

Improving TeleDiagnosis: A Call to Action



SOCIETY to
IMPROVE
DIAGNOSIS in
MEDICINE

Conversations with Clinicians

Problem

The use of telehealth for diagnosis dates back decades, for example, in fields like dermatology, where the value and limitations of virtual evaluations have been extensively evaluated.(1) Even in primary care, there is a sparse but long history of using telehealth for diagnosis, for example, in serving rural and remote populations.(2) The COVID pandemic of 2020, however, created an unprecedented and universal explosion of using telehealth for diagnosis (telediagnosis) in front-line clinical fields.

The major purpose of this series of ‘Conversations’ is to understand the quality and safety of this novel approach. In what ways might telediagnosis improve the diagnostic process or degrade it?(3)

We have previously considered the perspectives of practices and healthcare organizations on telediagnosis,(4) and in this *Conversation with Clinicians* we report on the experiences and concerns of the clinicians using virtual interactions for diagnosis primarily in ambulatory settings. Findings from the recent literature and input from active clinician-users are presented, again using the RE-AIM framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance and future prospects) to organize discussion topics.(5)

"Support for virtual care needs to reach patients where they are; someone struggling with a video platform will not benefit from assistance that comes from that same video platform."

Reach

Key findings from the literature: Convincing healthcare providers and organizations to adopt new practices is typically a slow, laborious undertaking. Adopting telehealth to replace in-person care in the setting of the 2020 COVID-19 pandemic has been a very unique and unprecedented exception; virtually every healthcare provider made this transition over a period of just a few weeks and months to allow healthcare practice to continue.

While the reach of telehealth included virtually every healthcare provider and organization, clinicians were acutely aware that reach was not even amongst their patients; not all were able to participate or participate optimally. Publications, blogs, and social media were clear and effective in pointing out disparities in patient uptake of telehealth.(6) Most concerning were findings that the patients most in need of healthcare services, the elderly, the educationally- and financially disadvantaged, and those in poor health, were disproportionately missing as effective telehealth users.(7, 8) The second issue of great concern was the falloff in total healthcare provided during the pandemic. The total number of ambulatory care visits fell by 25-33% during the heights of the pandemic, (9) with concerns that delayed care would ultimately lead to delayed diagnosis of malignancies, and more frequent complications of acute conditions.(10)

What we heard: Clinicians provided interesting insights on the ‘reach’ of telehealth for diagnosis. First, they confirmed the literature reports that some of their most needy patients struggled to participate in telehealth or were left out entirely. But several felt that on balance telehealth had expanded the reach of diagnosis. Rural patients represent a large group of beneficiaries. Another large group are patients with daytime jobs that make it difficult for them to attend an in-person visit.

Tech-challenged patients had great difficulty participating in virtual care. Many clinicians felt that the ‘fall back’ approach for these patients, just using a telephone call instead of a virtual video visit, was essentially equivalent, and provided these patients with the opportunity to participate in virtual care at their own level. Others felt that phone-only visits did not provide enough interaction or information. One clinician commented that their organization had created a well-constructed video guide for a patient to help them use telehealth, but for the most-challenged patients, they couldn’t access the video any more than they could use a video visit for their appointment. [This would be great for a call-out box—something

"A commonly raised critical skill: assessing who needs to be seen in person, and how urgently. "

like “tools need to be fit-for-purpose for the end-user”; someone who is struggling with accessing a virtual video platform won’t benefit from assistance that comes through a virtual video platform”]

Clinicians also mentioned the value in having their staff call or connect with patients the day before their scheduled appointment to iron out technical issues beforehand.

Effectiveness

In what ways does telehealth improve the diagnostic process or diagnostic outcomes? In what ways does it interfere with the process or degrade outcomes?

