in the Valley, she is accessible through a 1-800 telephone number. She gives out her home telephone number to all of her clients and takes the lap top computer home at night and on the weekends so that she can conduct emergency literature searches, if needed.

In addition to the circuit rider, AHEC has placed a permanent computer with Grateful Med software in Brownsville Community Health Center and Valley Baptist Medical Center. These facilities host primary care residency rotations and student preceptor programs which the AHEC sponsors.

South Texas AHEC focuses on the circuit rider librarian approach for two primary reasons. First, it meets the need for information required by practitioners in the community. Between October 1990 and August 1993, AHEC data show that the circuit rider system completed 3,425 searches and delivered 12,671 documents. The AHEC calculates that the value of this on-line searching and document delivery totals more than \$100,000 in direct costs.

Second, the circuit librarian is a strong marketing tool for the AHEC. Although labor intensive, this service continually demonstrates AHECs' presence and services to practitioners. The circuit riding librarian model reinforces the availability of medical library resources, as well as the role that AHEC can play in helping practitioners.

CONTINUING EDUCATION COURSES

South Texas AHEC provides little continuing education directly. Fiscal year 1992-93 data show that the AHEC provided continuing education for 225 professionals. Allied health professionals comprised 51 percent of participants, nurses 29 percent, and physicians 19 percent. Instead of developing a separate continuing education capacity, the STAHEC program office and the centers support continuing education offered by the individual health professions schools. Each UTHSCSA professional school--medicine, nursing, dentistry, and allied health--as well as UT-Austin's extension pharmacy program has its own office of continuing education.

The AHEC centers support the continuing education provided by these schools by giving information on the needs of community practitioners to these continuing education offices, based on input from community advisory committees, with support and assistance from the STAHEC program office. The AHEC centers also coordinate and publicize continuing education that is available locally, and provide some financial support for program offerings requested for a local area. The AHEC routinely conducts instructional development programs for new preceptors or community-based clinical faculty.

TELECOMMUNICATIONS

In 1993, the AHEC sponsored a month-long telemedicine demonstration project. The goals of this project were to demonstrate the use of telemedicine and telecommunications between the UTHSCSA and the AHEC-affiliated Family Practice Residency Program in McAllen, over 200 miles away. The demonstration included:

- A series of lectures, seminars, and grand rounds on topics such as orthopedics, dermatology, and neonatal resuscitation;
- Consultations and case presentations in obstetrics, pediatric cardiology and pediatric neurology; and
- Hands-on demonstration and use of electronic imaging equipment, microscopes, and stethoscopes.

All equipment was donated by private vendors. Educational programs were based at the Health Science Center. In McAllen, family practice residents and staff physicians, community physicians, medical students, nurses, and allied health staff participated. Most lectures were delivered from UTHSCSA; some sessions were interactive, with presentations from both settings. In addition to the practitioners who attended the

San Antonio sessions, participants in McAllen included 88 people for the lectures, 29 in the consultation sessions, and 14 for the equipment testing.

South Texas AHEC also uses two-way interactive video between the Health Science Center at San Antonio and the University of Texas campus in Brownsville to provide nursing courses for a BSN-MSN degree program. The program enrolls 29 students and provides 250 classroom hours per semester.

The Telecommunications Network of Texas, an existing network housed in the Texas Department of Education, also has some experience with providing live audio (via telephone lines) continuing education for credit for health care providers, along with visual materials (such as slides) to accompany the audio broadcast.

CONCLUSIONS: The Role of Support Services in South Texas

For the South Texas AHEC, support services is one important way of providing outreach and tangible services to rural practitioners, particularly those involved in training their students. The director of a community health center summarized this importance when she noted, "AHEC is important to our overall work. It provides residents, students for training, and helps to support the CHC's efforts." One rural practitioner we interviewed here summarized the need for support services when he told us, "The hardest thing about practicing in a rural area like ours is that you don't have an academic community to provide a life line to new ideas."

▶ Medical Library Resources

The medical library resources meet an important need. The AHEC staff and local practitioners told us that medical library facilities in this area are minimal, even at the local university campus with a school of nursing. They cited a lack of available books and journals, as well as difficulty in providing those materials to professionals located at a distance from the library. For many physicians, the librarian offers the only access to professional journals outside of their own personal libraries.

