

TELEHEALTH AND HEALTH CARE PROVIDER SHORTAGES

Position Statement and Recommendations from the
America Telemedicine Association
Approved March 2007

A number of recent reports indicate that the United States is facing shortages of health care providers nationwide. This U.S. problem is one aspect of a world-wide shortage of providers that seriously affects the health of the global population. If the problem is not addressed, it is likely to have significant consequences for the health of U.S. citizens, including reduced access to scarce care resources and an increased cost for those services. The problem is documented by the following quotes:

“... There are 77 million people known as “baby boomers” in the United States. These are people defined as being born in the years 1946 through 1964. This group represents the majority of the people that have earning power and are supporting the economy. The majority of the present doctors, nurses, and other health care providers and staff come from this group. The number of retirees from this generation will be growing rapidly in the coming years. Members of Generation X born between 1961 and 1981 are essentially the children of the baby boomers. There are only about 50 million people in the Generation X group. Comparison of these two generations raises a serious question for the health care industry: If today’s health care workers are primarily from the 77 million baby boomers generation, how will there be enough health care workers from a 50 million population in Generation X to provide services for the aging baby boomers, their own Generation X, and the generations to follow?”¹

“The Council on Graduate Medical Education (COGME), a national advisory body that makes policy recommendations regarding the adequacy of the supply and distribution of physicians, predicts that if current trends continue, demand for physicians will significantly outweigh supply by 2020. It recommends that medical schools expand the number of graduates by 3,000 per year by 2015.”²

“... Dr. Peter Buerhaus and colleagues found that “despite the increase in employment of nearly 185,000 hospital RNs since 2001, there is no empirical evidence that the nursing shortage has ended. To the contrary, national surveys of RNs and physicians conducted in 2004 found that a clear majority of RNs (82%) and doctors (81%) perceived shortages where they worked.”³

“The statistics are clear that the current shortage of pharmacists exists and will not be quickly resolved. Unless the problem is addressed immediately, the demand for pharmacists will continue to outpace the supply, and the nation’s health care delivery system will suffer. Addressing these issues will require a significant increase in the number of people who enter the pharmacy profession
....”⁴

“The lack of pharmacists in the U.S. has spawned Congressional action, private studies and public concern. Today, more than 8,000 vacancies exist in retail pharmacies, hospitals, clinics, and other industry sectors, and the problem is only expected to worsen over time.”⁵

“The health care labor shortage in the United States has been widely documented and expected to last through 2050. Almost half of the health care workforce will be 45 years or older by 2008. . . . By 2010, 40% of all registered nurses will be 50 years old or older; . . . the U.S. will need 1.7 million nurses but only 635,000 will be available. One of the most prevalent obstacles rural Americans face in accessing timely and appropriate primary health care services is the maldistribution and shortage of health professionals to provide needed services. Workforce shortages are especially serious in remote frontier communities, many of which are located in the western region of the United States.”⁶

“There are still serious mal-distribution problems—one in five U.S. residents is medically underserved.”⁷

“More than 35 million people now reside in rural counties with a community of at least 2,500 but no town as large as 20,000, [and are] presently served mostly by family physicians. If these people are to have a personal physician responsible for 1200 patients, more than 29,000 family physicians would be required. With projected population growth the number of family physicians required for this population increases in 2010 to 30,824, in 2015 to 32, 824, and in 2020 to 37,503.”⁸

There is a growing consensus that the supply of health care providers across the professions is going to be inadequate to meet the expanding needs for health care of the U.S. population - both in the short term and in the long term. Telehealth, while not the entire solution to the problems presented by the shortage and maldistribution of health care providers, can make important contributions to alleviating those problems.

First and foremost, telehealth methodologies by their very nature are designed to address the problem of provider maldistribution through providing clinical care at a distance in either rural or urban settings. The problem is characterized by a distribution of providers that is not uniform across geographic areas. In particular, the ratio of providers to patients tends to be lower in rural areas than in metropolitan areas. With fewer providers to serve a given size population in rural areas, access problems are exacerbated and the quality and safety of care may suffer. In simple terms, the providers, whether they are nurses, physicians, dentists or pharmacists, are not located where the need is greatest. Solving the problem requires that the patients be brought together in some manner with health care providers.

