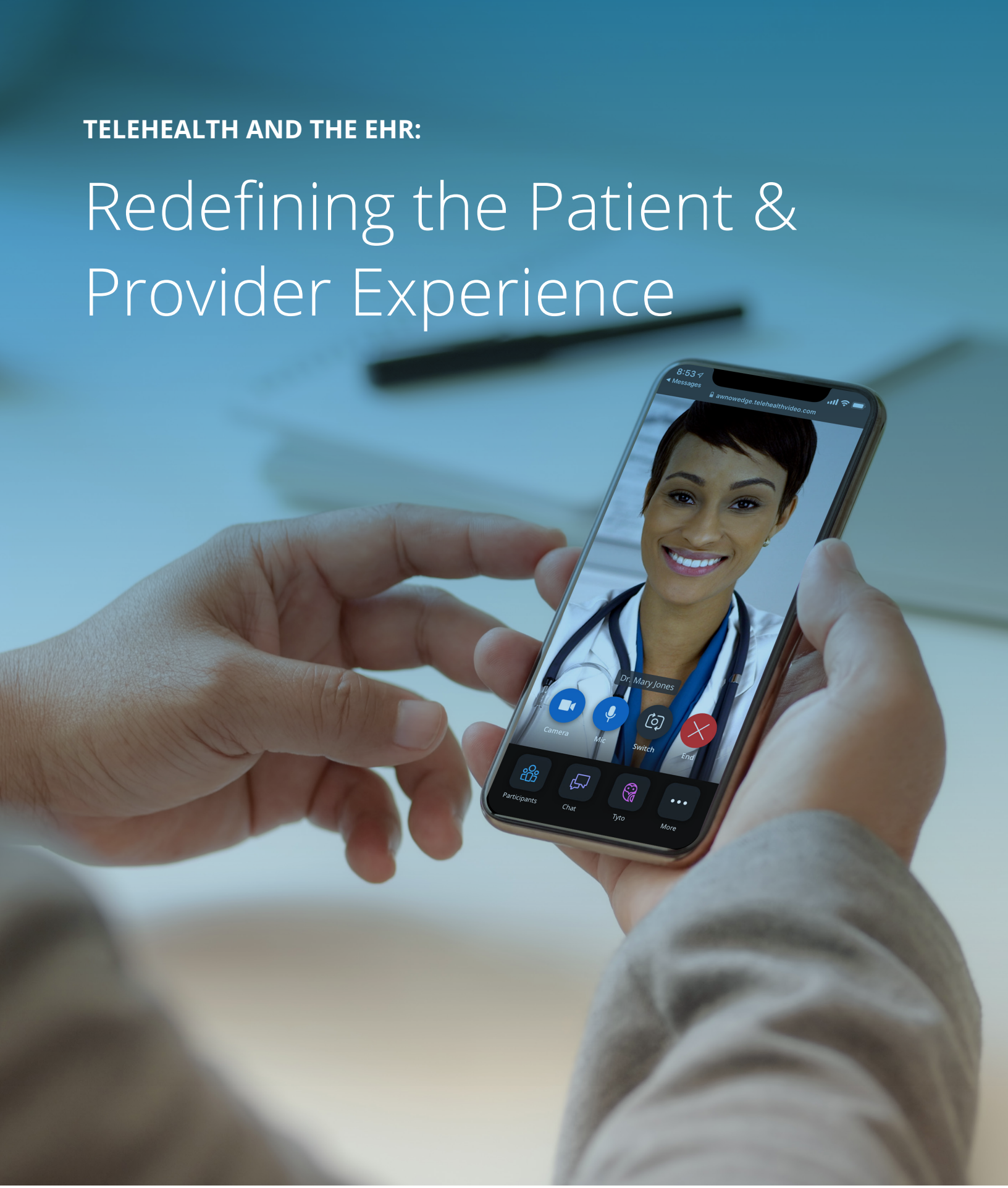
TELEHEALTH AND THE EHR:

Redefining the Patient & Provider Experience



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INTRODUCTION:
A New Era for Telehealth

As we emerge from the pandemic, healthcare providers are reassessing their telehealth needs, with a focus on platform consolidation, enterprise solutions and a streamlined experience for patients and clinicians. That means starting with the electronic health record (EHR).

