

What Is Telehealth?

The American Telemedicine Association defines telemedicine or *telehealth* as the use of medical information exchanged from one place to another via electronic communications to improve patients' health status. Physicians can use interactive video along with the collection and transfer of medical data to assist in treating their patients. It can be as basic as seeking medical advice over the telephone or as complex as using satellite technology to broadcast a consultation to multiple locations, using videoconferencing and medical imaging.

Telehealth services include:

Specialist referral services involving a specialist who assists a general practitioner in making a diagnosis;

Patient consultations using audio, video and medical data between a patient and a primary care or specialty physician in making a diagnosis and treatment plan; and

Remote patient monitoring using devices to remotely collect and send data to a monitoring station for interpretation. "Home telehealth" applications might include a specific vital sign, such as blood glucose or heart ECG. These services can be used to supplement the use of visiting nurses.

Remote patient monitoring is the type of telehealth service most likely to benefit home ventilation users. Historically, remote patient monitoring was driven by inadequate health services to persons living in inaccessible locations. Now, both providers and patients stand to gain from the development of telehealth. For providers, it promotes timely, high quality care and cost savings. For patients, telehealth provides accurate, timely and key information without the need to visit the hospital or health-care provider.

Key factors affecting the widespread adoption of telehealth:

● Limited scope of reimbursement

The limited nature of reimbursement for telehealth continues to impede its widespread use. Recently, Medicare and Medicaid expanded its coverage adding to the reimbursement allotted for people located in Rural Health Professional Shortage Areas (HPSAs). Only a few third party private payors provide telehealth coverage in selected states.

● Legal questions about geographic boundaries

Given that the Internet knows no boundaries, issues pertaining to the practice of telehealth between patients and providers across states have raised legal questions. At present, about 26 states have laws that regulate out-of-state telehealth practitioners. The vast majority of states require full licensure for an out-of-state physician who is providing telehealth services to patients residing in that state.

● Safety and standards for telehealth applications

As the use of telehealth expands, there is a stronger need for clinical protocols and guidelines that set standards for treatment and ensure patient safety. The key bodies in the USA involved in establishing widely adopted standards and guidelines include the Food and Drug Administration (FDA), the Federal Trade Commission (FTC), as well as the Center for Devices and Radiological Health (CDRH). The Joint Commission for the Accreditation of Healthcare Organizations (JCAHO) has its own standards on credentialing and telemedicine services.

● Privacy, security and confidentiality of patient data

With a growing number of health-related inquiries on the web and a wealth of personal information being stored online, there are serious issues pertaining to the security of and access to patient data. The Health Insurance Portability and Accountability Act (HIPAA) mandates the adoption of standards pertaining to national electronic health transactions. ▲

Online resources: To learn more about telemedicine and telehealth and related topics, such as reimbursement policies in your state and standards for telehealth programs, visit American Telemedicine Association at www.americantelemed.org.

Another valuable online resource for telehealth information is the Telemedicine Information Exchange (www.telemed.org), which contains news about telehealth, listings of new and ongoing programs, and telehealth funding opportunities.

IVUN Members Consider Telehealth

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In April 2006, IVUN members with computer access were invited to participate in focus groups about telehealth for home ventilation users. The purpose was to discuss the use of telehealth to improve home mechanical ventilation care in the USA and to gather the opinions and observations from both home ventilation users and service providers.

The focus group was initiated by PHD Medical, a diagnostic software development company based in Montreal, Quebec, Canada. PHD Medical has participated in the development of a telehealth solution for ventilator-assisted patients in Canada.

The sessions were conducted remotely using the online collaboration tool WebEx™ and conference calls. Participants attended two 1-hour sessions, held on consecutive weeks in April 2006. The first session described and demonstrated the proposed telehealth model for home ventilation in Quebec, Canada, and distributed a questionnaire. The second session reviewed the responses, which was followed by a discussion of challenges faced by home mechanical ventilation users and providers in utilizing telehealth.

Focus group participants

The provider focus group consisted of five participants with experience in respiratory therapy, nursing, ventilator manufacturing, clinic administration, and rehabilitation. The user focus group consisted of ten participants who use bi-level devices, volume ventilation or an iron lung. Participants had been using home ventilation 4.5 to 52 years.

The results from the provider group

Have you ever used telehealth technology in a clinical setting?

Most participants were new to telehealth, but one participant used it regularly to monitor patients in a remote hospital. Some had project and planning experience in telephone

triage. It was noted that most respiratory therapists (RTs) would have some basic telehealth experience due to frequent use of the phone for ventilator troubleshooting.

Do you think telehealth can improve the quality of care for home vent users? All agreed that it would provide faster, more frequent and more comprehensive treatments, would be particularly useful in remote or rural areas, and would help reduce fear and isolation for ventilator users.

