

Infectious Diseases Society of America
Position Statement on Telehealth and Telemedicine as Applied to the Practice of the
Infectious Diseases

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Introduction

The use of telehealth and telemedicine is becoming increasingly common as a method for providing clinical care, conducting clinical research, and enhancing access to continuing medical education. Physicians, clinics, and medical centers are harnessing modern telecommunication technologies to manage a multitude of acute and chronic conditions, as well as incorporating distance-based technologies into teaching and research. Given the broader availability and affordability of high quality telehealth and telemedicine equipment, changes to Medicare and Medicaid reimbursementⁱ, a growing number of states with billing parity laws for private insurance, patient acceptance, and support in the literatureⁱⁱ, the use of synchronous and asynchronous telemedicine will likely be incorporated into the clinical care models of a growing number of infectious diseases (ID) physicians.

An important consideration for the use of telehealth and telemedicine includes the potential for cost savings, on both an individual patient level and for the health care system in general. For example, The Veterans Health Administration (VHA) has been using telehealth technologies since the 1990's to assist in treatment of diseases such as congestive heart failure, diabetes, hypertension, chronic obstructive pulmonary disease and post-traumatic stress disorder. Analysis of VHA healthcare expenditures during 2012 showed an annual savings of \$6,500 for each patient that participated in a telehealth program.ⁱⁱⁱ The savings in 2012 for the VHA, attributable to telehealth technologies, amounted to almost \$1 billion in total savings across the entire VHA system during 2012.^{iv} Other cost saving estimates suggest that \$4.28 billion could be saved with the use of store-and-forward, real-time communication, and remote patient monitoring when used in emergency departments, prisons, nursing home facilities, and physician offices.^v

The technologies spanning telehealth, telemedicine, and mobile health (mHealth) are evolving rapidly. The Infectious Diseases Society of America (IDSA) supports appropriate and evidence-based use of telehealth and telemedicine technologies to provide up-to-date, timely, cost-effective subspecialty care to resource limited populations and to provide continuing education and longitudinal support to ID physicians. The purpose of this position statement is to educate IDSA members on the use of telehealth and telemedicine technologies and to promote IDSA's position on the use of such technologies.

Defining Telehealth, Telemedicine, and mHealth

Telehealth

The Health Resources Services Administration (HRSA), an agency within the Department of Health and Human Services (HHS), defines telehealth as “the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration. Technologies include videoconferencing, the internet, store-and-forward imaging, streaming media, and terrestrial and wireless communications.”^{vi} Furthermore, HRSA distinguishes telehealth from telemedicine as applying to “a broader scope of remote healthcare services...telemedicine refers specifically to remote clinical services, [while] telehealth can refer to remote non-clinical services, such as provider training, administrative meetings, and continuing medical education, in addition to clinical services.”

Telemedicine

Historically, the term “telemedicine” often used interchangeably with “telehealth” has been used to describe the interaction between a patient and a provider when separated by geographic distance. Modern methods of telemedicine typically use audio-video technologies to provide a real-time (synchronous), encrypted, Health Insurance Portability and Accountability Act (HIPAA)-compliant interaction between the patient and clinician. This interaction increases access to specialty healthcare and eliminates the need for distance travel. High definition cameras and encryption software as well as specialized equipment, including electronic stethoscopes, high-definition cameras, otoscopes and ophthalmoscopes, are now widely available.

Telemedicine has proven effective in a variety of care settings, and several studies support its use in a myriad of clinical environments, including for psychiatric care,^{vii,viii} surgical services,^{ix} emergency medicine,^x and critical care,^{xi,xii} with enhanced, more timely access to care, cost savings and high patient satisfaction.^{xiii} Telemedicine may provide high quality, high value care to patients with a broad range of infectious diseases including acutely ill inpatients and those with chronic infections (e.g. HIV or hepatitis C) managed in the ambulatory setting, for conditions such as HIV or hepatitis C virus.^{xiv, xv}

mHealth

Mobile health, or mHealth, is the delivery of health care services via mobile devices.^{xvi} The term has been used to identify healthcare delivery using a variety of mobile technologies, not only for direct patient care but including health monitoring and patient education. Although the application of mHealth is in the early phases of adoption, it has been demonstrated to play an increasing role in clinical medicine and clinical research. Examples of the use of mHealth technologies include monitoring medication compliance, monitoring disease and medication related side effects, and using electronic devices to enhance chronic disease management.