It seems clear by now that telehealth is here to stay, but where it lives and how much space it should occupy in our healthcare system remain hot topics of discussion. Predicting that widespread use is "inevitable," proponents say it will make healthcare more efficient and improve the quality of care.[1,2] "Once patients experience the benefits of this technology," a prominent health IT expert has stated, "they will demand nothing less from their providers."[3] Those at the skeptical end of the spectrum — including some of those same providers — say this kind of assurance is premature. Pointing to an array of potential pitfalls including clinical quality and patient safety, fraud risk, and administrative burden, they caution that the technology intended to improve our lives may actually erode the quality of care and disrupt provider-patient relationships.[4,5]

If this all sounds familiar, it's because it is. The sound bites and talking points above, some more than a decade old, refer not to telehealth but to electronic health records. Google it and see for yourself: Even a quick skim of the headlines and journal articles from the meaningful use era will surface some uncanny parallels to today's discussions about the future of telehealth.

What should we make of this déjà vu? One conclusion might be that healthcare is slow to embrace any new technology, and here we go again. On the other hand, what a difference a decade makes. Technological progress in any industry is cumulative, and the fact that the EHR did prove inevitable has laid the groundwork for the next phase of telehealth. The EHR pulled healthcare into the digital age, and now, as telehealth takes its place alongside the EHR in healthcare's digital infrastructure, the two technologies are poised to redefine what's possible for patients and providers.

Telehealth and the EHR, together at last

Where should telehealth live? Side by side with the EHR. One is the system of record and the source of truth, the other is the gateway to virtual and digital patient interactions, and combined they can create healthcare experiences that would be difficult to sustain or scale with one technology alone.

The growing need in a post-COVID world to bring the patient's record and (virtual) presence into one place — one screen — highlights just how essential the EHR-telehealth relationship has become. Until very recently, computer screens were seen by many clinicians as a barrier to connecting with patients.[6] "We physicians entered the profession to connect with and help patients — not stare at a screen," declared a 2019 opinion piece about EHRs in Scientific American.[7] COVID-19 was discovered just eight months after the article appeared — a sign of how quickly the landscape has changed. Now, connecting with and helping patients increasingly happens through screens, not in spite of them. The screen is no longer a distraction but a window into the patient's life in more ways than one.

Integration and consolidation

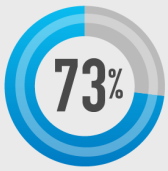
One big difference between the EHR and telehealth is the speed of their adoption. EHR use, which now hovers around 90%, doubled over a 10-year period — a breakneck pace by healthcare standards.[8,9] Between February and April 2020, by contrast, the percentage of healthcare visits conducted via telehealth increased 32X.[10] The telehealth ramp-up was understandably a bit less methodical. For many healthcare providers, the urgent need for virtual care at the height of the pandemic often meant cobbled-together telehealth and videoconferencing tools, a fragmented experience for providers

Telehealth Integration and Consolidation

A recent survey by Amwell and HIMSS Analytics of frontline clinicians and senior decision-makers at hospitals and health systems found that integration and interoperability were top priorities for telehealth in the wake of the pandemic.

FRONTLINE CLINICIANS

Percentage of frontline clinicians rating telehealth features "very" or "extremely" impactful to their ability to provide better patient care...

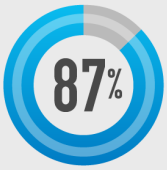


Ability to launch a video visit from the EHR

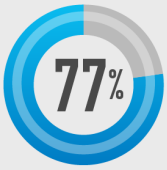
Ability to integrate with existing workflows, systems, and patient portals

HOSPITAL AND HEALTH SYSTEM LEADERS

Percentage of hospital and health system leaders rating the following as "very" or "extremely" important...



Ability to integrate telehealth with existing workflows



Moving to a fully integrated telehealth platform

Source: Building the Future of Virtual Care: Streamlined, Scalable, Sustainable: Insights from Amwell's 2021 Survey of Health Plans, Hospitals and Health Systems (see p. 10).

and patients, and a lack of integration and interoperability across platforms and systems.