Key findings from the literature: The main takeaway from the literature search was that the impact of telehealth for diagnosis in primary care settings was not currently known and was generally understudied.(4)

The literature provided interesting insights in two specific areas:

Team involvement in diagnosis - A published review of telemedicine’s impact on interdisciplinary team interactions concluded that telehealth offered many advantages over in-person care and that these outweighed the potential disadvantages.(11) The ability to convene and involve multiple specialists in the initial evaluation and planning for patients with malignancies (virtual ‘tumor boards’) illustrates the kinds of benefits telehealth can offer for diagnosis. An early study of telehealth encounters found that this medium facilitated interactions with consultants, albeit with a tendency to exclude the patient from these conversations.(12)

Impact of telehealth on consults - A survey of primary care providers who had used telehealth for electronic consults reported that clinicians identified multiple benefits. Overall, more than 75% of eConsults were felt to have improved care plans. Other benefits included avoiding the need for a face-to-face consultation, avoiding unnecessary tests and procedures, and an educational benefit was cited in over half.(13) Improved care was also found in a survey of VA primary care clinicians, but with a cost; most felt that eConsults shifted the responsibility for diagnosis and follow-up more in the direction of the

primary care provider, along with a time burden compared to sending patients for face-to-face visits with a subspecialist consultant.(14)

What we heard: Clinicians noted that telehealth visits for diagnosis had very significant and unique effects on the diagnostic process. Clearly, the largest challenges are the limitations imposed by not being able to conduct an appropriate physical examination, but creative workarounds were ubiquitous (see Implementation below), and clinicians commented that the cardinal skill all telehealth providers needed to master was knowing who needs to be seen in person, and how urgently.

Clinicians had the sense that they were doing *less* diagnostic testing; it was less convenient for the patients (compared to just stopping by the lab after an in-person visit) and increased the risk of possible COVID-19 exposure. Several clinicians felt that virtual visits increased their ability to ‘connect’ with their patients because they were more focused on listening to the patient. Several mentioned that eye contact was improved on video visits, where both patient and clinician are looking right at the camera, compared to in-person visits where the clinician is often distracted by the EMR and computer. More than one clinician felt that overall telehealth was improving diagnosis, primarily by improving access and facilitating follow-up.

Adoption and Implementation

Key findings from the literature: Although almost all patients are impressed with the ease and convenience of telehealth, clinicians have had a more difficult time acclimating.(15) Clinicians were also initially wary that telehealth might reprise their recent experiences with other e-health tools, such as the electronic medical record; generally, these were perceived as being disruptive to workflow, depressed productivity, and contributed to increased stress and burnout.(16)



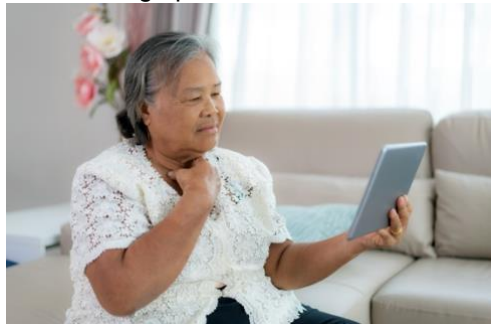
A number of concerns and frustrations have emerged from formal surveys of telehealth providers, reflecting the difficulty of diagnosis at a distance, challenges in translating their longstanding practices providing in-person care to this novel platform, (17) and the very different nature of how contextual factors influence diagnosis in virtual encounters.(18) The literature reflects clinicians’ struggles adapting to virtual care. Clinicians immediately notice the many things learned and conveyed just from body language in a face-to-face encounter that are missing in a virtual visit; “It’s hard to tell if a patient is done speaking or just pausing. I find myself interrupting patients far more than I do with face-to-face visits.”(19)

Overwhelmingly, the literature on the early use of telehealth for diagnosis describes an evolutionary path; first adopters faced early frustrations and struggles but with increasing experience report progressively increasing satisfaction and comfort. Surveys of more experienced physician users have shown that their experiences with virtual care are generally positive; telehealth is perceived as being clinically effective, efficient, and facilitative of follow-up.(20) Using telehealth for diagnosis clearly involves a learning curve, and another remarkable finding from the literature is the ever-expanding repository of tips, learning guides, and guidelines to orient early users and improve virtual practice.

What we heard: Clinicians we interviewed highlighted the difficulties of getting started with telehealth. “It was SUPER painful to get started!” Several also highlighted the ‘learning curve’ and how their comfort and skill in using telehealth visits improved over the first few months.

