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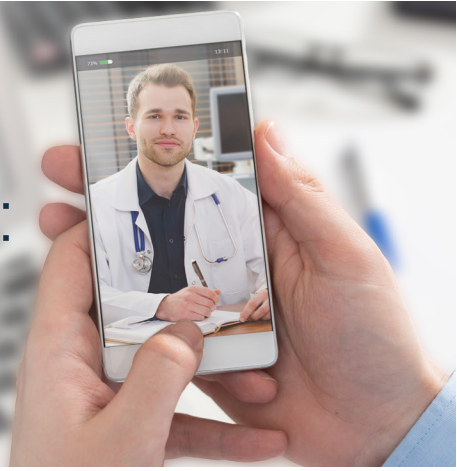
Telehealth in Alternate Care Sites:

Ensuring Patient Care and Staff Safety in Massachusetts



The use of telehealth has increased exponentially in response to COVID-19. Many hospitals have scrambled to add tablets to their inventory, facilitating patient communication with both loved ones and healthcare providers. Dr. Paul Biddinger, Medical Director for Emergency Preparedness at Mass General Brigham and Director of the Center for Disaster Medicine (Massachusetts General Hospital), Juan Estrada, Senior Director for Telehealth Consults at Massachusetts General Hospital and Dr. Lee Schwamm, Vice President of Virtual Care at Mass General Brigham shared how staff have adjusted to this new method of healthcare delivery and how lessons learned are being incorporated in near real time.

One thing that has emerged from the tragedy and many challenges associated with the COVID-19 pandemic is extraordinary innovation, including the exponential growth of telemedicine and related initiatives over just a few months. In this article, we will share how we incorporated telehealth at our hospital (Massachusetts General Hospital) and our broader system (Mass General Brigham). We'll also explain how we used it in two alternate care sites (ACS): Boston Hope—a 1,000 bed field hospital set up in partnership among our system, the state health department, and others—and an isolation hotel, which housed COVID-19 patients from some densely populated communities who were not sick enough to need hospitalization but could not safely isolate at home without exposing others.

Three Objectives

With respect to telemedicine, we focused on three objectives, which drove everything we did in the hospitals and ACS:

1. Reduce staff exposures and risk
2. Preserve the essential human elements of care
3. Address barriers and inequality

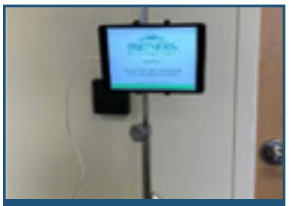
In the very early days of the pandemic, there were so many questions about disease transmission, clinician safety, and the effectiveness and limited supply of personal protective equipment (PPE). Delivering care remotely and decreasing the overall number of contacts was one of many strategies we used to reduce potential staff exposure and risk.

The literature shows that interactions between patients and caregivers often decrease as patient precautions associated with certain diseases (e.g., methicillin-resistant staphylococcus aureus and vancomycin-resistant enterococci) increase. When you add COVID-19 precautions to the changes in our visitor policies, we were concerned that the patient experience can be incredibly isolating.

We know that patient connection to friends and family is central to healing. And we also understand that this outbreak is affecting certain communities unequally. Whether that is based on race, language, income, location, or other barriers, we knew it was extraordinarily important to support all of our patients and directly address these challenges to ensure that all of our patients receive the same level and quality of care.

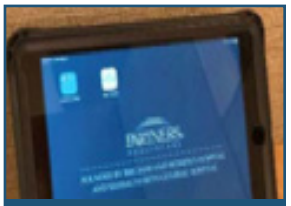
Using Tablets to Meet Our Objectives

To meet our three objectives, we used tablet computers three different ways (Figure 1).



VICS (Video Intercom Communication System)

VICS Rounding Tablet (for non-unit staff)



Patient Connect

Figure 1. Tablets used to support telehealth.

Related Resources:

- Use of Telemedicine in Alternate Care Sites (Webinar)
- COVID-19 Telemedicine/Virtual Medical Care Resources
- COVID-19 and Telehealth Quick Sheet
- Virtual Care: New Models of Caring for Our Patients and Workforce
- A Digital Embrace to Blunt the Curve of COVID19 Pandemic

First, we used tablets as part of the Video Intercom Communication System (VICS); we attached the computers to an IV or other upright pole. VICS truly facilitated communication between patients and clinicians. It allowed clinical caregivers to lay eyes on patients and talk to them and hear their voices while preserving the number of in-person interactions. It also allowed patients to see a friendly face, share how they felt, order food, and communicate with their clinical caregivers. Ease of use by clinicians and auto answer functionality were incorporated into VICS' design, as clinicians rotating through the units needed to check on patients at short notice and multiple times a day, and intubated and disabled patients would not have been able to answer incoming calls. Also, clear limitations on which clinicians were able to call into what rooms were essential to safeguarding patient privacy.