The shift from stopgaps to strategic solutions will define the next phase of telehealth. As we emerge from the pandemic, healthcare providers are reassessing their telehealth needs and technology, with a focus on integrations, platform consolidation, enterprise solutions, and streamlined experiences — including bringing telehealth into the EHR. More than two-thirds of the clinicians who participated in a recent survey from Amwell and HIMSS Analytics said the ability to launch a video visit from the EHR (73%) and to integrate telehealth with existing workflows, systems, and patient portals (70%) was "very" or "extremely" impactful to providing better patient care. Likewise, 87% of senior executives at hospitals and health systems cited the ability to integrate telehealth with existing workflows as "very" or "extremely" influential factors in their investment decisions, and 77% said that moving to a fully integrated telehealth platform was "very" or "extremely" important for their organization.[11]

Cerner and Amwell

Integrating telehealth in the EHR is the cornerstone of a successful enterprise telehealth strategy, but the depth and flexibility of the integration matters. To realize its full potential, virtual care must live in the EHR in a seamless, scalable way that — far from adding to administrative burden — enables new care experiences, frees up capacity for providers, and paves the way toward growth opportunities.

In 2016, Cerner and Amwell entered into a strategic collaboration to help enable this type of integration. Cerner and Amwell share the belief that healthcare delivery should be unified, continuous, and patient-centered. The telehealth solutions developed through this relationship are embedded within *Cerner Millennium*® and have now been adopted by hospitals and health systems across the country — including Fisher-Titus Medical Center and the University of Tennessee Medical Center (UTMC), the two case studies featured in this white paper.

The stories of how Fisher-Titus and UTMC brought telehealth and the EHR together — a clinician-led effort, in both cases — drive home how transformative this technological marriage can be for the provider and patient experience. While these healthcare providers have in many ways just begun their telehealth journey, their experience offers a snapshot of the evolving telehealth landscape and a window into the strategy and tactics that are helping drive results for the organizations at the leading edge of virtual care.

‘IT’S CHANGED EVERYTHING’:
Transforming the Provider Experience

After setting up a makeshift telehealth system during the first wave of COVID-19, Fisher-Titus Medical Center quickly turned its attention to implementing an integrated telehealth solution that has transformed the telehealth experience for its providers.

By early 2020, Fisher-Titus Medical Center, based in Norwalk, Ohio, had in place a long-term plan for virtual care. The plan, which was primarily designed to attract and retain patients in a competitive service area, included implementing an enterprise telehealth system beginning in 2022. “We had an understanding that telehealth was going to be exceedingly necessary in the future and would be a strong part of medicine, but there was no urgency,” says Dr. Glenn Trippe, chief medical information officer at Fisher-Titus.

Then COVID-19 hit. As lockdowns went into effect, the CEO of Fisher-Titus tasked Dr. Trippe with setting up a telehealth system in just one week. He and his team met the challenge, assembling a patchwork system composed of iPads, Microsoft Teams, and Office 365. This stopgap met the immediate need, supporting more than 2,500 virtual visits in April 2020 alone (see box on p. 5), but the system was “clunky at best,” Dr. Trippe recalls. The Microsoft Teams-based video visits required dual scheduling in Microsoft Outlook and Cerner, for instance, adding to the strain on front-desk staff. Other technical challenges, such as Teams app downloads that weren’t compatible with the enterprise system, required ongoing troubleshooting.

Once this provisional system was in place and physicians were able to see patients again, the Fisher-Titus administration directed Dr. Trippe’s team to implement a long-term, integrated telehealth system for scheduled visits that would support multiple workflows across clinics and specialties.

A virtual version of existing workflows

With its Cerner EHR already in place, and having already selected Amwell as its telehealth vendor for the planned 2022 roll-out, Fisher-Titus had two collaborators waiting in the wings ready to help. Working together, Amwell, Cerner and the Fisher-Titus team implemented the scheduled visits solution in just over six months.

