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Telemedicine = Medicine. Does the Math Add Up?
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The telemedicine equation all started in the late 1800's with an article about using a telephone to reduce office visits.

It transformed in the 1940's when radiologic images were sent via telephone across 24 miles in Eastern Pennsylvania, to the 50's and early 60's when early closed-circuit psychiatric consultations were done over a TV. In 1967, physicians at the University of Miami School of Medicine and City of Miami Fire Department used voice radio channels to transmit EKG rhythms. In the 70's, NASA tested STARPAHC, where mobile support units linked patients to physicians on select Indian reservations. Eventually, the internet explosion in the 1990's and early 2000's would prove to be the game changer telemedicine needed. With the internet, telemedicine now had the traffic pathway it needed to send and receive information quickly. Today, the solution is closer than ever to adding up.

Telemedicine is focused on creating a complete continuum of care that focuses on supporting and maintaining human health and well-being, rather than the things that cause diseases. In other words, to get theoretical, telemedicine takes a Salutogenesis (proactively improving health) versus a Pathogenesis (treating a disease after it starts) approach. This is one of the disruptive parts of telemedicine. As the "internet of things" affects how we approach care, telemedicine will be a big part of the change.

The Here and Now

Today, as technology has advanced, telemedicine has expanded to become the leading remote diagnosis and treatment tool of patients through telecommunication technology in hospitals, homes, private physician offices, and other healthcare facilities in both rural and urban markets. According to a recent survey of 436 healthcare professionals conducted by Reach Health, half of the respondents noted that telemedicine was a top priority for their organization. Remote Monitoring, TelePrimary Care, TeleUrgent Care, TeleHospitalist, TeleStroke, TeleCardiology, TeleInfectious Disease, TeleNephrology and TelePsych are not just buzz words; they represent a real outpatient and inpatient reality in today's healthcare environment. According to IHS Markit, in the US alone, the market size in 2014 was valued at 15.6 billion and is expected to grow to approximately $20 billion by 2019.

There are many areas of healthcare that telemedicine has already impacted, such as outpatient healthcare through coordination with primary care doctors and specialists, remote monitoring and specialty services. However, with the cloudy outlook of the ACA, some research indicates that inpatient telemedicine services are having the greatest impact in supporting efforts of rural and secondary market hospitals to further drive their mission in the communities they serve, which enhances their ability to remain financially viable. James Marcin, Director of the UC Davis Children's Hospital Pediatric Telemedicine Program said, "When rural patients know their hospital is using telemedicine, they have higher regard for that hospital and are less likely to bypass it for treatment at an urban facility." A 2012 report by the Institute of Medicine for the National Academies, entitled The Role of Telehealth in an Evolving Health Care Environment, shows that telehealth keeps patients in the local

communities, improves quality of care, and reduces costs by reducing readmissions and unnecessary emergency department visits for rural communities.

Acceptance of telemedicine continues to improve. According to the American Telemedicine Association, as many as 15 million people used telemedicine services in 2015. According to recent research from HIMSS Analytics, telemedicine's adoption rate has risen to 71% in a combined inpatient and outpatient focus. While there are still improvements to be made, the conversations around telemedicine are moving from "what is telemedicine?" to "how do I implement telemedicine?," and that's a step in the right direction.

Telemedicine Still Faces Headwinds

Despite all the benefits, telemedicine still faces multiple headwinds in the form of reimbursement, technology and licensing.

Currently, the largest roadblock for telemedicine is reimbursement, which is dictated by four key areas: where the patient is seen, how the consultation is conducted, where the service is provided and the type of provider servicing the patient. This needs to change, given the aging baby boomer population and reliance on Medicare. Right now, there isn't a clear and consistent understanding of how the big three (Medicare, Medicaid and commercial payers) reimburse telemedicine, so having a clear strategy and focus on this from a regulatory standpoint, could help drive further acceptance from providers and healthcare systems, leading to increased adoption of telemedicine strategies going forward.

Telemedicine technology has come a long way since the TV and analog phone lines. There are now many providers of telemedicine technology including GlobalMed, InTouch, Reach, PolyCom, Avizia, among others. Technology security is critical, and federal and state guidelines need to be modified to clearly protect and implement PHI safety through HIPAA and also provide the applicability and portability that telemedicine requires. Expect more technology solutions to develop, not only in improving provider access and communication with patients, but with data security. There is still considerable improvement needed in this area, particularly since telemedicine providers such as Eagle Telemedicine and others use a wide variety of telemedicine technologies at their hospital client sites. Technological flexibility across a variety of platforms is going to be key.

The last challenge facing telemedicine is state licensing. Right now, all telemedicine providers must be licensed in the state where they are providing service. Some states allow doctors to accelerate the state licensing process between other states, but many want it to go further. "You don't have to stop a get a new license every time to drive through a new state," says Jonathan Linkous, the American Telemedicine Association's CEO. More, not less, regulations are on the horizon. More than 200 bills in over 40 states have been introduced to help guide states in how telemedicine should be handled, including reimbursement guidelines and technology guidelines.

What's Next

The equation for telemedicine hasn't been solved, but the vision is certainly getting clearer. Telemedicine IS going to be the next great disruptor in the healthcare space.

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