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Telemedicine: What Actuaries Should Look for

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Smartphones have revolutionized the way we are able to communicate with family members, business associates and friends by being able to send pictures or videos immediately through text or email, even having the ability to hold a face-to-face conversation through Skype, FaceTime or other applications. Why shouldn't this trend impact the way we seek health care services? Telemedicine is the use of modern technology in smartphones or computer webcams to provide health care services to patients without leaving the comfort of their home or office. It is so convenient to be able to handle doctor's office visits and other interactions with physicians using the technology on our phones in a live face-to-face conversation.

TELEMEDICINE BACKGROUND

Oftentimes, the question arises as to the difference between telemedicine and telehealth. The American Telemedicine Association (ATA) has historically considered telemedicine and telehealth to be interchangeable terms, encompassing a wide definition of remote health care. While the term "telehealth" is sometimes used to refer to a broader spectrum of remote health care, it may not always involve clinical services. The ATA uses the terms in the same way one would refer to medicine or health as synonymous terms. Therefore, we will be using the term telemedicine for consistency through the article, but sometimes it could be referred to as telehealth.

Most telemedicine providers have board-certified doctors or physician assistants available 24 hours per day. A few examples include CareClix, ConsultADoctor, Teladoc and meMD. There are also other platforms that work directly with physicians to provide telemedicine to their patients, meaning that when patients have a virtual office visit, they would be talking directly with their primary care physician who knew their specific health background and profile.

TELEMEDICINE COSTS AND ADVANTAGES

A typical doctor's office visit costs between $120 and $250;[1] telemedicine visits cost between $40 and $50.[2] Not only is this a significant savings, but it also keeps patients productive and out of doctors' waiting rooms. Finally, it allows patients to receive the care they need, keeping them healthier overall.

In addition to solving live visit challenges, telemedicine also addresses issues with access to care based on where a patient lives—certain types of care may be unavailable, require travel, or may be too expensive. Living in a rural area makes visiting the doctor challenging. However, with telemedicine, these visits are more convenient for the patient and improve the patient's overall health because the individual is able to seek care when they probably otherwise would not.

TELEHEALTH LANDSCAPE

It is likely that most people have heard of or even used a tele-visit with a primary care doctor or a physician's assistant for a common diagnosis, but the current landscape of telemedicine has broadened to include a large variety of services outside of the typical doctor's office visit. Some examples include tele-ICU, tele-stroke services, tele-psychiatry, telehealth services for chronic disease management, school-based telehealth, tele-emergency, tele-dermatology, tele-ophthalmology, tele-pathology and tele-pharmacy.

To elaborate on one of these examples: Tele-ICU provides the opportunity for rural hospitals that are likely to have a shortage of critical care specialists to have more available access to intensivists and nurses certified in critical care ("ICU specialists"). This availability can allow the on-site doctors to get information and direction from ICU specialists and help identify when a transfer is necessary. Transfers for patients in a rural setting often require long-distance travel, time and cost, as well as less "close-to-home" comfort. Tele-ICU has the potential to limit the amount of transfers to the most serious cases where more resources are needed, while the other ICU patients can remain at the rural hospital with their on-site care providers receiving remote direction from ICU-specialists.

Tele-ICU does not only help rural hospitals; Mercy Health System, a hospital system located primarily in Illinois and Wisconsin, has created a Virtual Care Center, where professionals monitor ICUs remotely 24 hours per day for other hospitals coast to coast. The hospital system has reported that the average length of stay has been reduced by 35 percent and deaths have been reduced by 30 percent.[3] Having professionals able to monitor patients' vitals and other medical records assists the on-site doctors and nurses as they are visiting with other patients or dealing with their other daily assignments.

IMPACTS TO TRADITIONAL PROVIDERS AND THE HEALTH CARE SYSTEM

Research shows that telemedicine improves health care quality and patient outcomes and, therefore, patient health. A September 2014[4] study found that telemedicine improved health when

used for chronic disease management. The study results show decreased hospital admissions and lengths of stay, decreased emergency department visits, decreased mortality, and increased quality of care for patients with congestive heart failure. Better health quality and outcomes were also seen in stroke patients and patients with chronic obstructive pulmonary disease (COPD).

