Journal of the

National AHEC Organization

A Publication of the National AHEC Organization
VOLUME XXIX, NUMBER 1
Spring 2013

Collaborative Educational Innovations

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Volume XXIX, Number 1
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AHEC
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Special Introduction

Dedication to Lou Coccodrilli

Robert Trachtenberg, MS

Robert Trachtenberg, MS, is Executive Director, NAO.

Lou Coccodrilli

This edition of the *Journal of the National AHEC Organization* is dedicated to Mr. Lou Coccodrilli, who retired on January 3, 2013 as the Chief of the AHEC Branch of the Division of Public Health and Interdisciplinary Education, Bureau of Health Professions (BHPr), Health Resources and Services Administration (HRSA). Over his 40-plus-year career in government service, Mr. Coccodrilli led the administration of numerous BHPr training programs, totaling approximately $200 million annually. He also led the nationwide expansion of the AHEC Program, overseeing the program's growth from 18 AHEC programs and 40 AHEC centers in 18 states to a nationwide network of 55 programs and 244 AHEC Centers in 46 states, Guam, and Palau. His focus was always on increasing access to care for rural and underserved populations, improving the diversity of the health professions workforce, and exposing students to primary care and interdisciplinary training at community-based sites in underserved areas.

"Lou," as he is affectionately known, was a long-time champion and strong advocate of the AHEC Program, and worked assiduously to ensure that the AHEC Program maintain its standing and stature as a strategically vital HRSA program through many organizational, structural, and personnel changes at Health and Human Services (HHS) and HRSA. Amidst his AHEC Branch duties, Lou always found a way to support, mentor, and nurture his staff and colleagues, engage deeply with AHEC Program and Center Directors, and provide meaningful counsel to AHECs throughout the country as a means of maintaining focus on the essential work required to ensure that access to care for underserved populations was always advancing.

All AHECs and the National AHEC Organization owe Lou a huge debt of gratitude for helping to guide and shape the AHEC Program and therefore provide enhanced access to quality health care for an untold number of Americans. The National AHEC Organization and the network of AHEC Program Offices and Centers wish Lou the very best in his well-deserved retirement!

AHEC
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Editorial Overview

Collaborative Educational Innovations

Veronnie Faye Jones, MD, PhD, MSPH (KY); and Brenda Mitchell (CA)

V. Faye Jones, MD, PhD, MSPH, is Director of the KY AHEC program, Professor of the Department of Pediatrics, and Associate Dean of Minority and Rural Affairs in the School of Medicine at the University of Louisville.

Brenda Mitchell is the Program Manager for the California Statewide AHEC Program.

The true strength of the national AHEC program is being able to connect organizations with like missions and collaborate with educational institutions and community-based organizations. By convening meetings of national, statewide, regional, and local entities, AHECs are able to catalyze small amounts of funding into programs that help strengthen communities and equip them to develop sustainable programming to grow our national health workforce.

In this issue we have captured various articles that address the vital need to remove silos and replace them with alliances that address the very real needs for improving access and quality of care for underserved populations. Our lead article reflects an organizational change that offers sustainability to the Virginia AHEC program. The article by Gay Plungas discusses the Virginia Health Workforce Development Authority that brings together national and statewide partners to develop a health workforce master plan for the state. The author provides an innovative framework to address the necessity for a vibrant health professions pipeline that identifies, educates, recruits, and retains a diverse, appropriately geographically distributed and culturally competent quality workforce in the face of implementation of the Affordable Care Act and limited financial constraints. In addition, a piece by John Blossom represents another organizational change moving AHEC centers to hosted Community Clinic consortia and large clinic systems to strengthen the statewide California AHEC program.

Articles written by Bart Hallberg (SD), Karen Piantek (CT), and Kathy Suvia (CA) describe innovative academic partnerships to develop and institute comprehensive health careers activities and training for high school students. Samia Hussein (CT) describes a community need for a diverse emergency preparedness workforce leading to the development of an EMT training program geared for diverse young adults. Ray Christensen (MN) and Susan Jones (KY) describe two academic partnership-oriented programs developing interprofessional rural clinical and cultural experiences for medical, nursing, public health, and high school students. Angelica Christie (SC) covers an innovative partnership for at-risk undergraduate students for long-term academic success. The *Bench to Bedside* curriculum utilizes both video conferencing and an annual face-to-face summit to guide, mentor, and promote long-term academic success, personal growth, and professional development. Amanda Meloy's (WI) article describes a statewide health internship for undergraduate and graduate students interested in public health. Ragan Dubose-Morris (SC) describes educational partnerships that expand the reach of telehealth, including CME programming for rural health professionals. Mona Ketner (NC) describes the use of Action Learning Labs for quality improvement methods using a team approach to address specific health concerns.

Please enjoy this issue showing the benefits of collaborative educational and organizational interventions to address AHEC's mission and prepare for the healthcare workforce and training needs ahead.

VA

The Virginia Health Workforce Development Authority: A New Opportunity for the Virginia AHEC Program

Gay S. Plungas, MPH; Janet L. McDaniel, BSN, MPH, PhD; and Erin E. Silliman

The Virginia Health Workforce Development Authority (VHWDA), established by the Virginia General Assembly in 2010, begins the implementation phase of a statewide system for health workforce pipeline development. The VA AHEC Program is an integral part of the VHWDA infrastructure.

The Commonwealth of Virginia, like other states nationwide, is challenged by shortages in primary care health professionals, the geographic maldistribution of these professionals, and a lack of diversity in the health workforce. Virginia has over a decade of incremental and forward-moving policy research, planning, and infrastructure development pertaining to the healthcare workforce. These efforts include, but are not limited to, study reports by the Virginia Joint Commission on Health Care and the Governor's Health Reform Commission, the establishment of the Virginia Rural Workforce Council and the State Health Commissioners' Health Workforce Advisory Committee, and the development of the Virginia Health Workforce Data Center to ensure uniform data collection on licensed health professionals. During the development of Virginia's State Rural Health Plan in 2007, the fragmentation and lack of coordination of the healthcare workforce pipeline was identified as a key barrier to Virginia's ability to effectively recruit and retain health professionals in rural and other medically underserved areas.

As a result, in spring 2009, the Virginia Department of Health (VDH) was directed by the Virginia General Assembly to lead a study regarding the establishment of a statewide system for health workforce pipeline development and to make recommendations regarding the infrastructure that would be needed to implement that system. The VDH engaged stakeholders through a series of seven meetings and conference calls over the course of six months to obtain input on recommendations regarding *Code of Virginia* language (see Figure 1) for establishing an Authority structure to facilitate the development of the health workforce pipeline in Virginia. Ultimately, over 70 individuals representing over 50 agencies, organizations, and associations provided input and came to consensus on a mission statement and a set of nine core functions. This resulted in enabling legislation that was unanimously passed by both the Virginia House and Senate and signed by Governor Robert McDonnell during the 2010 General Assembly, thus establishing the Virginia Health Workforce Development Authority (VHWDA). Under Virginia law, an Authority is a quasi-governmental entity that has elements of both governmental and non-profit organizations.

Although this enabling legislation took effect on July 1, 2010, no state funding was allocated to the VHWDA due to the projected $1.8 billion revenue shortfall statewide, yet a Board of Directors was established as designated by the Code of Virginia. Simultaneously, authorized under Section 5102 of the Affordable Care Act (P.L. 111-148), the U.S. Department of Health and Human Services, through the Health Resources and Services Administration (HRSA), announced the availability of funds for the State Health Care Workforce Development Grant in June 2010. The VDH Office of Minority Health and Health Equity led the collaborative effort in developing an Implementation Grant proposal on behalf of the VHWDA, bringing together partners from and leveraging the resources of multiple private and public entities, including the Virginia Department of Health Professions, Virginia Workforce Council, Virginia Health Care Foundation, Virginia Community Health Care Association, Virginia Academy of Family Physicians, and the Virginia AHEC Program.

In September 2010, Virginia was the only state in the nation to be awarded a State Health Workforce Development Implementation Grant for $1.93 million with the notion that Virginia could serve as a national model for state health workforce efforts. The work plan of

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the Implementation Grant focused on two overall goals: 1) To set up a statewide infrastructure required for health workforce needs assessment and planning that maintains engagement by health professions training programs in decision-making and program implementation; and 2) To encourage regional partnerships that address health workforce pipeline development needs and promote innovative healthcare workforce career pathway activities. The work plan spans two years, but due to an unavoidable delay in staffing the VHWDA, a one-year No Cost Extension has been granted by HRSA to VDH through September 2013 to ensure that all activities of the grant are completed.

§ 32.1-122.7. Virginia Health Workforce Development Authority; purpose.

A. There is hereby created as a public body corporate and as a political subdivision of the Commonwealth the Virginia Health Workforce Development Authority (Authority), with such public and corporate powers as are set forth in § 32.1-122.7:2. The Authority is hereby constituted as a public instrumentality, exercising public and essential governmental functions with the power and purpose to provide for the health, welfare, convenience, knowledge, benefit, and prosperity of the residents of the Commonwealth and such other persons who might be served by the Authority. The Authority is being established to move the Commonwealth forward in achieving its vision of ensuring a quality health workforce for all Virginians.

B. The mission of the Authority is to facilitate the development of a statewide health professions pipeline that identifies, educates, recruits, and retains a diverse, appropriately geographically distributed and culturally competent quality workforce. The mission of the Authority is accomplished by: (i) providing the statewide infrastructure required for health workforce needs assessment and planning that maintains engagement by health professions training programs in decision making and program implementation; (ii) serving as the advisory board and setting priorities for the Virginia Area Health Education Centers Program; (iii) coordinating with and serving as a resource to relevant state, regional, and local entities including the Department of Health Professions Workforce Data Center, the Joint Legislative Audit and Review Commission, the Joint Commission on Health Care, the Southwest Virginia Health Authority, or any similar regional health authority that may be developed; (iv) informing state and local policy development as it pertains to health care delivery, training, and education; (v) identifying and promoting evidence-based strategies for health workforce pipeline development and interdisciplinary health care service models, particularly those affecting rural and other underserved areas; (vi) supporting communities in their health workforce recruitment and retention efforts and developing partnerships and promoting models of participatory engagement with business and community-based and social organizations to foster integration of health care training and education; (vii) advocating for programs that will result in reducing the debt load of newly trained health professionals; (viii) identifying high priority target areas within each region of the Commonwealth and working toward health workforce development initiatives that improve health measurably in those areas; and (ix) fostering or creating innovative health workforce development models that provide both health and economic benefits to the regions they serve.

(1990, cc. 874, 877; 1997, c. 329; 2000, c. 480; 2010, cc. 187, 488.)

Fig. 1. VHWDA Code of Virginia

The Virginia Health Workforce Development Authority

In January 2012, an Executive Director of the VHWDA with previous experience in an AHEC Program Office and as an AHEC Center Director was hired to oversee operations and to serve as the Program Director for the Virginia AHEC Program. The Virginia AHEC Program governance transitioned to the VHWDA due to the congruent mission and goals of both entities. The organizational structure of the VHWDA includes a governing Board of Directors and a consortium comprised of the states' five medical schools to act in an advisory capacity for the Virginia AHEC Program—this consortium model meets HRSA requirements for the receipt of federal AHEC funds. Additional AHEC staffing includes a part-time Director of Program Evaluation and newly created VHWDA positions include a Director of Development and Communications and a VHWDA Fiscal Administrator. In addition, the VHWDA funds portions of positions within the Virginia Department of Health Professions' Health Workforce Data Center through the partnerships created for the HRSA Workforce Implementation Grant. These VHWDA positions also provide support to the Virginia AHEC Program Office and the eight regional AHEC Centers.

A series of regional meetings was convened across the Commonwealth to assess workforce needs statewide, introduce the VHWDA, and to provide a mechanism by which the community could identify key focus areas for the VHWDA. The regional AHEC Directors were asked to identify local leaders and stakeholders in health workforce development as regional meeting participants. These regional meetings were successful in stimulating discussion among health workforce stakeholders across the Commonwealth and identifying potential areas of partnership and collaboration. Stakeholders identified key areas of focus/value of the VHWDA:

- To provide a vision or model of a state infrastructure to address workforce issues and develop an action plan;
- To report to legislators and key decision makers about regional and statewide needs by serving as a communication bridge between key community stakeholders and the Governor's Office/Administration;

- To function as a "one-stop-shop" of health workforce information for Virginia;
- To provide actionable data and information that can be integrated with academic health centers/programs, community colleges, hospital systems, and region-specific data so regional data is accurate and smaller regions are not absorbed by larger ones;
- To convene regional meetings to bring stakeholders to the table to enact change.

In November 2012, the VHWDA Board of Directors met with the Commonwealth of Virginia's Secretary of Health and Human Resources to initiate a strategic planning process to identify short-term and long-term strategies to meet the goals set forth in the Code of Virginia for the VHWDA and to discuss the fiscal sustainability of the VHWDA as it moves beyond Implementation Grant funding. An important short-term goal is redefining and reaching consensus on the future role of the Virginia AHEC Program in addressing healthcare workforce issues.

VHWDA and the Virginia AHEC Program

One of the nine core functions of the VHWDA as identified by the *Code of Virginia* is to serve as an advisory board and set priorities for the Virginia AHEC Program. A consortium of medical schools model was included in the VHWDA infrastructure with the eventual plan to transfer the federally funded HRSA grant funding for the Virginia AHEC from a medical school to the VHWDA. The inclusion of AHEC under the VHWDA was also an attempt to revitalize Virginia's AHEC program. The Virginia AHEC Program lost state funding in 2008 and changes in leadership and a lack of cohesion among the regional centers limited the overall impact of AHECs statewide, although each AHEC maintained a local presence. Traditional AHEC activities such as clinical rotations for health professions students have been coordinated through the health professions schools, although five of the AHEC centers assist with locating clinical sites and student placements. All AHEC centers participate in pipeline activities by distributing Virginia Health Careers Manuals to Guidance Counselors, middle and high school students, Workforce Investment Boards, dislocated workers, and other community groups. Centers also partner with community agencies and academic centers to sponsor pipeline activities such as summer camps, career fairs, internships, career counseling, cultural competency training, etc.

