A Research Agenda to Support the Optimal Use of Telehealth

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The Covid-19 pandemic is associated with a 154-percent increase in the use of telehealth in hospitals, primary care practices, and long-term care facilities between March 2019 and March 2020.[1] Some providers and organizations have shifted to telehealth as a primary mode of service delivery while others are using telehealth to supplement in-person visits. Public and private payers have made updates or exceptions to reimbursement regulations to support the deployment of video visits, telephone consultations, and email communication as clinicians seek safe ways to provide routine and acute care to patients. These changes could remain after the pandemic restrictions on face-to-face care end, so how do we implement telehealth most effectively as part the new steady state?

WHAT IS TELEHEALTH?

Telehealth uses virtual platforms to provide health education, patient engagement, and clinical care delivery. Telehealth enables health care providers to improve access to primary and specialty care and can be offered in a variety of care settings including hospitals, clinics, acute care locations, community sites and even private residences. Telehealth can be used to conduct live video visits or synchronous consults, to share health data between providers, and to transmit health monitoring information from patients to providers. It can include "store and forward" technologies that transmit photographs, x-rays, or other health information between providers. In addition, telehealth can encompass remote patient monitoring in which personal health or medical data is recorded by patients or caregivers and submitted electronically to a health care provider.

This brief lays out a research agenda to address questions about the optimal use of telehealth, considering the interlocking perspectives of clinicians, patients, regulators, and payers. Abt's interdisciplinary team of researchers and evaluators stands ready to assist in answering these and other emerging research questions to provide decision-makers with the best information to craft telehealth policies and processes going forward.

[1] Koonin, 2020

What incentivizes providers to adopt telehealth?

Despite recently accelerated growth, some providers remain reluctant to adopt telehealth. Barriers to provider uptake include lack of reimbursement for services rendered via telehealth, licensing requirements, unfamiliarity with telehealth systems, and the cost of the necessary technology. Other impediments include difficulty integrating telehealth into current practice, and concerns about potential medical errors and the security or privacy of patient data.[2] Jan Lindsay, a psychologist at the Veterans Health Administration (VA) who oversees mental health providers, notes that some providers need convincing to accept telehealth. She states, "*If I have 100 providers, 20 of them will probably be early adopters of telehealth. Forty more might need some sort of organizational incentive, like making learning and using telehealth platforms part of a performance plan. And getting the last 20 on board can be a struggle. They will likely need some sort of psychological buy-in, like stories about how telehealth can successfully help patients*."

Understanding provider motivations for or against using telehealth is a first step towards achieving more widespread telehealth adoption.

Research questions to help address provider uptake of telehealth:

- What can the evaluation of telehealth technology implantation into existing workflows tell us about best practices?
- How can the Technology Acceptance Model (TAM) help improve provider willingness and ability to use telehealth?
- How do barriers to telehealth use differ among different groups of providers or in different health care delivery settings, including in rural areas?
- What motivations for telehealth adoption or refusal are most common in different groups or in different health care delivery settings?
- How do providers' early experiences with telehealth (i.e., during the Covid-19 pandemic) influence their acceptance of telehealth as part of routine care?
- How is telehealth training being incorporated into medical and nursing school curricula?

Technology Acceptance Model

The Technology Acceptance Model (TAM) is a validated method of understanding how humans respond to and ultimately accept new advances in technology. The model holds that three factors are predictive of acceptance: attitude, perceived ease-of-use, and perceived usefulness. TAM has widely been applied to healthcare with researchers using the model to predict nurse willingness to use telehealth platforms in the ICU, elderly and chronically ill patient willingness to engage in a telehealth-based intervention, provider and administrator perceptions of telehealth in palliative care, and more.

Source: Kissi et al, 2020; Kowitlawakul 2011; Chang 2015; Nguyen et al, 2020

What telehealth technology is most appropriate for different organizations?

Some telehealth technologies can be expensive and require technological updates or new equipment. They may not readily integrate with other clinical IT systems; electronic health records (EHRs), for example, are largely not shared across hospital systems, potentially creating barriers to streamlined access for multiple telehealth providers.[3] Telehealth platforms must also comply with Health Insurance Portability and Accountability Act (HIPAA) patient privacy requirements. Commonly used communication platforms like Skype or Facetime might not meet encryption standards, thus requiring investment in specific software. Some clinical practices may lack on-site IT support to install, maintain, or integrate telehealth hardware and software with existing systems.

