

American College of
Emergency Physicians
Section on Telehealth

Fall Newsletter 2023

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HEALTH POLICY CORNER

Telehealth Regulatory Updates

By Jeff Davis | McDermott+Consulting

There has been a lot of action on telehealth, but before getting to the updates, here is some background:

Background:

The Consolidated Appropriations Act (CAA), 2023, enacted at the end of last year, extended many of the telehealth waivers that existed during the COVID-19 public health emergency (PHE) through the end of calendar year (CY 2024). While Congress did its part, the health policy community was waiting to see what the Centers for Medicare & Medicaid Services (CMS) would do to continue promoting the use of telehealth.

During the PHE, CMS temporarily added numerous codes to the list of approved Medicare telehealth services. This list of approved services is updated annually. In previous regulations and through guidance, CMS has examined which of the codes should remain on the list for an extended period past the end of the PHE or permanently. In May 2023, CMS [extended all the telehealth codes](#) that it had temporarily added during the PHE through the end of CY 2023. ACEP had sent a [sign-on letter](#) to CMS requesting that the agency extend the availability of the codes on the list through CY 2024, to align with congressional action in the CAA, 2023. While most office-based codes are already permanently on the list of approved telehealth services, CMS receives evidence from the public each year to decide which other types of codes (not similar to an office visit) it should permanently add to the list. CMS's decisions are based on an evaluation of peer-reviewed data that must prove that the service, when provided via telehealth, improves quality and reduces costs.

Another important telehealth policy that existed because of the PHE is payment parity. Many PFS services have two payment rates depending on whether they are provided in a facility setting (e.g., a hospital) or a non-facility setting (e.g., a clinician's office). Before the PHE, CMS paid clinicians performing a telehealth visit the PFS's lower facility-based payment rate instead of the higher non-facility rate. However, during the PHE, telehealth services were paid at the same rate as in-person services. Thus, if a clinician would have provided the service in a non-facility setting if the service had been delivered in-person, the clinician could bill for the telehealth service at the higher non-facility rate.

Updates from the CY 2024 Physician Fee Schedule Proposed Rule

On July 13, 2023, CMS released the CY 2024 Physician Fee Schedule (PFS) Proposed Rule. This major payment regulation includes some important telehealth policies that impact emergency physicians and other clinicians. It is important to note that CMS did not address a slew of new telehealth codes that have been making their way through the American Medical Association Relative Value Unit Update Committee (AMA RUC) process, which leaves questions open as to how the agency will handle the codes down the road.

Revised Process for Adding New Codes to Medicare Telehealth List

CMS proposes, at long last, to reform the process for adding new services to the Medicare Telehealth List. Currently, CMS adds services to the list based on two permanent categories (Categories 1 and 2) and one temporary category (Category 3). The temporary category was established during the COVID-19 public health emergency, and the plan was to eventually eliminate Category 3 and assess whether the services temporarily added to the list during the PHE should be permanently added based on a Category 1 or Category 2 review. Services added to the Medicare Telehealth List on a Category 1 basis are similar to services that are already permanently on the list, such as office-based services. Category 2, which applies to non-office-based services, involves a review of peer-reviewed literature that proves whether the service, when provided via telehealth, improves quality and reduces costs. Category 2 is a nearly impossible bar to meet, and not many (if any) codes have been added to the Medicare Telehealth List based on a Category 2 review.

Fortunately, CMS proposes to eliminate the three categories and replace them with a unified process for adding new codes to the Medicare Telehealth List either temporarily or permanently. All services must meet the following criteria:

1. Be separately payable under the PFS
2. Include elements that, when delivered via telehealth, are a substitute for an in-person, face-to-face encounter
3. Be provided using an interactive telecommunications system
4. Perform similarly, when provided via telehealth, to services that are already on the list of approved telehealth services
5. Have an equivalent clinical benefit regardless of whether the service is delivered via telehealth or in-person

Services that meet the first three criteria can be added on a temporary basis to the Medicare Telehealth List. However, CMS still needs to see data showing the clinical benefit of providing a service via telehealth before it will add the service permanently to the list.