The AHEC program also faces opportunity to expand the circuit riding library program as it develops AHEC centers in new geographic areas. This opportunity, however, presents a challenge to AHEC: How to expand the service to other areas, given the staffing requirements and cost of meeting the increased demand, and how to ensure that it this resource is accessible to all practitioners in the area, not just members of the consortium.

▶ Continuing Education Courses

Additional opportunities exist for continuing education provided by this AHEC. As we note, AHEC provides little continuing education itself, relying instead on the programs provided by the individual health professions schools at UTHSCSA. In our interviews in the Lower Rio Grande Valley, practitioners expressed a need for

additional continuing education focusing on three areas. First, we heard of the need for multi-disciplinary continuing education. While the continuing education provided through the health professions schools meets the needs of the professions, it tends to be isolated within individual disciplines, rather than cutting across them.

Second, practitioners expressed a need for locally-provided continuing education. This is a particular need for nonphysician and allied health personnel, for whom travelling to San Antonio or Houston for continuing education may be prohibitively expensive for them or their employers.

Finally, we heard about a need for continuing education that addresses specific local problems unique to this area, rather than having to pick from a broader agenda of health care issues. One nurse expressed this as, "We don't need any more training about home health visits, but we do need education on asthma, diabetes, psycho-social skills, and cultural sensitivity."

▶ Telecommunications

The South Texas AHEC Program has been actively involved in examining telecommunications' potential, both for providing nursing education and for continuing education and telemedicine demonstrations. AHEC staff note that they are committed to increasing the use of telecommunications for all types of medical providers.³⁵ The AHEC views telecommunications as a means to circumvent cost- and travel-restrictions on provider learning. Community practitioners and administrators believe that telecommunications can fill an important need. The administrator of a community health center summarized these views when she told us that her local continuing education committee is "very excited about telemedicine" as a way of delivering information to local practitioners.

The telecommunications demonstration provided information to practitioners. The practitioners also identified some problems that need to be overcome if telecommunications are to be an effective method for providing long distance education. On the positive side, the demonstration evaluators found that practitioners agreed about the potential for the technology. However, participants in the workshops raised questions about its current design. They expressed reservations about diagnostic telemedicine, primarily because of problems with the equipment.³⁶ In the telecommunications demonstration, it appears that technical problems with the equipment--not practitioner interest--led to the negative views. To address these problems, STAHEC staff are attending workshops and are talking directly with equipment vendors. According to AHEC staff, the quality of the diagnostic equipment is improving, and the range of available equipment is expanding.³⁷

South Texas AHEC utilized the knowledge gained by the demonstration to develop a plan, finance the acquisition of equipment, and implement the South Texas Distance Learning and TeleHealth Network. Equipment installation began in January 1995, and the network links ten community clinical training sites with the UTHSCSA campus.

APPENDIX C

ENDNOTES

1. Other Federal efforts include:

- Support for educational institutions that train practitioners. This approach includes, the Health Education and Training Centers Program, Rural Interdisciplinary Training Grants, and Nursing Special Project Grants;
- Direct personnel placement strategies, such as the National Health Service Corps (NHSC);
- Reimbursement approaches, such as the Health Professional Shortage Area bonus payment program; and
- Direct delivery programs, such as Rural Health Centers and Community/Migrant Health Centers programs.

2. P.L. 102-408 established a model State supported program. This program requires a 50 percent hard dollar match from State funds in order to obtain Federal funding.

3. U.S. General Accounting Office, *Health Professions Education: Role of Title VII/VIII Programs in Improving Access to Care is Unclear*, July 1994, p. 4.

4. U.S. Congress, Office of Technology Assessment, *Health Care in Rural America*, OTA-H-434 (Washington, DC: U.S. Government Printing Office, September 1990), p. 318.

5. *Ibid.*

6. Charles O. Cranford, "Continuing Professional Educational Support Systems," *The National AHEC Bulletin*, IX (Summer 1991) 1: 1-2. Emphasis in original.

7. The offerings cover dozens of different subject areas, and it is not possible to identify the exact number of courses given on different clinical topics. Some applications do not contain course specific information. Other applications list course titles differently or aggregate courses according to different criteria.