In general, telemedicine helps patients seek care when they may not have otherwise; however, the most commonly used telemedicine has patients seeing doctors that they have never met and will never meet. This phenomenon disrupts the continuation of care. The doctors providing teleservices usually have limited medical history knowledge on the patients they are providing care for other than what the patients provide. Initial care and follow-up care are more challenging in this type of environment.

The convenience factor of tele-visits is incentivizing patients to seek care virtually rather than visiting their doctor. This means that primary care doctors are not receiving payments for these lost services. To address this loss of income, more and more physicians are seeking to replace that income or gain extra income by partnering with telemedicine companies to provide tele-visit services. So, while they may lose a visit from a primary patient to an urgent tele-visit, the doctor can compensate by providing telemedicine services.

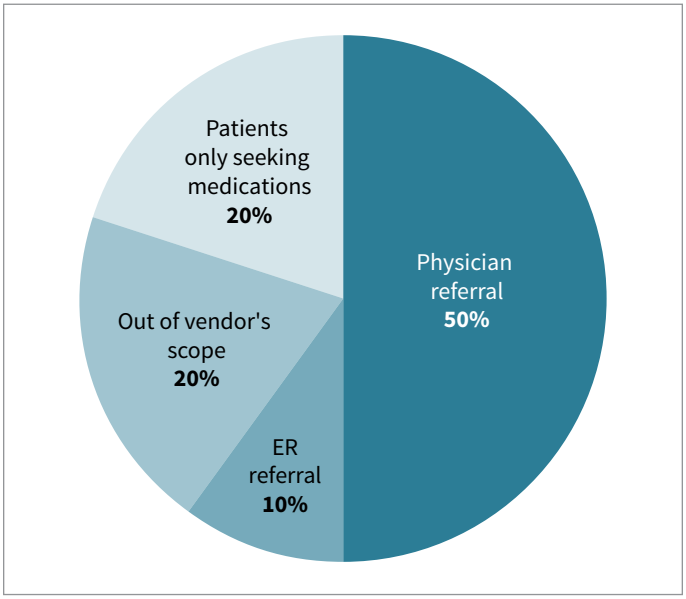
IMPACT ON HEALTH CARE COSTS

A December 2014[5] study found that the estimated savings in the commercial market are $126 per tele-visit and in the Medicare market are $45 per tele-visit. This estimated savings excludes the cost of any necessary follow-up care for cases that could not be resolved via the tele-visit; however, the study found that only 17 percent of cases were left unresolved. Half of these unresolved patients were referred to a physician and 10 percent of those patients were referred to an emergency room (see Figure 1). Twenty percent were out of the scope of the vendors' offerings and another 20 percent were patients solely seeking medications.

Even when accounting for the cost of follow-up care, the estimated cost savings in the commercial market are $96 per tele-visit and in Medicare are $33 per tele-visit.

The amount of cost savings may be changing, though, as more and more states are requiring that telemedicine services be reimbursed at the same rate as any other doctor's office visit through reimbursement parity laws (RPLs). As of 2017, 31 states and the District of Columbia have a parity law to some extent and, currently, there are seven states that have proposed bills to join these other states.[6] Parity laws for telemedicine look different from state to state. Some states require reimbursement for telemedicine on the same basis as an in-person visit but allow for recognition of cost savings. Most states, however,

Figure 1
Tele-visit Follow-up Care



Data from Dale Yamamoto. "Assessment of the Feasibility and Cost of Replacing In-Person Care With Acute Care Telehealth Services." Red Quill Consulting Inc., December 2014. Web. March 2017, *http://www.connectwithcare.org/wp-content/uploads/2014/12/Medicare-Acute-Care-Telehealth-Feasibility.pdf.*

require that health insurers reimburse telemedicine services at the same rate that equal or similar services would be reimbursed in person. This would reduce some of the savings discussed earlier, though it would not eliminate all savings. For example, in the December 2014 study, savings would still be realized for the approximately 51 percent of participants who reported they would have gone to the ER or an urgent care facility if not presented with the tele-visit option. Though the savings may not be as great, a tele-visit would still be less expensive than an ER or urgent care visit. On the other hand, under the RPL, savings would no longer be realized in the approximately 31 percent of participants who reported they would have gone to their primary care physician if not presented with the tele-visit option. This would be due to the equal cost of an in-person visit versus a tele-visit under the RPL.