[2] Frieden, 2019
[3] National Public Radio, 2021

Research questions to help address the most appropriate technology for different organizations:

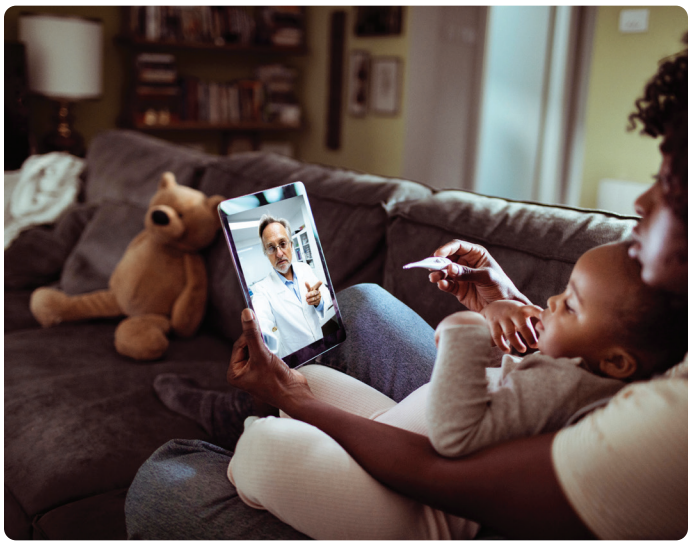
- What are the most popular or prevalent telehealth technologies currently in use? What are their acquisition and maintenance costs? Is their use reimbursable by public and/or private payers?
- What federal, state, or private sources of funding are available to different clinic and provider types to support the acquisition, installation, or maintenance of telehealth hardware or software?
- Which entities are providing technical assistance to clinical practices that wish to adopt telehealth? How is the support provided and what are the costs, if any, to obtaining support?
- How can clinical practices assess a potential telehealth technology for compliance with security and other regulations?

How can telehealth enhance team-based care?

Team-based care is a healthcare delivery model in which a multidisciplinary team of providers works collaboratively to address patient needs. This model has been associated with expanded access to care and more efficient delivery of a holistic set of services, including primary care and behavioral health.[4] As more providers and patients become comfortable with telehealth, organizations that support team-based care may need to adapt to deliver and coordinate some care electronically. And because telehealth allows for synchronous and asynchronous rapid communication among providers and is not limited by physical location, telehealth may facilitate the expansion of the team-based care model to virtual teams.[5]

Research questions to help address team-based care via telehealth:

- What are existing models of team-based care and what are the "lessons learned" for providers and patients about the implementation of team-based care?
- How can existing models of team-based care be adapted to take advantage of telehealth?
- What are the crucial steps in the process of implementing virtual team-based care facilitated by telehealth?
- What telehealth methods (i.e., store and forward, remote patient monitoring) can most effectively and efficiently be incorporated within team-based care?



What barriers do patients experience to using telehealth and how can they be overcome?

Research has shown that patients either tend to prefer telehealth visits or find that the quality of such visits is comparable to in-person visits.[6] But access to and use of telehealth varies widely across patient populations. Like provider uptake of telehealth, patient uptake has been historically low. Barriers to patient use of telehealth include lack of necessary technology or internet access, lack of knowledge on how to use needed technology, general distrust in technology, and fears about providing private health information over the internet.[7, 8] Lower socioeconomic status is associated with less access to technology such as computers and broadband Internet. A 2015 study found that "smartphone-only" users were more likely to be Black or Hispanic and have lower income than people with access to both a smartphone and at-home broadband Internet.[9] Some patients may also lack resources and capacity needed to take their own vital signs and provide other basic health information to providers. Providing equitable access to care for all clients will require addressing common barriers to telehealth uptake.

[4] Schottenfeld et al, 2016
[5] Luo, 2020
[6] Care Innovations, n.d.
[7] Gajarawala & Pelkowski, 2021
[8] Cimperman et al, 2013
[9] Anderson & Kumar, 2019

Research questions to help address patient barriers to telehealth:

- Has the relaxing of telehealth licensing requirements during the COVID-19 public health emergency increased patient access to care through telehealth? In what geographic areas or in what medical specialties did access to care increase?
- How can the Technology Acceptance Model (TAM) help improve patient willingness and ability to use telehealth?
- What sub-populations of patients are least likely to use telehealth? What specific barriers to telehealth do these groups face?
- What are creative ways that health centers or other community clinics are using telehealth to reach underserved populations?
- How can telehealth be adapted to reach patients with limited English proficiency, lack of consistent broadband access, or low internet skills?
- How can patient preferences for telehealth versus in-person visits be ascertained and accommodated? How can organizations use this data to tailor telehealth services for engagement and continued use?

