

Providing care from a distance

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Health care providers are stepping up to confront the coronavirus pandemic. That means not only preparing for an influx of COVID-19 patients, but also finding ways to ensure routine care continues in order to keep minor or chronic health concerns from escalating.

To address this issue, telemedicine is being used like never before to meet the needs of patients and clinicians while avoiding unnecessary in-person contact during this period of social distancing. At Penn, major changes have unfolded rapidly to expand and shift both technological and staffing resources to use digital tools for remote care.

"There are a lot of ways that we've pivoted from 'can do' to 'must do' with virtual encounters," says William Hanson, professor of anesthesiology and [critical care](#) at the Hospital of the University of Pennsylvania and chief medical information officer for the University of Pennsylvania Health System. "Tools that were being adopted much more slowly six months ago are now progressing much more rapidly."

Enhanced and augmented approaches to telemedicine are rolling out not only throughout Penn Medicine but also at the School of Dental Medicine and School of Veterinary Medicine to meet various health needs for patients, pets, and providers. Here are some examples of old approaches that are being scaled-up and new approaches that are quickly coming online.

Pre-screening calls

Prior to doctor's visits, laboratory studies, procedures, or other in-person appointments, it's common to receive a call to confirm the visit. Now those automated calls are being deployed by the thousands to screen patients for possible risk factors of coronavirus infection. "We're using these to determine if a patient has travel history, relevant symptoms, or contact history that would be a concern," says Hanson. This service creates a pool of patients that can be targeted with additional follow-up to determine if their visit might be postponed, offered remotely, or if they require a kind of care different from that which they had been scheduled to receive.

'Automated hovering'

If a patient is identified as having a health condition of some concern during these pre-screening calls—possibly a positive COVID-19 test, or a recent return from an area with a lot of infections—that doesn't warrant a trip to the hospital or primary care doctor's office, Penn Medicine is using a technique they call "automated hovering." They're accomplishing this with what Hanson calls a "Swiss army knife of a tool" called [Way to Health](#) that has a myriad of other uses, from checking in on postpartum women in pregnancy to monitoring blood glucose of patients with diabetes.

In the context of coronavirus infection, the "hovering" entails repeated phone calls at regular intervals to that check in to ensure the patient's condition is not getting worse. "You can be registered to have us look after you in an unobtrusive way," Hanson says.

A pool of doctors is staffing phone lines to triage these calls for next steps based on the patient's symptoms and history. A pool of nurses will be doing follow-up on every patient who gets tested for the SARS-CoV-2 virus, whether their test is positive or negative, to get in touch with the patients about their results and how to seek the appropriate care.

Virtual visits

In many cases, a scheduled one-on-one discussion with a primary or specialty doctor is simply shifting from an in-person encounter to one conducted by phone or the web. "If you look back only about two weeks ago, we were doing 200 of these virtual encounters a month," says Hanson. "Yesterday we did over 5,000."

For individuals with more immediate health needs, Penn Medicine On Demand, a kind of virtual urgent care, is now live. Hanson notes that

providers who were offering care in person have transitioned to providing care through this platform. "There are plenty of people who now have the time and opportunity to help out," he says.

Similar approaches are being put to use by Penn's School of Dental Medicine. Though current restrictions do not permit dentists in Philadelphia to see patients physically, registered patients who have pressing concerns can call in to receive teledentistry care.

"Using the same clinical skills utilized in person, the dentist attempts to determine what the patient's chief complaint is and what care the patient is seeking," says Mark Wolff, the Morton Amsterdam Dean of the School of Dental Medicine. With full access to patients' medical history, including dental X-rays through their electronic health records, the Penn dentists can also use video imaging to evaluate their patients and recommend a treatment plan, some of which can be accomplished at home with guidance from clinicians. "Frequently patients just need to know the dentist is available to them, and the telephone enables us to continue our communication at this extreme time," he says.

Reducing ICU traffic

In addition to telemedicine's use between provider and patient, it is being employed to reduce physical interaction between clinicians as well. For example, a system in place for more than a decade, Penn E-lert, is offering support to critical care doctors caring for patients in the intensive care units of Penn's Philadelphia-based hospitals. In each ICU room, a small, steerable video camera allows a critical care physician located centrally to check on the patient's status and vitals and, when appropriate, make recommendations for changes in care without ever entering the room.

"We've been using this for years, but it's particularly helpful in a

situation like this as it significantly cuts down on how many people are going in and out of each room," says Hanson. "The critical care physician might take a look at the room to make sure that appropriate isolation precautions are being adhered to, or they could tell a nurse, "While you're in there checking on the patient, could you adjust this other setting at the same time."

Therapy over the phone

Mental health care is not being left behind in the move toward more virtual caregiving. In the past two weeks, patients in Penn Medicine's Center for the Treatment and Study of Anxiety, an outpatient psychiatric practice, has moved from telehealth being an exception to the rule to having all clinicians providing mental health treatment remotely.

"I'm proud of the fact that in our clinic we've transitioned pretty seamlessly," says Jeremy Tyler, an assistant professor of clinical psychiatry. "And I found that a lot of my discussions with patients were around concerns about COVID-19, so I'm glad we were able to offer this."

To do so required overcoming hurdles, including working with insurance companies to begin providing reimbursement for mental health treatment provided by phone.

In addition, while regulations normally restrict licensed therapists from offering treatment to patients across state or national lines, those were lifted last week, enabling Tyler and his colleagues to continue treating patients who found themselves unexpectedly away from Philadelphia.

"It's been a tense time for us as providers," says Tyler, "but fortunately we've gotten the green light to continue offering services, even if we're caring for folks in a different state or country."

Hanson notes that this rollback of restrictions has occurred across the telemedicine space. "There has been dramatic federal regulatory relief, in terms of licensing, in terms of reimbursement from private insurers, and in terms of privacy restrictions," he says.

While popular video conferencing platforms like Zoom or Google Hangouts are not HIPAA-compliant, Tyler says Penn is on the cusp of launching its own video service to conduct therapy securely online.

"We're pushing that out very fast, and I'm eager to have it," Tyler says.

Expert veterinary consults

Telehealth isn't limited to caring for people; the School of Veterinary Medicine is also beginning to leverage teleconferencing software and other means to provide referring veterinarians hampered by travel restrictions with free expert advice from New Bolton Center, Penn Vet's large animal hospital in Kennett Square.

While not replacing traditional referrals, New Bolton veterinarians are on hand to provide real-time guidance with devices, such as ultrasounds or endoscopes, as well as other types of expertise.

A new landscape

As the capacity for telemedicine increases across Penn, it's enabling a nimble response to the coronavirus pandemic. According to those making use of these approaches, these changes will have ripple effects on health care moving forward.

"You can't put the genie back in the bottle," says Hanson. "I think many of these changes are permanent."

This may ultimately prove to be a silver lining of this difficult time, says Tyler.

"There are a lot of reasons outside of this crisis that we'd like to be able to offer this care online," he notes. "There are people who live in [rural communities](#) who could benefit from this; there are issues of cost and accessibility that this could help address. I think in the long run we're going to look at telehealth as not just something we need in a crisis but something we offer as a standard."

Provided by University of Pennsylvania

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