Next, we provided non-unit staff with "rounding tablets," stored in protective holders. These computers allowed our consultants to be able to see patients more easily and more often. So if someone needed a cardiology, nephrology, or some other consult, not only did it decrease the transit time, the provider was able to "see" the patient virtually. This also made it much easier to keep patients in their care environment and minimize transfer from one unit to another.

Mass General Hospital, one of the two largest hospitals within Mass General Brigham, is a teaching hospital, and we round in teams; our larger teams were still able to communicate with patients, having 1 or 2 team members in the room while the rest of the team stayed in the hall or further away, even at home, often connecting and collaborating virtually. This preserved both the effectiveness of the team dynamic and education and cooperation.

Patient Connect, the third way we used tablets, allowed patients to communicate with others. From an isolation perspective, having a way to talk to their family, their friends, and others was extraordinarily important to our patients. Furthermore, it provided a mechanism for group family interactions, even if not all "virtual visitors" had access to the internet, they could still participate joining from their regular telephones. This system was also particularly important for patients whose primarily language was not English and who needed interpreters. Using a tablet ensured quick, easy, professional, virtual interpretation, at any time of day. Not only did our interpreters not to have to come into the hospital, Patient Connect also provided us with access to interpreters who spoke a broader range of languages, including American Sign Language. At the height of the COVID-19 surge, Mass General Hospital was operating 893 tablets in the ways described in this article.

We also used these tools at both of our ACS, where we tried to mirror hospital-based systems as much as possible. Boston Hope, the ACS we created in the Boston Convention Center, was comprised of 1,000 beds (Figure 2). Half of those beds were dedicated to people experiencing homelessness and who were COVID-19 positive, but without significant acuity of their illness. The other 500 beds were converted to support post-acute care, or low-level medical care patients.

Figure 2. Boston Hope, the ACS created in the Boston Convention Center.

> *"We are all aware that some of our patients are fragile, and of course, we use human dynamic monitoring. But that clinical gestalt of laying eyes on a patient, seeing each other's faces, and talking to them and hearing their voice was extremely important. That was a key part of our response—making sure we were always connected with the patient, just as we would be if they didn't have COVID."*

> *A very ill patient who was nearing his end of life wanted to marry his long-term partner. Using the Patient Connect technology, we were able to allow family and friends to watch the live feed video and be part of the ceremony.*

Population density is high in some of the communities that surround Boston, and lots of people live in relatively small living spaces. It is nearly impossible for COVID-positive patients to isolate and not infect others in those situations, so we contracted with a local hotel where we isolated residents who fit that profile (Figure 3).

Figure 3. Providers care for patient at an isolation hotel.

Some patients who were recommended for the ACS or the isolation hotel were reluctant to go, but we were able to use the tablets to give them a virtual tour of the remote sites, which helped to ease their concern. Telemedicine also allowed those patients to stay connected with their families and connect with us as we rounded on them.

Equipment Supply, Requirements, and Ease of Use

Several residents of our communities donated iPads to us, and if they were not too old, our information technology (IT) team was able to repurpose them. It did take some effort to collect them, wipe them clean, then load the right software onto them, including antivirus and other security files.

You must also ensure you have enough bandwidth within your Wi-Fi system (including at the ACS locations) to support these kinds of services; this also requires IT expertise. In our case, our IT staff also conducted some analyses of potential "dead spots" within our facilities. If you want to use tablets to access patients' electronic medical records, you will need to load the software and use your individual user information to access the program.

For the most part, patients were able to use the tablets with ease. We were able to adjust the font size as needed and adjust the tablet position on the poles. We did, however, have some older patients, and some with cognitive challenges, who either needed assistance or were not able to use them.

We think many of our colleagues would agree—it is amazing how quickly we have been able to move forward and adapt to using telemedicine. What was traditionally used in more focused areas of inpatient care (e.g., stroke patient care) is now being used on a general inpatient basis, even in the emergency department. It saves time, energy, and PPE while ensuring patient connection to their caretakers, both in- and outside of the medical setting, as well as provider safety.

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