In order to stay financially viable after the loss of state funding, some of the centers shifted their emphasis to other initiatives to address community health workforce needs, such as training and placing medical interpreters in healthcare agencies. Other centers have excelled in offering continuing education programs for the current healthcare workforce, especially physicians.

The Virginia AHEC Program plans to capitalize on this opportunity to address the longstanding health workforce issues referenced in the introductory paragraph of this article as the Commonwealth of Virginia faces a "perfect storm" of emerging demand for primary healthcare services due to the implementation of the Patient Protection and Affordable Care Act, the aging of the state's population, and new population growth, especially among underrepresented populations.

The placement of AHECs within the VHWDA is an opportunity to provide new directions for the AHECs in statewide health workforce development. The VHWDA Board has identified three short-term key focus areas: *Pipeline* development from kindergarten through health professional education and training; assessing the statewide *Supply* of licensed and unlicensed healthcare professionals; and quantifying health professional *Demand* including community needs and healthcare employment opportunities. The AHECs were identified as a key resource to enhance awareness of health professions and to coordinate pipeline activities.

In summary, the Commonwealth of Virginia has created an opportunity to develop a statewide health workforce development strategy and has included the Virginia AHEC Program as an integral component of this strategy. The Virginia AHEC Program plans to capitalize on this opportunity to address the longstanding health workforce issues referenced in the introductory paragraph of this article as the Commonwealth of Virginia faces a "perfect storm" of emerging demand for primary healthcare services due to the implementation of the Patient Protection and Affordable Care Act, the aging of the state's population, and new population growth, especially among underrepresented populations.

The authors gratefully acknowledge Representative David Nutter, who introduced legislation in the VA General Assembly to create VHWDA; Dr. Kathy Wibberly, author of the HRSA Workforce Implementation Grant that currently funds VHWDA; and Ms. Linda Bohanon, who served the VA AHEC Program for 21 years and is currently the Grants and Fiscal Administrator for VHWDA.

California AHEC Program: Retooled

CA

H. John Blossom, MD

In the last decade and after 30 years of accomplishments, the California Area Health Education Center (AHEC) found that both its program office and eight centers were no longer adequate to respond to the health professions tasks at hand nor to the changed environments, both local and statewide. Put succinctly, the program found itself using out-moded management styles and centers increasingly were devoting time and resources to fiscal survival at the expense of programmatic activities. The last decade has seen a strategic retooling. First, we moved from top-down management to a more horizontal and participatory management style. Centers, program leadership, and outside stakeholders convened and endorsed several principles. Evaluation was identified as a core value. Group consensus emerged from a process led by a senior faculty member and enumerated characteristics of a successful AHEC center. These formed the basis of a self-assessment process that has allowed for gradual and intentional growth towards consistency in program intent and evaluation center by center. To better meet Health Resources and Services Administration (HRSA) goals and to stabilize centers, a deliberate relocation of centers from financially vulnerable independent corporations to community health centers (CHCs) and networks was undertaken. We found that centers hosted by CHCs began to thrive, better meet goals, and achieved better financial security. The early results of this process were so impressive that we were able to reopen multiple dormant centers, increasing from 8 to 14 centers, though not all federally funded.

We found that centers hosted by CHCs began to thrive, better meet goals, and achieved better financial security. The early results of this process were so impressive that we were able to reopen multiple dormant centers, increasing from 8 to 14 centers, though not all federally funded.

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The retooling centers began to collaborate among themselves. Three in the Los Angeles area developed a joint area health careers fair that garnered its own support. Multiple centers also chose to participate in the HRSA-funded disaster preparedness program as cal-PEN, the California Preparedness Education Network. It received accolades for design and conduct of preparedness education for community health centers throughout the state. Even though its congressional funding expired, it has served as a template for more activities. Multiple centers are participating in HRSA-funded activities conducted by the state primary care office such as the SEARCH program and a recent project to increase retention of National Health Service Corps (NHSC) loan and scholarship recipients. On a side note, the program office received an *Aurora* award for collaborative production of four broadcast-quality TV shows that were nationally seen on UCTV (and web archived at www.uctv.tv).

Looking back, the logic underpinning these developments seems quite strong. More participatory management styles seem quite appropriate to organizations working to link community to academia in order to accomplish change and development locally. Basing centers at CHCs means that the health professions recruitment, training, and retention activities of AHECs occur where the intended activities most effectively can take place.

When the Carnegie Commission report called for the creation of the AHEC program, it based its assumption on the relevance and proven track record of the widely appreciated agricultural extension programs located throughout the US. These agricultural extension programs were not placed in academic centers; they were located in rural communities. Just so, California centers are located in the areas where underserved families live and seek health care.

The retooling has also had the positive outcome of making the statewide program not only more visible to partners, but also moved the program from the role of interesting friend to great collaborator.

CA

Community Partnerships Enhance Rural High School Pipeline

Kathy Suvia, MBA

Fig. 1. AHEC Staff demonstrate how to have fun with health careers.

There is no medical school or even a public university in the region. Few students have ever been on a college campus and many are from families where neither parent has a college degree.

With the demand for primary care providers and allied health workers in rural Northern California projected to increase due to an aging population, population growth, and federal healthcare reform, local stakeholders are keenly aware of the need to focus on the future workforce. Current shortages for healthcare professionals in California's rural areas are expected to increase even more dramatically as demand for care increases and the competition for newly trained clinicians and support staff becomes more intense. The Northern California AHEC and several partners are investing in local youth with a focus on "grow our own" pipeline strategies.

The Health Alliance of Northern California (HANC), the host organization for the Northern California Area Health Education Center (NC AHEC), is a regional trade organization of 11 free-standing federally qualified health centers, federally qualified health center lookalikes, a non-profit rural health clinic, and Indian health clinics located in the eight rural and frontier counties in Northern California. These organizations operate with the mission to provide services to all, regardless of their ability to pay, and to provide a vital safety net for the growing number of residents who have low income and no medical insurance. Maintaining current and future staffing capacity is a constant challenge for the clinic administrators.

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Along with the clinic members of HANC, a key partner in the NC AHEC pipeline projects is College OPTIONS, which helps students of all ages and their families in Shasta, Siskiyou, Tehama, and Trinity counties make informed choices about post-high school education by providing advisors in the schools, confidential financial aid advising, free workshops, and up-to-date informational material. College OPTIONS is a collaboration between California's two major public university systems, local community colleges, local private colleges and universities, the county offices of education, the California Education Round Table Inter-segmental Coordinating Committee (ICC), and local education stakeholders, as well as a local private foundation. By providing school and community-based college awareness and preparation services, College OPTIONS is making a difference in the lives of Northern California students and their families.

Background

The target area of the pipeline projects includes three rural counties in far Northern California beginning with Siskiyou, which is on the Oregon border and continuing south through Shasta and Tehama Counties along the I-5 corridor vertically through the center of California. Even with this interstate highway, much of the population of the counties to be served is very spread out, with some students riding the school bus for several hours each day to and from school. There is no medical school or even a public university in the region. Few students have ever been on a college campus and

many are from families where neither parent has a college degree. The total percentage of graduates from local high schools who enrolled in postsecondary institutions in fall of 2010 was only 39%, well below California's average college enrollment rate of 51% and the national rate of 70% (California Postsecondary Commission/CPEC, 2010).

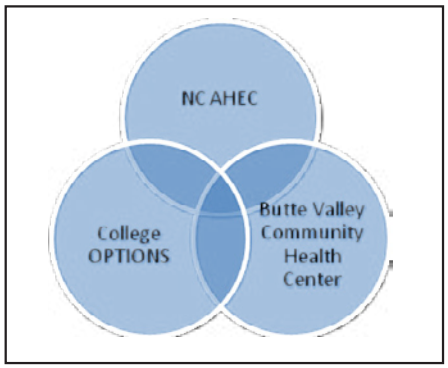

Fig. 2. AHEC and community partners find common interest in offering health careers orientation to high school students.

All of the counties targeted have received primary care, mental health, and dental health professional shortage designations. Ironically, there are local young people who could fill many of the primary care, allied health, and support roles that will be needed. However, there are few opportunities for youth to be exposed to viable health career options and the necessary training plans. Economic factors for the region exacerbate the problem, providing little encouragement to young people considering their future careers. The median household income for the region is significantly lower than that of California as a whole. Unemployment rates, as in many rural areas across the country, trend much higher than the state average, implying that young adults will need to move away to larger areas to secure employment.

Health Careers Orientation

Realizing their common mission of helping young people and communities, the NC AHEC and College OPTIONS joined forces in 2009 to reach out to local high school students about the opportunities within health care. The project began very simply with one workshop at a very small high school in Dorris, California; an agricultural community with a population of approximately 900 individuals and a high school student body of less than 100. Rose Wooldridge, the College OPTIONS Advisor for the high school, and Kathy Suvia, NC AHEC Center Director, pooled their information resources and developed an interactive curriculum that would inform, inspire, and encourage the students to consider careers in health care. See Fig. 1.

Out of that session, which included a Question & Answer period with an MD from Butte Valley Community Health Center (located across the street from the high school), three students came forward and wanted to volunteer at the health center. See Figure 2. Wooldridge, Suvia, and key members of the health center staff put together an orientation and Health Insurance Portability and Accountability Act (HIPPA) Certification lesson to prepare the students for their "work" at the clinic. Since that first cohort of student volunteers, students from the high school have volunteered at the health center each year. One recent student volunteer, Delaney Helms, summed up her experience by saying, "Volunteering is a good experience for anyone who wants to go into the health field." When asked her favorite thing about volunteering, she replied, "Working with the PA and trying to figure out what was wrong with the patient and how to treat it." See Fig. 3.

Continuing the partnership support, the NC AHEC has contracted with College OPTIONS for the past two years to offer the health careers orientation workshop at 16 high schools within the region. Since that first workshop in Dorris in late 2009, nearly 300 students have participated in this particular pipeline project.

Health Careers Summit

Seeing the value of connecting high school students with community health centers, the next step was to host a Health

Fig. 3. Pipeline student volunteer (left) with her mentor at Butte Valley Community Health Center

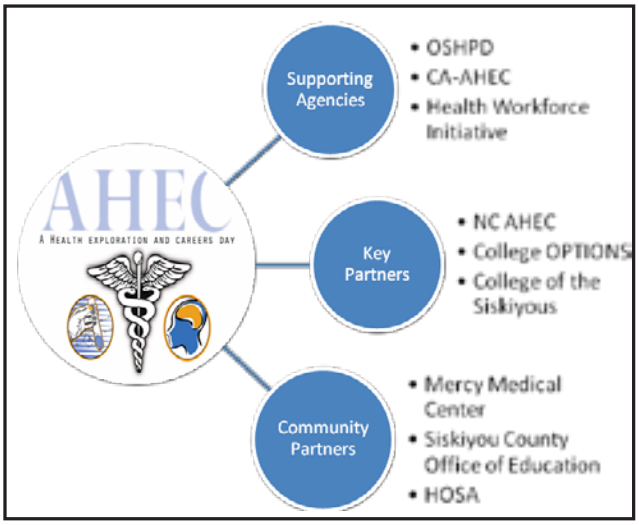

Fig. 4. Community partners work together to create AHEC Day event.

This was an extremely valuable project in exposing the students to campus life and offering a realistic look at medical school.

Careers Summit and invite health center representatives, College OPTIONS Advisors, and high school career counselors. The event was planned in a "train the trainer" model as a way to reach out to the large geographic area and remote communities and schools in the region. Along with plenty of activities designed to help the summit participants get to know each other and form community partnerships, the agenda included a program by the California Office of Health Planning & Development on health career opportunities in Northern California. Additional workshop components were an introduction to careers opportunities in public health and the HealthCorps program. In response to the significant educational costs anticipated by students, the scholarship and loan repayment benefits of NHSC were introduced.

The final portion of the day was a facilitated planning exercise for the summit attendees to identify opportunities for student experiences in the local health centers.

Medical School Field Trip

Building on the increased interest in medical careers, and factoring in the several-hundred-mile distance from the closest medical school or even a university, the Northern California AHEC sponsored a field trip to the University of California-Davis Medical Center in the spring of 2011. See Figure 4. As mentioned earlier, even with an interstate highway, much of the population of the counties served by the Northern California AHEC is very rural and remote with little opportunity to visit a college campus.

The successful field trip was offered to select students in the target area. Ten students from ten different high schools, all hand-picked by their school advisors, participated in the trip. Even more important was that the majority of the students were potentially first-generation college students. This was an extremely valuable project in exposing the students to campus life and offering a realistic look at medical school. A highlight of the trip was the chance to visit with medical school students who encouraged the field trip participants to reach out and go for their dreams. "If we can do it, you can do it!" was the message they shared.

End of the two-day trip comments included:

- *"I loved the med school because it was very hands-on. I enjoyed asking the med students my questions for college and financial aid."*
- *"The student panel inspired me to go after my dream of becoming a doctor and going back to work for my Native American tribe and working with my people. This was the best trip I've been on."*
- *"It was really impressive. It made me want to apply to their medical program. It gave us a really good feel of what it would be like."*
- *"At UCDMC I really enjoyed … the mock examination rooms and what it takes to be admitted to a medical school."*

As one of the students from that trip graduated from high school more than a year later, she shared her future plans, "I want to attend medical school and begin a career as a pediatrician. My ambition is to help many children all over

Fig. 5. Summit participants planning with "different hats"

Fig. 6. Northern California high school students enjoying a tour at UC Davis Medical School

the world and make a huge difference in children's lives." See Figures 7 & 8.

AHEC Day

The most recent collaborative pipeline activity, A Health Careers and Exploration (AHEC) Day, has expanded the AHEC and College OPTIONS partnership to include the local community college, College of the Siskiyous, and many other local stakeholders: See Figure 4.