Emergency Medicine and Observation Codes

CMS is proposing to keep the following emergency medicine and observation codes on the Medicare Telehealth List through the end of CY 2024:

- **CPT 99221**: Initial hospital inpatient or observation care, per day, for the evaluation and management of a patient, which requires a medically appropriate history and/or

- examination and straightforward or low-level medical decision making. When using total time on the date of the encounter for code selection, 40 minutes must be met or exceeded.
- **CPT 99222**: Initial hospital inpatient or observation care, per day, for the evaluation and management of a patient, which requires a medically appropriate history and/or examination and moderate level of medical decision making. When using total time on the date of the encounter for code selection, 55 minutes must be met or exceeded.
 - **CPT 99223**: Initial hospital inpatient or observation care, per day, for the evaluation and management of a patient, which requires a medically appropriate history and/or examination and high level of medical decision making. When using total time on the date of the encounter for code selection, 75 minutes must be met or exceeded.
 - **CPT 99234**: Hospital inpatient or observation care, for the evaluation and management of a patient including admission and discharge on the same date, which requires a medically appropriate history and/or examination and straightforward or low level of medical decision making. When using total time on the date of the encounter for code selection, 45 minutes must be met or exceeded.
 - **CPT 99235**: Hospital inpatient or observation care, for the evaluation and management of a patient including admission and discharge on the same date, which requires a medically appropriate history and/or examination and moderate level of medical decision making. When using total time on the date of the encounter for code selection, 70 minutes must be met or exceeded.
 - **CPT 99236**: Hospital inpatient or observation care, for the evaluation and management of a patient including admission and discharge on the same date, which requires a medically appropriate history and/or examination and high level of medical decision making. When using total time on the date of the encounter for code selection, 85 minutes must be met or exceeded.
 - **CPT 99238**: Hospital inpatient or observation discharge day management; 30 minutes or less on the date of the encounter
 - **CPT 99239**: Hospital inpatient or observation discharge day management; more than 30 minutes on the date of the encounter
 - **CPT 99281**: Emergency department visit for the evaluation and management of a patient that may not require the presence of a physician or other qualified health care professional
 - **CPT 99282**: Emergency department visit for the evaluation and management of a patient, which requires a medically appropriate history and/or examination and straightforward medical decision making
 - **CPT 99283**: Emergency department visit for the evaluation and management of a patient, which requires a medically appropriate history and/or examination and low level of medical decision making

Facility Versus Non-Facility Payment Rates

CMS proposes to allow the higher non-facility payment rate for telehealth services that are performed for patients located at their homes. These services would be billed under the place of service (POS) code 10. However, much to the dismay of telehealth advocates, CMS proposes to return to its pre-pandemic policy of paying the lower facility-based rate for all telehealth services in which patients are not located in their home (and instead are located at a physician's office or hospital, for example). CMS believes that the cost of providing the telehealth service, as

reflected in the practice expense RVUs, is more accurately reflected by the non-facility rate. Clinicians would be required to use POS 02 for these telehealth services.

Alignment with Consolidated Appropriations Act, 2023

As expected, CMS proposes policies to align with the CAA, 2023 that delayed the following until 2025: the in-person requirement for mental health telehealth services, the Medicare originating site and geographic restrictions (which forced patients to go to a facility in rural area to receive a telehealth service), and coverage of audio-only services for services on the Medicare Telehealth List. These proposals are generally all good news, but also are mainly policies that Congress addressed rather than proposals that signal where the agency stands on making more permanent changes.

Other Temporary Extensions

In a win for telehealth advocates, CMS proposes to continue its suspension of frequency limitations for certain subsequent inpatient visits, subsequent nursing facility visits, and critical care consultations furnished via telehealth. CMS also continues to be flexible with respect to its supervision requirements, allowing physicians to supervise services delivered by non-physician practitioners remotely and teaching physicians to supervise residents remotely in both urban and rural areas.

Comments on the CY 2024 PFS proposed rule are due on September 11, 2023 and ACEP is working on a comprehensive response.

SPOTLIGHT Section

The spotlight section serves to take a closer look at a particular area in the practice and implementation of tele-emergency care. Feel free to email the newsletter editor at imassag@emory.edu if you have suggestions for the spotlight section.

Spotlight on Telehealth Education

By Lulu Wang, MD | Director of Telehealth Education, MedStar Health

At MedStar Health, I have the privilege of teaching telehealth to medical students, residents, and fellows. In doing so, I often hear, “I didn’t realize there was more to it than video visits.” That discovery process is like realizing that the mushroom you stepped is actually part of a vast mycelial network.

Telehealth education should be viewed through the same lens. Scoping telehealth too narrowly – as a replacement for one-to-one, in-person care – would grossly underrepresent its value.

Telehealth education often starts with concrete training – a how-to guide on platforms, devices, and best practices. While important, these components don’t capture the most essential part of telehealth learning, which is a foray into innovative thinking. How do we integrate communication technology tools to augment our current inefficient processes and deliver better care? How do we identify problems in our system and solve for them using technology solutions? How do we adopt a systems approach to folding telehealth into value-based care delivery? How can a clinician communicate to other stakeholders the most urgent issues that our patients face? These are more difficult concepts to teach.

