Telemedicine: Is Virtual Medical Care as Good as In-Person Care?

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Telemedicine (also known as telehealth or virtual care) has been growing in popularity in recent years. From 2016 to 2017, telemedicine usage increased 53%.[1] With pandemic fears in 2020, telemedicine exploded—seemingly solving the problem of fear of spreading infection. According to a CDC report, telemedicine visits increased 154% in March 2020 compared to 2019.[2]

Many doctors and facilities offer virtual visits in addition to in-person visits, but there are several "telemedicine-only" companies, including Doctor on Demand, MDLive, and Teledoc. Some health insurance companies, including UnitedHealthcare®, Humana, and Cigna, offer telemedicine as a benefit to their subscribers. With telemedicine becoming common and widespread, should we embrace this new way of providing medical care? Is virtual care as good as in-person care, and are physical visits to the doctor even needed in most cases?

Definition of Telemedicine

Definitions vary, but the term telemedicine (or telehealth) is generally used to mean providing medical care at a distance using communication technology. The Health Resources and Services Administration of the U.S. Department of Health and Human Services provides this definition: "Telehealth—sometimes called telemedicine—is the use of electronic information and telecommunication technologies to provide care when you and the doctor are not in the same place at the same time."[3]

Some form of telemedicine has always existed in modern medical care. Doctors often make decisions about hospitalized patients based on information from nurses and remote monitoring. Obstetricians and family physicians, for example, can monitor intrapartum fetal heart tracings from home or office. Surgeons can perform robotic surgery from miles away. Remote consultations are routinely done in military and maritime medical care. Doctors frequently communicate with their patients remotely using telephone, texting, e-mail, and even video calls. Doctors also make use of patient-collected data such as home blood pressure readings, glucose tests, EKG tracings, and home sleep study analyses.

However, what is new about the recent idea of telemedicine is a complete substitution of virtual visits for in-person visits, often without any prior patient-physician relationship. Before now, virtual interactions were an adjunct to in-person care, never a complete substitute, and they were an extension of an existing patient-physician relationship.

Advantages of Telemedicine

Clearly there are advantages to managing care virtually. Patients can do a virtual visit nearly any place, without even needing to travel. For the elderly or others who have difficulty driving or getting out of the house, it is an easier option. For those fearful about exposure to illness, virtual visits eliminate the concern. Through this convenience and ease, access to care is potentially increased.

For the doctor there are benefits as well. Telemedicine reduces, and potentially eliminates, the need for office space and staff. Some physicians and medical organizations are exclusively virtual—requiring only a computer and network connection. There is also a lower barrier to follow-up visits, since patients don't have to make a trip to the office.

There are potential cost savings too. Patients avoid the expense of travel and time off work. Lower overhead costs for physicians can result in lower visit charges.

Disadvantages of Telemedicine

Convenience is a benefit of telemedicine, but it can also be a negative. If a virtual visit can be done while playing at the park (as one ad depicted), will that convenience trivialize the encounter? In the words of Thomas Paine, "What we obtain too cheap, we esteem too lightly."

With widespread use of personal health monitoring devices (heart rate, sleep patterns, pulse oximetry, etc.), and now development of virtual stethoscopes and otoscopes, it would seem that the need for in-person visits is all but eliminated, since medical measurements can be done from home by the patient. For example, home blood pressure measurements are widely used and have been shown to be a reliable way of diagnosing and monitoring hypertension.[4] However, one study showed that home blood pressure readings were inaccurate 70% of the time.[5] Another study showed significant errors in reliability and accuracy of patient-reported home blood pressure readings compared to actual home blood pressure readings.[6] In our office, we have gotten calls for very low home pulse oximetry readings—for patients who have no respiratory disease and are breathing comfortably, sometimes even sleeping.

With sufficient monitoring in the office and adequate education, home medical measurements can be useful, but as a stand-alone substitute, they are subject to significant error.

Distractions are another concern with telemedicine. In our office, with signs posted advising against phone use, patients still look at their phones, text, or answer phone calls—even while the doctor is in the room with them. How much easier it

is to be distracted when virtual visits are done at home or work or at the park. Will the patients pay attention to, or remember what is being said?

Truthfulness is not often discussed relating to the patient-physician relationship, but it is well-known that patients are not always forthcoming. Virtual technology can create a lack of emotional connection through physical and virtual separation, and can obscure subtle body language or facial expressions. These factors may make it easier to be less-than-truthful when sitting behind a video screen than when face-to-face, especially when there is no established patient-physician relationship.

Virtual visits potentially compromise privacy. While patients have the right to share their information with whom they like, what is the physician's obligation or liability while doing a telemedicine visit? What if the patient is in a public place? Should the consult be stopped or the patient warned? How does the physician even know who else is present; we can only see what is in view of the camera. Will the patient be willing to divulge all necessary information if not in a private place? What if the patient needs to show the physician some body part? Do we create situations in which privacy is too carelessly managed?

Poor quality of the video call is a well-known problem. Much of the time, perhaps most of the time, video calls have glitches—frozen images, grainy images, dropped calls, etc. These things are a minor annoyance when all we want to do is see the other person's face, but they are a major issue when a physician is trying to observe a patient, do a virtual "exam," or communicate complicated things—especially if there is no prior relationship with the physician.