- Health Workforce Initiative of the North/Far North Community Colleges
- Mercy Medical Center–Mt. Shasta, a Dignity Health Member
- Siskiyou County Office of Education
- Yreka High School Health Occupations Students of America (HOSA)

AHEC Day, made possible in large part by a grant from the California Office of Statewide Health Planning and Development (OSHPD) and additional funding from some of the stakeholders, took place in November 2012. AHEC Day was a county-wide, one-day symposium on health careers. Students from rural high schools and some middle schools participated in interactive workshops and heard from local professionals and state healthcare leaders. Outreach to underrepresented ethnicities was key in recruitment for the event. Students participating represented all ethnic groups in the rural county, and in most cases, were represented in significantly higher percentages than the overall population. For example, the most recent U.S. Census data shows Siskiyou County with a Latino/Hispanic population of 10%. Latino/Hispanic students attending AHEC Day represented nearly 22% of the total attendance.

While student evaluations clearly demonstrated their enjoyment and appreciation for the workshops they attended, it is more significant that 90% signaled that the event increased their knowledge about careers in health care, and 47% strongly agreeing with the increased knowledge. See Figures 7 & 8.

With the long-term goal of increasing the supply of clinicians and health providers to underserved communities in mind, the event organizers were thrilled when nearly 80% of the students responded that the event increased their interest in becoming a health professional.

Overall, the event strengthened relationships between industry professionals, educators, and the local AHEC. There have already been many requests to repeat the event with offers for support from a variety of sources.

The Future

Looking to the future, the pipeline efforts of the partners so closely fit within the missions of each organization that continued support and involvement is anticipated. The partners, along with the NC AHEC Advisory Board, offer leadership, technical assistance, facilities, and other staffing needs. Expansion and more comprehensive assistance in partnership with educators and the healthcare professional community is a realistic goal, even in these times of uncertain funding.

The collaborative efforts of a few committed stakeholders have provided significant assistance toward the development of the healthcare workforce needs in rural Northern California. Program results demonstrate increased interest and preparation from local students to enter health careers training. Increased involvement of industry leaders, such as community clinic and hospital administrators, is key to future project enhancement. The local healthcare industry recognizes that it faces severe shortages of qualified staff and has shown its willingness to invest in positive measures to help alleviate that situation.

By investing in local youth through "grow our own" efforts, the Northern California AHEC and its collaborative partners are making a positive impact on the overall health of their community.

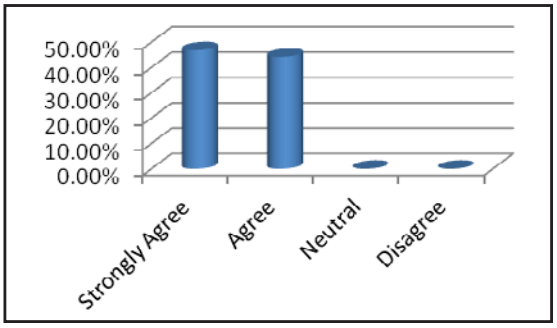

Fig. 7. Student self-assessment of increased knowledge about careers in health care.

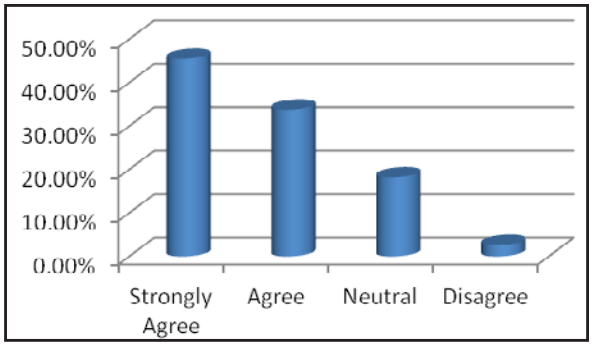

Fig. 8. Student self-assessment of increased interest in becoming a health professional.

SD

From High School Student to CNA in Two Weeks

Bart Hallberg and Sandy Stockholm, MPA

The Yankton Rural Area Health Education Center (YRAHEC) joins a team including seven other healthcare, education, and job skill entities promoting the Certified Nursing Assistant Institute (CNAI), which targets South Dakota high school students. In its first four years of operation, the CNAI produced 29 graduates. CNAI partners include: Avera Sacred Heart Hospital (ASHH), Avera Sister James Care Center (ASJCC), Avera Education and Staff Solutions (AESS), Yankton Rural Area Health Education Center (YRAHEC), Regional Technical Education Center (RTEC), Mount Marty College, Southeast Job Link, and the Benedictine Sisters. In 2008, the Avera Health Foundation awarded a grant to fund the first year of the CNAI. In 2012, the CNAI was recognized with an Avera Quality Award–Caring with Collaboration. In 2013, CNAI will offer this same opportunity to 25 students.

The CNAI is a 10-day program that meets the South Dakota Board of Nursing requirements for Certified Nursing Assistants (CNAs). In addition to the 75-hour classroom and clinical course, students also have opportunities to learn about the importance of human touch in caring for a patient. The CNAI also gives participants an opportunity to explore various health professions. Healthcare professionals visit with students sharing information about health careers and students get to tour local medical facilities.

Because of the affordability of the program to participants ($25/student), opportunities are made available that may become a career and/or a stepping stone to other healthcare careers. "I would like to express how grateful and honored I am to have been chosen as one of the ten candidates for the 2012 CNA Institute in Yankton. Not until attending the Institute did I realize the special care residents of nursing homes require," stated by a participating sophomore high school student.

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Fig. 1. CNAI students receive instruction in the classroom and through a clinical course. A group of 8 collaborators helps to make the CNAI reality. A local long-term care facility opens its doors for the clinical portion of training. Educational agencies provide classroom space, computer usage, and discounted room and board.

The YRAHEC manages the marketing/promotion, the student application process, and the overall organization of CNAI in their effort to address the current and increasing need for the services CNAs provide. The CNAI partners share a vision of bringing more CNAs to the workforce, which will strengthen the area's ability to continue care for the growing elderly population. According to a May 2012 report issued by the South Dakota Department of Health, it is anticipated that by the year 2025, South Dakota's elderly population is expected to double.

Due to the success of the program, the CNAI is on a path for continued growth. 2013 promises to be a banner year for the CNAI. Not only will the number of students be increased from 10 to 15 at the Yankton site, a second CNAI site with 10 students will be held at Dakota Wesleyan University located in Mitchell, SD. In the future, CNA instruction may be even more accessible to young people as discussion has begun about bringing it to all South Dakota high schools.

All partners involved provide their portion of support and services at a reduced rate or for free. For example, the technical education center allows the CNAI to hold their classes in their facilities with no room charge. In addition, Southeast Job Link provides complimentary use of their computers. This year, the Benedictine Sisters granted a funding request with a generous $5,000 donation because the CNAI so aligned with their values and beliefs of providing for the poor and sick. A local long-term care facility opens its doors every year for the CNAI and welcomes the students to complete the clinical portion of their training. In addition, while the students are in Yankton, Mount Marty College

Fig. 2. 2012 CNAI students are pictured with two instructors on "test day," June 15, 2012. This year the program will more than double in size from offering training to 10 students in 2012 to 25 students in 2013.

Fig. 3. CNAI is a 10-day program that meets the South Dakota Board of Nursing requirements for CNAs. In addition to the 75-hour classroom and clinical course, students also learn about the importance of human touch in caring for patients. Participating students pay only $25 to enroll in the program.

provides discounted room, board, and student transportation while students attend CNAI.

The annual CNAI relies heavily on its partners in the Yankton community who volunteer their time and provide additional learning sessions for the CNAI attendees. Some of these sessions include spirituality lessons, elderly exercise classes, emergency department tours, nursing simulators, radiology department tours, physical therapy sessions, and many others.

Key partners in this collaborative project have been actively engaged in the planning process from the beginning. Debriefing meetings are held at the conclusion of each Institute where feedback from students, instructors, guest presenters, and CNAI collaborators is gathered, shared, and analyzed.

Through the success of this program and the excellent curriculum and teaching since conception, 96% of participants of CNAI have become certified as nursing assistants. Data is gathered at all points throughout the CNAI to assess success and possible opportunities for improvement. Once the data is gathered, all partners and collaborators are involved in analyzing and reviewing the data. Based on what the data tells the team, improvements and changes are made.

It is estimated that it costs a long-term care facility between $3,500 and $4,000 to hire and train a CNA. By utilizing the CNAI, the partners are able to train and certify nurse aides for approximately $1,500 per participant.

It is estimated that it costs a long-term care facility between $3,500 and $4,000 to hire and train a CNA. By utilizing the CNAI, the partners are able to train and certify nurse aides for approximately $1,500 per participant. These facilities have seen firsthand the quality of the training and the affordability the program gives them when compared to how much they would spend training their own personnel. The importance of the program's existence can be shown by the agreement of facilities in the surrounding area who have pledged to donate $1,500 to YRAHEC for every CNAI graduate they hire in support of continuing the sustainability of this program.

CT

What's In It for Me?:The Health Ambassadors Program Enters the Classroom

Karen Piantek, MA, BLS Instructor

In 2010, the Health Resources and Services Administration (HRSA) recommended that Area Health Education Centers (AHECs) around the country create 120-hour programs for students in high school and above. The prospect of running a program about the same length as a full-year high school course was daunting. However, Central AHEC in Connecticut saw the value in the increased contact hours with students and recognized an opportunity to provide students with a more comprehensive experience that included both personal and educational development in addition to awareness of and exposure to health careers. The result was an increase in the demand for school-based services as part of an innovative educational collaboration with area schools that lead to a year of record outcomes.

While in the past Central AHEC had to seek out collaborations and negotiate entry into schools, schools and community organizations now sought the agency out.

Central AHEC Health Ambassadors are youth ages 14-18 who want to explore health careers and improve the health and well-being of their community. The basis for the new program is the Connecticut-born Youth Health Service Corps (YHSC), a nationally recognized and implemented health career recruitment program that engages high school students in service-learning projects that address pressing community health issues. By building upon lessons learned in experience running summer youth workforce development programs, Central AHEC created a comprehensive curriculum that includes academic skills building, public health issues and careers, career readiness training, personal development workshops, service-learning activities, and health education. The program also incorporates best practices and recommendations from Connecticut Department of Education Common Core Standards, Capital Workforce Partners Career Competencies, and the Search Institute 40 Developmental Assets, as well as performance standards and competencies for individual schools.

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The path began with an honest look at what schools provided, what they needed, and the barriers to student success and engagement. An assessment identified a need for literacy skills, critical thinking skills, access to and practice with technology, and a hard-nosed understanding of what the journey towards becoming a healthcare professional entails. With a syllabus of workshops that addressed these topics, Central AHEC found numerous schools and organizations that were eager to host the program. While in the past Central AHEC had to seek out collaborations and negotiate entry into schools, schools and community organizations now sought the agency out.

The inherent question for most schools regarding AHEC programs was, "What's in it for us?" Central AHEC's answer was a vastly expanded curriculum that complied with state and school education competencies, making it more attractive to teachers and administrators because it incorporated many of the skills and academic reinforcement that the schools themselves did not have time to address.

Central AHEC currently works with six Greater Hartford high schools to integrate the Health Ambassadors curricula into in-school activities, often for entire grade levels. Many Hartford area schools are magnet schools, and most have taken on a special focus, with many incorporating medical themes. The classroom activities are a jumping-off point for students to become familiar with the many programs offered by Central AHEC, and they often choose to continue on and work with AHEC staff outside of school hours to perform service in the community and engage in additional program workshops.

Although only entering its second year, Health Ambassadors has more than doubled the number of high school students with whom Central AHEC normally works. During the 2011-2012 school year, 163 students were enrolled in the program and trained in the initial Youth Health Service Corps core modules. But its greatest success has been at E.C. Goodwin Technical High School in New Britain,

Fig. 1. E.C. Goodwin High School students give makeovers to visitors at the Friendship Center in New Britain, CT.

Fig. 2. A Central AHEC staff member teaches cardiopulmonary resuscitation (CPR) to students at E.C. Goodwin.

where students meet during a free period in their schedules in order to participate. At this technical school where students predominantly go into non-medical trades after graduation, 50 students enrolled in the Health Ambassadors program in 2011-2012, the second highest number of recruits out of six partner schools (the first highest was at a medical-themed magnet academy). More impressive, however, was the retention rate. While some groups could expect to lose up to 40% of their original students to other activities throughout the school year, the E.C. Goodwin program kept more than 80% of its students actively engaged from beginning to end.

While some groups could expect to lose up to 40% of their original students to other activities throughout the school year, the E.C. Goodwin program kept more than 80% of its students actively engaged from beginning to end.

The larger-than-expected interest in a health careers program at E.C. Goodwin was surprising at first, but the Central AHEC AmeriCorps volunteer assigned to the school made an effort to find ways for the students to connect the program activities to what they were studying. A successful activity during a Martin Luther King Day of Service event had students who studied subjects like the culinary arts and cosmetology at E.C. Goodwin cook dinner at a homeless shelter and provide free makeovers to those who came for dinner. This allowed them to utilize familiar skills while learning about the health and well-being of vulnerable populations. It is this flexibility in the Health Ambassadors program that has proved most effective.

Central AHEC's ability to give schools what they really want has allowed the agency to get a foot in more than one door. From here, the agency injects elements from its base of services, including the promotion of health careers among students, the improvement of access to culturally competent providers in the community, the elimination of health disparities in vulnerable populations, and other services relevant to the Central AHEC mission. This phase of collaboration with the schools is crucial in building a relationship because it is an opportunity to give the schools what they already know they want ("What's in it for them") while showing them the quality of other agency offerings.

The addition of AmeriCorps volunteers to Central AHEC's Careers and Education Initiatives team two years ago has also been a cost-saving measure that has both enhanced and expanded programming. The five AmeriCorps volunteers have allowed the agency to work with additional schools as well as offer additional services. Each AmeriCorps has also brought her own individual expertise to the curriculum and the student body. Through their efforts, Central AHEC has expanded both outreach and offerings with relatively little cost.

With new budgetary constraints faced by AHEC centers across the United States, these collaborative innovations with community, schools, and AmeriCorps have become even more important. As AHEC healthcare workforce programs become more integrated with classroom activities, schools are willing to provide additional resources to support students, such as transportation or reimbursement for program costs. Aside from fiscal solvency, the obvious and important benefit to students is a more seamless educational experience. Central AHEC is no longer the "other," but rather is part of an integrated initiative that allows students to see the value of their foundational schooling in the larger context of entering the healthcare workforce.