Telehealth methodologies provide such a solution through various forms of telemedicine to make better use of scarce resources. The live interactive videoconference uses telecommunications technologies to bring the patient together with the provider in a

virtual visit that has been demonstrated to be effective in numerous situations. Physician specialists located in large urban practices can diagnose and treat patients in rural health professional shortage areas using videoconferencing. Pharmacists located at large 24/7 staffed hospitals can provide pharmacy services to small rural hospitals that cannot justify the cost of full-time pharmacist coverage. Retail pharmacists can provide medication services to small rural communities through supervision of a medications dispensing technician. Diabetic nurse educators can work with diabetic patients who do not have local access to such services because the geographic demand is insufficient to support such a practice. Rural providers can share their expertise across a broader geographic area and serve as consultants to their rural colleagues using telehealth methodologies.

It is important to recognize that this solution to maldistribution will only be effective if urban providers have the time available to provide such care. In all too many situations, needed specialists are already fully booked and do not have the time or resources to provide any additional services via telehealth or otherwise.

Telemedicine consultation models allow the local rural provider to present their patients to a specialist via videoconference and to be more involved in the consultation than is possible when patients are sent to see a specialist at a distant location. In most cases, when a generalist refers a patient to a specialist in another location, the patient is seen and the local provider will be sent a written report. Telemedicine allows for the local provider to both present the patient at the beginning of the consult and to participate in a case conference at the end of the specialist's virtual visit. Over time, the local provider becomes more knowledgeable and can manage patients without requiring specialists as often. This has been demonstrated in e-mental health programs where psychiatrists in urban tertiary medical centers have been able to diagnose and treat mental health patients in rural areas where there are either limited or no available psychiatric services. Use of the consultation liaison model where the rural provider presents and then at the end can participate in a case conference about his/her patient has allowed the rural provider to learn how to manage mental health issues for their patients. This is not intended to eliminate the need for mental health specialists entirely but to provide access to mental health services locally and simultaneously provide training for rural providers.

Telehealth methodologies can promote more efficient care so that the same provider can service more patients in a given day within a broader catchment area. This has been amply demonstrated in the field of home health. Nurses performing three to five physical home visits during a given day can now conduct virtual visits using videophones and other means and visit with many more patients during that same period of time with travel time and costs greatly reduced. While such virtual visits cannot and should not completely replace in person visits, they provide a valuable supplement that has a proven benefit for patients. By significantly improving the productivity of a health professional, the shortage in terms of units of service delivered can be diminished without the need for so great an increase in the number of providers.

Another highly effective role for of telehealth is the use of store and forward telemedicine (SFT). SFT consults rely on asynchronous transfer of still digital images of a patient, or

clinical data, such as blood glucose levels or electrocardiogram measurement, from one site to another for the purpose of rendering a medical opinion or diagnosis. Common types of SFT include radiology, pathology, dermatology, ophthalmology, and wound care. SFT has been proven to resolve access to care issues in both rural and urban areas and provides a more efficient use of specialist time.

Telehealth can not only improve the productivity of individual providers but can also lead to a reduced demand for services. Numerous examples exist in the home monitoring literature of studies that demonstrate reductions in emergency room visits and hospitalizations that have resulted from the use home monitoring equipment. One of the best know examples is the work of the Veterans Administration in the state of Florida that indicated a 50% reduction in hospital admissions and 11% reduction in ER visits using home telehealth and care coordination.⁹ These reductions free up resources, including physician time, which can be productively used for other purposes such as providing medical services that are otherwise unavailable.

While increases in productivity and reductions in demand can be of some assistance in meeting the growing need for health care providers, it is important to recognize that there will be a continuing need to increase the number of providers simply to keep up with population growth and changing demographics that require care. Telehealth methodologies can be of assistance in several ways.

First, telehealth methodologies extend the geographic scope of an educational program by supporting the training of students at a distant site from a central location or multiple locations. There are a significant number of persons who would avail themselves of the opportunity to become medical professionals if they could stay in their home community to continue jobs and family support during training periods. Once trained, many of these new professionals would stay in that same community and provide a career of support. Thus, telehealth can assist in expanding the pool of individuals who are willing and able to pursue a health professions career.