FISHER | TITUS

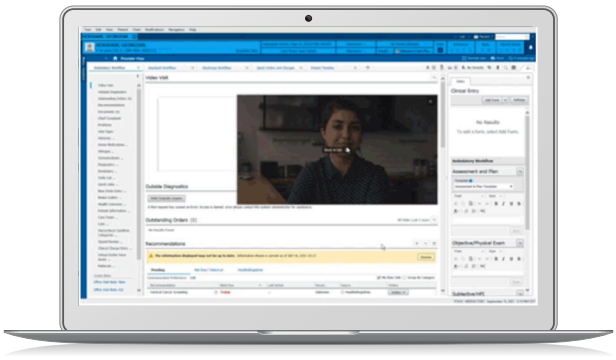
Fisher-Titus is a not-for profit health system based in Norwalk, Ohio, that comprises:

- 99-bed acute care hospital
- 69-bed skilled nursing facility
- 48-unit assisted living facility
- Home health center
- Outpatient services (labs, imaging, physical rehab)

A core requirement of the new system was to reduce the time-intensive dual-scheduling process and streamline the pre-visit rooming workflow. In response to this need, Amwell and Cerner designed a virtual rooming process that mirrored the standard in-person workflow and warm handoffs. The virtual warm handoff entailed keeping a video visit open so multiple staff and providers could come and go, just as they would in an exam room.

A second requirement was the ability to simultaneously document virtual visits in *Cerner Millennium*, without signing into or toggling between multiple platforms. The Fisher-Titus team was able to achieve this by enabling providers to launch a virtual visit within Cerner, and use a picture-in-picture feature to float the patient's video stream in a separate window overlaying the Cerner window. This simple solution, available on Amwell's Converge platform, enabled providers to maintain eye contact with patients while documenting the visit in Cerner, and adjust the size and location of the window as needed.

The picture-in-picture feature helped simplify the implementation and reduced the need to outfit provider workstations with tablets or additional monitors to enable a simultaneous view of the patient and the EHR. After implementation, designated video stations within offices were also no longer needed. Instead, providers gained the flexibility to use their own laptops or tablets to conduct and document virtual visits on a single screen from a location of their choice, whether that be their office, an exam room, or home. "It's changed everything," Dr. Trippe says.



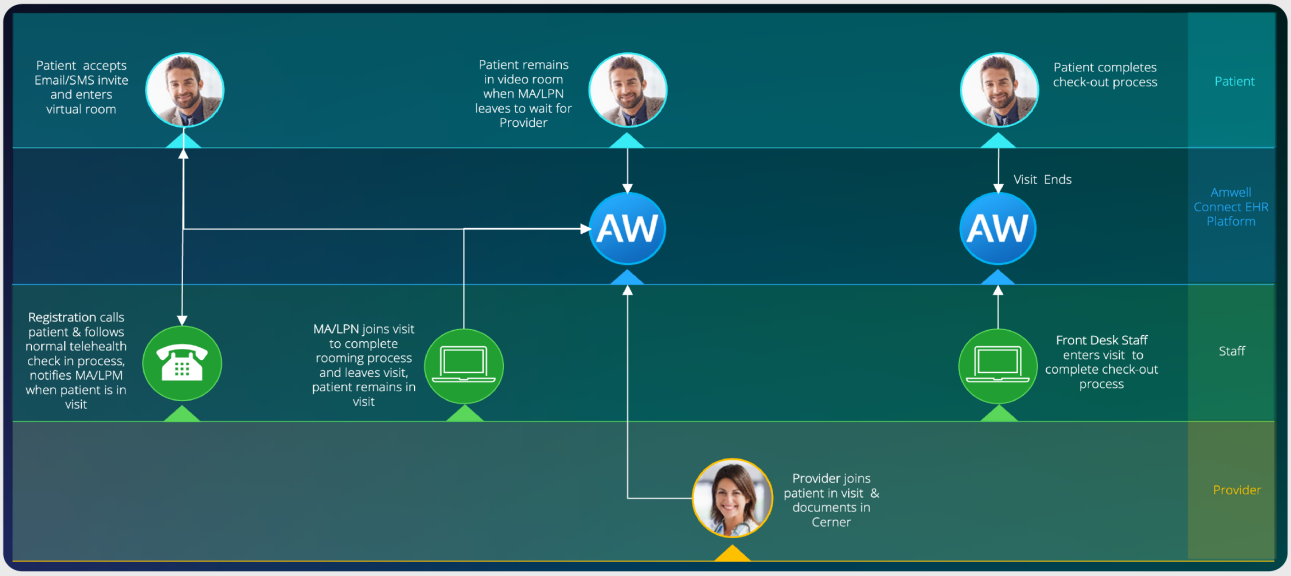
A picture-in-picture feature, available on Amwell's Converge platform, met a key requirement for clinicians: the ability to document virtual visits in *Cerner Millennium* without losing sight of the patient.