This program will be available to other AHECs and organizations to implement in the 2013-14 school year.

The Bench to Bedside Initiative: Bridging the Gap in the Education Pipeline

Angelica E. Christie, MEd; Paula M. Jones, MBA; and Jessica R. Huggins, BA

Technical knowledge and competencies are integral components of every undergraduate program of study. However, to successfully achieve the goal of becoming a healthcare professional, students also may need better development of social skills and capabilities in order to be competitive in the classroom and workplace. Data demonstrate that the period of college/university study following high school graduation, but prior to admission to a health professions training program, is particularly critical for students interested in health careers.

High school and college students in South Carolina, particularly underrepresented minority (URM) students and those from rural and medically underserved regions, face significant barriers in the form of economic and educational disadvantages. Many high schools in South Carolina have a large percentage of economically and/or educationally disadvantaged students as evidenced by economic status indicators and standardized test scores (SC Department of Education, 2011). The economic disadvantage is striking with 129 of the 212 high schools (61%) reporting poverty indices above 60%. The educational disadvantage is also significant with average composite SAT scores of 1413 in South Carolina compared with the national average of 1498 (SAT Report, College Board, 2012). Advanced-level math and science courses are more readily available at larger South Carolina high schools, but students in the smallest and most rural high schools do not consistently have access to honors courses. College Board statistics indicate that nationally, "four out of five Black/African American graduates were either left out of an AP subject for which they had potential or attended a school that did not offer the subject" (AP Report, College Board, 2012).

Racial disparities that exist in the enrollment in AP courses and successful completion of AP exams provide an indicator of the pre-existing academic disparities between White and African American students within enrolled undergraduate populations. African American students who attend college often struggle more than their non-minority peers to achieve academic excellence and may be inadequately prepared to effectively complete high-quality application packets for admission to health professions educational programs.

This situation has significant implications for the future of the clinical workforce. The lack of diversity in our current healthcare workforce has been examined by the Institute of Medicine. Data from the U.S. Census project an even greater need for workforce diversity as the demographics of the population continue to shift toward more URM residents, especially in South Carolina (Committee on Institutional and Policy-Level Strategies for Increasing the Diversity of the U.S. Health Care Workforce, Board on Health Sciences Policy, 2004). A diverse healthcare workforce is critical to the delivery of high-quality, accessible healthcare to increasingly diverse communities.

In response to this disturbing trend, the South Carolina AHEC has partnered with the Medical University of South Carolina (MUSC) and five undergraduate colleges to bridge the gap in the healthcare recruitment and retention pipeline and help URM students achieve academic and career goals. Supported by a three-year grant from The Duke Endowment, the South Carolina AHEC and its partners have developed and implemented the Bench 2 Bedside Initiative. Bench 2 Bedside activities emphasize and promote long-term academic success, personal growth, and professional development for URM undergraduate students. The programmatic infrastructure connects faculty members and staff of the partnering undergraduate institutions (Claflin University, Clemson University, Coastal Carolina University, the College of Charleston, and Winthrop University) and MUSC academic medical center faculty to establish a sustainable network of guidance and support for the self-identified pre-health program participants.

Faculty members and career counselors from all partnering institutions collaborate to:

1. Assist with the early identification and development of talented URM undergraduate students through personal development seminars and mentoring sessions;
2. Provide activities to engage undergraduate students in experiences pertaining to health-

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related conditions that are particularly prevalent in medically underserved and minority populations; and

3. Build the foundation for sustained relationships between undergraduate students/faculty and health professions students/faculty.

A Health Insurance Portability and Accountability Act (HIPAA)-compliant videoconferencing network is used to deliver a large component of the Bench 2 Bedside programming, reducing geographic barriers to training and access to resources. The curriculum focuses on "high priority" diseases or conditions that have disproportionately negative outcomes in underserved/minority populations. The content for a student seminar series includes healthcare topics, critical thinking exercises, and personal development strategies. The student seminars conducted over the videoconferencing network engage participants in a coordinated effort to effectively guide and mentor URM undergraduate students. Through discussions led by a core team of AHEC faculty and other healthcare professionals, the students recognize the relevance of their undergraduate studies and the importance of understanding and applying basic sciences and research findings in the provision of clinical care.

An annual face-to-face summit on the campus of the academic medical center campus includes: 1) advisor workshops for undergraduate career counselors designed to provide information and support undergraduate professional staff and faculty charged with advising students, 2) faculty development networking opportunities for undergraduate and health professions faculty to exchange information and ideas for improvement and sustainability of the program, 3) individual student advising sessions with health careers program representatives, and 4) student activities designed to promote and highlight student Bench 2 Bedside projects.

Since the December 2011 implementation, several Bench 2 Bedside programmatic benchmarks have been achieved:

- An intercollegiate committee of undergraduate science faculty and pre-health advisors has been convened to coordinate the promotion and implementation of activities;
- The core team at the academic medical center is actively engaged in the planning and implementation process;
- The South Carolina Health Occupations Outreach Learning System (SCHOOLS) network has been expanded with the installation of teleconferencing equipment on the undergraduate campuses;
- Marketing strategies are in place to support the delivery of promotional, instructional, and informational content, including a multipage website, pre-recorded webinars, and Twitter© and Facebook© feeds;
- The student seminar series is underway;
- The first annual Bench 2 Bedside two-day summit for program participants and their undergraduate faculty and staff has been held in conjunction with the annual Medical University of South Carolina Student Research Day.

Future benchmarks include the implementation of a Bench 2 Bedside project competition that will provide an extended learning opportunity for some of the students to actively participate in student projects on their campuses leading to a poster presentation or oral presentation during the MUSC Student Research Day event.

This initiative is the first of its kind for the South Carolina AHEC and we have been able to fine-tune the seminar series and plans for the projects based on collaborative feedback from the undergraduate and MUSC faculty. Eighteen undergraduate students, several of whom had participated in AHEC activities during high school programs, from five different campuses, attended the first summit. We anticipate that at least 30 new URM students each year will become active Bench 2 Bedside participants. The Bench 2 Bedside Initiative is strategically designed to collect longitudinal data. It is estimated that a minimum of 50% of the students participating in the Bench 2 Bedside program will succeed in gaining admission to health professions training programs within three to four years. We anticipate that this program will help bridge the gap between our high school and health professions pipeline programs.

REFERENCES

College Board. (2012). *8th Annual report to the nation*. Retrieved from http://apreport.collegeboard.org/goals-and-findings/promoting-equity.

College Board. (2012). *The SAT report on college & career readiness: 2012*. Retrieved from http://research.collegeboard.org/programs/sat/data/cb-seniors-2012.

Committee on Institutional and Policy-Level Strategies for Increasing the Diversity of the U.S. Health Care Workforce, Board on Health Sciences Policy. (2004). *In the Nation's Compelling Interest, Ensuring Diversity in the Health-Care Workforce*. Institute of Medicine of the National Academies. The National Academies Press, Washington, D.C.

U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, Census of Population and Housing, Small Area Income and Poverty Estimates, State and County Housing Unit Estimates, County Business Patterns, Nonemployer Statistics, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report.

South Carolina Department of Education, 2011 State Report Card. http://www.ed.sc.gov/data/report-cards/2011/index.cfm

CT

An Innovative Approach to Diversifying the Allied Healthcare Workforce: The Central AHEC Institute for Allied Health Professionals

Samia Hussein, BS, HHS, EMT-B, BLS Instructor; and Denise Smith

When Kevin Coleman saw an advertisement for Central Area Health Education Center (AHEC), Inc.'s Institute for Allied Health Professionals, he knew he wanted to be a part of it. In his application for this emergency medical technician (EMT) bridge program he wrote, "Throughout my schooling I looked for opportunities for training but life happened. Either I wasn't qualified, not a resident, or some other reason." For Coleman, an African American living in Hartford, Central AHEC's Institute for Allied Health Professions was the answer to getting into the healthcare field.

Fig. 1. 2011 Institute of Allied Health Professionals graduate Kevin Coleman stands by his Bloomfield Ambulance rig.

Coleman is one of the program's greatest success stories. He currently works at the Bloomfield Volunteer Ambulance Association as a driver and Emergency Medical Technician (EMT), and was recently promoted to Field Training Officer. He now trains new EMT recruitments and teaches cardiopulmonary resuscitation (CPR) part-time at the Connecticut Training Professionals agency in South Windsor, Connecticut. Coleman states of the program, "What I am doing now has opened my eyes and has opened doors of opportunities that would have never been available if AHEC wasn't available to me."

Originally called the Advancing Health Education and Careers Institute (as an alternate acronym for AHEC), the program was developed in 2006 to provide health careers exploration, personal development, and workforce readiness competencies for high school students ages 14-18. In 2009, the Institute was redesigned and renamed through funding from the Connecticut Women Education and Legal Fund and in partnership with Capital Community College to connect the need for diverse EMTs with the interest in the community. This program is a culturally relevant and innovative allied health professions workforce readiness program for unemployed or underemployed, at-risk African Americans and Hispanics ages 18 and over residing in the Hartford area. Aspiring allied healthcare professionals include dislocated workers, adult learners, individuals changing careers, and individuals who have never been to college. The primary goals of the program are to assist in the academic preparation for the EMT-Basic training course with the ultimate goal of achieving national certification credentials, to address workforce shortages in allied health careers within the state of Connecticut, and to increase workforce diversity as well as cultural competency among medical professionals.

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Workforce diversity in Emergency Medical Services (EMS) is lacking, even more so than in other allied healthcare and public safety professions, according to the report "EMS Workforce for the 21st Century: A National Assessment" (2008). The report states, "Changing ethnic demographics suggest a need for a more ethnically diverse workforce…both to provide more culturally sensitive care and to access largely untapped sources of workforce supply" (p. 9). According to the National Registry of Emergency Medical Technicians (NREMT) cited in the report (2008), in 2007 only 3% of EMTs were African American and only 5% were Hispanic (p. 35). While Connecticut's individual data is unknown, there seems to be a strong interest in EMS careers among both African American and Hispanic populations within the Hartford area. In its first year, Central AHEC's Institute for Allied Health Professionals received more than 120 applications to fill 30 spots. Coleman himself noted in his application to the program as a second-year cohort, "Being an EMT would mean giving me an opportunity to educate, be a concerned citizen in my community and represent African American men who, through adversity, hard work and a desire and passion to excel, have [set out to] help others."

Fig. 2. Students from the 2012 class on a field trip to the Lifestar helipad at Hartford Hospital.

Fig. 3. 19 students from the 2012 class celebrated their graduation from the Central AHEC Institute for Allied Health Professionals in July.

Some of the challenges to increasing diversity in the EMS field are that prospective students often lack the access, preparation, opportunity, money, or resources to take the EMT-Basic class and pass national testing. To mitigate some of these issues, Central AHEC's program is comprised of two tiers that are both free to accepted candidates. Students are engaged in the 8-week, 48-hour Institute for Allied Health Professionals preparatory course before they transition into an academic or hospital-based EMT training program. The purpose of the redesigned Institute was to act as a bridge program that would provide a pathway for candidates from traditionally underserved populations to enter the EMS field with the goal of increasing diversity in the profession. It includes a series of rigorous workshops intended to ease the transition into the fast-paced and highly technical EMT-Basic course. Coleman notes of his experience, "[The Institute] prepared me to meet the challenges of the certification process which was very intense and prepared me for employment and how to look for and network with the ambulance services."

The program consists of academic preparation, clinical skills, cultural and workforce competency skills building, and includes mentoring and career readiness support in individual and group settings. All workshops and activities are facilitated by culturally competent health providers and professionals. Students are prepared to enter the healthcare workforce, understand the role, responsibility, and competencies needed to become allied health professionals, and receive critical support and mentoring to advance them in their allied health profession. Classes and guest lecturers are ethnically and racially diverse allied health and education professionals who are committed to a high-quality, rigorous learning environment and student success. The Phoenix Society of Black Firefighters, Hartford Fire Department, North Central EMS Council, and Aetna and American Medical Response Ambulance Associations are all partners in this collaboration and have provided support for the EMT students throughout the process, including mentoring and job training experiences.

Central AHEC's Institute for Allied Health Professionals is now in its third year and has recently announced a new collaboration with the Hartford Hospital EMS Education Department. While the original two-year initiative in partnership with Capital Community College engaged African American and Caribbean American adult residents of Hartford, the new collaboration with Hartford Hospital has allowed for the recruitment of both African American *and* Latino/a adults in Hartford and the surrounding towns. The need to expand to the Hispanic population was based on the need for Spanish-speaking EMTs, especially in Hartford where 43.4% of resident are Hispanic (U.S. Census, 2010).

There are currently nine African Americans and 10 Hispanic individuals completing their EMT-Basic course at Hartford Hospital. To address the gender disparity in EMS, 11 of these participants are female. While not as egregious as the racial and ethnic disparities, the gender gap is still large. The 2007 National Registry of Emergency Medical Technicians (NREMT) data from the report (2008) shows that women account for only 28% of the EMS workforce (p. 32).

In order to ensure success, the Institute coordinator, Samia Hussein, continues to work with the students after their initial 8-week preparatory course as well. As a working EMT, Hussein provides mentoring, study assistance, and professional development activities for students as they complete Tier II training and prepare to take the National Registry exams to become certified EMTs.

The AHEC Institute for Allied Health Professionals was presented at the 2012 New England Science Symposium at Harvard Medical School where the program was shared with researchers, physicians, students, and educators. It provides the skills students need to succeed when transitioning into the EMT-Basic course as well as a support and follow-up system to stay connected to resources and achieve national credentials and employment.

REFERENCES

Chapman, S. A., Lindler V., Kaiser, J. A., Nielsen, C. S., Bates, T., Hailer-O'Keefe, L., . . . Wijetunge, G. (2008, May). *EMS workforce for the 21st century: A national assessment.* Retrieved from http://healthandwelfare.idaho.gov/Portals/0/Medical/EMS/workforce_report_ems.pdf

United States Census. (2010). *Census interactive population search: Hartford, CT* [Data file]. Retrieved from http://www.census.gov/2010census/popmap/ipmtext.php?fl=09

WI

Using Partnerships to Improve the Healthcare Workforce: Wisconsin AHEC's Statewide Community Health Internship Program

Amanda Meloy, MA, MLIS

The Wisconsin Area Health Education Center (AHEC) System, consisting of a statewide program office at the University of Wisconsin School of Medicine and Public Health (UWSMPH) and seven regional centers, works to improve the supply, distribution, and quality of healthcare professionals in Wisconsin.

