

# The Promises and Pitfalls of Telemedicine

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## ABSTRACT

Telemedicine technology promises to improve patient outcomes, lessen the burden of visits on patients, increase access to physicians, increase physician efficiency, and decrease costs. However, it must be incorporated into medical practice safely without impeding patient–doctor interactions. This will require an effective triage system, efficient physician workflow, and a HIPAA-compliant communication method, among others. Payment reform is a barrier to more widespread adoption: physicians must be able to care for their patients while being reimbursed. Technologies that enable real-time access to medical records, have the ability to capture high-quality images, and supply a comprehensive medical history will help further the success of telemedicine.

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We are practicing in a time of rapid technological innovation. Telemedicine technology not only exists, but is increasingly being welcomed by healthcare consumers. It is imperative, however, that this technology be incorporated into medical practice in the safest and most efficient ways possible. Knowing how exactly, with whom, and by whom this technology should be used to improve patient outcomes while avoiding harms is an important area of inquiry.

## The Promise of Telemedicine

By 2025, a significant shortfall in physicians is expected. Although the shortage in primary care physicians has been most publicized, according to the American Association of Medical Colleges, a shortfall of 30,000 to 64,100 non–primary care physicians is also projected.<sup>1</sup> Increasing mid-level provider supply and responsibility is underway, but this will certainly meet a ceiling as well and cannot be the only solution.

Technology, in the form of giving patients access to their labs, electronic messaging, and electronic prescribing, has been shown to reduce the need for in-person visits.<sup>1</sup> Traditional electronic health record (EHR) messaging and telephone encounters have their limitations, however, as mobile access to full EHR capabilities is often not available and sending information and pictures to mobile devices is not reliably secure. One promise of EHR-based telemedicine is that it could create visits that may increase physician efficiency. A study of telemedicine utilized for retinopathy of prematurity reported similar outcomes at lower cost than traditional ophthalmoscopy.<sup>2</sup> The results of a British study demonstrated remarkably good diagnostic accuracy in rheumatology telemedicine visits; notably, these study patients were not randomized, but selected to participate in this study.<sup>3</sup>

Whether or not these visits took less time on the part of the physician was not clear. However, office visits can be inefficient from the perspective of a patient who has to take time off of work, perhaps find childcare, and spend much of his or her time waiting for the doctor. For rural patients, the needed subspecialist may be an hour or more away. Taking technology one step further, in the form of real-time electronic visits, may not only help to increase timely access to a primary care or sub-specialist physician, but make that telemedicine visit much more efficient for the patient. Importantly, there is evidence to suggest that patients with certain chronic conditions who are engaged with telemedicine technologies have moderately improved outcomes.<sup>4</sup>

### Telemedicine as a Work in Progress

Most of the telemedicine literature that has demonstrated successful outcomes has carefully selected patients and/or conditions for which the technology is being used. However, these results serve to caution that telemedicine cannot always work for all patients at all times from any healthcare provider. In addition, as with in-person visits, patients must know who is delivering their care. Done properly with high-quality images and complete histories, telemedicine applications may be well suited for conditions such as rashes, acne, or postexcision care in established dermatology patients. Chronic disease management through telemedicine in the areas of eczema or psoriasis, for example, represents a promising area for care delivered through telemedicine applications.

Further, if a stated aim of telemedicine is to increase physician efficiency, electronic visits need to be organized with a specific workflow that does so, just as an office visit is. For telemedicine to be successful, electronic visits should have ancillary medical staff to triage the visit to ensure that only patients who can be safely managed electronically are scheduled for a telemedicine consultation, just as they would be for an office visit. In addition, the staff member or the telemedicine system itself should be able to ensure that the initial medical history is filled out, medication lists and allergies are updated, and the photographs submitted are of high quality. An electronic

appointment or expectation of when the doctor will be able to get back to the patient should also be set so that there are no frustrations created before the visit has occurred.

During the telemedicine consultation, it is important that the patient–doctor interaction is not impeded. Whether done in real time or by store-and-forward technology, where the patient and physician send messages back and forth, both patients must have a HIPAA-compliant method to communicate so the process of history-taking can contribute to making the correct diagnosis. Further, it is vital that the physician is able to ensure that the patient understands what was communicated and is able to follow through with the treatment plan.

### Overcoming Barriers to Adoption

Although there clearly exists an online marketplace for healthcare services, telemedicine services provided by traditional medical offices—which may have a longitudinal relationship with patients and are therefore able to leverage knowledge of the patient and continuity of care—are hindered by lack of payment reform around this technology. According to the American Telemedicine Association, only 22 states and the District of Columbia have mandated no provider, technology, or patient setting restrictions for insurance reimbursement.<sup>5</sup> The 28 remaining states have myriad rules from various insurers that will present a challenge to physicians who attempt to bill for their services. Because of reimbursement uncertainty, the patients who are able to most easily access telemedicine services are the ones who are billed directly for them out of pocket. Physicians who use telemedicine technologies in their practice will need to pay close attention to the changes in reimbursement laws in their states.

In states where telemedicine is a noncovered entity, patients may be willing to pay out-of-pocket for timely diagnosis and treatment to avoid missing work hours, having to find childcare, or driving to the clinic. The key to physicians being able to offer telemedicine services rests in their ability to achieve good patient care while being reimbursed for their time. Technologies that provide patients and their physicians with real-time access to the medical record, have high-quality image capture ability, and provide the means to supply a comprehensive medical history will help further the success of telemedicine.

Once they are confident that they have the technology and the ability to be reimbursed for their services, medical practices will need procedures in place to handle appropriate triaging and vetting of telemedicine encounters. The ability to communicate with the patient's primary physician and potentially escalate the telemedicine visit to an in-person visit if needed will also be imperative to seamlessly integrate telemedicine into medical practice.<sup>6</sup> Making telemedicine accessible ultimately relies on a partnership between payers, physicians, and technology companies with the attainable goal of improving practice efficiencies and patient outcomes.

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