Prior to COVID-19, several institutions had begun to implement formalized telehealth curricula in their school and training programs. In a study by Khullar et al., 154 U.S. medical schools were surveyed on the presence of telehealth education in their curriculum; half reported they had it.¹ For those who didn’t teach telehealth, barriers included limited curricular time, lack of experienced faculty, rapidly evolving technologies, and lack of institutional support and funding.

The pandemic was a potent accelerator, with surges in medical school courses on telehealth. Many institutions recognized telehealth as a vital component of learner education in a progressively digital world. Telehealth was incorporated in other ways too; for example, at the Georgetown University School of Medicine, a “Telehealth Thread” was created, one of fourteen such “threads” that longitudinally incorporate core clinical skills over a period of four years. To unify and standardize the material included in such courses, several groups have proposed sets of competencies. A 2021 report published by the American Association of Medical Colleges enumerated six core competencies in telehealth: patient safety and appropriate use, access and equity, communication, data collection, ethical practices and legal requirements, and technology.²

In graduate medical education, a 2022 publication mapped specific telehealth skills to six competencies recognized by the Accreditation Council for Graduate Medical Education (ACGME) including: patient care, medical knowledge, interpersonal and communication skills,

practice-based learning and improvement, professionalism, and systems-based practice.³ Residents at emergency departments with telehealth care delivery (e.g., tele-triage, tele-fast track, tele-urgent care, tele-consultation, tele-EMS medical direction) should fold these encounters into their training. Some specialties, like internal medicine, have already incorporated telehealth into their ACGME milestones.

Several telehealth fellowships exist. Jefferson Health established the first, followed by George Washington University, Massachusetts General Hospital, and Georgetown/MedStar. All offer one- to two-year non-ACGME accredited programs. Fellowship structure varies, but all feature a combination of telehealth knowledge acquisition and leadership development, research, and operational experience.

When we teach learners in the ED, our job is to train them for a successful practice of emergency medicine. Familiarity with telehealth is part of that skill set. Increasingly, emergency physicians have risen to assume telehealth and innovation leadership positions within their organizations, and for good reason. As Dr. Hollander and Dr. Sharma coined succinctly, we are not only the proceduralists and the resuscitators, but also the “availabilists.”⁴ Our work uniquely positions us to interface across service lines, between the inpatient world and the outpatient. As such, it is essential we continue to develop high-quality telehealth education for our learners.

References:

1. Khullar D, Mullangi S, Yu J, et al. The state of telehealth education at U.S. medical schools. *Healthcare*. 2021;9(2). doi:10.1016/j.hjdsi.2021.100522
2. Association of American Medical Colleges. *Telehealth Competencies Across the Learning Continuum*.; 2021.
3. Hart A, Romney D, Sarin R, et al. Developing Telemedicine Curriculum Competencies for Graduate Medical Education: Outcomes of a Modified Delphi Process. *Academic Medicine*. 2022;97(4):577-585. doi:10.1097/ACM.0000000000004463
4. Hollander JE, Sharma R. The Availabilists: Emergency Care without the Emergency Department. Published online 2021. doi:10.1056/CAT.21.0310

VOICES FROM THE FIELD

Tele-Disaster Medicine: A conversation with Dr. Jarone Lee

As the newsletter editor of the ACEP Telehealth section, I had the pleasure of interviewing Dr. Jarone Lee about the NGO he co-founded – Health Tech Without Borders (HTWB). HTWB is a global non-profit (501c3) organization that supports communities affected by sudden humanitarian emergencies. As an innovation hub, HTWB connects those in need of medical attention with vetted volunteer clinicians via online health intervention tools and offers targeted digital trainings to equip medical personnel with any additional education they might need. Since their inception, HTWB has helped more than 110,000 patients in regions of crisis to seek medical and psychological support and has facilitated targeted training for more than 2,000 clinicians.

We started our conversation discussing how COVID accelerated tele-emergency care.

Jaron Lee (JL): That is one of the silver linings of COVID – it showed that telehealth works, it works well for the right use cases, for the right patients, and in the right setup. Now in disaster medicine, humanitarian relief, and global health, everyone is trying to incorporate digital health. But they are where we were pre-COVID. For good reasons: it's still new. People are trying to figure out how to incorporate telehealth and what that will look like.

Iyesatta M. Emeli (IME): You and HTWB are figuring it out.

JL: We are doing it in a unique way. I am a disaster responder and I've been to multiple disasters, locally, nationally, and globally. Hurricane Irma was one of the disasters that showed me telemedicine/telehealth works. COVID showed me it works very well. During COVID, I got involved with the national emergency tele critical care network and saw that we could quickly build and deploy a telehealth response to a worldwide emergency. Separately, I met a great core group of folks in the digital health space – Marianna Petrea-Imenokhoeva, Hicham Naim, and Dr. Bob Arnot. Together, we comprise the executive board of HTWB, and came together to support Ukraine.