Reliability creates relief for providers

The team implemented a phased roll-out of the integrated virtual care experience, first piloting its within Dr. Trippe's own pediatric practice. It was there that the team made final adjustments before rolling it out to the broader group. These adjustments were focused more on workflow and less on technology. For instance, Dr. Trippe and the team found that headsets were required for front desk staff to successfully conduct the virtual check-in and check-out process due to higher-than-normal noise levels.

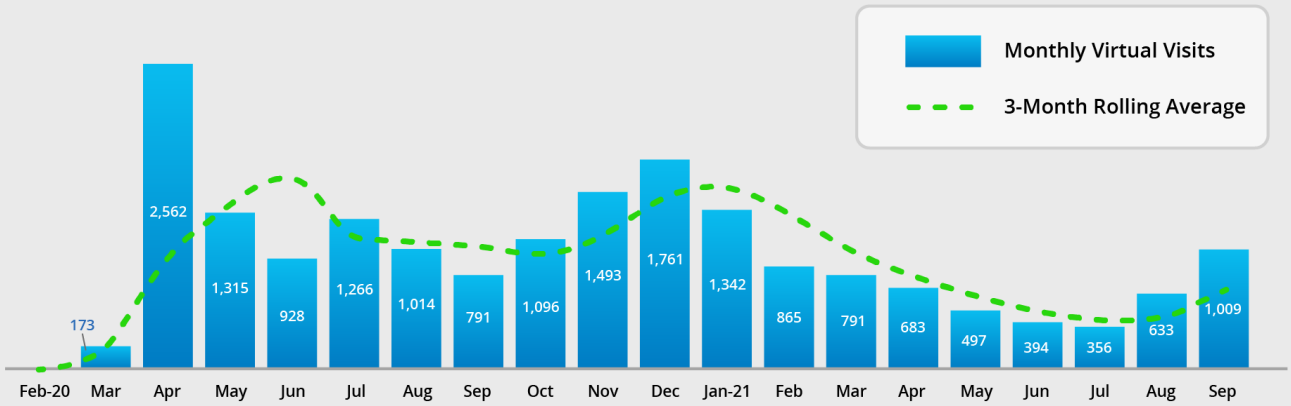
Virtual Rooming Workflow

A virtual rooming workflow that mirrors the in-office experience is a core component of an embedded telehealth solution. The workflow enables front-desk staff, medical assistants, nurses, and physicians to move in and out of a virtual visit like they would an in-person exam room.



Riding the COVID-19 Roller Coaster

After peaking at over 2,500 visits at the beginning of the pandemic, when most in-person care was shut down, monthly virtual visit volumes at Fisher-Titus continued to mirror the surges in COVID-19.



