telylabs

5 Patient Care Applications for Affordable Telehealth

White Paper

For most of the world, the quality of healthcare has improved dramatically in the past century, resulting in continually increasing life expectancy. However, even now, local access to appropriate healthcare is not always possible. And when that happens, patient health suffers. Telehealth, the use of electronic information and telecommunications technologies to support long-distance clinical health care, has helped to improve patient outcomes and reduce costs. But it is the recent advent of simple, secure and affordable video communications that has dramatically improved – or enabled for the first time – applications in telehealth that bring healthcare providers to patients when the factors of distance or disability prevent local access.

The benefits of video-enabled telehealth are being realized widely, from reduced hospital readmissions in outpatient care, to improved outcomes via specialist care. Some barriers to widespread adoption still exist, but the issues of cost, complexity and security have largely been overcome.

This white paper presents several applications for video-enabled telehealth that have been made broadly available or enabled for the first time by new simple, secure and affordable video conferencing solutions.

Video-enabled telehealth applications presented in this white paper:

- outpatient care, as a cost-effective means to reduce hospital readmissions rates;
- inpatient care, to enhance patient care with convenient remote consults and video calls to family;
- specialist care, to improve patient outcomes when local access to specialists is not possible;
- elder care, to make it possible for socially isolated elderly people to live more independently and more happily in their own homes for longer;
- end-of-life care, to improve patient well-being and reduce stress for both patients and their families.
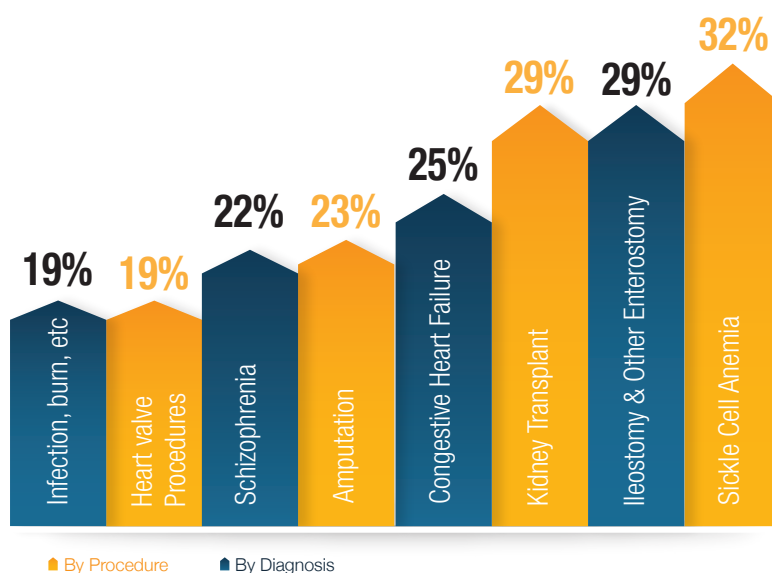
In each case, overcoming longstanding challenges of cost and complexity in video communications – while meeting necessary standards of quality and security – is the key to making widespread adoption possible.

Outpatient Care: Cost-Effective Hospital Readmission Prevention

When patients need to be readmitted to a hospital soon after going home from a hospital stay, it's painful and inconvenient for the patients and their families. It's also increasingly expensive for hospitals.

In the US, Medicare is fining a record number of hospitals – 2,610 – for having too many patients return within a month for additional treatments, according to federal records released October 1, 2014. Over the course of the year, the fines will total about $428 million, Medicare estimates. Last year, nearly 18 percent of Medicare patients who had been hospitalized were readmitted within a month. Roughly 2 million patients return a year, costing Medicare $26 billion. Officials estimate $17 billion of that comes from potentially avoidable readmissions.[1]

30-Day Readmission Rates for U.S. Hospitals

Category	Rate
Infection, burn, etc	19%
Heart valve Procedures	19%
Schizophrenia	22%
Amputation	23%
Congestive Heart Failure	25%
Kidney Transplant	29%
Ileostomy & Other Enterostomy	29%
Sickle Cell Anemia	32%

