Video Communications in Healthcare

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Introduction

In the technology oriented healthcare industry, providers and patients are recognizing the benefits of video communications. There is constant pressure to increase quality of patient care and the desire to provide new services, while at the same time controlling costs. Healthcare providers are leveraging the power of video communications to link patients, physicians, and clinicians and extend the reach of healthcare. Patients want lower out-of-pocket costs, shorter wait times and less travel as they receive medical care. Video communications allow medical personnel to evaluate patients and diagnose illnesses in real-time without the need for either the patient or the practitioner to travel. Medical professionals also use video communications to access certification programs, for continuing medical education (CME), and to train others. Using video communications for telemedicine allows

hospitals to tap individual expertise across the world. Patients get the care they need regardless of their location, and often faster and at a reduced cost.

Healthcare Industry Trends

In the 2015 PwC HRI Consumer Survey, 60% of consumers stated they are willing to have a video visit with a physician through a mobile device. And 58% of clinicians would rather provide a portion of care virtually. American consumers are having video consults and using their smart devices as diagnostic tools. The healthcare industry is becoming a more connected, transparent, and convenient entity. [1]

The smartphones, apps and monitoring devices that have been underutilized by the healthcare industry are already in the palms of the hands of consumers. This allows increased access, lower costs, and the ability for anytime, anywhere medical monitoring, diagnosis and treatment. Video communications plays a large role in medical care. The healthcare industry is looking for innovation to service remote regions and emerging markets. High quality video allows virtual examinations and monitoring to be done remotely.

The healthcare industry shift to data in the palms of consumer hands will result in the need to connect healthcare providers, manage data, deal with security and privacy, and explore new ways to connect and generate revenue from a distance.

The world internet of things in healthcare market was evaluated at $60.4 billion in 2014, and is estimated to garner $136.8 billion by 2021, registering a CAGR of 12.5% over the forecast period. [2]

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[1] HRI Consumer Survey, PwC, 2015.

[2] World Internet of Things in Healthcare Market: Premium Forecast, Growth and Analysis For Six Years Research Report 2014 – 2021, Medgadget, September 24, 2016

Important healthcare trends for the coming year include: [3]

Cloud Computing Technology: Cloud computing technology allows healthcare professionals to store and access patient information and update records remotely. Cloud computing creates a better experience for patients and healthcare professionals by making patient records immediately accessible globally.

Increased Patient Engagement: The use of smartphones, medical apps and wearables is increasing patient engagement with healthcare professionals. Some of the technology devices have an immediate impact, like monitoring glucose levels, while others (e.g. monitoring of eating, sleeping, and exercise) offer more long-term healthcare benefits. These technologies encourage patients to manage their own healthcare.

Virtual Healthcare: Virtual healthcare options save consumers time and money and expand affordable access without overburdening healthcare facilities. According to a recent Harris Poll, a quarter of consumers would choose a virtual healthcare option if it were available. [4]

Expect to see an increase in healthcare apps and a demand for remote consultations and virtual house calls.

Impact of Video Communications

In healthcare, nothing is as important as giving patients the care they need. But for many hard-to-reach or homebound patients, visiting a physician can be challenging. Video communications solutions make doctor, patient and expert access as easy as dialing a phone.

With video communications physicians can be virtually connected to patients and use technology to conduct examinations and provide diagnoses real-time using a video device, computer, tablet or mobile device. Patients can be

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[3] TechZulu.com, Hitkonferencijablog.com, and Healthcarebusinesstech.com

[4] 5 Trends Healthcare 2016, Techzulu.com

monitored from home and still have the benefit of face-to-face communications. Specialists can also be accessed real-time when needed during a medical emergency. Teams of physicians can collaborate remotely exchanging information, observations and recommendations to accelerate patient care.