Examples of Established Use Cases for Telehealth and Telemedicine

Distance Learning

Telehealth programs are designed in many ways to address a variety of clinical, systems-based, or public health needs. Many telehealth programs use real-time audio-video technologies to connect providers, administrators, or other professionals simultaneously over broad geographic regions. The goal of such programs is to create a virtual network of support for providers, which allows for just-in-time consultations, rapid dissemination of knowledge, and longitudinal mentorship. An example of a telehealth model that connects providers in real-time is the Extension for Community Health Outcomes (ECHO) program, developed by Dr. Sanjeev Aurora at University of New Mexico and replicated in a number of settings around the world. This program connects community providers to academic medical center specialists regularly to provide ongoing mentorship and to support the treatment of chronic medical conditions. In a landmark study, treatment of chronic hepatitis C by community providers with the support of an ECHO telehealth network was shown to be as effective as treatment by academic medical center specialists.^{xvii} This telehealth format has been expanded and replicated for many medical domains and geographic locations and has been applied to chronic infectious diseases such as hepatitis C, HIV, and tuberculosis. This model can also be used to connect non-clinicians such as case managers, community aid workers, and public health departments to provide longitudinal support and to catalyze knowledge sharing, discussion of systems-based issues, and collective problem solving. IDSA recognizes that employing telehealth can expand the coverage of ID-led public health services, such as infection control and prevention, antimicrobial stewardship, and patient care coordination related to outpatient parenteral antimicrobial therapy (OPAT).

HIV Management

Literature supports the use of telemedicine for HIV management, for which subspecialty care can be critical. Studies have shown improved adherence to antiretroviral therapy (ART) and more favorable clinical outcomes when clinicians with significant experience and formal training in the management of HIV infection are directly involved with patient care.^{xviii,xix,xx,xxi} Expert management by a subspecialty trained clinician can potentially influence survival, lower the risk of opportunistic infections, and decrease the risk of toxicities, side effects and drug-drug interactions with ART.^{xxii,xxiii,xxiv} Timely and appropriate ART, as well as adherence counseling, minimizing side effects and toxicities of ART, and the availability of other educational and case management resources, may benefit the individual patient with HIV infection^{xxv} and reduce transmission in the community.^{xxvi} Compared to in-person management by generalists, subspecialty care using telemedicine has been shown to improve virologic suppression and result in a greater rise in CD4+ T-cell counts in a large prison population,^{xxvii} and may prove beneficial for HIV care in other resource-limited settings. In addition, the use of telemedicine may enhance the coordination of care between services for patients with HIV disease.^{xxviii} The potential of mHealth in the provision of ID services in telemedicine is as yet not fully realized, but IDSA anticipates great advances especially in the realm of reliable mobile device-enabled diagnostic tools for the transfer and analysis of clinical data and for use in patient communication.

Understanding the Technology

ID telemedicine service providers can choose between, or combine, two fundamentally different care delivery modalities; synchronous and asynchronous.

Synchronous Telemedicine: This term refers to a live real-time, patient and provider interaction. This method of telemedicine takes advantage of encrypted videoconferencing as its core technology. The patient and provider are able to interact similar to a traditional clinic encounter.

Synchronous telemedicine visits utilize a high-resolution video camera coupled with broadband technologies. Videoconferencing systems must use HIPAA-compliant encryption software, and work optimally with a connection speed of at least 384 kbps in both the downlink and uplink directions.^{xxxix} With the near ubiquitous access to broadband technologies, the access to synchronous telemedicine is increasing while reducing cost as a barrier. The resolution for telemedical encounters must at the very minimum be 640x360 with a speed of 30 frames per second.^{xxx} However, for diagnostic images a higher resolution is needed; a minimum resolution of 800 X 600 pixels (480,000) is required, but higher resolution images may increase diagnostic fidelity. To ensure patient confidentiality, HIPAA requires 128-bit encryption and password-level authentication.^{xxxi}