By Procedure   By Diagnosis

In the United Kingdom, more than 390 million British Pounds (about $625 million US Dollars) has been withheld from hospital budgets under a similar policy that penalizes hospitals if a person is readmitted within 30 days for something considered avoidable – even if it's not the hospital's fault.[2]

Hospitals worldwide are responding to this more costly environment by replacing perfunctory discharge processes with more active patient monitoring. One example: Cleveland Clinic's "Virtual Visit" program. Virtual Visit is a bundled service, including Time Warner Business Class Internet connectivity and installation, and telyHD™ video conferencing appliances from Tely Labs. Virtual Visit enables Cleveland Clinic healthcare professionals to interact with patients in their homes.[3]

With remote outpatient care, both healthcare providers and their patients benefit from improved outcomes at lower cost than in-person visits to patients' homes. Patient benefits of the service also include the saved time, expense and potential risks of traveling to see healthcare professionals in their offices. **A critical element in cost-effective outpatient care: video communications technology that is affordable enough to enable widespread deployments into patients' homes, at minimal cost.**

> *"We know that great care can be delivered where patients want to be most: in their homes, and we see telemedicine as a way to help us do that better and more efficiently," – Dr. Eiran Gorodeski, MD, director of center for connected care at Cleveland Clinic.*

Inpatient Care: Simple & Secure Video Calls for Virtual Visits with Loved Ones and Remote Consults

When the University of Texas Southwestern Medical Center dedicated its new $800 million hospital in October 2014, the 450-bed facility was hailed as a patient-centered, state-of-the-art medical innovation. Each patient has an individual room with natural light, shown to improve healing and sense of well-being, and has personal control over lighting, temperature and window shades via a bedside remote control. The hospital's thoughtful layout further benefits patient health by reducing hall traffic in patient areas, minimizing noise and risk of infection.

Another key patient-centric innovation: all of the hospital's patient rooms are equipped with easy-to-use video conferencing appliances from Tely Labs, enabling patients to see family and friends wherever they may be, whenever the patient wishes. Staying connected with loved ones has been shown to have a positive impact on patients' emotional health and sense of well-being, which in turn has a positive effect on patient outcomes. The complications of travel, work and school schedules, hospital visiting hours and concerns about risk of infection make such hospital visits a challenge for many. Virtual visits via video conferencing can bridge the gap, helping to alleviate feelings of depression and anxiety that affect many patients when physical visits aren't possible.

At UT Southwestern Medical Center, video conferencing is also integrated into the patient workflow processes, such as one-click video calling directly from a patient record from within the hospital's EMR system, allowing both local and remote caregivers to consult with other members of the patient's care team as well as engage with patients, sharing images (such as X-rays, CT scans, and MRIs) and information to help patients better understand their illness and treatments.

The key to success for inpatient care: simple, standards-based video communications. Patients can share HD video calls with their loved ones at the click of a button, using any of the most popular video calling services, such as Skype,

Zoom or Blue Jeans, via a telyHD in the hospital room. At the same time, remote care teams can connect with patients in their rooms, using these same cloud-based video conferencing services or through traditional, on-premise standards-based video conferencing systems and infrastructure. The telyHD Pro appliance provides cost-effective and standards-based interoperability in a very easy to install and use package.

Specialist Care: Simple & Secure Remote Access

Parkinson disease (PD) is a chronic and progressive neurodegenerative disease, meaning that symptoms continue and worsen over time. Over a million people are now living with Parkinson disease, and the burden is increasing rapidly around the world. The cause is unknown, and although there is presently no cure, there are treatment options to manage its symptoms.[4]

PD is an example of a disease where access to specialist care is associated with improved outcomes for patients: those with PD who do not see a neurologist are 14% more likely to fracture a hip, 21% more likely to be placed in a skilled nursing facility, and 22% more likely to die.[5]

However, access to care is limited by distance, disability, and the distribution of doctors. Among US Medicare beneficiaries with PD, more than 40% have not seen a neurologist.

Specialist consultations via video direct to patients in their homes can provide care to those who have difficulty accessing care. "Virtual visits for Parkinson disease: a case series" published in Neurology Clinical Practice, December 2013, describes the results of a program developed to provide individuals with PD or related disorders a one-time telemedicine consultation with a remote movement disorder specialist delivered primarily into the patients' homes to test the feasibility of remote specialist care.

