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Spring 2013

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Recommended Citation

Dubose-Morris, Ragan; Cochran, Kristin; and Epps, Cydney Carson, "Applying Statewide Innovation Through Infrastructure and Partnership" (2013). *MUSC Faculty Journal Articles*. 40.

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Applying Statewide Innovation Through Infrastructure and Partnership

Ragan DuBose-Morris, MA; Kristin Cochran, MHA; and Cydney Carson Epps, MBA

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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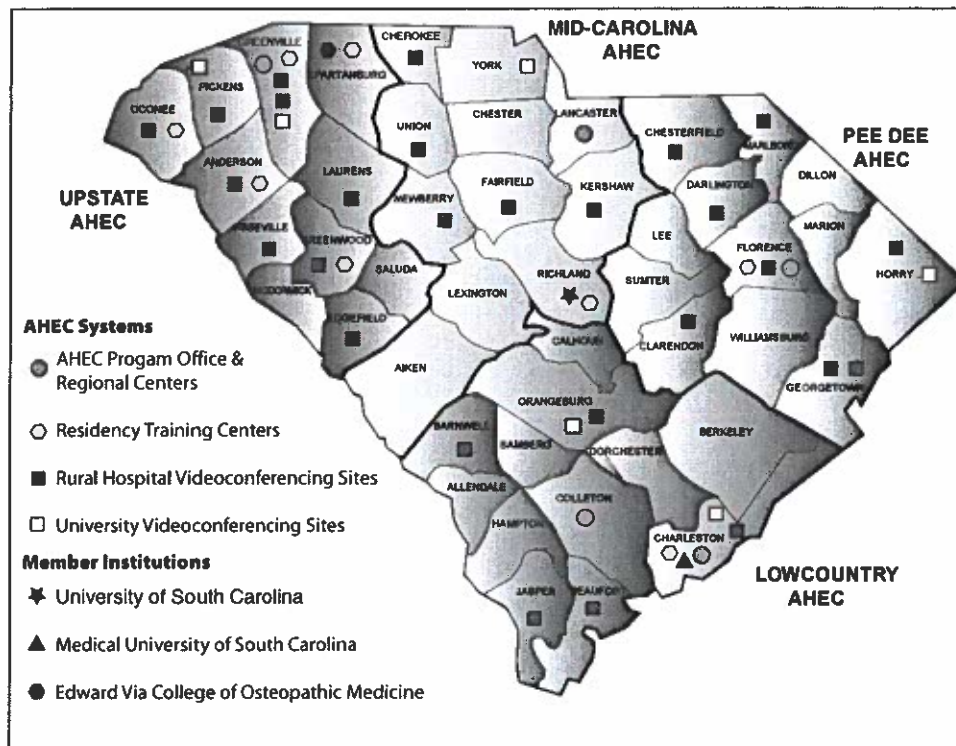


Fig. 1. South Carolina Health Occupation Outreach Learning System (SCHOOLS)

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.

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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 telehealth 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

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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.

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