The minimum technical standards for conducting a synchronous telemedicine visit may vary on a case-by-case basis. For example, the American Telemedicine Association (ATA) acknowledges that lower bandwidth and resolution may be appropriate for telepsychiatry evaluations,^{xxxii} but recommends a much higher image resolution for visits that rely more heavily on images and physical exam findings to make diagnostic and therapeutic choices. According to ATA guidelines, tele-dermatology equipment should display images in at least 75 pixels per inch (ppi) with spatial resolution at a minimum of full Common Intermediate Format (CIF) – and a preferred minimum of 2 CIF – a minimum of 0.19-dot pitch monitor for resolution, a minimum of 0.5 candelas per square meter (cd/m²) of luminance and a contrast ratio of at least 1:500.^{xxxiii} Each clinic, and provider, should strive to provide high-quality resolution at both the distant and originating sites.

Asynchronous Telemedicine – Also called “store-and-forward,” this term refers to a method of providing consultations to referring providers or patients without a live audio or video interaction with the patient or referring physician. Clinical data, such as a chief complaint, history of present illness, pertinent medical and family histories, medication list, allergies, description of exam findings, photographs of exam findings, laboratory values, culture data and radiographic studies are digitally provided to the ID consultant, reviewed in depth, integrated, and used to formulate an expert opinion regarding a specific case. The most common specialties to use asynchronous telemedicine include dermatology and radiology, where much of the clinical evaluation relies on reviewing high-definition images rather than a real-time interaction or physical exam provided by the specialist at the distant site, but may be used for ID consultation in specific cases and clinical questions. After reviewing clinical data, the ID physician provides a timely consultative report back to the referring provider or patient at the originating site.

Asynchronous (store-and-forward) ID telemedicine services may be one of several different types of interactions:

- (i) Telerriage involves the review of patient cases transmitted by a referring provider to determine which patients need to be seen in-person by an ID physician, which patients can be cared for by teleconsultation, and which patients may not need a referral.
- (ii) Teleconsultation involves the review of patient cases transmitted by a referring provider and the provision of a consultative report back to the referring provider. Unless the patient's care is then transferred to the consulting ID physician, the referring provider typically maintains responsibility for carrying out treatment recommendations.
- (iii) Direct-to-patient telemedicine involves a patient originating his/her own consultation by transmitting a medical history and images to an ID physician. The patient then receives a recommendation for treatment or direct care from the ID physician.

Issues for Consideration

Licensure, Credentialing and Privileging

Synchronous telemedicine requires the equivalent licensing, credentialing, and privileging as required for direct patient contact. In the United States, ID telemedicine services using interactive technologies are restricted to jurisdictions where the provider is permitted, by law, to practice. In other words, ID physicians delivering telemedicine services must be licensed in the state in which the patient is physically located, (i.e. the originating site), at the time of consultation and must abide by that state's rules and regulations for maintenance of licensure and medical practice laws. IDSA supports efforts by State Medical Boards to facilitate and lower burdens for physicians to obtain licenses in multiple states.

The Joint Commission (TJC) has established credentialing and privileging requirements for the provision of medical services using telemedicine. Under the [TJC Telemedicine Requirements](#), practitioners who render care using live interactive systems are subject to credentialing and privileging at the distant site (location of the provider) when they are providing direct care to the patient. Practitioners who render care using asynchronous systems are viewed by TJC as "consultants" and may not be required to be credentialed at the originating site. The originating site may use the credentialing and privileging information from the distant site if all the following requirements are met:

- (i) the distant site is TJC-accredited;
- (ii) the practitioner is privileged at the distant site for those services that are provided at the originating site; and
- (iii) the originating site has evidence of an internal review of the practitioner's performance of these privileges and sends to the distant site information that is useful to assess the practitioner's quality of care, treatment, and services for use in privileging and performance management.

Providers who wish to provide asynchronous (store-and-forward) consultations across state lines should limit such consultations to states in which they are legally permitted to provide care.

Reimbursement

IDSA supports coverage and payment for telehealth and telemedicine services when provided appropriately by subspecialty-trained, board-certified infectious diseases physicians and when several important criteria are met (i.e. adequate compliance with HIPAA, appropriate use of the technology) The criteria are essential to ensure telemedicine care is high quality, promotes efficient care coordination (rather than fragmentation), meets state licensure and other legal requirements, maintains patient choice and transparency, achieves a high level of patient satisfaction, and protects patient privacy.