The technology itself can be a barrier to appropriate care. Though it is easy to assume everyone knows how to fluently use virtual communication apps and software, many do not. Among the elderly, lack of knowledge about technology, sensory impairments, or cognitive impairments may be more likely, but these limitations can exist even among younger patients. However, it may be difficult to detect these limitations virtually, possibly resulting in a false assumption that accurate information was obtained and that good communication was provided.

We are reduced to making guesses with virtual visits because we lack a physical exam and other information (often subtle) we collect during an in-person visit. In the case of addressing a follow-up concern after an in-person visit, this risk is typically minimal, but with virtual care completely substituting for in-person care, the risk is higher. While a good doctor may be able to correctly guess the majority of the time based on history alone, how do we rule out the other items in the differential diagnosis? How do we hear the barely perceptible rales to make the diagnosis of pneumonia or detect the subtle new heart murmur? How do we palpate the enlarged spleen, which may be the only clue to lymphoma? How do we detect self-cutting that may be found incidental to a complete physical exam?

There are attempts to provide guidance on doing virtual "exams." One article gave instructions on performing musculoskeletal exams virtually.[7] Another article proposed a 10-step checklist for a "patient-assisted physical examination."[8] However, these methods lack precision—a critical element in physical examination.

Because of the lack of precision and incompleteness due to the limitations of virtual interactions, there is the risk of inappropriate testing and treatment. Excessive testing may be done to rule out conditions that could easily be distinguished on careful exam. Excessive treatment may be prescribed to cover things "just in case" when a thorough in-person evaluation could have led to more targeted therapy. Data comparing testing and treatment patterns is limited, but telemedicine has been associated with increased antibiotic prescribing[9] and with increased use of broad-spectrum antibiotics.[10]

Benefits of In-Person Care

Beyond just the necessity of gathering information, there is a benefit of the check-in process at the front desk, of patient rooming, including vital signs, and finally the direct interaction with the doctor. The process involved in a visit to the doctor's office formalizes the event and raises its importance. The patient's mind is prepared for the visit, and even the process itself helps to call important things to their mind. The doctor's instructions may be remembered more completely, since our recall is better when the memory is attached to an important event.

While there are some who suggest that physical examination or use of a stethoscope is becoming obsolete,[11,12] physical examination is a critical element of medical care. A physical exam during a mental health visit may detect body language, facial expression, and other subtle behaviors that help to clarify a diagnosis or status of a condition. A physical exam during a visit for a neurologic complaint may involve a complex neurologic exam revealing only a subtle defect. While some may argue that these things can be done virtually, the virtual veil of the video screen and technology obscures subtle findings. With modern advances in laboratory and imaging, some might say we really only need to know which tests to order to make a diagnosis. However, a physical exam is part of what determines pre-test probability, which, in turn, allows correct interpretation of a test.

A Cochrane review failed to show a reduction in morbidity and mortality from general health checks in adults;[13] we might wonder whether we should still do traditional wellness visits or annual check-ups. However, the benefits of regular visits to the doctor go beyond the strict medical outcome. Medical care is relational. Doctors often know a great deal about their patients—things that are not directly medical and are not recorded in the chart, but that are important in the nuances of understanding a problem and determining the best treatment plan. The relationship is also a basis of the patient's trust and willingness to agree to recommendations.

Physical examination is medically important, but even the physical interaction itself has value. Humans need direct, in-person interactions; they need to be touched. Intuitively we know touch is important; we see its power in a mother's ability to soothe her child. Though it is hard to quantify, this effect is confirmed in studies. Touch or touch therapies have been associated with decreased pain.[14,15] Hugs have been linked

with decreased blood pressure[16] and even with decreased risk for infection.[17]

Touch forms the basis for our relationships. Just as handshakes and hugs are socially important in maintaining relationships and signaling attitudes, so touch in a medical context has similar value. A confident handshake, a reassuring hand on the shoulder, or an encouraging pat on the back can deepen the patient-physician relationship and have a powerful effect on a patient.

Conclusion

Advancements in communication technology, combined with pandemic fears, have brought great interest in telemedicine and made its use widespread. There are benefits of telemedicine, including convenience, reduced fear of infection exposure, ease of follow-up visits, and potentially lower costs. However, there are significant potential risks, including compromising the quality of care, estranging our patients, and losing a powerful tool in medical care—touch. Telemedicine can be a useful adjunct, but the highest level of medical care is only achievable through direct physical interaction with our patients.

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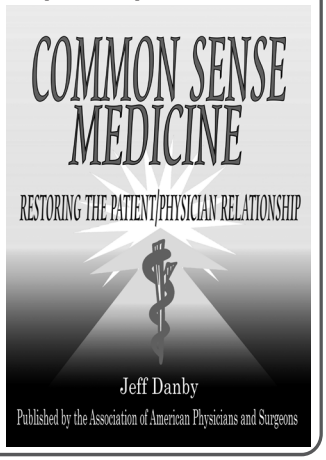

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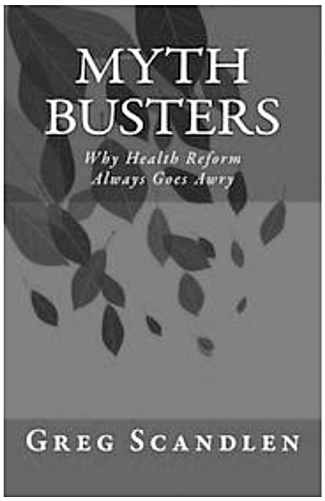

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