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Telehealth: Preparing Advanced Practice Nurses to Address Healthcare Needs in Rural and Underserved Populations

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Research Article

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Abstract: Healthcare is being confronted with questions on how to deliver quality, affordable, and timely care to patients, especially those in rural areas, in systems already burdened by the lack of providers. Advanced Practice Registered Nurses (APRNs) have been challenged to lead this movement in providing care to these populations through the use of technologies, specifically telehealth. Unfortunately, APRNs have limited exposure to telehealth during their educational experience, thereby limiting their understanding and comfort with telehealth. To address this problem, a telehealth program was developed at a large university that prepares Doctor of Nursing Practice (DNP) APRN students. The telehealth program, embedded into the DNP curriculum, consisted of a simulation workshop, practice immersion, and written project. This program was well received by students, making them aware of the benefits and barriers to the implementation of telehealth as a care delivery modality. Telehealth was embraced as students implemented the program in their own practices.

Keywords: telehealth, healthcare technology, advanced practice nurses, rural populations, nursing education

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There is a shortage of primary care providers, especially in rural and distant communities (National Rural Health Association [NRHA], 2012; Rosenblatt, Chen, Lishner, & Doescher, 2010). Of specific concern is how to deliver quality, affordable, and timely care to these underserved patients in systems already burdened by the lack of providers. Advanced Practice Registered Nurses (APRNs) such as nurse practitioners, nurse midwives, and clinical nurse specialists are well positioned to respond to issues of providing healthcare to the increasingly diverse populations (Institute of Medicine [IOM], 2010; Patterson, Osborne, & Gregory, 2004). In order to do so, it is important for APRNs to master technological tools necessary to advance health, specifically electronic health records, health information technology, clinical decision support systems, and telehealth/telemedicine. APRNs are encouraged not only to master these technologies but also to lead the coordination and collaboration with other healthcare providers in their use and application (IOM, 2010). While APRNs are trained to address the critical issues of care coordination and management in a culturally sensitive manner, they are not often trained with a focus on healthcare technologies, specifically telehealth (Stanley, Werner, & Apple, 2009). This paper presents a program consisting of: (1) a workshop, (2) an immersion experience, and (3) innovative assignments provided to increase the telehealth knowledge and skills of APRNs.

Background

Rural health

The rural community setting presents uniquely dynamic barriers to access to healthcare services for patients, informal caregivers, and family members. Such barriers may include the lack of healthcare facilities and providers, limited public transportation services, cultural issues indigenous to geographic regions, poor health, and educational limitations (NRHA, 2012; Rutledge, Barham, Wiles, & Benjamin, 2008). An estimated 80%

of rural areas are said to be medically underserved, meaning that they suffer a lack of adequate provider coverage from physicians, dentists, nurses, pharmacists, and other allied health/medical professionals (Brewer, Goble, & Guy, 2011). This shortage not only decreases access to care but also overloads the healthcare services in such communities (Brewer et al., 2011). A lack of public transportation as well as chronic health problems can limit the rural poor and underserved population's ability to travel to see providers. Family members find themselves taking on caregiver responsibilities without formal knowledge and support (Luptak et al., 2010).

Healthcare providers also confront difficulties and barriers to practicing in remote communities. Rural healthcare providers experience limited professional networking and support to keep them up-to-date with new approaches to healthcare (Armer, 2003; Conger & Plager, 2008). In addition, they often lack access to needed specialists and equipment, thus undermining their ability to provide basic healthcare (Conger & Plager, 2008). This phenomenon has created a hesitancy of younger providers to choose to work in these areas and thus an overload on existing rural healthcare providers, many of whom are aging and nearing retirement (US Department of Health and Human Services, 2008).

Telehealth

Telehealth has been shown to assist healthcare professionals in overcoming barriers to care by providing remote access in underserved communities (Phillips, 2010; US Department of Health and Human Services, 2008). Telehealth is defined by the Health and Human Services Administration (US Department of health and Human Services, 2012) as the use of electronic information and telecommunications technologies to support not only long-distance clinical healthcare, public health, and health administration but also patient and professional health-related education. Telehealth comprises the use of technology and communication media such as computers, telephones, live video streaming, and telemonitoring equipment to enable healthcare service delivery. Telemedicine is a subset of telehealth that only encompasses remote patient care (US Department of Health and Human Services, 2012). For example, telemedicine occurs when medical information is exchanged between sites using electronic communications in order to address the patient's clinical needs.