The technology, through multipoint videoconferencing can supply educational programs to many remote sites much less expensively than putting an instructor “on the ground” at each location. At the same time, it does provide of a degree of interactivity which is very important to the teaching process. It is a well known and proven principal of education that students who are active in their learning achieve mastery more quickly and demonstrate a better understanding of what they have learned. Telehealth has a particular advantage over most distance learning in that it already has connectivity to health care locations such as hospitals, clinics and other settings and can be used for training in those locations for little additional cost.

Telehealth also facilitates other kinds of teaching besides lectures and group discussions. In particular, it can promote remote mentoring where a student practices a certain skill under the supervision of a master tutor at another location. Surgeons have engaged in remote mentoring in minimally invasive surgery for some time. Since the surgery is conducted by a surgeon viewing an image captured by a video camera introduced into the

patient's body through a small opening, that image can be readily shared with others. By viewing this image, an expert surgeon can provide real-time advice to a surgeon in training as they carry out the procedure. With high bandwidth telecommunications, the surgeons could be a half a world apart and still interact with each other in an effective manner.

A problem facing health professions students in medicine, pharmacy and nursing is the lack of clinical training sites – locations where students can work with patients and develop their skills in patient care. While telehealth methodologies cannot by themselves create new training sites, they can foster better communications among those sites and facilitate the supervision of students located at those sites by a central educational authority. Since professional schools are responsible for the quality of training at their clinical sites, the greater ability to communicate and supervise students at these remote sites should enhance the ability and desire to include training sites beyond those within a small geographic radius of the training facility – medical school, pharmacy school or nursing school.

Finally, telehealth may assist in addressing the shortage of health care providers by promoting new models of practice that improve the effectiveness and efficiency of the care process. For example, telehealth methodologies could promote high quality care supplied by lower cost and, theoretically, more numerous and available personnel who can be trained and closely supervised by higher level providers. The model for this is the physician's assistant (PA) who provides care under the supervision of a licensed physician according to established protocols. In effect, the physician is "handing off" certain aspects of patient care to the PA under carefully controlled conditions. A vital and critical component of controlling and improving the quality of such care is the timely and effective communication between the physician and the PA. Telehealth methodologies promote and facilitate such communication and can further broaden its geographic scope so that effective communication and supervision can be carried out over sizable geographic distances without compromising the quality of care. The efforts of the Alaska Federal Health Care Access Network (AFHCAN) in Alaska are perhaps one of the best examples of this type of work. AFHCAN addresses the need for health care in remote Alaskan villages, where there are no physicians, by using store-and-forward telehealth to "hand off" health care to health aides located in those villages. The health aides then provide care under the supervision and advice of physicians at centrally located sites.

In summary, telehealth and its associated technologies have an important role to play in addressing the maldistribution and shortages of physicians, dentists, nurses and pharmacists. Appropriate uses of telehealth provide the promise of a greater geographic scope of services that will address the needs of underserved populations, improve the efficiency of care, facilitate professional education and promote new models of care, making health care more accessible to those in need.

ATA Policy Recommendations:

1. Efforts should be made to facilitate the provision of telehealth services across state lines.

Rationale: One source of the maldistribution of providers is the variation of population densities among the states and the corresponding higher densities of practitioners in certain locales. Medical licensure rules and procedures that prevent qualified health professionals from providing telehealth services in neighboring states can exacerbate this problem. Efforts to resolve these artificial barriers should be encouraged.

2. Public policy should address inconsistencies in payments for services when those services are provided using telehealth technologies.

Rationale: The patterns of payment for health care services provided via telehealth methodologies continue to be inconsistent. Medicare pays only for certain services when those services are delivered to patients in rural locations. The individual state Medicaid programs frequently have different sets of rules regarding what is covered and what is not, and private insurance carriers exhibit the same type of payment variation. In some situations, telemedicine is incorporated into fee for service payments, while areas such as home health, the use of telehealth methodologies is allowed but not reimbursed. The lack of consistent and uniform payment policies stunts the growth of telehealth. Consistent policies would allow the growth of telehealth in a manner that would more likely provide a solution to provider shortages.

3. Federal and state policies should facilitate the development and implementation of alternative payment systems -- such as Pay for Performance (P4P) -- that emphasize patient outcomes of health care.