Fig. 1. Community health intern for Pepin County Public Health Department, Erin Niles, educating children about vegetables and the new community garden in Durand, Wisconsin - 2011.

The Wisconsin AHEC program office coordinates the statewide Community Health Internship Program (CHIP), a summer internship which links undergraduate and graduate students with health-focused agencies throughout the state to address a variety of public health issues. CHIP initiated in Milwaukee and now is operating statewide. There are two programs: a statewide program coordinated through the program office, and a program in southeastern Wisconsin coordinated by Milwaukee AHEC. Participating students are residents of Wisconsin or attend Wisconsin schools. They receive a modest stipend ($1,200 per month). The communities benefit because the projects are proposed by the sponsoring agency and address health priorities in that specific community. Internship projects include: promoting wellness, local policy, emerging technology, environmental health, and quality improvement. Since 2000, CHIP has placed 261 interns in 58 local agencies throughout the state and 368 in the Milwaukee area.

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To recruit sites/mentors, Wisconsin AHEC relies heavily on partners—local public health departments, community health centers, tribal health centers, academic institutions, and other community agencies—to spread the word about CHIP. Previous CHIP sites/mentors use word-of-mouth and e-mail to promote CHIP to other agencies that might be interested in hosting an intern. One mentor wrote, "I have always felt this is a great program for workforce development and assistance to complete projects in the health department." To host an intern, potential CHIP sites/mentors complete an online application and describe their project and community; this is then added to a comprehensive site description list that students can access.

Academic partners assist Wisconsin AHEC in recruiting student interns and distribute student application information via e-mail and university job site lists. AHEC also works with the UWSMPH's RUSCH program—Rural and Urban Scholars in Community Health, a pre-med pipeline program—to provide students an opportunity to work on a community or public health project in a rural or underserved area. The potential interns complete an online application and rank their top four project choices. The CHIP coordinator then works with partners, mentors, and students to make the appropriate matches.

CHIP creates a three-way partnership agreement among community agencies, student interns, and the Wisconsin AHEC program office. The success of CHIP depends on all parties understanding the roles they play in the partnership and sharing a commitment to collaborative learning. The community agencies provide on-site mentors, technical support, and assistance to help interns gain an understanding and appreciation of the broad range of public health activities undertaken at the local level. Students commit to working full time for the eight-week duration, participate in orientation and web-based instruction, and perform in a professional manner. The AHEC program office facilitates the matching of interns with community agencies, coordinates centralized orientation and learning opportunities, and facilitates effective working relationships. Funding for intern stipends is provided through a combination of state funding to the AHEC program office, grants

from other programs (including Wisconsin Center for Public Health Education and Training), and support from host sites.

CHIP helps interns build networks in the local community and across Wisconsin, as well as gain professional skills and knowledge throughout and beyond the CHIP experience. Upon becoming a CHIP participant, interns have access to learning opportunities unique to their community and to CHIP. Mentors, for example, commit to providing job shadowing opportunities to interns to help them gain an understanding of the wide variety of careers within public health. These opportunities include home visits with public health nurses, inspections with environmental health staff, patient interaction with clinicians, and participation in statewide conferences.

Wisconsin AHEC provides educational opportunities including a day-long orientation in Madison to kick off the program and web-based instruction on community health principles and practice throughout CHIP. During orientation day, the interns and mentors meet, often for the first time, to discuss project goals, work plans, opportunities, experiences, and interests. The interns learn about common public health topics such as helpful research databases, including InformedCaring.org and the County Health Rankings and Roadmaps. They also gain a perspective on working with a population or culture different from one's own by participating in an experimental learning and interactive poverty simulation, "Communities in Crisis," to better understand the complexities of poverty and behavior change.

Interns participate in the web-based instruction in order to be part of a larger network, share resources, have access to a variety of public health experts, and practice building professional skills important to public and community health. Interns are asked to participate in webinars, write their legislators, interview an expert, present a final presentation using online technology, and write a reflection piece about their CHIP experience. The letter to the legislator is often a popular assignment because it demonstrates the importance of policy and helps the interns articulate their CHIP experience in a meaningful and concise manner. Many interns receive a letter in response. One CHIP intern received a request for a face-to-face meeting from her state representative. The representative asked the intern and mentor to educate her on the policies that should be implemented in Wisconsin laws in regards to Advanced Care Planning. The intern had a chance to convey her knowledge and make a difference in her community and the state at large.

Fig. 2. Two community health interns for La Crosse County Public Health Department, Allison Gilbert and Meghan McCaulley, leading a Strong Seniors exercise class in La Crosse, Wisconsin - 2012.

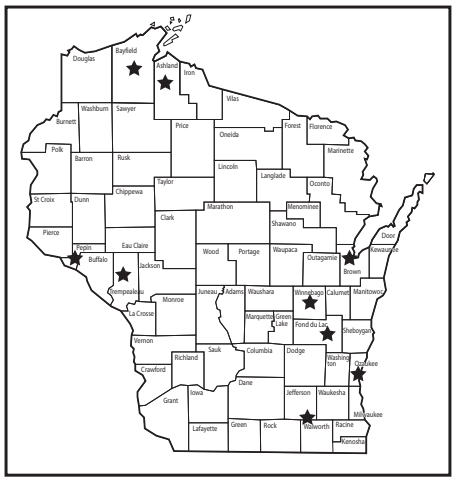

Fig. 3. 2009-2012 counties where past Wisconsin AHEC statewide CHIP interns received a job

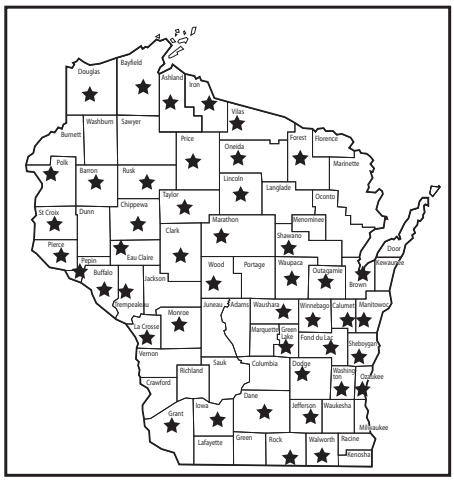

Fig. 4. 2002-2012 Wisconsin AHEC statewide CHIP sites by counties

Wisconsin AHEC measures CHIP outcomes using an online survey for both interns and mentors. Outcomes for interns include learning about public health principles and practice (factors affecting health, interprofessional teamwork, strategies for working in shortage areas, and collaborating with a culture different than one's own) and increasing interest in a public health career. Using intern survey data from 2010-2012, 97% of interns agreed that they learned about public health principles and practice. Eighty percent agreed that CHIP increased their interest in a public health career.

AHEC also asked the interns to write a reflection piece and offer feedback on their CHIP experience. The students offered their "ah ha" moments and personal stories. One intern reflected, "Through this internship, I was introduced to many new career paths in public health. It provided me the unique opportunity to improve health of individuals in my community. As a representative of the public health department, I grew into a confident

Fig. 5. Community health intern for the Madison and Dane County Public Health Department, Erin Leege, collecting a water sample in order to test for safe water in one of the Dane County lakes near Madison, Wisconsin - 2012.

Fig. 6. Community health intern for Live54218, a non-profit in Green Bay, Wisconsin, Sarah McCaulley, partnering with the local YMCA to play the "world's largest Twister game" in an effort to engage youth in a fun activity - 2012.

professional, eager to share my knowledge and establish long-term goals."

Another intern wrote, "I am now committed to a career in public health." After such positive feedback, AHEC has begun to track previous interns' career paths using CHIP listservs, the National Student Clearinghouse, and social media tools Facebook and LinkedIn to understand if previous interns really do commit to a career in health. Although AHEC is at the beginning stages of data collection, three of the 2010 and 2011 CHIP interns entered medical school at UWSMPH in the fall of 2012.

Furthermore, AHEC is trying to understand if CHIP had a direct impact on previous interns finding a job in public health and getting more health professionals into rural and underserved areas in Wisconsin after they graduated. Since 2009, nine previous CHIP interns were hired at the public health department where they interned (five, with all but one in a federally designated health professions shortage area); a nearby public health department (one); or through an AmeriCorps position at a previous CHIP site (three). After interviewing these previous interns and mentors, all agreed that CHIP played a vital role in the hiring process. One previous intern talked herself into a job and made the argument that the health department should hire her, a health educator, when they were looking to hire a different position. She was hired because her previous mentor knew she was a capable and responsible professional who enjoyed working at the small, rural health department.

Wisconsin AHEC will continue to measure outcomes, build educational partnerships, and implement learning opportunities. Additionally, AHEC was thrilled to learn that the CHIP program is making improvements to the healthcare workforce in the state.

REFERENCES

Informed Caring is a portal for Wisconsin health professionals. This site was designed to serve those working in local health departments, federally qualified community health centers, and others providing health services in rural and underserved communities in Wisconsin—particularly those without access to academic or hospital libraries (http://www.informedcaring.org/).

The County Health Rankings & Roadmaps program helps communities create solutions that make it easier for people to be healthy in their own communities. (http://www.countyhealthrankings.org).

Wisconsin Primary Care HPSAs: Federally Designated Health Professional Shortage Areas. (2010, March). Retrieved from http://www.dhs.wisconsin.gov/health/primarycare/docs/PCHPSAmap3510.pdf.

MN

Summer Internship in Medicine: A Minnesota AHEC-University Collaborative Educational Innovation

Ray Christensen, MD; Barbara F. Brandt, PhD; and Kelli Johnson, MBA, PhD

Since 2003, the Minnesota Area Health Education Center (AHEC) and the University of Minnesota Medical School have been mutual partners collaborating to support the Summer Internship in Medicine (SIM) Program. The program was launched in 2003 at the University of Minnesota Medical School in Duluth (with support and assistance from the Minnesota Hospital Association) as part of Duluth's focus on training family physicians for rural Minnesota practices. SIM offers medical students an opportunity to spend two to eight weeks (later reduced to two to four weeks to allow broader participation) during the summer after their first year of medical school living and learning about the practice of medicine in rural communities. It also offers the host organizations—hospitals or health systems—in rural communities an opportunity to showcase the high quality of care they can provide and boost their physician recruitment efforts. SIM is designed to offer these students an early immersion experience, giving them a sense of the roles and responsibilities of a local physician in a rural healthcare "ecosystem."

The SIM program is heavily focused on the importance of getting the students into the community to help them better understand both life and practice in a small town, experiencing firsthand what it means to be a physician in rural practice. This approach enables the students to experience the many components of rural healthcare delivery and it also offers a unique recruitment opportunity for participating communities.

SIM Program Goals

The goals of the SIM program are to provide access to a rural experience early in the medical school career to provide students a rural foundation for comparison with other rotations throughout their education. The program seeks to give medical students an opportunity to observe, participate, and gain an understanding of the function and structure of a rural community healthcare system, while enabling them to interact with and explore rural culture and community, particularly the role of a physician in a rural community to develop an early understanding of physician responsibility in healthcare delivery, leadership, and community involvement.

As part of the program, the student interns must observe and work with physicians in practice and have access to the physicians for mentoring and support when needed. The interns must also spend time with other professionals in the healthcare system—including emergency room, delivery room, surgery, pharmacy, home care, physical therapy, laboratory, medical records, and hospital administration—as well as in the community—including law enforcement, correctional health, chiropractic, social services, ambulance services, mental and behavioral health, and public health nursing. The unique value of this internship lies in the opportunity for the students to access the breadth of experiences that comprise the overall healthcare system in a rural community.

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Educational Innovation

Research has identified the importance of communities in retaining physicians in rural practice. (Pathman, Konrad, & Ricketts, 1994; Cutchin, 1997). Pathman, Steiner, Jones, et

al., (1999) also found that feeling comfortable with small town living was more important to the rural physician experience than feeling comfortable with the practice of rural medicine.

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Collaboration with AHEC

Identifying and Recruiting Placement Sites

Over the past several years, the Minnesota AHEC has been an essential collaborator to the overall success and longevity of the SIM program. Regional AHEC directors have frequently played an important liaison role in facilitating the placement of SIM students at rural hospitals. Sometimes this activity has been early in the process—recruiting hospitals to host SIM interns—and sometimes late in the process—scrambling to find placements for interns for whom not placement had yet been made or for those whose initial plans fell through.

As the program has accepted an increasing number of students each year, the need for placement sites has grown as well. Here, AHEC personnel have become a valuable partner to the Medical School working through their regional networks to find facilities, providers, and communities who are willing to take an intern.

As the program has accepted an increasing number of students each year, the need for placement sites has grown as well. Here, AHEC personnel have become a valuable partner to the Medical School working through their regional networks to find facilities, providers, and communities who are willing to take an intern. In addition, AHEC continues to work with the Medical School encouraging sites to provide a stipend (typically $500 per week) for the interns. In situations where a hospital or healthcare system has not previously hosted a SIM student, AHEC staff has played a critical role in promoting the value of the program and making the case for how participation benefits the facility and the community in recruitment. The AHEC serves as an additional supplier of practice locations, helping the SIM program to expand and thrive.

Facilitating Collaborative Tailoring of Individual Internships

The SIM program designers, mindful that summer is a busy time with reduced staff levels and limited time available for teaching, have intentionally limited the amount of physician precepting activity, encouraging the students, the hospital administration, and physicians to design the internship together so that it works for all parties. This structure has provided an opportunity for AHEC personnel to add value. In situations where assistance in facilitating planning and scheduling the internship is needed, AHEC staff works with hospital administration to help them plan how to best use the internship as a marketing and recruiting opportunity for the hospital. In addition, the AHEC staff serves as a liaison to facilitate the parties in structuring the internship experience. An AHEC regional director characterized the work as being an ambassador to the facility on behalf of the students and being the "chamber of commerce" promoting the value of the hospital and the overall community to the student.