8. One AHEC we visited sponsored a weekend-long retreat for rural preceptors, and plans to repeat it annually or more often. Another AHEC brings its preceptors together three times each year at the health sciences center. These sessions, taught for the most part by other preceptors, include courses on teaching, evaluating students, and handling problem situations.

9. The AHCPR guidelines issued to date are: *Acute Pain Management* (issued in March, 1992); *Urinary Incontinence in Adults* (March, 1992); *Pressure Ulcers in Adults* (May, 1992); *Cataracts in Adults* (February, 1993); *Depression in Primary Care* (April, 1993); *Sickle Cell Disease* (April, 1993); *Early HIV Infection* (January, 1994); *Benign Prostatic Hyperplasia* (February, 1994); *Management of Cancer Pain* (March, 1994); *Unstable Angina* (March, 1994); *Heart Failure* (June, 1994); and *Otitis Media with Effusion* (July, 1994).
10. University of Arkansas for Medical Sciences Area Health Education Centers, *Demonstration of Dissemination of Medical Technology Using Area Health Education Centers*, Contract No. RFP HRSA 240-BHP-24(0)MAD, October 1990 to January 1993, Executive Summary, p. 8. These guidelines were not developed by AHCPR, but were the product of another PHS effort, a consensus development conference of the National Heart, Lung and Blood Institute.
11. In two other States, the AHEC directors told us that they were cooperating with efforts of the State medical society to provide information to practitioners about managed care and health care reform.
12. These programs are designed for associate degree nurses or diploma nurses to earn bachelors' degrees or, in some cases for bachelors' level nurses to receive masters' preparation.
13. See, for example, John E. Wennberg, J.L. Freeman, R.M. Shelton, and T.A. Bubolz, "Hospital Use and Mortality among Medicare Beneficiaries in Boston and New Haven," *New England Journal of Medicine* 321 (October 26, 1989)17: 1168-1173.
14. The Office of Technology Assessment has noted, for example, that "rural areas are increasingly competing with urban practices (such as those associated with health maintenance organizations) for primary care physicians." OTA, p. 18.
15. See, for example, Washington Statewide Office of Rural Health, *Implementing Health Care Reform: Setting a Course for Rural Washington*, Workshop Summary, November 9-10, 1993, Seattle.
16. One AHEC director in a rural State summarized this view when he noted that, "Our physicians don't even know how to spell HMO."
17. See, for example, "Peering into 2010: A Survey of the Future of Medicine," *The Economist*, March 19, 1994.
18. The ORHP sponsored a "Rural Telemedicine Workshop" in November 1993 that brought together Federal and State officials, researchers, and members of the business community to address issues related to telemedicine. See, "Reaching Rural: Rural Health Travels the Telecommunications Highway," Office of Rural Health, 1994, for a summary of conference proceedings. A report prepared for ORHP also addresses the potential of telecommunications in detail; see John P. Witherspoon, Sally M.

Johnstone, and Cathy J. Wasem, *Rural TeleHealth: Telemedicine, Distance Education and Informatics for Rural Health*, Western Cooperative for Educational Telecommunications, Boulder, CO, September 1993.

19. Other centers operate at Jonesboro, Fort Smith, El Dorado, and Texarkana. Only Pulaski County (Little Rock) is not covered by an AHEC center.

Pine Bluff AHEC is located on the grounds of the Jefferson County Regional Medical Center. Professional fees provide 58 percent of their \$4.9 million budget, 36 percent comes from State appropriations, and the balance from community support, such as the local hospital. These funds support the AHEC, one community health center, and a library/learning resource center.

Northwest AHEC, based in Fayetteville, is located about two miles from the Wilmington Regional Medical Center, where hospital-based training of residents takes place. Northwest AHEC operates on an annual budget of \$3.2 million--about 38 percent from professional fees, 38 percent from million in state money, 10 percent from grants for special projects, and 15 percent from local hospital support.

20. The access libraries are located in Fayetteville and Jonesboro. Being an NLM-access library means that they provide information, training, and demonstrations on Grateful Med to users who are not affiliated with AHEC, as well as to those who are. The data on users is a duplicated count.