Rationale: Current payment systems support and encourage existing methods of health care delivery that emphasize the delivery or performance of a particular service regardless of the impact that service has on health care. Such services are defined by the professional providing the service, the nature of that service and the location where the service is delivered. The impact of such payment systems is that innovation that goes beyond the modification and enhancement of services with the existing model is discouraged. Opening up a payment system to reimburse for outcomes of care instead of discrete services de-emphasizes the “who, what and where” of care delivery and may well encourage innovations in the delivery of care, such as the use of telehealth methodologies, to achieve those outcomes in a more efficient manner. Similarly, such payment systems could encourage the better use of all health care professions in a team approach to achieve those outcomes. In both such instances, it is quite possible that a payment system that emphasizes patient outcomes would lead to reductions in the shortage of health care providers.

4. Telehealth should be incorporated into provider loan forgiveness programs targeting rural and urban underserved areas.

Rationale: Generally, the purpose of health care provider loan forgiveness programs has been to increase the accessibility to health care in underserved areas by providing financial rewards for providers who will practice in those areas. Since telehealth methodologies have been demonstrated to provide increased accessibility in rural areas, the linkage of telehealth and loan forgiveness should lead to even better accessibility for underserved areas. It is a particularly difficult problem in these days of provider shortages to convince individual providers to participate in the provision of care via telemedicine since they are often fully occupied in their current practice and there are no exceptional financial rewards for participating in telehealth care. Extension of loan forgiveness to providers of such care would supply the additional financial reward that could make telehealth services more attractive to those individuals entering the health professions and who have significant loan burdens. This could increase the numbers of professionals willing to provide such services, and could supply a partial solution for the problem of maldistribution of health care providers.

5. Health professions educators should introduce telehealth into their professional curricula and make use of it to offer their programs.

Rationale: One of the significant problems with which the telehealth field must cope is the ignorance of health care professions regarding the utility and benefits of telehealth. This recommendation is based on the assumption that providers are more likely to engage in telehealth activities if they are familiar with its utility and have some skills in using telehealth methodologies to care for patients. This can and should be accomplished by introducing concepts and practices of telehealth into the professional training of health care providers, realizing that curricular change is a daunting task and that professional academic organizations such as the American Association of Medical Colleges, the American Council on Graduate Medical Education, the American Association of Colleges of Nursing, the American Dental Education Association and the American Association of Colleges of Pharmacy have considerable influence in matters of educational curricula.

References

- ¹ Burgiss SG, Telehealth Technical Assistance Manual, National Rural Health Association, October 2006.
- ² AAMC Reporter, November 2004. Last accessed on 4/28/2007 at <http://www.aamc.org/newsroom/reporter/nov04/cogme.htm>
- ³ Beurhaus PI, Staiger DO, Auerbach DI, Trends: New signs of a strengthening U.S. nurse labor market. Health Affairs, November 17, 2004, Web Exclusive.
- ⁴ Facts at a glance: The pharmacist shortage. Last accessed on 4/28/2007 at http://www.afpenet.org/news_facts_at_a_glance.htm
- ⁵ Facts at a glance: The pharmacist shortage. Last accessed on 4/28/2007 at http://www.afpenet.org/news_facts_at_a_glance.htm
- ⁶ Health Care Workforce Distribution and Shortage Issues in Rural America, National Rural Health Association, March 2003.
- ⁷ Questions and Answers About the AAMC's New Physician Workforce Position, last accessed 4/28/2007 at <http://www.aamc.org/workforce/workforceqa.pdf>.
- ⁸ Green LA, Dodoo MS, Ruddy G, Fryer GE et al. The Physician Workforce of the United States: A Family Medicine Perspective. The Robert Graham Center: Policy Studies in Family Medicine and Primary Care, October 2004.
- ⁹ Chumbler NR, Neugaard B, Koob R, Qin H, Joo Y, Evaluation of a Care Coordination/Home-Telehealth Program for Veterans with Diabetes, Evaluation & the Health Professions, Vol. 28, No. 4, 464-478 (2005).

Prepared by:

Stuart M. Speedie, PhD, University of Minnesota, Minneapolis, MN
Barbara Johnston, MSN, Sacramento, CA
Robert Cox, MD, Hays Medical Center, Hays, KS
Nina Antoniotti, RN, MBA, PhD, Marshfield Clinic, Marshfield, WI
Jana Lindsey, RN, CMC, Shriners Hospital for Children, Honolulu, HI