Those that oppose the RPL argue that it reduces cost savings, as discussed; while supporters of the RPL say that, without the RPL, providers are not incentivized to offer telemedicine services if they are reimbursed more for in-person services. Supporters may also declare that while the RPL reduces cost savings somewhat, there are still many other ways in which telemedicine can provide cost savings aside from a tele-office visit being cheaper than an in-person visit. Cost savings could include reduced hospital admission and readmission rates, reduced lengths of stay, reduced ER visits, prevention outreach, more efficient staff utilization and better health care outcomes.

Additionally, telemedicine provides unconventional cost savings to the patients such as reduced days off work/school for patients or their child's doctor appointment. Patients can save gas money as well, especially in rural areas where primary care providers, specialist doctors or emergency rooms may be more than 30 miles away.

CONSIDERATIONS FOR ACTUARIES

Actuaries who are pricing health products for their companies need to be mindful of the laws and regulations in their states as to how telemedicine is required to be reimbursed. Actuaries should perform internal studies to determine whether tele-visits are creating a savings, if credible and reliable data is available. External studies have suggested that savings are usually achieved with the introduction of telemedicine; therefore, actuaries should consider whether their health plans should provide plan design incentives for members to seek care through these technologically savvy means. Of course, actuaries will also need to consider the cost of providing these services when determining the ultimate savings for these visits.

Additionally, when facets of telemedicine other than tele-visits are present, actuaries will need to develop pricing assumptions regarding reduced ER visits, hospital admission, and length of hospital stays. These types of assumptions will also need to be considered when specifically determining tele-visit savings.

As the adoption, use and coverage of telemedicine continue to grow, the impact of these considerations and assumptions will become more significant. While there is a multitude of readily available information on telemedicine and what it can offer, specific statistics to help develop necessary assumptions are currently limited in their availability. However, as more insurance companies cover telemedicine, there is an optimistic outlook that more research will surface that will help quantify cost savings more accurately.

WHAT'S NEXT?

With telemedicine services crossing state lines in some cases, provider licensure portability will need to be addressed. In February 2015, Wyoming passed interstate medical licensure legislation to expedite a pathway to licensure for qualified physicians who wish to practice in multiple states and increase access to health care for patients in multiple states.[7] Standards of practice for telemedicine will also need to be created, not only to define what types of services are appropriate to deliver remotely, but also to aid in defining malpractice. Most providers have malpractice liability coverage, but telemedicine is still a gray area. Most providers are only covered within their state, while telemedicine services can cross state lines.

In a country where health care costs seem to be ever increasing at higher and higher rates, telemedicine is a practice that can provide some relief. Telemedicine takes many forms, from improved machines that track vitals more efficiently to video conference visits to medical record storage and even wearable health monitors such as the Fitbit. Looking ahead, there are endless possibilities to how current and yet-to-be-developed technologies can help provide health care that is more efficient and cost-effective. ■

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ENDNOTES

1 "Typical Costs for Common Medical Services." Blue Cross Blue Shield of Massachusetts, n.d. Web. March 2017, *http://www.bluecrossma.com/blue-iq/pdfs/TypicalCosts_89717_042709.pdf.*

2 Dale Yamamoto. "Assessment of the Feasibility and Cost of Replacing In-Person Care With Acute Care Telehealth Services." Red Quill Consulting Inc., December 2014. Web. March 2017, *http://www.connectwithcare.org/wp-content/uploads/2014/12/Medicare-Acute-Care-Telehealth-Feasibility.pdf.*

3 Melinda Beck. "How Telemedicine Is Transforming Health Care." *The Wall Street Journal*, June 2016. Web. March 2017, *https://www.wsj.com/articles/how-telemedicine-is-transforming-health-care-1466993402.*

4 Rashid Bashshur, Ph.D., Gary Shannon, Ph.D., and Brian Smith, M.S. "The Empirical Foundations of Telemedicine Interventions for Chronic Disease Management." Mary Ann Liebert Inc., September 2014. Web. March 2017, *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4148063/pdf/tmj.2014.9981.pdf.*

5 *Supra* note 2

6 American Telemedicine Association, n.d. Web. March 2017, *http://www.americantelemed.org/policy-page/state-policy-resource-center.*

7 "Wyoming Insurance Interim Topics." Wyoming Department of Insurance, May 2016. Web. March 2017, *http://legisweb.state.wy.us/InterimCommittee/2016/07-0509APPENDIXB.PDF.*