21. AHEC staff told us, however, that at the El Dorado AHEC center, there is a much greater focus on multidisciplinary continuing education.

22. The equipment costs about \$100,000 per unit.

23. One physician told us that "More CE goes on in the hallways of the hospitals than in all the local courses combined."

24. The other programs are located at the University of Miami Medical School (which has two AHEC centers) and the University of South Florida School of Medicine in Tampa, a new program with two AHEC centers in the planning stage.

25. Southeastern College of Osteopathic Medicine, the original home of this AHEC, merged with Nova University in January, 1994 to form Nova Southeastern University. The university includes several off-site campuses that utilize electronic learning facilities and already operates a technology center that includes broadcast studios with interactive compressed two-way video.

Five of the 19 counties in the Nova Southeastern University AHEC Program area have been designated as county-wide Health Professionals Shortage Areas (HPSAs), and the remaining 14 have partial-county HPSA status. Twenty-one CHCs operate in 15 of the 19 counties.

26. In the North Florida AHEC, 33 of the 37 counties are either wholly or partially designated HPSAs. Four counties have no hospital, and six counties have only one hospital with 60 beds or fewer. Four CHC organizations operate in this area, many of them with multiple satellite clinics in rural communities.
27. The AHEC program office at Nova Southeastern maintains the journals and photocopies individual articles for distribution, while the Central Florida AHEC center librarian coordinates the distribution. A practitioner who would like a copy of an article from any of these journals writes his or her name and address on the photocopied contents page and returns it to the library coordinator. A Nova Southeastern student photocopies the article and mails it to the requestor.
28. While the practitioners have the option of contacting the university library directly, according to AHEC staff few do so. The local AHEC center is viewed as a friendly intermediary. According to AHEC staff, most practitioners gain access to FHIN through a phone call to the local AHEC center, where a staff member is trained to narrow the search to identify references that would be of most use to the practitioner. The AHEC center staff then phones the AHEC medical librarian, who performs the actual search and faxes the reference and abstracts to the practitioner.
29. One of the early activities of North Florida AHEC was contracting with a local entity (e.g., the board of commissioners or county hospital) in each county to conduct a large scale survey on how AHEC could meet local needs, including continuing education. The staff reported to us that while this "was an interesting exercise," they found it most helpful to meet with locally developed groups of professionals to define needs.
30. This distribution also holds true for the other AHECs in the state. On a statewide basis, 8 percent on participants in AHEC-sponsored CE were physicians, 25 percent were nurses and nurse practitioners, and 67 percent attended multidisciplinary courses (1993). Virginia Fowkes, "The Florida Area Health Education Center Program, July 1992 through June 1993: Report to the Legislature."
31. The other Texas AHEC programs are based at Texas Tech School of Medicine in Lubbock and the University of Texas Medical Branch in Galveston.
32. Four other centers have opened more recently in Eagle Pass, Laredo, Del Rio, and Corpus Christi.
33. The consortium consists of 10 hospitals, 2 State mental health/mental retardation clinics, an affiliated family practice residency clinic, and a CHC. The South Texas AHEC Program is extending the circuit riding library concept to other areas of South Texas as new centers come on line.

The current subscription rate for a hospital is \$1,000 per 100 beds. In 1993 the circuit-rider librarian program cost about \$58,000 for staff, travel, subscriptions, and

fax services. South Texas AHEC covered about two-thirds of the cost, and consortium fees about one-third.

34. The librarian provides one-on-one instruction for anyone who wants to learn how to conduct his or her own searches, but she feels, at this time, that physicians have neither the time nor the inclination to conduct their own searches, they expect someone else to do so. She told us, "You can't just throw equipment at them. You need to establish a human connection for it to work."

35. For example, STAHEC program staff noted that they have written and submitted various proposals to State and Federal funding sources to further the use of telecommunications.

36. The demonstration evaluators note, "The most anticipated equipment turned out to be, perhaps the biggest disappointment." They cited problems with static and interference in using electronic stethoscopes, and insufficient light for the electronic otoscope. See, The University of Texas Health Science Center at San Antonio, "Telemedicine Demonstration Evaluation," pp. 6-7.

37. One vendor told the AHEC staff that it had made changes to equipment based on the evaluation from this demonstration.