How can practices and oversight bodies assess the quality and safety of telehealth services?

The ongoing quality and safety of any health service delivery model is necessary for improvement and achieving desired outcomes, but methods of quality assessment based on in-person care are only beginning to be developed for wider adoption to telehealth.[10]

Identifying how to measure telehealth quality is a crucial first step. Quality measurement for telehealth must encompass the quality of the telehealth encounter itself, for both the provider and the patient, and the quality of patient outcomes following a telehealth encounter. But health care organizations may not have the staff or tools to conduct telehealth quality assurance. Existing quality assurance and quality improvement tools may need to be adapted to capture outcomes most relevant to telehealth. Practices and oversight bodies will need to develop or select from existing quality measures that can assess these outcomes.

Research questions to help address how telehealth services can be assessed:

- Can existing quality measures be reliably applied to telehealth services? Are new quality measures specific to telehealth needed?
- How does telehealth pose new safety risks and how do we mitigate these risks?
- How can states enforce quality standards and consumer protections when telehealth reaches across state lines? Which laws apply – those in the state of the provider or those in the state of the patient? How might policymakers address licensing requirements to allow the safe use of telehealth across state lines?
- What standardized measures are best suited to evaluating telehealth implementation and outcomes?
- How does telehealth compare with in-person visits in terms of patient health outcomes?
- How does telehealth compare with in-person visits in terms of treatment adherence, visit attendance, and follow-up care?

How will telehealth services be reimbursed by public and private insurers?

Reimbursement restrictions—especially prior to the Covid-19 pandemic—are an oft-cited barrier to telehealth. If providers are not reimbursed for providing telehealth at the same rate as in-person care, uptake is less likely.[11] Reimbursement may vary by provider type, health care service delivered, or telehealth modality used, making it difficult for providers to know which telehealth services are reimbursable. In addition, the confusing array of reimbursement policies from different insurers may dissuade some providers from offering telehealth services.

Research questions to address telehealth reimbursement:

- How did relaxing reimbursement regulations during the COVID-19 pandemic correlate with increased uptake in telehealth?

[10] Sugapong, 2020
[11] Rural Telehealth Toolkit - RHIhub, 2019

- How do state licensing requirements interact with Medicare, Medicaid, and private payer reimbursement policies for telehealth?
- How does provider satisfaction with telehealth correlate with reimbursement for telehealth services?
- How can policymakers address payment structures and reimbursement to decrease barriers to telehealth implementation?
- What is the minimum volume of telehealth services needed to generate sustainable reimbursement that justifies investments in technology and training?
- How has telehealth reimbursement been incorporated into value-based payment models? In what ways can health care organizations' experiences with telehealth inform future value-based payment models that incorporate emerging technology solutions for care delivery?

Which telehealth platforms work best for which patients, settings, and health conditions?

The telehealth market has exploded due to the coronavirus pandemic and is expected to continue to grow after the pandemic is under control. Even prior to the pandemic, telehealth revenue grew by 44 percent from 2014-2019.[12] During COIVD-19, the U.S. Department of Veterans Affairs alone saw a 1,700 percent increase in telehealth visits from February 2020 to January 2021.[13] Hundreds of different telehealth platforms are available. A relatively small number of providers and patients have extensive experience with more than one telehealth platform. Different platforms offer varying functionalities. Each will have its own look and feel and varying strengths and weaknesses for ease of use, data security, EMR compatibility, and other characteristics. Providers and patients may have different preferences for telehealth platforms that must be reconciled.

Research questions to address telehealth platform choice:

- How is telehealth being used to reach patients in primary care, acute care, and long-term care settings? How does telehealth in these settings differ?
- What are key factors that providers and health systems should consider when choosing a telehealth platform or platforms?
- What does the evaluation of existing platforms tell us about their accessibility, ease of use, safety, and usefulness for both providers and patients?
- How do various platforms comply with laws and regulations for protecting health and other personal information?
- How should trade-offs in the preferences of providers and patients be balanced with regulator and payer requirements?

The COVID-19 pandemic has brought new telehealth policies to light, but barriers remain. By accelerating a research agenda, federal agencies, states and healthcare systems can answer pressing questions that can help ensure that wider telehealth adoption is effective, affordable, and sustainable, and that telehealth services are calibrated to meet patient needs.

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[12] Abrams et al, 2021
[13] McDonough, 2021

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