Medicare covers telehealth services only when certain conditions are met. The conditions for payment of telehealth services by Medicare are mandated by law and include the following:

- The eligible beneficiary must be located in a rural Health Professional Shortage Area which is located either outside of a Metropolitan Statistical Area (MSA) or in a rural census tract or; located in a county outside of a MSA.
- The beneficiary must be located in an originating site of service that is authorized by law.^{xxxiv}
- Only certain services (identified by CPT[®] codes and HCPCS codes) are permitted to be provided via telehealth technologies.^{xxxv}

Telemedicine programs can be funded in a number of ways, including: billing patients for clinical services, billing insurance for clinical services, contracts to provide care, program grants and research grants. Private insurers vary in their policies, but most will reimburse services provided to patients in rural areas. It is recommended that the provider write a letter of intent to the insurer informing them that the provider will be billing for telemedicine services. Notably, over the past four years, the number of states with parity laws for billing private insurance for telemedicine services has doubled. As of this writing, 32 states and Washington, DC mandate parity in reimbursement for telehealth visits.^{xxxvi} However, only 15 of those states, and Washington, DC, have policies that authorize state-wide coverage with no provider or technology restrictions.^{xxxvii} Therefore, hospitals, clinics, and providers should be aware of legislation and policies within their state.

Forty-eight state Medicaid programs provide some coverage for telemedicine, but the extent of coverage, rules and regulations vary widely by state.^{xxxviii} Medicare reimburses for live-interactive consultations, office visits, individual psychotherapy, and pharmacologic management delivered via a telecommunications system for patients located in non-metropolitan statistical areas (non-MSAs). This includes nearly all rural counties. A definition and listing of qualified areas is available via U.S. Census data at [Metropolitan and Micropolitan Statistical Areas](#). Note that there is no geographic limitation or requirement for the location of the health professional who is delivering the medical service.

As of 2016, CMS reimburses asynchronous ID telemedicine services only as a demonstration project in Hawaii and Alaska. However, several states are currently reimbursing asynchronous ID telemedicine services for Medicaid patients. There are also private insurers that are paying for store-and-forward modalities, including those that are part of a Medicare Advantage plan. Clinicians who wish to provide store-and-forward services should request information from their payers regarding reimbursement.

For the latest telemedicine reimbursement information, see the [American Telemedicine Association](#) , [CMS Telehealth](#), [The Center for Connected Health Policy](#) , or the [IDSA Information on Telehealth](#) websites.

Scope of Service, Quality of Care, and Documentation

If experts are involved in designing and maintaining each aspect of a telehealth or telemedicine program, with evidence-based protocols, excellent communication between team members, and frequent program evaluation and quality assurance measures, an outstanding program may be designed and implemented. Vital core concepts include: obtaining the correct equipment and technology, providing high quality clinical care in a timely fashion, assuring strict patient confidentiality, striving for high patient and provider satisfaction, appropriately creating and storing medical records, communicating with other care providers at the originating site, designing a sustainable business model (including reimbursement considerations) and – for some programs – high quality teaching and research. Some specific considerations include:

- Patients or referring physicians seeking ID telemedicine services should have a choice of ID physicians and must have access in advance, to the licensure and board certification qualifications of the clinician providing care. The delivery of ID telemedicine services must be consistent with state scope of practice laws.
- The patient’s relevant medical history should be collected as part of the provision of ID telemedicine services. Ideally, appropriate medical records should be available to the consulting ID physicians prior to or at the time of the telemedicine encounter. Consulting ID physicians should have a good understanding of the culture, medical records, policies and procedures, health care infrastructure, and patient resources available at the site from which consults are originating.
- The provision of ID telemedicine services must be properly documented. These medical records should be available at both the originating (location of the patient) and distant sites (location of the provider).
- The provision of ID telemedicine services should include care coordination with the patient’s existing primary care physician or medical home, and existing ID physician(s) if one exists. This should include, at a minimum, identifying the patient’s existing primary care physician in the telemedicine record, and providing a copy of the medical record to active members of the treatment team. This is vitally important

so that information about diagnoses, test results, and medication changes are available to the existing care team.

