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Telemedicine technology and implications for reproductive office operations

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Telemedicine had been very slowly making inroads into standard clinical practice. The onset of the COVID-19 pandemic resulted in the rapid implementation of telemedicine across most practices. The efficiency and permanence of telemedicine services depends on a multitude of factors including technologic choices, governmental and insurance regulations, reimbursement policies, and staff and patient education and acceptance. Although challenges remain and the extent of implementation is still evolving, it is clear that telemedicine is here to stay and that all those involved in health care need to be familiar with its opportunities and challenges. (*Fertil Steril*® 2020;114:1126–8. ©2020 by American Society for Reproductive Medicine.)

Key Words: Telemedicine, insurance policies, government regulations

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The practice-limiting implications of the COVID-19 pandemic affected most clinical providers in the middle of March 2020. The need to pivot quickly and seamlessly to telemedicine was obvious. While most providers were familiar with the concept of telemedicine, few had any practical experience with its application (1).

Before the COVID-19 pandemic, the use of telemedicine had been growing incrementally, but it was far from mainstream practice. Telemedicine applications started as niche products focused on providers and facilities serving patient populations with unique needs. Early telemedicine solutions were targeted at providers and facilities providing care in rural areas, to underserved populations, and in areas with provider shortages (2, 3). Some early adopters of this technology were rural health facilities, community health

centers, community mental health centers, correctional facilities, and health centers serving indigenous peoples.

Commercially available and affordable telemedicine platforms began to emerge in the late 1990s to serve these market segments. The early iterations of these platforms were designed for a facility-to-facility provider and patient experience. They required specialized video cameras, audio microphones, and software at both locations. This modality still required patients to visit a provider location for their telemedicine appointment with a distant provider.

These early telemedicine products required dedicated space, equipment, and trained staff. Early regulatory guidelines and insurance protocols required a clinician, usually a nurse or therapist, to be present in the room with the patient. Initially, these telemedicine options were targeted at specific provider specialties thought

to be optimal for this practice, most commonly psychiatry, psychology, behavior and mental health, and addiction treatment and counseling (2). The expense and shortage of psychiatrists in particular made these specialty services an attractive market for the commercial introduction of this modality.

Furthermore, regulatory and insurance protocols restricted most telemedicine initiatives to patient, specialty, and diagnostic categories where direct patient physical examinations were not required. In addition, many insurance carriers required patients to be in a medical facility in rural locations (1, 4).

Today, the overall environment for telemedicine has evolved significantly. Technologic advances in personal computers, laptops, tablets, and smartphones, along with a relaxation of regulatory restrictions, have created a more fertile environment for the broader application of telemedicine to more provider specialties and patient populations. Innovation in telemedicine technologies, its acceptance by the general population, and an appreciation of the potential value of telemedicine by providers is fueling an unprecedented growth in the field of telemedicine (5).

Received October 17, 2020; accepted October 19, 2020.

M.U. has nothing to disclose. L.B. has nothing to disclose.

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Fertility and Sterility® Vol. 114, No. 6, December 2020 0015-0282/\$36.00

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<https://doi.org/10.1016/j.fertnstert.2020.10.049>

PLATFORMS

Non-tech-savvy offices and patients remain an Achilles heel for seamless virtual visits. As the COVID-19 pandemic first affected providers, many providers were caught unprepared for the implementation of broad-based telemedicine practice. Very few practices had the technologic infrastructure or the dedicated information technology (IT) specialists in place to smoothly shift a significant percentage of their on-site visits and patient care to a telemedicine modality.

Fortunately, most of the technologic resources for the widespread adoption of telemedicine were readily available, if not yet fully integrated into the practice operations of most providers and facilities. Most commercially available electronic medical records (EMRs) had been incrementally developing these capabilities for several years.

Also, the public in general, having grown accustomed to and familiar with online businesses and social activities, was now better prepared to interact with providers in a new and innovative manner. In addition, many patients preferred limiting their exposure risk of COVID-19 by avoiding entering health care facilities. In facing this disruption in the delivery of care, large hospital and ambulatory care systems had distinct advantages because their comprehensive systemwide EMRs mostly had telemedicine applications built into their operating systems. Although the existing telemedicine features were not widely used, the systemwide extension of these capabilities by their IT teams was a timely achievement. Complicating the challenge for providers large and small was the hurdle that the vast majority of patients had never experienced a telemedicine interaction with a provider. For many providers, the challenge of non-technologically savvy patients was and still remains the greatest obstacle to efficient telemedicine practice. In addition, most practices, with the exception of pediatrics, reproductive medicine, and a few others, tend to skew toward an older patient demographic. The older patient demographic is more likely to be technologically challenged than younger patient groups. Older patients would tend to have less sophisticated computers, devices, and phones. Many may have more difficulty adding the necessary telemedicine applications to these devices. The lack of cameras and microphones on older personal computers and failure to update software and browsers also complicate implementations. Providers and office support staff routinely have to guide patients through these technologic barriers before initiating the telemedicine visit.

All-in-one telemedicine systems approaches offer the potential for simple rapid implementation of this technology. Achieving optimal efficiency by integrating telemedicine technology into a provider practice requires a state-of-the-art flexible EMR with a suite of telemedicine features and the support necessary to continue to incorporate additional features as they become available. The preferred solution is an EMR with a set of fully integrated telemedicine features.