The degree to which telehealth is able to extend access to care is now being recognized as a benefit in improving patient outcomes, patient satisfaction, and access to care (Schlachta-Fairchild, Varghese, Deickman, & Castelli, 2010; Ferguson, 2008). Studies have reported significant reductions in hospital readmissions, with a resulting decrease in overall costs of healthcare (Cady, Finkelstein, & Kelly, 2009; Chen, Kalish, & Pagan, 2011; Peters, 2008). Telehealth allows patients to access providers in the comfort of their homes, in local clinics, or through mobile vans in a timely and effective manner that in turn empowers patient self-management. Providers are able to identify complications earlier, affording them the ability to provide interventions in a timelier manner that improves patient outcomes and provider efficiency (Roupe & Young, 2003).

Role of APRNs in rural telehealth

APRNs will be needed to fill the role of the primary care provider in rural areas that have been underserved by primary care physicians and physician specialists (Burkes, 2010; Stanley et al., 2009). A study conducted in 2010 by Schlachta-Fairchild and colleagues indicated that APRNs have taken a leadership role in healthcare in rural areas. They are particularly qualified clinicians who are already providing "cost-effective, accessible, patient-centered care" to disadvantaged and underserved members of society (p. 99). APRNs' education enables them to provide a broad array of services identified as vital to the success of healthcare reform. If those in rural areas are to receive state-of-the-art healthcare and access to needed primary and specialty care provided in a time efficient and affordable manner, it is imperative that the APRN providers be trained in the use of technologies such as telehealth (IOM, 2010; Phillips, 2010). The National Organization of Nurse Practitioner Faculties (NONPF) NP Competencies (2012) recommend that NP students be prepared in "Technology and Information Literacy Competencies" (p. 3).

A program was developed, implemented, and evaluated as part of a post-Master's Doctor of Nursing Practice (DNP) program in the Southeastern United States to prepare APRN DNP students for the application of telehealth within their practice sites. The program received IRB approval allowing for the collection of data on the program impact. All student responses were kept confidential, and all numerical data were provided in aggregate. The entire program has been provided each year for the past three years to a total of over 60 APRNs. This paper describes the three phases of the program: (1) hands-on exposure to telehealth using standardized patient (SP)

scenarios, (2) telehealth immersion experiences, and (3) student projects. The DNP program is provided as a hybrid program where the student comes to campus for a long weekend each semester. The hands-on experience with the SP was conducted during one of the campus weekends with DNP faculty experienced in telehealth. The follow-up immersion experience and the projects occurred when the students returned to their home clinical sites. Data are presented on student and program outcomes. Specific emphasis is on the identification of benefits and barriers to telehealth and methods to overcome these barriers.

Theoretical framework

Bandura's social cognitive theory of self-efficacy provided the theoretical framework for the development of the telehealth experiences (Bandura, 1977). An individual's expectation of personal self-efficacy is based on four major sources: (1) performance accomplishments, (2) vicarious experiences, (3) verbal persuasion, and (4) emotional arousal (Bandura, 1977). Using this theory, it is anticipated that the students will develop a higher level of "self-efficacy" related to using telehealth if they participate in a program that has been developed based on the four theoretical constructs. "Performance accomplishments," addressed through performance exposure and desensitization, are achieved during the hands-on SP encounter, allowing students to practice and model behaviors in a safe environment in order to raise their mastery expectations related to telehealth. "Vicarious experiences" involve the live modeling of behavior that occurs during the immersion experience where the students are able to witness others actually performing telehealth without adverse consequences. Through "verbal persuasion" and encouragement during the SP encounter, immersion experience, and development of the project, faculty and mentors assist the students in believing that they could successfully master and utilize telehealth. The simulated and community telehealth experiences successfully diminished the students' "emotional arousal" (fear and anxiety) related to the use of telehealth.

Methods

Phase 1: telehealth simulation workshop

The telehealth workshop was designed to: (a) provide an understanding of the role of technology in healthcare, in particular rural healthcare since this was the focus of the DNP program, and (b) examine and explore the numerous ways telehealth can be utilized for patient and caregiver care, education, and support. The workshop allowed the students to apply telehealth to a SP case representing the rural population. The SP (patient actor) was used in the telehealth module to give students the actual experience of performing a follow-up telehealth visit.