Making Community Connections and Helping with Housing

AHEC personnel can call upon their networks to enhance the SIM experience by matching the students' skills and interests to community events or resources, as well as to additional observational experiences as part of the internship. A common barrier for SIM student placements is the lack of housing for the interns in rural communities. Here again, the AHEC staff have helped students find short-term housing, sometimes connecting the student with a rental resource and sometimes working with the facility to identify housing opportunities to help make the summer internship an effective and fondly recalled experience.

SIM Program: Outcomes to Date

In the past decade, almost 600 SIM interns have gained firsthand experience with the rural medical care system in rural communities across Minnesota and in a handful of other states and counties. Figure 1 shows the number of primary care residencies as a percentage of the annual number of SIM participants. More than half (51%) of the SIM interns in 2003-2008 went on to a residency in primary care (family practice, internal medicine, pediatrics, or medicine-pediatrics). But regardless of later practice decisions, all SIM interns develop a lifelong appreciation of rural healthcare delivery, its challenges, and its rewards. This understanding will impact their medical future careers regardless of specialty.

Fig. 1. SIM Students (2003-2008) Residency and Practice Information

SIM Year	Residency Start Year	Probable Practice Start	# SIM Students	# Primary Care Residencies (% of SIM group)	# Currently in Primary Care Practice
2003	2006	2009	22	11 (50%)	7
2004	2007	2010	16	10 (63%)	7
2005	2008	2011	34	20 (59%)	8
2006	2009	2012	40	19 (48%)	11
2007	2010	2013	65	32 (49%)	*
2008	2011	2014	90	43 (48%)	*
TOTAL			267	135 (51%)	33

* Note: SIM participants from 2007 & 2008 are still in their residencies.

Figure 1 also shows the number of SIM participants from the years 2003-2006 who are currently practicing primary care medicine. These numbers likely under-represent the total number of primary care practitioners from this group, as some are still completing residencies and fellowships. Others have been unreachable despite varied and repeated attempts to determine their post-residency practice location. An evaluation of the SIM program is currently underway, which includes planning for data collection activities to aid in longitudinal tracking of program participants and assessment of outcomes.

Conclusion

The Summer Internship in Medicine Program at the University of Minnesota Medical School has been bolstered by a strong and ongoing collaboration between the AHEC and the University. Co-authors are conducting a comprehensive evaluation. Preliminarily, the program is well-received by students and communities alike. The students gain valuable educational experiences and the communities have access to the students and the opportunity to recruit future healthcare practitioners. Beyond increasing the number of rural primary care practitioners, the program has benefited rural health care by grounding all SIM participants in the value of bringing their specialties to rural areas.

REFERENCES

Pathman, D. E., Konrad, T. R., & Ricketts, T. C. (1994). The National Health Service Corps experience for rural physicians in the late 1980s. *Journal of the American Medical Association, (27)*1341-8.

Cutchin, M. P. (1997). Community and self: concepts for rural physician integration and retention. *Social Science Medicine, (44)*1661-74.

Pathman, D. E., Steiner, B. D., Jones B. D., et al. (1999). Preparing and retaining rural physicians through medical education. *Academic Medicine,* (*74)*810-820.

KY

A Collaborative Educational Innovation in an Old Order Mennonite Community

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Forming collaborative, interprofessional partnerships to facilitate the education of future healthcare providers to serve diverse cultures is an overarching goal of Area Health Education Centers (AHECs) and supported by the Institute of Medicine (IOM, 2005). This article describes the process of creating and sustaining a collaborative, interprofessional health promotion and educational project with an old order Mennonite (OOM) community in south central Kentucky. This ongoing project began over a decade ago and involves the collaborative efforts of the South Central Kentucky AHEC, the School of Nursing at Western Kentucky University (WKU), a family practice residency program affiliated with the University of Louisville but located at T.J. Samson Community Hospital in Glasgow, KY, and family members residing in an OOM community.

Their reliance on the horse and buggy for local transportation is central to their desire for separation from the world. Some OOMs do selectively modernize, using limited technology in their work site such as cell phones.

Description of the Mennonite Community

The conservative Mennonite and Amish communities are among the most rapidly growing populations in rural Kentucky and currently number more than 9,000 (Young Center for Anabaptist & Pietist Studies, 2012) with approximately 800 to 1,000 individuals residing in the targeted OOM community (Old Order Directory, 2009). Collectively referred to as Anabaptists, the OOMs and Amish share a common religious heritage. "Old order" refers to Mennonite and Amish populations that follow a conservative lifestyle avoiding many modern technologies (Kraybill & Hurd, 2006). Their reliance on the horse and buggy for local transportation is central to their desire for separation from the world. Some OOMs do selectively modernize, using limited technology in their work site such as cell phones (Wenger, 2003); however, they still avoid telephones or electricity in their homes. The impetus for most adults in this community to seek health care is when an illness interferes with their ability to work. Most OOMs do not participate in health insurance programs or accept any government-sponsored programs. Their embracement of preventive health services is limited and they prefer self-treatment to current modern medical treatment.

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Gaining Access (1997-2001)

Accessing and establishing this OOM community as a learning site for future healthcare providers required a cultural desire, a long-term commitment, and diverse strategies. The first step in accessing this community was unplanned. Three nursing students expressed a desire to learn more about Anabaptist groups as part of a project for a community health course. To facilitate this learning experience, the faculty member contacted a friend, known to the OOM community. Insiders contribute to the success of community projects, as they are familiar with the values, norms, and practices of a community and assist "outsiders" to be accepted as creditable sources of health information (Myers, 1998; Bushy, 2000; Lee, 2006). For two years, the insider accompanied the faculty member each time she visited the community. As trust and respect grew between the faculty and

Table 1. Positive Benefits for Community Members, Faculty, AHEC, and Students

Community Members	Received health education about topics of their choice
	Referred to medical specialists (cardiac surgeon, etc.) as needed
	Received lipid and colorectal cancer screening when participating in research studies
	Increased health services (immunizations and dental care) made available to community members
	Participated in monthly health screening (blood pressure, lipid, and glucose) as desired
Faculty	Allowed faculty the opportunity to advance their scholarly work
	Facilitated the cultural learning opportunities for students
	Promoted interprofessional, collaborative community-based nursing
	Completed 4 diverse research studies in the community resulting in publications and presentations at scholarly local, state, national, and international conferences
AHEC	Supported the formation and use of a collaborative, interprofessional partnership to educate healthcare providers to serve culturally diverse rural populations
	Addressed the overall mission of AHEC
Students	Provided cultural diverse learning opportunities for over 600 future healthcare providers
	Identified barriers to health care in OOM communities and their role in providing culturally sensitive care
	Fostered scholarly work (cultural sensitive brochures, educational posters, and honor's thesis)
	Provided the opportunity to apply principles of health promotion, program planning, and teaching and learning within the context of a specific rural, diverse culture

community members, the South Central Kentucky AHEC Director became a key partner and facilitated the inclusion of family practice residents and their preceptors. This expansion, along with the addition of other nursing faculty, led to the creation of a more structured healthcare project in the OOM community that continues today.

Description of Current Project (2001-2012)

For the past 10 years, Health Promotion Day or Clinic Day, as referred to by members of the OOM community, is held one day each month. The goal of the project is to provide future physicians and nurses a cross-cultural educational experience while providing basic health screening, education, and primary care for members of an OOM community. Community members select the focus of the monthly discussions. These educational programs are planned, implemented, and evaluated by nursing students, medical residents, and faculty. The one-hour educational session is followed by a primary care clinic staffed by the family medicine residents and their preceptor while nursing students offer health screening for blood pressure, cholesterol, and glucose.

Outcomes

Acceptance by the OOM was gradual as nursing faculty assisted students with several small-scale projects over a five-year period; however, one pivotal event was the approval by the Bishop and acceptance of a culturally appropriate publication on farm safety, entitled *Weeds in our Garden,* which was distributed to all three schools in the community. Table 1 summarizes the positive benefits the project has provided for the OOM community members, faculty, AHEC, and students.

Early outcomes included diverse scholarly creations by nursing students such as a poster on buggy safety shared at a fall gathering of local farmers and their families, a culturally sensitive brochure on cancer, and an honor's thesis on maple syrup urine disease. Approximately 450 WKU nursing students, 50 WKU public health students, 20 WKU social work/folk study students, and 80 University of Louisville residents have participated in Health Promotion Days. The educational topics, chosen by the community members, are wide ranging and have included cardiopulmonary resuscitation (CPR) training, mental health issues, diabetes, obesity, and immunizations, among others. A partnership was established with the local county health department, who provided tetanus and influenza immunizations during Health Promotion Days. In collaboration with the dental

Fig. 1. Old Order Menonnite Farming Method

Fig. 2. Old Order Menonnite Buggy

staff of the WKU Institute for Rural Health Development and Research, this project has also facilitated access to dental care for 50 members of the community.

While the addition of the family practice residents was always the primary role for AHEC, over time the AHEC role expanded. In addition to the interprofessional education with nursing students and family practice residents, public health internship students and Health Occupations Students of America (HOSA) have also been involved intermittently. AHEC has funded some of the research studies and purchases the supplies for the health screenings conducted by the nursing students. AHEC also coordinates the inclusion of the Mennonite culture in the annual University of Louisville Cultural Competence Workshop for medical, dental, and dental hygiene students as well as an annual lecture for the Glasgow Family Medicine Residency Program.

In 2009, after much community interest, AHEC was able to facilitate a visit and an educational offering from Dr. Holmes Morton on genetics in plain communities. Dr. Morton is the director of a non-profit medical and diagnostic service for children with inherited metabolic disorders. Sixty-nine OOM and other Anabaptist community members and 15 medical professionals attended the meeting. During the last 3 years, OOM community members have participated in the University of Louisville Cultural Competency Workshop Session held annually for medical, dental, and dental hygiene students with an attendance of at least 400 students each year. The most recent role for AHEC has been the addition of a postcard reminder sent to all members of the community each month with the date, time, and topic for the next clinic day.

The impetus for most adults in this community to seek health care is when an illness interferes with their ability to work. Most OOMs do not participate in health insurance programs or accept any government-sponsored programs. Their embracement of preventive health services is limited and they prefer self-treatment to current modern medical treatment.

WKU faculty members have also facilitated research in the community within the framework of a community-based participatory research model (Israel, Schulz, Parker, & Becker, 2001). The impetus for all of the studies has been an interest from community members. In a 2006 comparative study of lipid values, 41 community members received lipid screening (Main, Jones, & Abell, 2010). A colorectal cancer screening study utilizing fecal occult blood testing was completed with 37 adult participants in 2009 (Main, 2010). In 2010, a qualitative study of the experience of community members in the use of Burns & Wounds Ointment and Leaf Therapy was conducted through the mail in the U.S. and Canada (Main, Williams, & Jones, 2012) with 32 participants sharing their experiences. The most recent study focused on the perceptions of child body weight and feeding patterns with 14 families and 65 children participating in the study (Garrett-Wright, Main, & Jones, 2012).

Course evaluations demonstrate that students are able to identify barriers to health care in OOM communities and their role in providing culturally sensitive care. Student qualitative comments have also been collected and these

comments support the importance of this exposure to students. One student wrote, "I am trying to be more culturally aware… It has really made me take a hard look at myself and examine my own stereotypes and prejudices. I realize I have too many and that is something I am working on changing. It was something I really wasn't even aware of, but this experience has really opened my eyes."

Challenges and Benefit

Creating and sustaining this project has presented some challenges. The time commitment is difficult to predict. The OOM live in a slower-paced world filled with face-to-face socialization, which they highly value. Prior to each monthly clinic, a nursing faculty member writes or visits the community to confirm the monthly topic. Communication with the OOM community requires face-to-face conversation or by written letter. The benefits of this collaborative, inter-professional educational project for all the players outweigh the challenges of implementing the multiple-faceted project. Members of the Mennonite community benefit as their health needs, identified by their own people, are addressed. The nursing students and medical students and residents learned as they applied principles of health promotion, program planning, and teaching and learning within the context of a specific rural, diverse culture. Faculty members view the project as an excellent community-based learning experience and welcome the opportunity to conduct research and build a network between the unique community and the universities. The mission of AHEC was supported while a collaborative, inter-professional partnership was formed and used to educate future healthcare providers to serve culturally diverse rural populations.

Conclusion

This collaborative educational project has met the goal of providing future healthcare providers a cross-cultural educational experience while providing basic health screening, education, and primary care for members of the old order Mennonite community. This goal was accomplished, as all partners were willing to step out of their comfort zone and adhere to the principles of collaboration: to work together, learn from each other, respect and trust all partners, communicate, and value the unique nature of all partners (Chitty & Black, 2011).

REFERENCES

Amish Population by State (2012). Young Center for Anabaptist and Pietist Studies, Elizabethtown College. Retrieved from http://www2.etown.edu/amishstudies/Population_by_State_2012.asp

Bushy, A. (2000). *Orientation to Nursing in the Rural Community.* Thousand Oaks, CA: Sage Publications.

Chitty, K. K., & Black, B. P. (2011). *Professional Nursing: Concepts & Challenges*. 6th Edition. Maryland Heights, MO: Saunders Elsevier.

Garrett-Wright, D., Main, M. E., & Jones, S. (2012). Perceptions of Child Body Weight in a Mennonite Community. 26th Annual Conference of the Southern Nursing Research Society. New Orleans, LA.

IOM (Institute of Medicine), 2005. *Quality through Collaboration: The Future of Rural Medicine*. Washington, DC: National Academy Press.

Israel, B. A., Schulz, A. J., Parker, E. A., & Becker, A. B. (2001). Community-based participatory research: Policy recommendations for promoting a partnership approach in health research. *Education for Health, 14*, 182-197.

Kraybill, D. B., & Hurd, J. P. (2006). *Horse and Buggy Mennonites: Hoofbeats of humility in a postmodern world.* University Park, PA: Pennsylvania State University Press.

Lee, H. J., & Winters, C. A. (2006). *Rural Nursing: Concepts, Theory, and Practice*, 2nd Edition. New York, NY: Springer Publishing.