55 patients in 5 states were offered access to a specialist via video conferencing. Thirty-three of 35 consecutive patients completed a survey, indicating satisfaction above 90% for virtually all aspects of the visit measured, and likely to recommend telemedicine to a friend. The paper concludes that "providing care to patients in their homes via telemedicine is feasible, results in changes to care, and is well-received."

The key to success for remote specialist care, as indicted in the study, is simple and secure means for video consultations. Patients who do not have local access to specialist care benefit from the next best thing: remote consultations by video, right in their homes. What's more, they realize new benefits including time and money saved by not having to travel.

> *"Throughout history, the quality of healthcare you get has been dictated by who you are – race, creed, sex, and so on – and where you are. With affordable video communications we are changing this so that anyone, anywhere can get great care." – Dr. Ray Dorsey, MD, MBA, Professor of Neurology and Director of the Center for Health and Technology at the University of Rochester Medical Center*

Elder Care: Ease-of-Use Overcomes a Digital Divide

Since 1840, life expectancy at birth has risen about three months per year. A graph of global life expectancy over time shows the trend rising smoothly and almost universally in most years, in all countries regardless of wealth. The whole world is living longer.[6]

But with aging populations come new concerns. The rising trend of social isolation among the elderly, for example, has been convincingly proven to increase the likelihood of health problems. Socially isolated elderly people are 60% more likely to suffer from mental and physical health issues, more prone to heart attacks and more likely to require emergency treatment resulting in the need to be transferred to supervised living facilities.[7]

Population 65+ By Age: 1900-2050
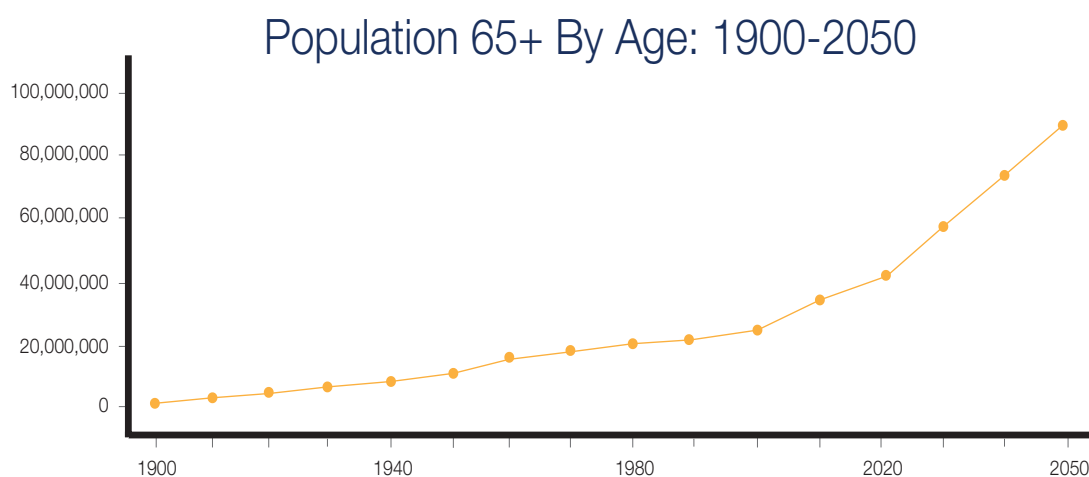
With an increasing number of elderly people living on their own, the task of keeping them safe, well and socially connected has become a medical, social and financial challenge. In the UK, the cost of keeping at-risk individuals in residential care homes runs at about £3,000 per month and the bulk of these charges are borne by the National Health Service (NHS).

One solution: provide an easy-to-use way for older people to video chat with volunteers as well as far-away family members. A partnership between the NHS, the British Red Cross and British Telecom, called Facelook, is designed to alleviate the devastating effects of loneliness.

"Cheering people up has medical as well as social implications," says Dr. John Havard, a British general medical practitioner based in rural Suffolk, England, and the founder of Facelook. "Video conferencing is a promising option in this regard, but ensuring that it's easy for older people to use is crucial. As soon as the telyHD was launched, I saw it was the right solution. It is very easy to use. All you need is a simple remote control, and there's no need for a computer."