Simulated telehealth scenario

The SP represented a rural individual who was recently discharged from the hospital following a stroke that left her with right-sided weakness and slurred speech. She portrayed an elderly African American woman who had limited resources, lived independently, was distantly located from healthcare services and was being provided assistance from her adult daughter due to her stroke. The students encountered the patient and her caregiver for two simulated experiences. In the first scenario, the patient was being seen for a face-to-face hospital follow-up ambulatory care visit to assess her status. The second visit was via telehealth. During this encounter, the patient's primary goal was to regain her pre-stroke independent lifestyle. She appeared frustrated, depressed, and anxious. The caregiver, the patient's adult child, was with the patient during both visits and reported feeling overwhelmed.

The participants, post-Master's DNP APRN students ($n = 60$), were placed into groups of four to six students with a faculty mentor to conduct the face-to-face interview and the telehealth visit. The students participated in groups for the following reasons: (1) to learn from each other, (2) so that they could receive the mentorship of a faculty member, and (3) to learn how to function as a team. The groups included students from diverse nursing backgrounds in order to afford experiences with other specialties. For example, groups might consist of family nurse practitioners, mental health nurse practitioners, and clinical nurse specialists. Small student groups fostered a team approach during the modules.

Face-to-face visit

During the initial face-to-face visit, students interviewed the SP and caregiver, focusing on the impact the stroke had on both of them. Each student was able to participate in portions of the interview. The DNP faculty member

assigned to each group facilitated the process through verbal support and the modeling of behavior. Students assessed specific factors they might encounter such as cultural issues that might affect care and recovery, physical weakness related to the stroke, current knowledge about stroke management and recovery, access to psychosocial support, as well as caregiver burden and stress. Since patients vary in access and knowledge regarding telehealth, students determined the technology resources available to the SP and caregiver as well as their knowledge about and ability to utilize technology. Data obtained during the scenario were used to develop a plan for utilizing technology to improve access to care and healthcare outcomes for this patient and caregiver.

The telehealth visit

During the follow-up telehealth scenario, students met with the same patient and caregiver they had assessed in the face-to-face appointment in a setting that simulated a remote telehealth experience. The purpose of this encounter was to stimulate the student's comfort with using technology (Skype®, Breeze) for communication with a patient and family member. The students were provided information on the need for secure networks and informed that the networks used in the class were not necessarily approved for healthcare use but were to simulate the experience. Through the use of technology, the students practiced assessing the patient's physical and emotional needs. Home health equipment to monitor blood pressure, heart rate, temperature, weight, and oxygen saturation was not available to use for practice. This equipment has been purchased and will be used for subsequent student training. The patient and caregiver were situated in a room set-up to simulate a home setting outfitted with a computer monitor for audio and video streaming for the healthcare appointment. This type of equipment is currently not commonly found in homes but is growing in prominence as more providers embrace the technology. The student group was located in another room that served as the clinic setting equipped with similar telehealth technology. Students took turns using the telehealth system to conduct a follow-up visit.

The students' specific task was to assess how the patient had progressed since the face-to-face visit. Aspects of the patient care visit included: (1) assessment of physical improvement, (2) a medication check, (3) follow-up on therapies, (4) ongoing education, and (5) support for the patient and caregiver in relationship to the recovery. Visual tools were used to assess the patient's progress, for example, having the patient hold a book in each hand to assess right-sided weakness, having the patient raise one arm and then the other to measure the improvement of right-sided mobility, and observing the patient ambulate within the camera view. Students also assessed the mental and emotional mood of both the patient and the caregiver. Students were able to quickly implement appropriate measures to enhance the dyad's health.

Evaluations

The experience was evaluated by the 60 students using a self-administered anonymous survey consisting of Likert-scale responses and open-ended questions. The items were measured from 1 (poor) to 5 (excellent). The SP scenario was found to be realistic ($x = 4.9$). In general, the students were very pleased with the telemedicine experiences ($x = 4.0$). The overall experience was rated highly ($x = 4.3$) with all of the students stating that they would recommend the experience to friends. Students overwhelmingly expressed how impressed they were with the value of telehealth in providing support and education to patients and their caregivers in the home setting. Comments included "very useful information and practical applications"; "best part was exploring ways to use telehealth"; and "I did not know how big telehealth was in healthcare". They identified the importance of preparation and training in the use of telehealth technology. Many of the students expressed surprise at how quickly they, as students, were able to feel comfortable with the technology and how easily they could communicate and assess both the patient and the caregiver. Most of the students stated that they felt as close to the patient via the telehealth as they did during the face-to-face encounter. Telehealth provided an opportunity for students to utilize creative assessment techniques that they had not considered when face-to-face with the patient.