- Organizations and clinicians providing ID telemedicine services should have an active training and quality assurance program for both the distant and receiving sites. Each organization should also maintain documentation on how the program protects patient privacy, promotes high quality clinical continuity of care, and care coordination for patients who may require subsequent in-person evaluations or procedures.
- Organizations and clinicians participating in ID telemedicine services should have protocols for local referrals (in the patient’s geographic area) for urgent and emergency services.
- The physician-patient relationship:
 - a. For ID telemedicine services where a referring provider ultimately manages the patient (including the prescription of medications), the consulting ID physician is **not** required to have a pre-existing, valid patient-physician relationship. It is optimal, however, if the patient has available access to in-person follow-up with a local, board-certified ID physician if needed.
 - b. For direct-to-patient ID telemedicine services, IDSA believes that the consulting ID physician must either:
 - Have an existing physician-patient relationship (having previously seen the patient in-person), or
 - Create a physician-patient relationship through the use of a live-interactive face-to-face consultation at the initial visit, or
 - Be a part of an integrated health delivery system where the patient already receives care, in which the consulting ID physician has access to the patient’s existing medical record and can coordinate follow-up care.
- The use of direct-to-patient ID telemedicine services raises several additional issues (and all of the above criteria still apply):
 - a. Providers must exercise caution regarding direct prescribing for patients via electronic communications or asynchronous telemedicine evaluations. Most states have regulations that discourage or prohibit practitioners from prescribing for patients that they have not seen face-to-face. In many cases, the wording of these regulations is such that a live interactive teleconsultation would meet the requirements for a “face-to-face exam.” The Federation of State Medical Boards established a National Clearinghouse on Internet Prescribing located at [Internet Prescribing Overview by State](#). The

Clearinghouse includes a state-by-state breakdown of jurisdiction, regulations, and actions related to the regulation of Internet prescribing.

- b. ID physicians providing direct-to-patient ID telemedicine services must make every effort to collect accurate, complete, and quality clinical information. When appropriate, the ID physician may wish to contact the primary care providers or other specialists to obtain additional corroborating information.

Privacy and Confidentiality

Clinicians who practice telemedicine should ensure compliance with the Health Insurance Portability and Accountability Act (HIPAA) of 1996, as amended, and its stated rules and regulations. While synchronous or asynchronous transmissions over the integrated services digital network (ISDN) infrastructure are often thought to be secure, depending on the access interface, internet protocol (IP) transmissions should be encrypted when transmitted over the public internet to ensure security. IP encryption in other settings such as private or semi-private networks is also highly recommended. To ensure patient confidentiality, HIPAA requires 128-bit encryption and password authentication.^{xxxix} The handling of medical records, faxes, and communications is subject to the same HIPAA standards as apply to a standard office environment.

HIPAA compliance also involves informing patients that their protected health information (PHI) will be traveling by electronic means to another site for evaluation and consultation. This should be noted in the consent form at the point of care, and the HIPAA notice of privacy practices. In addition, all electronic transmissions, including email, should be encrypted and reasonable care should be taken to authenticate those providers who have electronic access to the records.

Responsibility and Liability

If a provider-to-patient model is used, with no provider at the originating site, the ID physician may bear full responsibility (and potential liability) for the patient's care. The diagnostic and therapeutic recommendations rendered are based solely on information provided by the patient, any available medical records, and the history and physical exam performed by the clinician at the distant site. Therefore, any liability should be based on the information available at the time the patient was evaluated by the distant site provider. In a consultative model (provider-to-provider), liability may be shared; however, the allocation of responsibilities will vary by individual case and on a state-by-state basis, depending upon regulations. ID physicians should verify that their medical liability insurance policy covers telemedicine services, including telemedicine services provided across state lines if applicable, prior to the delivery of any telemedicine service.

In the teletriage and teleconsultation models (provider-to-provider), the referring provider ultimately manages the patient with the aid of the consultant's recommendations. The referring provider may accept the recommendations in part or whole or none at all, and the responsibility

and potential liability in this scenario may be shared (between the referring provider and the consultant) based on the extent to which the recommendations were followed by the referring provider. If a direct-to-patient model (provider-to-patient) is used (no provider at the referring site), the responsibility and potential liability rests entirely on the ID physician providing telemedicine services. In this case, the ID physician providing telemedicine services would also be responsible to ensure proper follow-up and to address any medication complications.