Do you think that telehealth can help providers to reduce costs? Mostly agreed, with key comments being:

- Providers might anticipate savings by reducing travel cost and time.
- If the equipment isn't expensive and providers are paid for the telehealth consultations, it could reduce the provider's overall cost.
- Cost savings would depend on type of provider and type of service offered. For example, telehealth could be of greater value to an HMO that provides multiple services, such as RT and MD consultations, and medical equipment. However, a provider who only provides services relating to ventilator operation is

continued, page 6

less likely to save costs by using a similar telehealth system.

- There could be potential savings due to reduced emergency room visits.

Is telehealth a long-term service, or is it more beneficial for certain times, under certain conditions? The group thought that there was potential under both. Home ventilation users have different levels of needs, but all agreed that there is a clear benefit for all users during the early stages of the return to the home. The length of time that a telehealth system would be most beneficial would depend on each patient's condition and requirements.

What are the top three challenges for telehealth for home ventilation users?

All the challenges listed fell into the following three categories:

1. Financial: A primary concern was determining who will pay for telehealth products/services.

- Would a provider be paid for delivering telehealth services, or would it be strictly a means for reducing the cost of providing remote care?
- Would the telehealth equipment be affordable?
- Would the costs associated with delivering the service be reasonable?
- How will liability issues be defined for remote consultations using telehealth?

2. Practical: Another concern was the equipment.

- Would the technology be user-friendly for home ventilation users?
- Would the equipment be convenient and available to providers?

The group expressed concern about the personnel needed to install and to train in use of the telehealth equip-

ment and the need to hire technical personnel to manage the equipment for the providers.

3. Conceptual: A major challenge will be the acceptance of telehealth by the various stakeholders.

Physician support is needed, and medical professionals will have to believe in the benefits before committing to the technology.

Consumer acceptance is required, and users will not only have to understand the benefits and become comfortable with the technology, but be able to purchase the equipment or pay for the service, possibly with the assistance of private insurance or other payers.

Payers such as private insurance or Medicare/Medicaid will have to be convinced that telehealth technology does indeed improve health outcomes while reducing the overall cost of care.

It was the general opinion of the provider group that the financial and practical issues would have to be addressed and resolved in order for telehealth technology to reach widespread acceptance in the home care/home ventilation community.

The results from the users group

The user focus group was also given a questionnaire that included five questions, whose responses were discussed.

1. How many times a year do you typically see the following medical professionals?

General practitioner:	1–3 times/year
Respiratory specialist:	0–6 times/year
Respiratory therapist:	0–weekly/year
Homecare nurse:	0–8 times/year

Based on the responses from long-time ventilation users compared to relatively new ventilation users, the

Sincere thanks to the ventilator users and providers who shared their unique experiences and insights by participating in the focus group sessions. Also, thanks to the IVUN administrative team who provided invaluable support in promoting awareness of the focus group to IVUN Members.

comments on medical visits seem to confirm the provider group's comment that medical visits are more frequent during early use of home ventilation and tend to decrease over time.

2. Do you think that telehealth could help improve your quality of care?

Quality of life would be improved by avoiding hospitalizations, saving on travel costs and expediting treatment, and improving the monitoring and followup on ventilation equipment.

The system would be particularly helpful for users in remote areas with limited clinical support and resources.

3. Do you think telehealth is beneficial in the long term, or at certain times, and under certain conditions?

The user group felt that telehealth would be most beneficial to home ventilation users in these three ways:

- During the first six months of the return to the home.
- During critical times, such as during respiratory infections, or when experiencing mechanical problems with the ventilator.
- To help in the long term with reminders and equipment maintenance verification.

4. What are the top three challenges you would face if you were given the opportunity to receive telehealth services?

The main challenges noted by the user group were mostly in the area of practical use:

- Setting up and finding space for the equipment.
- Training on the equipment, for both the user and personal care assistant/caregiver.
- Being able to operate the equipment with limited dexterity or relying on

caregiver's ability to set up and operate the equipment.

Aside from practical challenges, all users felt that the cost of the equipment and the service from the provider, and the terms of the service contracts would be major factors that would affect their ability to try a telehealth service.

5. Do you think that you benefited from participating in this focus group?

The users all agreed that participating in the focus group was a worthwhile experience, and that while learning about new technology seems interesting, they benefited most from hearing about and sharing experiences with other home ventilation users.

Conclusions

Many of the participants in both user and provider groups expressed their satisfaction with being given the opportunity to share their knowledge and experiences with their peers. Although most agreed that telehealth technology presented some interesting potential benefits for the home ventilation community, there were still challenges and questions that would have to be addressed.

About PHD Medical

PHD Medical, www.phdmedical.com, is a Canadian company based in Montreal, Quebec, that designs and develops software and hardware applications for the medical community in the areas of home health diagnostics and telehealth. PHD Medical applies its strengths in software design and technology integration to develop solutions to improve the delivery and management of remote patient care and home diagnostic testing. ▲