Phase 2: telehealth practice immersion experience

All of the students participated in an 8-hour telehealth practice experience in order to garner real time encounters in healthcare settings that were actively utilizing telehealth. Students selected sites outside of their practice setting, thus providing a diverse and full immersion

vicarious experience. They had the opportunity to observe the preparation for the encounter and the debriefing. While at the site, students assessed the benefits and barriers to the program and considered how they might apply telehealth within their practices. The students were exposed to a wide variety of venues that used telehealth.

Some of the practice sites chosen by the students included rural and urban primary care practices, practices that provide mental health, Community Service Boards, state corrections systems, and Acute Stroke Telehealth Networks (Table 1). Students observed the many uses of telehealth such as the video-conferencing for patient education and support, provider to provider consultation, home-based chronic disease management, provider education, and remote patient assessment/monitoring. The variety of platforms and practice applications gave students an inside glimpse and experience into the far-reaching diversity and flexibility provided by telehealth. Students shared their experiences with their classmates through posts on-line.

Table 1 Examples of telehealth venues students visited

1) Healthcare setting	2) Telehealth use
3) Veterans Administration Medical Center	– Mental health visits – Staff training – Chronic disease management
Community Board	– Telepsychiatry visits between patients and psychiatrist
Prenatal Practice	– Telemonitoring for diabetes management – Video-conferencing for patient education
Hospital-based Patient Transfer Center	– Consultations to expedite patient transfer – Telestroke consultations between "Hub" (main) hospital providers and "Spoke" (rural/remote) hospital providers
Teaching Hospital	– Video-conference: clinical, educational, and administrative services – Telestroke and telepsychiatry consultations for providers – Telehealth education for rurally located stroke patients
University-based Telehealth Center	– Dental network: student training and telemedicine consults – "Project Hearts & Hope": video broadcasts in pediatrics – "Older Drivers Project": Web assistance and driver training – Research and development of Smart technology
Geriatric Center	– Cognitive Assessment Clinics/home monitoring

Phase 3: telehealth project

In order to assist the students in fully experiencing performance accomplishments from the telehealth immersion experience, they each wrote a paper that addressed: (1) the role of the telehealth for both the provider site and the recipient site, (2) the history of the program, (3) the technology that was used to provide the telehealth encounters, (4) benefits to the program, and (5) barriers and how they were overcome. They were also instructed to conclude their overview with a potential model that might be successfully implemented in their respective clinical practices and identify methods to implement this care model. Table 2 lists some of the programs planned by the students based on the encounter.

Table 2 Programs planned by students based on telehealth encounter

- Diabetic/blood glucose monitoring and patient education program
- Palliative care program using home telemonitoring
- Home telemonitoring for chronic disease management
- Daily meeting program with Community Services Board for patient discharge planning
- Televisit program with chronic GI patients for 3- to 6-month follow-up visit
- Remote psychiatric telemedicine consultation program
- Alzheimer's patient support and education
- Mental health/psychiatric support and counseling for incarcerated juveniles
- Endocrinology consultation program for diabetic patients
- Telemedicine for a hospital-based NICU program (cardiology and genetics consultations)
- Telemonitoring of "moms-to-be" with pregnancy-induced hypertension
- Monitoring and support program for children with chronic illness
- Stroke consultation program
- Teledermatology consultation program
- Video-conferencing for specialty consultations for patients with chronic disease
- Team-electronic "transport" of radiology images and pediatric echocardiograms

Benefits

Students identified the value of telehealth in a number of venues (see Table 3). They expressed that by receiving training in the use of telehealth technology as well as techniques for assessing physical attributes, it is possible to assess physical conditions without touching the patient. They could see the benefit of telehealth in

Table 3 Benefits of telehealth

- Lowers healthcare costs
- Decreases travel time
- Immediate problem-solving and time-sensitive interventions
- Decreases safety/security-associated risks
- Education of patients in rural communities
- Reduction in readmissions
- Exceptional healthcare without excess travel
- Easier to coordinate care
- Increases patient compliance
- Being able to utilize the "Cloud" to transmit large images in a timely manner
- Shortens patient length of stay in hospitals
- Quality care without compromising safety
- Helps with shortage of physicians
- Provides patients with self-monitoring skills
- Providers can keep close tabs on home patients
- Quicker response time to local ER physicians
- Due to quicker treatment, less rehabilitation needed
- Inmate healthcare
- fewer risks and embarrassment of traveling from correctional facilities
- Specialty care more accessible to underserved in rural and urban communities
- Continuing education to isolated/rural health practitioners