Main, M. E. (2010), "A Colorectal Cancer Screening Project in an Old Order Mennonite Community: Capstone Project Technical Report." *Nursing Faculty Publications.* Paper 43. http://digitalcommons.wku.edu/nurs_fac_pub/43

Main, M. E., Jones, M. S., & Abell, C. (2010). The accuracy of referral for portable lipid analyzers in an old order Mennonite population. *Online Journal of Rural Nursing and Health Care, 10*(2), 55-64.

Main, M. E., Jones, M. S., & Williams, D. (2012). Treatment of Burns with Burns & Wounds (B & W) Ointment and Leaf Therapy, *Journal of Alternative and Complementary Care, 18*(2), 109-111.

Myers, D. D. (1998). Insider. In H. J. Lee (Ed.), *Conceptual basis for rural nursing*. (1st ed.), pp. 125-138. New York, NY: Springer Publishing.

Old Order Mennonite Communities (2009). Unpublished community directory.

Wenger, L. (2003). *Unser satt leit: Our sort of people health understandings in the old order Mennonite and Amish community.* Unpublished master's thesis, University of Waterloo, Waterloo, Canada.

SC

Applying Statewide Innovation Through Infrastructure and Partnership

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The art and practice of health care necessitates the continued exploration and acquisition of medical knowledge. Although healthcare professionals complete years of formal training, healthcare is an evolving field with continuous advances and quality refinements that must be incorporated into healthcare processes. Without effective systems of education, the advances in health care derived from research would likely "die on the vine" (Bachmann, Cantoni, Coyne, Mazzola, & McLaughlin, 2010).

Background

Important considerations for provision of health care in the 21st century incorporate the use of technology, including telecommunication, to reduce the cost of healthcare delivery, expand service access for patients, and conduct quality improvement research within practices. Trends associated with ubiquitous and evolving technology include the rapid growth in the amount of available knowledge, increased access and dissemination of information through digital means, and a new generation of learners who have been immersed in technology throughout their lifetimes (Robin, McNeil, Cook, Agarwal, & Singhal, 2011). Telecommunication has already fundamentally changed relationships and communication strategies in the education and training of health professions students, accessibility of continuing education opportunities, delivery of health care, and conduct of research.

Healthcare professionals have long been expected to maintain professional credentials and skill sets through continuing education courses. For many years, there has been a shift from in-person courses to those offered online as a way to address healthcare professionals' limited time for continuing education and need for timely access to new knowledge and individualized training (Moore & Kearsley, 2011). In recent years, funding agencies and employers are expecting educational programs to deliver outcome-based curricula that demonstrate change in measurable outcomes through intermediate and long-term assessments. The effectiveness of distance learning systems has been found to be equally or more effective than in-person training (Moore & Kearsley, 2011). However, simply creating new "eLearning" opportunities does not guarantee successful adoption by the target audience nor achievement of long-term goals (Bachmann, Cantoni, Coyne, Mazzola, & McLaughlin, 2010). Therefore, not only is it vital to support and facilitate the e-Learning experience, particularly for the educators and learners reluctant to embrace the digital age, but success in demonstrating outcomes also requires stronger collaboration between all of the organizations and individuals involved in a training experience (Harden, 2006).

New opportunities for training are emerging as telehealth models gain traction. In all clinical settings, healthcare providers and their support staff are integrating new technical skills into their daily activities. This results in a need for quality, tailored training geared toward supporting clinical activities and practice modifications in the era of teleconsults and electronic health records (Gattoni & Tenzek, 2010). In order to implement a sustainable telehealth system, education and training has to occur at all personnel levels and multiple content areas. Administrators, clinicians, educators, and patients need instruction not only to use the equipment properly, but also to successfully conduct sessions and incorporate proper video etiquette.

In addition to accommodating new models for delivering traditional professional educational content, e-Learning environments will be crucial to effectively shift entire segments of the workforce into new practice models, such as the patient-centered medical home. Online problem-based learning experiences that directly relate to the transition of practices to the "patient centered-medical home" model have been found to directly impact patient care (Luke, Solomon, Baptiste, Hall, Orchard, Rukholm, & Carter, 2009). In order for a practice to be certified as a patient-centered medical home, providers must work within an interprofessional team to manage a patient's care across specialties. Technology can support training healthcare teams, regardless of the geographic location of the team members.

The South Carolina AHEC has effectively engaged in collaborations and infrastructure development to create a viable and dynamic model for delivering education in an

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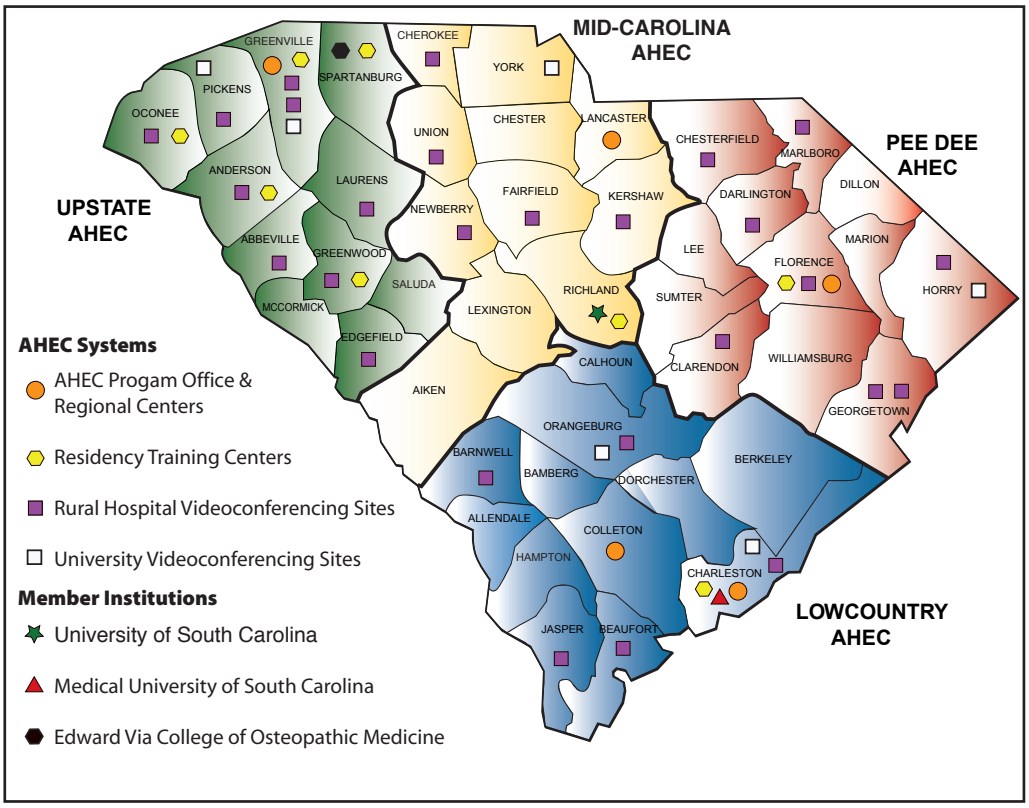

Fig. 1. South Carolina Health Occupation Outreach Learning System (SCHOOLS)

environment that is experiencing rapid shifts in technological trends and changing expectations.

Back to SCHOOLS

In the fall of 2010, the South Carolina AHEC received grant funding from the Health Resources and Services Administration (HRSA) to install Polycom videoconferencing equipment in the Program Office, the four South Carolina AHEC regional centers, and 20 rural hospitals across the state. Equipment purchased through this grant coupled with a strong relationship with the IT team at the Medical University of South Carolina (MUSC), our host institution, led to the creation of the South Carolina Health Occupations Outreach Learning System (SCHOOLS). One of the factors that made the proposal successful was the availability of the Palmetto State Providers' Network (PSPN), a statewide, Health Insurance Portability and Accountability Act (HIPAA)-compliant, dedicated broadband highway developed through Federal Communications Commission (FCC) pilot project funds.

SCHOOLS initially expanded access to AHEC educational programs and supported health professions student rotations. Our regional AHEC centers and the program office pooled marketing resources and developed strategies to offer statewide continuing education programming. Students on clinical rotation near a SCHOOLS site have been able to virtually attend seminars and workshops with peers and faculty on the main campus. Statewide curricular-based continuing education programs developed in partnership with funded projects have included a series offering Spanish for Healthcare Professionals, Stroke Management, Diabetes Management, a series on Addiction Management, and a program developed for civilian healthcare professionals providing care for returning veterans. The vast majority of these programs are now available as recorded programs through the online learning system developed and hosted by Upstate AHEC, known as AHEC U (www.AHECU.org). The Program Office and four regional AHEC centers assist with the orientation and rotation support of physician assistant (PA) students who are transitioning from their didactic to clinical experiences. Approximately 63 PA students from MUSC have taken part in clinical experiences supported by the video network. Additional and expanded collaborations with the South Carolina College of Pharmacy, which is located on two campuses, have provided access to weekly grand rounds sessions for students on rural clinical rotations. These students are able to stay in the community sites while presenting or participating in the case-based lecture series. On a monthly basis, pediatric residents at MUSC invite other residents, pediatricians, and health careers students to join in their case report via the SCHOOLS network.

The network of SCHOOLS locations and programming continues to grow with 31 current locations and more coming online. New locations include undergraduate campuses, which will assist in our health professions student development and recruitment pipeline programs. Funding from The Duke Endowment launched an initiative aimed at addressing the gap in engagement that occurs between the time students graduate from high school and when they apply to a health professions program. This initiative is a partnership with MUSC and five undergraduate colleges across the state to strengthen the healthcare pipeline of underrepresented minority students majoring in science who are interested in health careers. The SCHOOLS infrastructure allows intercollegiate faculty and students to connect with each other and faculty at an academic medical center through videoconferencing. Programs are designed to develop and support the academic and personal development of the students as well as allow faculty to network and mentor prospective health career students.

Within the past year, we have begun to collaborate with faculty members at MUSC and the University of South Carolina (USC) and those working on other grant-funded initiatives that require an educational or training component. We work with them to develop, deliver, and evaluate live and enduring e-Learning courses designed to affect healthcare delivery outcomes and facilitate research initiatives. These include programs for recognition and management of neurodevelopmental disabilities and an end-of-life series. We also finalized statewide access to our on-line centralized program registration and evaluation that can be used to query the data and produce reports, making it easier to conduct follow-up evaluation for intermediate benchmarks. In turn, partnering institutions and agencies have agreed to share long-term aggregate outcome data collected as part of their reporting requirements.

The Gateway to Telehealth

We have been able to leverage our telecommunication system and educational programming to expand the number of facilities joining the SCHOOLS network by 48%. Since inception, the educational offerings provided via SCHOOLS have effectively helped to spread the adoption of telemedicine in South Carolina. As SCHOOLS sites join the network, receive equipment, and put processes in place to take advantage of health provider training, they became more open to integrating clinical telehealth activities into their practices and facilities. Statewide SCHOOLS educational activities support clinical telemedicine services for rural hospitals managing the initial presentation of stroke victims, rural practitioners interested in referring patients for specialty services, and primary care practitioners who are responsible for Human Immunodeficiency Virus (HIV)/Acquired Immunodeficiency Syndrome (AIDS) patients.

An example of the impact telehealth education can have on health outcomes has been demonstrated in our collaboration with a stroke management initiative. A team from an MUSC Joint Commission Certified Primary Stroke Center provides urgent consultations at select hospitals in South Carolina through a web-based outreach initiative. We have teamed with the stroke experts to offer continuing education on stroke recognition, management, and protocols to initiate a telemedicine consult. Evaluations indicate an overwhelmingly positive result (93% affirmative) from healthcare professionals who indicate that they are intending to make changes in their practices following participation in our stroke management programs. Learner-proposed changes included the ability to conduct better patient stroke assessments and incorporate nationally developed standards of care.

As a result of our interest in promoting teleheath in South Carolina, members of the South Carolina AHEC are serving in a leadership capacity for the development of educational materials for policy makers, administrators, and clinicians. These efforts are incorporated into statewide efforts to positively affect reimbursement and licensure requirements related to telehealth.

Current efforts continue to focus on supporting new telehealth applications as a result of partnerships developed through education programs. Additional opportunities are emerging to provide direct patient education, assist with clinical research projects in rural settings, and identify entities and organizations in the state that can benefit from our expertise in developing collaborative educational partnerships.

New Models of Care

In the United States communities are facing a shortage of primary care providers. There are approximately 800,000 South Carolinians who currently do not have health insurance who may gain coverage under the healthcare reform legislation. In order to provide quality care for current and future patients, improved access to healthcare services will be needed, particularly in primary care. The SCHOOLS infrastructure is being used to provide learning opportunities and guidance for advanced-practice nursing, medical, and physician assistant students interested in careers in primary care. It will also expand access to specialty care for patients living in rural areas of the state.

Funded by a grant from The Duke Endowment, the South Carolina AHEC, MUSC, and USC established the Institute for Primary Care Education and Practice to increase the number of health professions students who choose careers in primary care by providing outstanding learning opportunities, support, and guidance for advanced-practice nursing, medical, and PA students interested in careers in primary care. A significant number of these educational offerings are being facilitated through video-based training and online programs. By utilizing the SCHOOLS infrastructure, the Institute is bringing together students and preceptors from multiple degree programs and specialties across the state. In addition, faculty from MUSC will be selecting practices that are interested in further developing interprofessional collaboration and team development, helping them establish

teamwork goals to achieve meaningful use of electronic health records (EHR), and assisting them with the implementation and evaluation of actions to improve on selected quality measures.

The Duke Endowment is also funding the Virtual Tele Consult Clinic (VTCC), an innovative approach to providing access to specialty care using telemedicine. This interdisciplinary, collaborative approach combines recent advances in technology with a broad coalition of specialists based at MUSC. Using a hub and spoke model, prospective patients in locations within South Carolina remote to the medical center are being afforded the opportunity to have consultation with specialists via an affordable, web-based telemedicine platform. Educational programs offered via the SCHOOLS network is providing in-service training to personnel working in the referring practices regarding use of the telemedicine equipment, the consult process, and billing for a teleconsult visit.