Antimicrobial Stewardship Programs via Telehealth

IDSA supports the development of antimicrobial stewardship programs (ASPs) that use telehealth technologies.

Using telehealth as a means to administer and conduct ASP-related activities will allow community hospitals (those that are solely owned or a part of a hospital system) to effectively and efficiently participate in stewardship programs. Many community hospitals lack the resources needed to build ASPs or, if resources are available, the resources must be allocated over a wide range of necessary ASP activities. Therefore, using telehealth technologies to administer ASPs will allow for greater flexibility and efficiency for a hospital and its staff.

Ideally, ASPs that are administered via telehealth should allow an ID physician:

- Access to the facility antibiogram – this facility-specific document provides useful information to ID physician which will inform the practice of antimicrobial stewardship.
- Access to, and interaction with, the facility pharmacy and therapeutics (P&T) committee – the P&T committee will make decisions on antimicrobial usage that will be pertinent to the ID physician providing stewardship services. The P&T committee may also benefit from access to the ID physician.
- Access and ability to review a patient’s medical record – the electronic health record (EHR) will hold pertinent data which will inform antimicrobial stewardship recommendations.
- Access and interaction with hospital personnel to deliver educational programs in support of the ASP.
- Access to patients when applicable to ASP functions.

In addition to the tenets listed, IDSA also recommends that any ASP follow the IDSA guidelines for ASPs. The IDSA guidelines are intended to ensure ASPs are effective in reducing the emergence of antimicrobial resistance, “including that an ASP be led by ID physicians and pharmacists, who have the expertise and the education to ensure the right drug is being prescribed for the right patient, at the right time, for the right diagnosis.” The guidelines are available at [IDSA Antimicrobial Stewardship Guidelines](#).

Summary of IDSA Positions

- IDSA supports use of appropriate, evidenced-based telehealth technologies to provide timely, cost-effective care to resource-limited populations, and to provide continuing education and support to ID physicians.
- IDSA supports the use of telehealth technologies to expand the coverage of ID-led public health services such as infection control and prevention, antimicrobial stewardship programs, and patient care related to outpatient parenteral antimicrobial therapy.
- IDSA recognizes the potential of mHealth technologies particularly when used to appropriately transfer and analyze diagnostics and clinical data.
- IDSA supports the efforts of State Medical Boards to facilitate the acquisition of physician licensure in multiple states.
- IDSA believes there should be appropriate coverage and reimbursement for telehealth and telemedicine services.
- ID physicians who practice telemedicine should ensure compliance with the Health Insurance Portability and Accountability Act.
- Prior to providing telemedical services, ID physicians should verify that their medical liability insurance policies cover telemedicine.
- IDSA supports the use of ID physicians in the administration, development, and implementation of antimicrobial stewardship programs that use telehealth technologies.

Disclaimer

This Position Statement on telehealth and telemedicine is intended to be for informational and educational purposes only to IDSA members. It is not intended to establish a legal, medical, or other standard of care. Individual physicians should make independent treatment decisions based on the facts and circumstances presented by each patient. The information presented herein is provided “as is” and without any warranty or guarantee as to accuracy, timeliness, or completeness. IDSA disclaims any liability arising out of reliance on this Position Statement for any adverse outcomes from the application of this information for any reason, including but not limited to the reader’s misunderstanding or misinterpretations of the information contained herein. Users are advised that this Position Statement does not replace or supersede local, state, or federal laws. As telemedicine laws vary by State, this Position Statement is not a substitute for an attorney or other expert advice regarding your State law, policies and legal compliance with applicable statutes. The material in this Position Statement is based on information available at the time of publication. As laws and regulations continually change, practitioners must keep informed of changes on an ongoing basis.

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Notes and References

ⁱ The regulatory mandates for the reimbursement of telehealth services under Medicare remain unchanged, however, the Centers for Medicare & Medicaid Services (CMS) have recently begun to grant waivers by removing payment restrictions such as site-of-service and geographic requirements for telehealth services, if those services are provided under a Medicare demonstration project, such as the Comprehensive Care for Joint Replacement Model.

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