Source: Fisher-Titus Medical Center

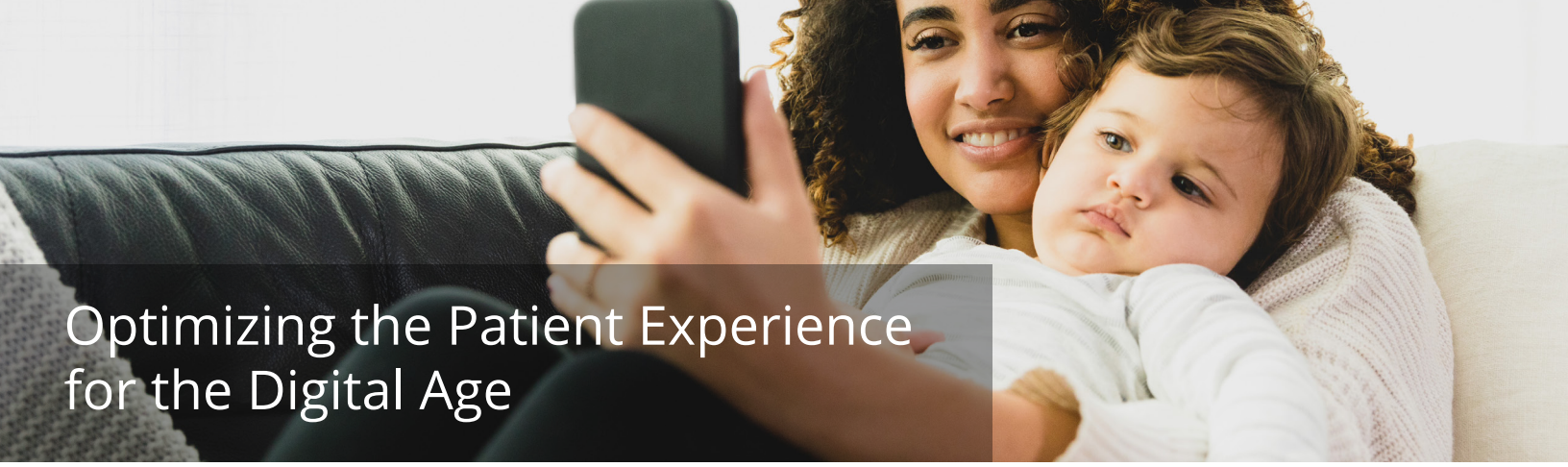
During the broader roll-out, which included pediatrics, primary care, specialty care, and hospital clinics, the team separated training into two groups: front-office staff and medical assistants, and physicians. It was important that the front-office staff and medical assistants understood the full workflow to feel comfortable moving freely in and out of the virtual visit, and could provide support to the clinicians. For the clinician training, the team used test patients to help the clinicians feel comfortable with the technology and workflow. They also scheduled actual telehealth patients for that day and remained on-site to support the team as they used the new integrated experience.

Clinicians and staff members responded positively to the new system and workflows. The ease of launching a visit and the similarity to an in-person visit was a common refrain in the feedback from providers. Though it had saved the day in the spring, the makeshift tablet-based telehealth system was prone to breaking down. For providers, switching to the embedded solution "was a relief," says Dr. Trippe. "It was just easier."

Ready for telehealth's 'explosive future'

Bringing telehealth into the EHR has transformed the provider experience and created a stable foundation for future growth. Just as important, the possibilities suggested by the success of the virtual rooming workflows have made the organization, from front-desk staff to senior administrators, think differently about the long-term potential for telehealth.

"Prior to the outbreak of COVID, I think most people were looking at telehealth as a niche area, a side business, maybe something we want to dabble in," says Dr. Trippe. "Now my opinion is that telehealth and virtual medicine are not only here to stay, but will make up a major piece of our future business. Blood pressure monitoring, diabetes management, behavioral health, post-op surgical care — much of it could be done in telehealth. I'm just looking at an explosive future. Prior to COVID, telehealth was a niche. Now it is a mainstream piece of medicine to be further developed."



Optimizing the Patient Experience for the Digital Age

After discovering that a high proportion of video visits were reverting to telephone during the height of the pandemic, the University of Tennessee Medical Center (UTMC) set out to revolutionize the virtual patient experience.

Prior to March 2020, The University of Tennessee Medical Center (UTMC) had not yet established a long-term strategy for an enterprise telehealth solution for 2020 and beyond – despite strong interest among leadership. Strict regulations at the state level made it difficult for providers to be reimbursed for telehealth visits. As pulmonologist John C. Callison, Jr., MD, UTMC's chief medical information officer recalls, the state "had different viewpoints on parity and payment, so it was at a stalemate at the time." However, these strict regulations were soon lifted as COVID-19 swept across the nation.

UTMC's absence of an enterprise telehealth platform required the health system to quickly stand up a solution in the early days of the pandemic. With most elective procedures canceled and nonessential in-person care curtailed by lockdown restrictions, UTMC's greatest telehealth need was ambulatory scheduled visits to help UTMC providers continue to see patients while in-person clinics were closed. Within five days, UTMC stood up a telehealth solution that leveraged Microsoft Teams and UTMC's Microsoft 365 software — including Outlook for scheduling.

Despite the sudden launch of Microsoft Teams, "patients were having a lot of issues," says Dr. Callison. "It was not very user-friendly from the patient side of things." Since Teams is an app-based program, it requires a separate username and password from other UTMC systems. This authentication process – complicated further by frequent software updates from the Teams app – created confusion and a less-than-optimal patient experience. As a result of these technology challenges, many scheduled telehealth visits were converted on the fly to telephone visits. In April 2020, UTMC conducted more than 6,000 remote visits, but 58% were conducted via telephone (see box on p. 7). Implementing an integrated, reliable platform for video visits became a clear priority heading into the fall of 2020. "Telephone visits weren't cutting it, from a patient experience standpoint or a reimbursement standpoint," Dr. Callison says.