Must-have features in a fully integrated telemedicine-capable EMR are as follows:

- Appointment scheduling and delineation between telemedicine visits and physical visits. Rescheduling, e-mail and text reminders.
- All communications fully Health Insurance Portability and Accountability Act (HIPAA) compliant.
- Universal compatibility with Android and iPhone devices and all browsers.
- Telemedicine visit patient virtual waiting room or queuing capability with automatic check-in and check-out.
- Text or e-mail invitations or reminders of visit.
- Real-time documentation of provider notes.
- System-integrated video and audio with high-quality camera and microphone.
- Online secure uploading capability for documents, consent forms, pre-visit questionnaires and patient coinsurance/copayment billing.
- Capability to save tele-images to the patient's record in the EMR.

Add-on technology approaches are commonly used alternatives. Providers without telemedicine-integrated EMRs have to incorporate add-on telemedicine technology features and products into their EMRs or add nonintegrated products by installing them alongside their EMRs. These are obviously less efficient and more cumbersome and have the potential to cause disruptions in practice operations. This add-on approach may lead to some interactions falling through the cracks, including notes, billing, testing results, and scheduling changes. Alternative options used by some providers have included the use of Facetime (not secure or HIPAA compliant), Webx (6), Doxi.me (7), Zoom (8), and similar products. Of these options, only Doxi.me and Webx are specifically designed for telemedicine use.

In general, providers should seek fully integrated telemedicine solutions to best serve their patients and maximize practice efficiency.

Telephone and video with audio are the two primary options for remote virtual visits. Traditionally, telephone calls with patients for follow-up, questions, and status of recovery were considered to be integral to standard patient care and not reimbursed. Reimbursement for these services was considered to be included in other related billable services, whether office visits, procedures, or surgeries. These calls were usually made at the convenience of the provider and not scheduled.

Currently the delineation between telephone calls and video visits is being blurred with services such as Facetime and similar video call capabilities. Telemedicine-specific phone options are commercially available, such as Doxi.me and Webx. These should be preferred over basic social media platforms. Often, telemedicine visits scheduled to be video visits are instead relegated to phone-only platforms owing to patient technology obstacles. Concerns with HIPAA and security on less rigorous social platforms are legitimate. Despite these concerns, some patients prefer to use these popular platforms because of their familiarity and ease of use. The clinical

appropriateness of video versus telephone usage is evolving and will vary by specialty, diagnosis, and patient population. Certainly, depending on the clinical problem, the ability to view the patient offers distinct advantages and extends the utility of televideo visits compared with telephone visits. Quite likely, reimbursement parameters from insurers may determine the balance between the modalities.

FINANCIAL AND STAFFING RAMIFICATIONS

Ideally, converting some percentage of physical office visits into telemedicine should drive a corresponding reduction in expenses related to space and staffing. Fewer physical office visits replaced with more telemedicine visits should drive a reduced requirement for medical assistants, support staff, and overall office space and corresponding expenses. To achieve these reductions, the shift in physical to telemedicine visits needs to be consequential. For smaller practices with already limited staffing, further reductions may not be feasible. Realistically, some percentage of staff time will continue to be devoted to supporting patients with telemedicine troubleshooting issues, thereby offsetting some of the expected savings. Not all patients and or conditions are appropriate for telemedicine, and many patients will prefer an onsite visit. Cost savings in space will be tempered by COVID-19–related and permanent changes in safety precautions and patient expectations regarding more waiting area spacing, increased ventilation, and physical barriers between patients and staff. Preferably, the most successful scenario is one where there is not simply a one-for-one conversion of physical visits to telemedicine, but rather where lower-value visits are converted to telemedicine and the newly available schedule times are then used to schedule higher-value new patients, consultations, and procedures.

Cost savings ramifications may be affected by changes in reimbursement policies. A critical unknown factor in the long-term adoption of telemedicine will hinge on the reimbursement policies of government payers and commercial insurers. At the beginning of the COVID-19 pandemic, most government and commercial payers quickly relaxed their requirements and limitations relating to telemedicine coverage and provider reimbursement (9). Most payers adopted temporary policies consistent with Medicare, reimbursing telemedicine and physical office visits equally. Previous policies generally reimbursed telemedicine at lower rates and often with restrictions. Payers have previously stated that the provider cost savings of telemedicine justify lower reimbursements. As we have discussed, many of the anticipated cost savings may not actually be realized. A return to reduced provider reimbursement for telemedicine compared with physical visits would inevitably stunt telemedicine's long-term growth. A legacy of this pandemic will be that some percentage of patients will prefer to seek telemedicine care where appropriate and most providers will recognize the value in

integrating telemedicine into their practice even at reduced reimbursement.

How do providers adapt to the opportunities of telemedicine? Telemedicine is now here to stay. Patients will expect telemedicine as an option in appropriate situations. Younger populations will adapt the practice faster, but generally all patient groups will become more comfortable with the technology and its possibilities. Providers will have to modify some clinical practice operations to better integrate routine telemedicine into their practices. The scheduling of block time by providers for telemedicine visits will likely be a best practice. Staff will have to learn to support non-technologically savvy patients with both the implementation and the interactions. Support staff themselves will need to be more tech-savvy to accommodate telemedicine and educate patients. Provider offices may have to invest in more IT support to continue integrating new telemedicine features into their practices. Selecting a comprehensive EMR with all the telemedicine features fully integrated will be more critical than ever. Providers will have to evaluate whether their current EMR has the capability to continue to develop and evolve as new telemedicine features are brought to market. Providers may need to invest in higher-capability EMRs, which of course will be more expensive, in order to meet the expectations of their more tech-savvy patients. Patients will expect to communicate with their providers more frequently through messaging, secure e-mails, and patient portals. Routine paperwork and consent forms need to be available securely online for patient access and completion. These features must all be integrated into the EMR in a HIPAA-compliant manner. Clearly, this is a rapidly evolving field, and clinicians, office staff, administrators, and IT officers all need to be aware of the practical issues this technology raises.

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