Benefits & Applications of Video Communications

Video communications are used for a variety of applications in healthcare that center around patient care, collaboration, training and compliance, and communications command and control. It presents an opportunity for CIOs to work with Chief Medical, Marketing, and Patient officers to build solutions that meet specific needs and engage the customers, whether those customers are medical staff or patients.
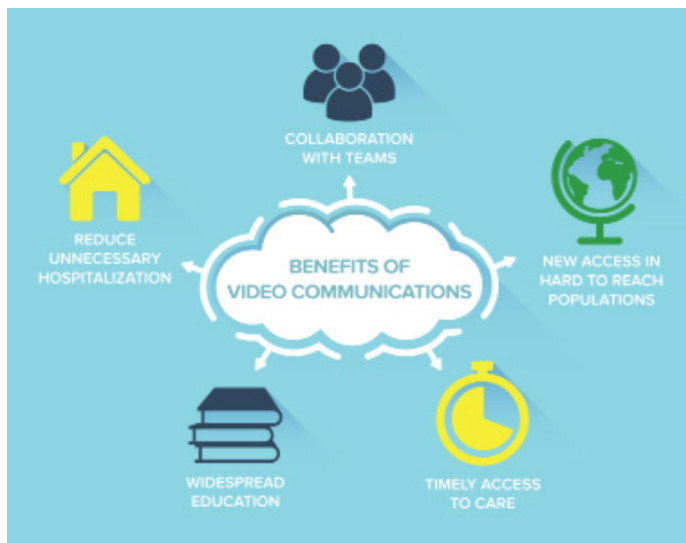
Patient Care

Patients are now viewing videos of procedures and medical information remotely in advance of treatment. Nurses, doctors and family members are able to connect to a patient through a video call to check-in and monitor the patient. These approaches help reduce patient anxiety levels and provide better care to patients.

Collaboration

At teaching hospitals researchers are using video to provide detailed results, for peer reviews and to invite experts to collaborate globally. Healthcare providers also use video communications to solicit advice for hard to diagnose medical situations.

Improved Education, Training and Compliance

Making videos available on-demand and live streaming training allows healthcare providers to enhance education and track what is watched and for how long. Healthcare personnel can keep certification up-to-date by obtaining education from distant locations. Employee training can be done in large groups across multiple locations without the need to leave the work site.

Communications Command and Control

Capture and distribution of video messages can be pushed-out to staff and patients, helping unify a healthcare campus and remote locations. Video communications and digital signage help deliver information to patients, healthcare staff and visitors. The technologies are also useful to promote programs and services, as well as for emergency broadcasts.

New information can be presented to multiple locations in a single session. Information can be disseminated to multiple locations for common issues like benefits, compliance, and hospital policies.

Improves Quality of Care

Using video communications allows a healthcare facility to obtain specialized patient care without the need to transfer the patient. Video communications improves delivery of treatment by allowing doctors at multiple locations to make clinical diagnoses and consult with patients.

Competitive Advantage

Use of video communications allows teams to share information more widely resulting in faster and more informed decisions. This results in reduced time to market for new products and services. Video communications in healthcare can be leveraged to produce more personal one-on-one relationships between patients and medical staff,

which results in increased loyalty and trust.

Finding a Compliant Video Solution

The Health Insurance Portability and Accountability Act (HIPAA) lays out privacy and security standards that project the confidentiality of patient health information. In terms of video conferencing, the solution and security architecture must provide encryption and meeting access control so data in transit cannot be intercepted.

Consider technology that allows multiple sites to join a HIPAA compliant call, that includes encrypted chat, so families can participate in healthcare decisions. The meeting host should have complete control of the meeting with features such as lock meeting, expel attendees, mute/unmute all, lock screen sharing, and end meeting. Select technology that can tie desktops and conference rooms together and allow easy communication with computers, tablets and smartphones. Screen sharing should transmit encrypted screen capture along with mouse and keyboard strokes only, not the actual data.

Vendor Spotlight

Zoom's founder and CEO, Eric S. Yuan, left WebEx in 2011 with an all-star engineering team to build the next generation of online video conferencing. Now over 550,000 companies trust Zoom and 94% of their IT organizations would recommend Zoom.

Zoom Video Communications enables HIPAA compliance. Zoom offers multi-layer security with encryption by default and never has access to PHI (patient healthcare information).

Zoom offers a feature-rich video platform to support virtual care with the highest quality video, audio and screen sharing that easily integrates with healthcare environments.

Further details on all aspects of Zoom HIPAA compliance are available on the Zoom web site and include standards for access control, audit controls, integrity, person or entity authentication, and transmission security.