THE UNIVERSITY OF TENNESSEE MEDICAL CENTER

The University of Tennessee Medical Center, based in Knoxville, Tennessee, serves as a major referral center for East Tennessee, Kentucky, and North Carolina. The health system comprises:

- **710-bed hospital**
- **7 centers of excellence**
- **4 urgent care centers**
- **20+ specialty practices**
- **Level 1 trauma center**

A simplified virtual experience

In collaboration with Cerner and Amwell, UTMC began the implementation process in June 2021 and launched the embedded solution for scheduled video visits in October of the same year. Maintaining the *Cerner Millennium* experience familiar to providers, the new solution enabled providers to initiate a virtual visit with a simple click in *Cerner Millennium*. Patients, meanwhile, no longer needed additional apps or logins and could now access video visits through a text or email invite, addressing the confusing patient experience that patients encountered with Microsoft Teams.

To phase the rollout and target the heaviest telehealth users, Dr. Callison and the team used a dashboard that tracked total telehealth volume by clinic and provider, as well as the proportion of telephone to telehealth visits — a key metric that surfaced troubleshooting needs in addition to tracking adoption and success.

The embedded solution also enabled UTMC to create custom workflows and design a virtual rooming system that approximated the traditional in-person patient experience. Before the pandemic, for instance, patients visiting UTMC's multidisciplinary Adult Cystic Fibrosis Center in person would be shown to an exam room, where they would typically be seen by six to eight different team members who cycled in and out of the room — a tried-and-true approach to multidisciplinary care used by cystic fibrosis clinics across the industry. During COVID-19, some cystic fibrosis clinics tried to replicate this approach by having the full team of providers sit together in a conference room and conduct a video visit with the patient — an inefficient use of the clinicians' time. Before the embedded solution, patients at UTMC's clinic were asked to click on a separate appointment link to consult with each specialist — a confusing and overwhelming experience for the patient.

With the new solution, UTMC developed a virtual rooming system that involved patient intake on the day before the visit and an electronic tracking board that would alert each member of the clinical care team when the patient was ready for them. The patient, meanwhile, was able to sit in a virtual room and see each member of the multidisciplinary team without having to join multiple invitations.

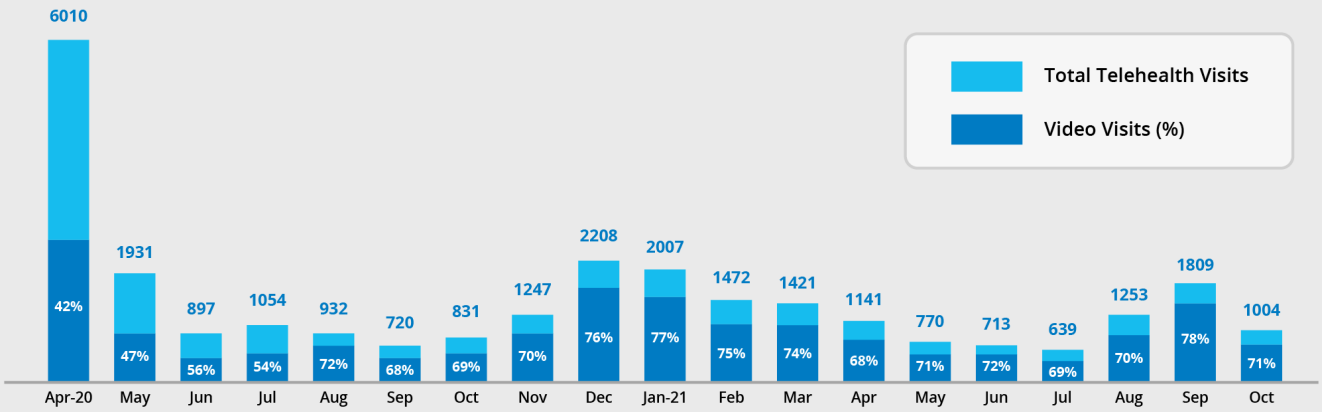
Quantifying success

The feedback from patients was loud and clear. "Patients loved it," says Dr. Callison. "It was so much easier to use." In looking at the data following the implementation, Dr. Callison and the team discovered that patient satisfaction measures validated the day-to-day feedback they were hearing from patients in the cystic fibrosis clinic and elsewhere.