Conclusion

Across all areas of study and practice, there is a need for a well-trained workforce. Connectivity to and support of students who have expressed an interest and aptitude for service as healthcare professionals is invaluable to the development of a diverse workforce. Adapting continuing education opportunities to the rapidly emerging trends in telecommunication is vital to supporting the needs of the healthcare providers in the state.

The South Carolina AHEC has been fortunate throughout its 40-year history to provide programs and services that positively impact the recruitment and retention of healthcare professionals across the state. Elevating training to new levels of effectiveness and innovation is seen as a priority and an opportunity. By utilizing new technologies, overlaid on existing infrastructures and proven frameworks, we will build and support the workforce of tomorrow through training free of the limitations imposed by traditional learning environments.

According to the Federal Communications Commission (FCC), South Carolina ranks nationally in the top five states that are utilizing secure-broadband healthcare networks to deliver education and patient care (Federal Communications Commission, 2012). At this point in its two-year history, over 1,400 participants have accessed over 150 continuing professional educational and health professionals student programs at 31 SCHOOLS locations. Partnerships include a tertiary-care medical center (MUSC), three academic medical centers, and several HRSA-funded training programs.

Given the challenges and constraints faced by healthcare professionals and organizations, the entire South Carolina AHEC system is seeking to create and utilize innovative educational delivery systems to serve our state for years to come.

For additional information about South Carolina AHEC programs, visit www.scahec.net.

REFERENCES

Bachmann, L., Cantoni, L., Coyne, J., Mazzola, L., & McLaughlin, E. (2010). Are we ready for a CME eLearning Readiness Index (eCMERI)? A map and a literature review. *Third International Conference on Human System Interaction* (pp. 513–519). IEEE. doi:10.1109/HSI.2010.5514521

Federal Communications Commission (2012). *Wireline competition bureau evaluation of rural health care pilot program staff report* (p. 98). Washington, D.C.

Gattoni, A., & Tenzek, K. E. (2010). The practice: An analysis of the factors influencing the training of health care participants through innovative technology. *Communication Education, 59*(3), 263–273. doi:10.1080/03634521003605808

Harden, R. M. (2006). Trends and the future of postgraduate medical education. *Emergency Medicine Journal, 23*(10), 798–802. doi:10.1136/emj.2005.033738

Luke, R., Solomon, P., Baptiste, S., Hall, P., Orchard, C., Rukholm, E., & Carter, L. (2009). Online interprofessional health sciences education: From theory to practice. *The Journal of Continuing Education in the Health Professions, 29*(3), 161–7.doi:10.1002/chp.20030

Moore, M. G., & Kearsley, G. (2011). *Distance education: A systems view of online learning* (3rd ed., p. 361). Belmont, CA: Cengage Learning.

Robin, B. R., McNeil, S. G., Cook, D. A., Agarwal, K. L., & Singhal, G. R. (2011). Preparing for the changing role of instructional technologies in medical education. *Academic Medicine, 86*(4), 435–9.doi:10.1097/ACM.0b013e31820dbee4

NC

A North Carolina AHEC's Approach to Improve Testing for Perinatal Sexually Transmitted Infections

Mona Brown Ketner, MSN, RN, C-EFM; Mildred E. Carraway BSN, RN; and Sheila W. Cromer, MSPH, BSN, RNC, WHNP

Introduction

The prevalence of Human Immunodeficiency Virus (HIV) and other sexually transmitted infections (STIs) in pregnant women continues to be a problem associated with North Carolina's high infant mortality rate. In 2000, the NC Section of the American College of Obstetricians and Gynecologists (NC ACOG) and the North Carolina Division of Public Health surveyed all perinatal providers regarding their knowledge of current STI testing laws. The results of the survey showed 36.5% of providers were unfamiliar with state rules and regulations for testing pregnant women (Troccoli, K. et al., 2002, p. 422). From this survey, it was determined that quality improvement (QI) efforts were needed to help providers and hospitals comply with existing laws, rules and regulations, and Centers for Disease Control (CDC) recommendations.

Identified Problem

During 2003, medical records at six hospitals were reviewed by a nurse consultant with the Women's Health Section, North Carolina Department of Health and Human Services (NCDHHS), to assess perinatal STI testing practices. Results revealed significant gaps in care with a lack of adherence to state testing laws (see Figure 1). These rules were amended April 1, 2003, and required all pregnant women—irrespective of race, socioeconomic status, and ethnicity—to be tested for syphilis, chlamydia, gonorrhea, and HIV at specific intervals (NC Office of Administrative Hearings). In 2004, NC AHEC nurse educators joined the state nurse consultant to strategize on how to best meet the educational needs and address practice gaps in the state.

Action Learning Labs: Quality Improvement Project

In August 2005, the nurse consultant, NC AHEC Nurse Educators, and Perinatal Outreach Coordinators collaborated with the NC Hospital Association to develop an Action Learning Lab (ALL) to address deficits in compliance with STI rules. An Action Learning Lab (ALL) is a quality improvement method involving a team approach to address specific health concerns. Two initial ALLs were held in the Northwest and Eastern AHEC regions, with 12 hospitals participating.

An audit tool, developed by the nurse consultant and AHEC educators, allowed hospitals to capture prenatal STI testing data prior to each ALL (see Figure 1 for sample questions). These results were used to establish baseline compliance among perinatal care providers.

Action Learning Lab team members included nurse managers from labor and delivery and nursery, along with a hospital representative from Infectious Diseases and Risk Management. The Chief of Obstetrics and a hospital attorney were also invited to be part of the ALL team. The teams attended an all-day learning lab, facilitated by the nurse consultant and AHEC educators. The groups examined their respective data and developed a corrective action plan. A vital part of the day was didactic information disseminated by the consultant and AHEC educators in order to assure awareness of numerous recent law changes. Each team was provided a toolkit, including medical articles addressing best practice and a copy of the 2003 North Carolina Administrative Code regarding STI testing. The day's final activity consisted of interactive group presentations to share each team's strategic plan.

Following the ALL, team members returned to their hospitals and expanded their group to include other interdisciplinary stakeholders. Additional follow-up to the learning lab included multiple conference calls facilitated by the AHEC educators and the nurse consultant to assess hospitals' progress toward their action

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Figure 1 (Sample questions)

Reviewer's Initials:_____

Hospital Perinatal Syphilis, Gonorrhea, Chlamydia, HBV, HIV and GBS Screening Practices Audit Form

Date of review: _____
Mother's Chart #:_____

1. **Mother < 25 years of age: 1=yes 2=no**
2. **History of prenatal care:** 0-1 prenatal visits / 2-9 prenatal visits / greater than 10 prenatal visits / unable to determine number
3. **Date of Delivery** ___/___/___
4. **Lab results showed the mother was tested for:**
   - (a) **Syphilis at initial visit:** 1=yes 2=no
   - (b) **Syphilis at 28- 30 weeks** 1=yes 2=no 3=delivery prior to 28 weeks
   - (c) **Syphilis at delivery** 1=yes 2=no
   - (d) **If the infant was stillborn, syphilis testing was done on the mother** 1=yes 2=no 3=NA
   - (e) **Hospital determined Syphilis status of the mother before discharge of the infant** 1=yes 2=no
   - (f) **Chlamydia at first visit** 1=yes 2=no
   - (g) **Chlamydia on women <25 years of age in third trimester** 1=yes 2=no 3=delivery prior to 3rd trimester
   - (h) **Chlamydia on women <25 years of age at delivery** 1=yes 2=no
   - (i) **Gonorrhea at initial visit** 1=yes 2=no
   - (j) **Gonorrhea on women <25 years of age in third trimester** 1=yes 2=no 3=delivery prior to 3rd trimester
   - (k) **Gonorrhea on women <25 at delivery** 1=yes 2=no

Fig. 1 Hospital Perinatal Syphillis, Gonorrhea, Chlamydia, HBV, HIV and GBS Screening Practices Audit Form

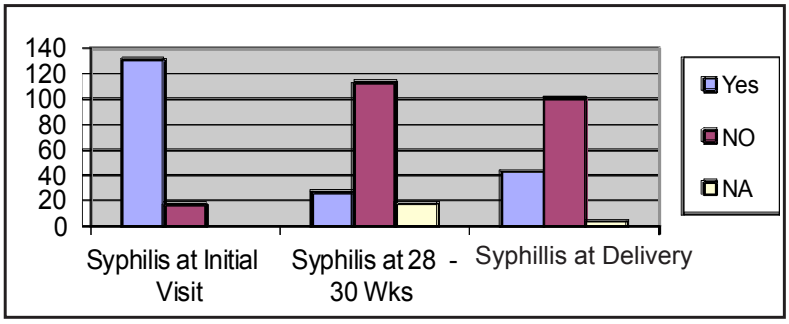

Fig. 2. Syphilis screening results by nurse consultant.

Practice "X" QA Data
Syphilis

Initial Visit

	Yes	No	No data	% Tested
1st review	75	14	15	**72.1%**
2nd review	10	0	0	**100.0%**
% Improvement				**27.9%**

Actual Practice results, name removed

Fig. 3. Medical practice in Eastern AHEC region.

plans. After the initial Action Learning Lab, seven additional ALLs were held throughout North Carolina between 2006 and 2007 to ensure inclusion of all delivering hospitals in the state. The educators contacted additional private physician offices, health departments, and prenatal clinics to provide education regarding updated perinatal STI testing laws.

Evaluation and Outcomes of the Action Learning Labs

Benefits that emerged from the Action Learning Labs include increased collaboration between staff from hospitals, private physician offices, and health departments. Hospital nurse managers continue to communicate regularly with prenatal care providers, in order to improve perinatal outcomes and universally apply STI testing policies.

One of the requirements of the ALL was a re-examination of prenatal and inpatient records to assess STI compliance. One hospital's initial audit revealed a 25% compliance rate with testing for gonorrhea during pregnancy; the audit subsequent to the Action Learning Lab revealed an increase in compliance to 80%. In 2012, many of the participating hospitals continue to incorporate regular review of both inpatient and outpatient obstetric medical records as part of their ongoing quality improvement initiatives; this practice has become a standard part of care.

Additional Collaboration with Private Providers

The success of the STI Action Learning Lab projects provided a CDC grant opportunity for Eastern AHEC and NC DHHS. Eight counties in eastern North Carolina were part of an enhanced perinatal HIV pilot project in 2008-2009. These counties were reported as having significant numbers of HIV in 2007, ranging from 21 to 37 reported cases (Epidemiology & Special Studies Unit, 2008, p. 3). This grant funded promotion of professional education and awareness among private providers, with a focus on best practice guidelines to enhance testing for perinatal HIV and other STIs.

Strategies such as toolkits, chart reviews, and corrective action plans using the Action Learning Lab format were utilized with providers in the Eastern AHEC region. A modified audit tool was used in obstetric private practices. Analysis of current practices

among these providers for testing of perinatal STIs revealed a range of compliance from 35% to 100%. Technical assistance was provided at each practice site by the Eastern AHEC educator and nurse consultant.

This CDC grant provided continuing education credit for all staff members who completed the pilot project. Providing American Medical Association Physician's Recognition Award (AMA PRA) Category 1 Credits™ was a key factor to increase physician involvement. Follow-up chart reviews showed increased testing for perinatal HIV and STIs in all practices, with most achieving a 100% compliance rate (see Figure 3).

Outreach and Education

Additional educational opportunities provided by the AHEC Nurse Educators and NC DHHS Nurse Consultant included the following:

- Action Learning Lab model utilized at the National Office of Women's Health Meeting in Denver, Colorado in August 2006 to address health concerns such as access to prenatal care for low-income women and improving flu vaccine usage,
- North Carolina Health Directors Annual Meeting held in Raleigh, January 2008, "Routinization of HIV Testing" presented as educational option,
- The 2008 through 2012 issues of *The Perinatal Post* newsletter at Northwest AHEC and *DownEast* newsletter at Eastern AHEC, continued provider updates regarding NC STI testing laws after conclusion of Action Learning Lab project,
- Presentations at various continuing education conferences across the state, including *Annual Gravidas at Risk Perinatal Conference* held in Hickory and *Annual Perinatal Symposium* in Greenville during 2007 and 2008.

Final Project Conclusions and Lessons Learned

The Action Learning Labs, held between 2003 and 2008, led to greater awareness of North Carolina perinatal STI laws and increased testing rates among both prenatal providers and hospitals. Routine testing for perinatal STIs has become a standard part of both outpatient and inpatient care across the state, resulting in improved patient care. The interdisciplinary ALL allowed providers to partner in an effort to change policies and procedures and streamline practice. The success of this project also demonstrated the vital importance of collaboration between healthcare providers and AHECs in an attempt to decrease North Carolina's infant mortality rate.

The use of an ALL as a quality improvement initiative has proven to be successful in both hospitals and private practices. This Quality Improvement (QI) methodology is applicable in multiple settings, is time efficient, incorporates a multi-disciplinary approach, and has the potential for creating enthusiasm for compliance with best practice. In North Carolina, the Action Learning Lab approach met its expectation for improving testing for perinatal sexually transmitted infections.

REFERENCES

American College of Obstetrics and Gynecology Committee on Obstetric Practice. (2008). ACOG Committee Opinion No. 418: Prenatal and perinatal human immunodeficiency virus testing: Expanded recommendations. *Obstetrics and Gynecology, 112*(3), 739-742. doi:10.1097/AOG.0b013e318188d29c

Epidemiology & Special Studies Unit. (2008). *North Carolina HIV/STD quarterly surveillance report.* (No. 4). Raleigh, NC: NC Department of Health and Human Services.

NC Office of Administrative Hearings. *NCAC, Title 10A - Health and Human Services, Chapter 41 - Epidemiology Health, Subchapter A, COMMUNICABLE DISEASE CONTROL, 10A NCAC 41A .0101, REPORTABLE DISEASES AND CONDITIONS.* (No. 41). Raleigh, NC: NC Office of Administrative Hearings.

Troccoli, K., Pollard, H., McMahon, M., Foust, E., Erickson, K., & Schulkin, J. (2002). Human immunodeficiency virus counseling and testing practices among North Carolina providers. *Obstetrics and Gynecology, 100*(3), 420-427.

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