Table 4 Barriers for providers in implementing and maintaining a telehealth program

- Educating and training staff
- "Newness" of the technology, knowledge application, and new user intimidation
- Limited willingness of healthcare programs to participate in telehealth
- Limited access to broadband
- Provider acceptance, buy-in, and referring community physician resistance
- Funding – start-up, getting, and maintaining adequate funding and reimbursement
  a) Having the infrastructure to support and facilitate the program; logistics
  b) Confidentiality
  c) Technical support
  d) Proving telehealth's effectiveness vs "face-to-face"
  e) Equipment – obtaining and installing equipment
  f) Training staff to connect and maintain equipment and staff turnover
  g) Accommodating patients with visual or hearing impairments
  h) Patient resistance and/ or compliance
  i) Interruption in service during bad weather
  j) Delay in telemonitoring transmission of patient data

allowing providers and patients without access to specialists to receive needed consultation. It helped the patient and provider feel less isolated.

Students identified how the live video and audio stream conferencing facilitated a unique opportunity to interact with the patient. More specifically, they experienced how telehealth sessions could be utilized to maintain awareness of their patient's progress and intervene if their medical conditions changed and before they became detrimental. They recognized the benefit of being able to complete a "virtual" office visit without the patient and caregiver having to make a special trip to the provider's office.

Barriers

Through the telehealth workshop and real-life telehealth experiences, students identified a number of barriers to the implementation and maintenance of a telehealth program (Table 4). Financial support for the purchase and start-up of a program was cited as a common barrier as well as the cost of ongoing technical support and equipment maintenance. Students were interested in how to address this barrier as many of the identified patients in need of this service had little or no insurance coverage for

such telehealth services. Many students were aware that reimbursements for telehealth services are changing. Interestingly, students had a lively debate during subsequent on-line course discussions regarding the differences between state-funded Medicaid and federally-funded Medicare. The students' concern and debate matched that of the citizens of the United States.

Provider and staff buy-in was also noted as a barrier observed by students at several of the telehealth sites. The physician and nurse shortage was identified as a potential barrier in terms of having the staff to facilitate such a program. The coordination of IT systems and protocols with and between facilities and providers was presented as a barrier particularly when telehealth was used in mental health and correctional centers. Students recognized a need to educate both patients and providers on such technologies.

Telehealth programs implemented by students

A number of the DNP graduates have implemented telehealth into their practices as a result of the program. These programs foster: (1) collaboration with other providers/specialists, (2) provision of patient education,

(3) improvement of patient care, (4) provision of mental health services, and (5) research. The following are examples of some of the programs that have been implemented by the DNP graduates.

Collaborating with specialists

Two family nurse practitioner graduates of the DNP program developed and implemented a nurse run clinic in a remote mountainous region where up to 75% of the population was unemployed. There were no physicians in the local area. In order to obtain needed consultation with physicians and other specialists while patients were in the office, they relied on telehealth. Consultation occurred with specialists in fields such as orthopedics, dermatology, and neurosurgery. The nurse practitioner providers were able to develop a consultation and referral source that improved the efficiency and quality of care they were able to provide in an underserved region.

Patient education

A nurse practitioner graduate of the DNP program was actively involved in providing care for patients in stroke radiology at a large medical center. During her DNP program, she developed, implemented, and evaluated the outcome of a stroke education program that was delivered through telehealth (Schweickert, Rutledge, Cottrell-Gordon, Jensen, & Goughen, 2011). She provided stroke education to a group of patients through face-to-face education. She then provided stroke education to a similar group in the same rural town ~300 miles away via telehealth. She found that the education provided through telehealth was as effective as the education provided face-to-face. Since graduation, she has continued to seek funding and implemented similar programs through churches located in remote and rural areas. In addition, she has been funded to start a Tele-ostomy clinic.

Patient care

A neonatal nurse practitioner in the DNP program found that when transporting neonates the transport providers from her hospital were not connected to the specialists at the hospital. In order to improve the care provided during transport, she developed and implemented an on-line telehealth program using mobile hotspots. This enabled the transport team to provide neonatologists with data on the child and receive orders for care while in transport.