Disparities were very apparent between clinicians in large practices and those working more on their own. Clinicians from large practices benefitted from telehealth training, peer support, and better technical support. Several organizations had provided useful tools and guidelines in support of telehealth visits. In contrast, lone providers struggled on their own, with no tools, guidelines, or support. One related the story of practicing telehealth visit skills with her nurse, in lieu of any institutional resources.

A fascinating upshot of the telehealth revolution are the creative solutions, and work-arounds clinicians



have devised to circumvent the limitations of a virtual visit: Evaluating strength by what size soup can the patient is able to elevate or how many twists the patient can put in a towel; evaluating rebound abdominal tenderness by having the patient jump up and down; testing breathing limitation by having the patient take a deep breath close to the microphone; etc. One clinician mentioned new tools mothers can have at home to facilitate newborn evaluations and how these are the hot new baby-shower gifts.

Maintenance, Trends & Future Prospects

Key findings from the literature: Patients seem to love the convenience and the immediacy of telehealth. On the provider side, a growing number of clinicians are also becoming telehealth-evangelists, extolling how it improves access, expedites triage, facilitates access to consultants, and improves follow-up after an initial diagnostic visit. With constituents on both sides of the equation being so enthusiastic about telehealth, it seems inevitable that its use will continue at scale post-COVID. However, the actual course will be largely determined, by the future course of policy and financial considerations, as yet unknown.

There are two issues that emerged from the literature that are of great interest regarding the future of telehealth for diagnosis:

- First, several authors and groups have commented on how telehealth might be affecting clinician stress. The cognitive load of telehealth encounters and the frequent battles with telehealth technology are both elements that contribute to clinician stress.(21) A survey of primary care providers also identified virtual consultation as a source of stress, in that it seemed to shift responsibility for diagnosis and follow-up more for primary care providers.(14) On the other hand, telehealth use effectively reduced the fear of infection that was a ubiquitous concern in the midst of the COVID-19 pandemic.(22) A surprising observation is that telehealth might provide at least a partial antidote to physician burnout. The ability to interact with a patient eye-to-eye, and recreate some of the positive elements of a house call in their home setting..(23)
- Second, is the possibility that the care that was deferred during the COVID-19 pandemic might have actually led to improved outcomes for patients, reflecting the known risks of over-testing and over-treatment in healthcare generally.(24) Maybe in some ways, less is more.

What we heard: Clinicians told us that their taste of telehealth over the past year has left them hoping it persists going forward, at least for some applications. They like the intimacy, they like how a virtual visit improves communication, they like the ease of follow-up.

Most anticipate a hybrid system emerging, and the challenge for clinicians will be finding the right balance between in-person and virtual care and knowing when to tell patients they need to be seen in person.

Clinicians are concerned about reimbursement for telehealth services. Foremost, it has to be financially viable, a complex issue that was largely ignored during the COVID pandemic year or obviated by federal short-term financial support.

Relevant resources and tips

[Making Telehealth Visits Better for Nurses and Doctors](#)

“The AMA has developed a [COVID-19 resource center](#) as well as a [physician’s guide to COVID-19](#) to give doctors a comprehensive place to find the latest resources and updates from the Centers for Disease Control and Prevention and the World Health Organization.

The AMA has also curated a selection of [resources to assist residents and medical students during the COVID-19 pandemic](#) to help manage the shifting timelines, cancellations and adjustments to testing, rotations and other events.”

[Help patients adjust to telehealth by remembering the human touch](#)

[Telehealth Competencies for Nursing Education and Practice: The Four P’s of Telehealth](#)

Conclusion

Understanding the barriers to and facilitators for rapid adoption of telehealth for diagnosis is key to promoting high-quality diagnosis and, ultimately optimal patient outcomes. Through a series of conversations with providers from clinical practices, hospitals, and health systems, and an in-depth review of current literature, we were able to elucidate some early trends in **R**each, **E**ffectiveness, **A**doption, **I**mplementation, and **M**aintenance (including trends and future directions, using the RE-AIM framework. Future listening sessions with clinicians, representatives from telemedicine companies, and patients are planned for later this year.

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