The most important element of the project was finding a simple video conferencing solution that was easy enough for even the least technically minded patient to use. Older people are unlikely to use computers, but almost without exception, this age group watches television, so the launch of the telyHD set top video conferencing device was a

breakthrough for the project. Importantly, telyHD is a completely self-contained set-top device. No computer is required.

"If we can make older patients happier and more involved in their social circles, then we know it is good for their health while supporting NHS goals of spending less to do more. Video conferencing is a promising option in this regard, but ensuring that it's easy for older people to use is crucial." – Dr. John Havard, Facelook

End-of-Life Care: Keeping in Touch Eases the Strain of Saying Goodbye

As populations around the world age, the need for palliative, home and hospice care is growing. End-of-life care allows terminally ill people a more dignified and comfortable alternative to spending their final months in a hospital, where they may receive treatment that is either unwanted or ineffective, and where their loved ones usually have only limited access and often miss sharing their last moments of life.

In addition to tending to the physical health and comfort of a patient, hospice care also focuses on the emotional needs and spiritual well-being of the terminally ill and their families. One important contributor to patient well-being is a feeling of connectedness with loved ones. At the same time, staying in touch is more of a challenge now, as families are more likely than ever before to live farther apart.

Hospice of the Western Reserve has installed telyHD video calling appliances from Tely Labs in each of their 42 patient rooms. The device's friendly on-screen interface and straightforward 7-button remote allows patients to connect with a minimum of fuss. **But for the video calling service to be beneficial to patients, it also had to be easy and convenient for their families to use, regardless of where they may be or what personal computer or mobile device they may have.** Because telyHD is Skype® certified, friends and families on the other end of the call can connect using any Skype-enabled device, anywhere. And because Skype is the most widely used video communication service available, with some billion Skype users worldwide, it is the best choice for ensuring easy connections to patient's families and loved ones.

"Using technology to help families connect during the final phase of life is a gift that's hard to measure, but it's so meaningful. So often, family members live out of state, and in some cases, overseas. Being able to virtually visit with their loved ones brings peace of mind and eases the stress about not being able to be there in person." – William E. Finn, Chief Executive Officer, Hospice of the Western Reserve

Conclusion

The benefits of video-enabled telehealth are now well-known and documented. Technical problems of cost and complexity that have long been barriers to widespread adoption of video-enabled telehealth have largely been overcome by the advent of newer, standards-based "plug-and-play" video appliances that work with existing video conferencing systems as well as newer cloud services. As a result, new video-enabled telehealth applications that would have been impossible until very recently are becoming commonplace.

Vision

Telehealth via simple, secure and affordable video communications solutions is a great step forward for healthcare. But plug-and-play, self-contained appliances, based on open-standards platforms and with operating systems that are accessible to third-party development, have great potential to do more. With this technology it will soon be possible to overcome current barriers to widespread adoption of telemonitoring – real-time remote surveying, analyzing and interpreting of patient vital signs – by providing an integrated solution that includes lightweight, bandwidth-efficient wireless devices that will enable a leap forward in video-enabled telehealth.

Tely Labs

Tely Labs manufactures video conferencing solutions designed to provide the benefits of video-enabled telehealth simply, securely and affordably. Tely Labs solutions are:

Simple – With just three connections to make (power, network, and HDMI), Tely Labs appliances can be setup and ready to use in minutes. Built-in WiFi provides added convenience and simplicity.

Secure – Secure connections are ensured with built-in AES-128, SRTP for media encryption, TLS for signal encryption and SDP (over TLS) for exchanging SRTP keys.

Affordable – Tely Labs telyHD Pro defines a new level of affordability in video conferencing technology, with appliance prices starting at $649.

Interoperable – SIP standard-based video conferencing means the telyHD Pro can be registered as a SIP endpoint to other standards-compliant video conferencing equipment and added to infrastructure from vendors such as Cisco, Polycom, LifeSize, Avaya and others for directory or URI dialing, leveraging existing investments. telyHD Pro also features easy on-screen connectivity to Blue Jeans and Zoom cloud bridging services, and is Skype certified.

To learn more about how Tely Labs is enabling new telehealth applications worldwide, contact us at info@tely.com or visit tely.com.

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