Mental health services

In order to improve the access to mental health counseling provided to elderly patients on psychotropic medications in a nursing home, one of the psychiatric/mental health nurse practitioners provided counseling via telehealth. This enabled the nursing home to provide the patients with mandated counseling in an area where there were no mental health providers.

Research

Caregivers of the elderly with dementia are often isolated as a result of the care recipient's condition. A gerontological nurse practitioner DNP graduate recently received research funding to develop and evaluate the outcomes of a website intervention using an interprofessional team of providers to offer on-line care and support for the caregivers. Through the website, she will provide the caregivers with access not only to diverse providers but to social support from other caregivers in similar positions.

Conclusions and implications

Students came away from the telehealth program with a broader view of the positive implications of telehealth in healthcare. They were able to identify and in some cases implement specific applications of some aspect of telehealth within their individual clinical practices. The greatest appeal for use was found to be in rural communities where the issue of access to care is often critical. They saw the benefits of telehealth in the home health setting where patients with chronic or debilitating diseases could be managed in the comfort and convenience of their homes. Overall, students were impressed with the potential of telehealth to decrease healthcare costs, hospital readmissions, and the ability to initiate treatments in a more timely and effective manner. The ability for APRNs to connect with other providers improved the quality of care provided to the patient and helped minimize the isolation experienced by the rural provider.

Telehealth is an excellent technology for addressing many of the barriers to healthcare in rural and disadvantaged areas. It can provide patients, caregivers, and

healthcare providers with the opportunity to connect to one another from a distance. Rural practices have the opportunity to connect their patients to specialists who are located at a distance. Remote care providers can collaborate with peers for patient support and education. What would possibly require hours of travel to a healthcare provider can occur in the rural private practice office or in the comfort of patient's homes as a result of using telehealth. In order for these benefits to be maximized, healthcare providers should be educated as expert clinicians in the area of health technology and specifically telehealth.

Through the interactive vicarious telehealth modules, students were able to develop a rich understanding of telehealth technology. Students also acquired the knowledge and understanding of the necessary resources to connect their rural or disadvantaged practice settings to specialists with whom they would not otherwise have close contact. At the completion of the clinical experience, students could identify problems and articulate strategies to circumvent these barriers. Through the clinical immersion, students developed not only a network of resources and support to facilitate the development and implementation of telehealth within their practices but most importantly the belief (self-efficacy) in their ability to utilize telehealth.

Telehealth is fast becoming a more common method to deliver healthcare to those areas where access is limited. This includes not only rural populations but also the homebound and those with access barriers in urban and suburban areas. At some point in the near future, telehealth will no longer be a new or novel approach. It will instead be a standard of care. While there are still issues to be worked out in terms of reimbursement and other funding, the trend toward using such technology is advancing quickly. Acting proactively by preparing the nursing workforce to use such technology is vital in arming providers with tools needed to meet the healthcare

demands of an increasing population, particularly populations residing in remote rural regions.

The teaching model presented in this paper, based on Bandura's self-efficacy theory, represents a proven methodology for providing students not only an exposure but also immersion into telehealth (Bandura, 1977). Armed with these experiences and knowledge, students can more easily craft and implement such strategies into their clinical practice settings. Showing students the variety of venues in which telehealth can be applied and the relative ease with which it can be employed is an important aspect of guaranteeing future success in managing the complexities in healthcare.

Based on the success of this educational program, steps are now being taken to implement additional clinical experiences that will allow students to take an even more active role in health technology. A specific focus will be on providing interprofessional support to caregivers of elderly individuals with dementia through a Virtual Patient Centered Homes website. In addition, students interested in policy development are lobbying for telehealth funding. As recently as January of 2012, students were involved with lobbying for telehealth to be considered a viable means for providing collaboration with physicians as opposed to on-site supervision (HB 346, 2012).

With the healthcare crisis so prominent and the need for new models of care that provide for quality access a must, telehealth is becoming a sought-after tool. We now must embrace programs such as the one described in this paper to prepare students and providers for this new role in healthcare. Using patient actors and face-to-face computer technology, many programs can introduce such experiences to their students. With very few resources, healthcare education can be transformed to provide students with the knowledge and skills in telehealth required to meet the needs of the homebound, rural, and underserved populations.

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