With the embedded solution in place, patient experience scores for telehealth visits have been comparable to those for in-person visits. In 2021 (through December 9), the mean sat-

Audio vs. Video Visits

As UTMC rolled out telehealth in the EHR, the percentage of telehealth visits conducted via video (versus telephone) emerged as a key metric that enabled the telehealth team to identify troubleshooting needs in addition to tracking adoption and success.

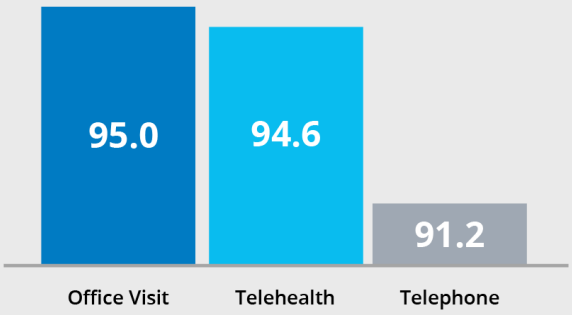


Source: University of Tennessee Medical Center

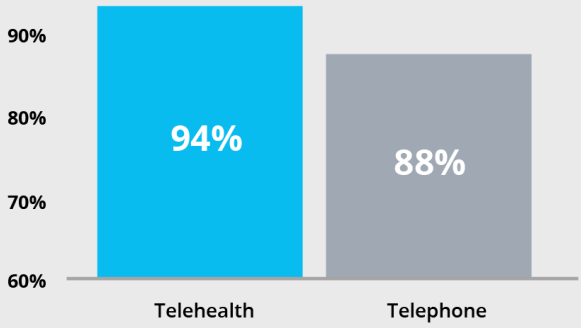
Tracking Satisfaction

Following the launch of the embedded solution for scheduled visits, the patient experience scores for telehealth visits have remained almost identical to those for in-person visits. By contrast, patient satisfaction scores for telephone visits have been lower, highlighting the importance of tracking the ratio of telephone to video visits, and moving away from telephone visits.

Mean Patient Satisfaction Score
Jan 1 – Dec 9, 2021



Patients Who Would Recommend a Visit
Jan 1 – Dec 9, 2021



Source: University of Tennessee Medical Center (via Press Ganey)

isfaction score for an office visit has been 95.1 versus 94.6 for telehealth. By contrast, the mean patient satisfaction score for telephone visits over the same period was 91.2 — reinforcing the importance of monitoring the ratio of telephone to video visits, and moving away from telephone visits. The percentage of patients who would recommend a telehealth visit is 94%, versus 88% for a telephone visit.

"I was actually really hesitant to look at that data," says Dr. Callison. "It's always, 'Oh, how's your patient satisfaction?' — and sometimes you just don't want to know the answer, because you assume it's not going to be good. So we didn't look at that data for the longest time, but we finally did, and we're really glad we did."

Just as important, the embedded solution was a hit with clinicians as well, who appreciated the ease of use, the virtual rooming workflows, the simple email and SMS/text invitations for video visits, and features including the floating picture-in-picture window that enabled them to document in Cerner without leaving the video visit.

Setting sights on integration across the care continuum

As the pandemic shifts gears yet again, UTMC continues to expand its telehealth program. In addition to their bread-and-butter scheduled visits for ambulatory care, Dr. Callison and the team are exploring new use cases including cardiopulmonary rehab, specialty care and consults (such as ophthalmology), and post-surgical follow-up care. The ratio of telehealth to telephone visits continues to be a key yardstick, along with the percentage of overall visits conducted via telehealth.

As new possibilities and use cases arise, UTMC remains focused on refining the patient experience and understanding the long-term needs of its patients. Many patients in UTMC's service area live 100 miles or more from the hospital, and these patients — especially those covered by Medicaid and Medicare who are more likely to experience transportation barriers or financial constraints — would benefit from having expanded telehealth options even after the pandemic subsides, Dr. Callison notes.

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