Features & Functionality to Consider

Zoom unites cloud-based HD video conferencing, mobility and web conferencing across all platforms and devices in a service dubbed the 3-in-1 Cloud Meeting Platform. Zoom is a true cloud-based solution with no dedicated on-premises hardware necessary. Zoom's "Meeting Connector" software runs on any virtual machine, behind an enterprise's firewall, and meetings happen within an organizations own private cloud. Enterprises can keep meetings local while using Zoom's public cloud infrastructure for meeting set-up. This ensures easily scalability.

Zoom is the first in the market to offer mobile screen sharing with video conferences. From their own mobile devices, users can start or join meetings, send invitations via email, SMS and instant message, and utilize a full suite of collaboration features, such as typing on and annotating documents and presentations, and recording meetings.

Simply put:

- Zoom combines cloud video conferencing, group messaging, and collaboration tools such as screen sharing, co-annotation, and remote control into one simple platform.
- It runs across Mac, PC, iOS, Android, Blackberry, H.323/SIP systems, and its own software-based conference room system, Zoom Rooms
- It's the only video conferencing solution that lets you share your mobile screen, share video with audio, and co-annotate from any device.
- You can record your sessions in MP4 format for later review.
- It has the ability to put an attendee on hold, allowing healthcare providers to place a patient on hold to confer in private with other clinicians and staff.
- API & SDKs allow for integrations into healthcare environments, or including video meeting

capabilities in healthcare provider websites and mobile apps.

- There is support for multiple camera inputs allowing medical professionals to share peripheral camera feeds.
- Zoom's precise audio, that enables original microphone sound, is perfect for digital stethoscopes.

Use Cases

Healthcare organizations are using video communications for a variety of unique situations, in addition to the standard communications previously discussed. These include:

- Creating a more connected and safer environment for eldercare patients who have difficulty leaving home.

Two years ago, Acacia Living began using Zoom Video Communications as a business communications solution to help an eldercare client with online meetings. Rob Rossi, then CIO of Acacia Living, realized there was a bigger opportunity: to help healthcare providers and family members use telepresence to create a more connected and safer environment for their at-home seniors.

- Telesurgery to conduct live surgeries, seek medical expertise from a distance, and train surgeons.

A Fortune 30 pharmaceutical firm realizes the value of video communications by linking instructors, physicians and hospitals to conduct live telesurgery events to both help patients and educate doctors. Using video communications allows the firm to quickly educate physicians on the latest medical technology while experts not only operate in real-time, but educate others how to use the technology for their patients.

- Triage and disaster response; remote emergency care

Disaster response teams across the globe are using video communications for remote disaster relief and emergency care. Technology is deployed when weather events, accidents, and

terrorist events happen to quickly assess damage and provide care for the injured.

- Communications between pathology labs and surgical suites to allow surgeons to converse real time with pathologists and see what they are seeing.

Major hospitals are using video communications to allow more rapid diagnosis and response. Surgeons are now able to interact with pathologists real-time to obtain almost instantaneous diagnoses to allow patients to get the care they need more quickly.

- Hospital administrators and staff interaction from remote sites without leaving the primary facility.

A major New York hospital is using video communications to link their sites, which are scattered across the city and region. Use of video communications saves time and speeds decision-making. No longer are people commuting between sites for meetings. The commute was often taking longer than the actual meeting. Now video communications technology allows more meetings to take place each day, which results in work being completed more quickly.

Summary

Video communications ensures that healthcare professionals can run the day-to-day business of hospitals, service patients remotely, and obtain continuing medical education without any loss of care or quality. Because video communications are so good, healthcare professionals are able to see symptoms clearly and patients can relate to healthcare professionals without leaving home. Knowledge transfer is critical for healthcare providers. Challenging problems include an aging population, the potential for global outbreaks of diseases, a shortage of skilled nurses and doctors, and escalating medical costs. Real-time visual communications are now a reality given the technology exists to see the other site without being there.

About S. Ann Earon, Ph.D.

S. Ann Earon has been a researcher and consultant in conferencing and collaborative communications for 34 years. She holds a Masters in instructional technology and educational administration from Northeastern University, and holds an interdisciplinary Ph.D. from Boston College with majors in business, speech & communications, and education. Dr. Earon is the Founding Chairperson of IMCCA, the non-profit industry association for conferencing and collaborative communications. She can be reached at AnnEaron@aol.com.