IME: What are the unique challenges and lessons learned from working in a war zone?

JL: There are many lessons learned. We put much of it into our [NEJM catalyst paper](#). One thing I will say about the paper is that it made it look like we were well organized. As you can imagine, none of this was well organized. It was duct tape, bubble gum...

IME: Building the plane as you flew it...

JL: When we started it, we didn't know if this was going to work. We put out a call to action for tech companies and clinicians to come together to support Ukraine. We wanted to help however we could. The global community came together in a way I have never seen. Forty tech companies wanted to donate their product pro bono, and we got 800 clinicians and volunteers from 20 countries. Incredible, right? Putting that all together in a massive scramble, working with our NGO partners, we are now up to 110,000 consults to Ukrainians. Interestingly, even though it is a conflict zone, the principles of doing this work remain the same: it is about local community partners. For example, we went live with three companies. Two of them were seasoned telehealth companies based out of the European Union. The third company was a small start-up company, called Doctor Online - Ukrainian built; Ukrainians knew it, it had brand recognition. The other two had been around longer and our most active platform turned out to be Doctor Online, the local Ukrainian built telemed platform. True of all our projects, in Pakistan, Iraq, Mexico, soon in countries in Africa: the key is about local partnerships and buy in.

IME: This is a purely digital response, correct? No boots on the ground. What are the jurisdictional and licensure hurdles?

JL: Everything we do has to be above bar. We have to be sure we are credentialed and licensed. The good news is that the credentialing and licensing were worked out with the Ukrainian Ministry of Health. So that was, in many ways, easy. The interesting thing about this is that unlike clinicians from other countries, the first question we regularly get from U.S.-based volunteers is about malpractice coverage. Unfortunately, this is a commentary on our U.S. healthcare system.

IME: (laugh) I was about to ask: What is the malpractice coverage?

JL: The majority of our initial volunteers ended up not being US-based, because, unfortunately, a lot of us cannot get over the malpractice hurdle. Ultimately, it was up to the individual volunteers to find coverage, including speaking to their personal malpractice carriers. I am happy to report that our local malpractice carrier for my hospital, CRICO, decided early on to cover us in this effort.

IME: Is some of the work you do peer-to-peer, because that could circumvent the liability issue.

JL: For Ukraine, it's mainly direct to patient. We do also have peer-to-peer programs, webinars, and educational series. We did a mental health series, a burn series and we are working on a rehab medicine series. For Mexico, we're supporting an NGO (Global Response Medicine) that's running a few of the border clinics that are taking care of the refugees at the US Mexican border on the Mexican side. These consults are all peer-to-peer. There is a clinician deployed there, and it is like what I saw in Irma: you are there by yourself. It's kind of nice to have a whole hospital in your pocket, right? It's nice to have a reach back and have easy access to all the consults we are accustomed to in the hospital. As we think about our telemed programs in other parts of the world like Pakistan, Cameroon, Central African Republic, we plan to create it differently. These programs will focus on creating a local clinical workforce to take care of patients within their countries. This way the model will become sustainable, long-term.

IME: HTWB in Ukraine is heavily text based, which I think is important in a disaster where communications systems are fragile. Is this something that you will carry through to future projects in other parts of the world?

JL: In Ukraine a majority of our work is text-based but we always need the option of doing it all. We need a safe and secure platform with the ability to do the whole span: text based, asynchronous, audio video synchronous, knowing that needs evolve. One of our partners on the ground in Pakistan has been doing telemedicine to their rural areas via phone. It's just a phone. So it can be really low-tech. It doesn't have to be fancy. That's the cool part.

IME: We started out by talking about how COVID accelerated the growth of telehealth. I think it opened the doors globally to healthcare delivery digitally. In Ukraine, you had the advantage of having, already in place, a company with name recognition delivering digital care. What happens when there is a disaster in a country that does not have this type of pre-disaster digital infrastructure?

JL: Ideally, pre-response, we should have something pre-planned. I think that is the future. We've had some high-level discussions with folks at WHO and other places about digitizing their teams, digitizing responses. I'm sure our U.S. government is thinking about this. We need these plans setup pre-disaster. That's key: ideally, we invest in it now, have the technology ready, keep the lights on, and have the clinician base at the ready. If we don't have everything in place, it takes time to ramp up and we risk missing the window to support. In Ukraine, pre-war, it was already a very digitized country so that made our work much easier. But let's say it isn't like Ukraine. We have a process at HTWB to determine if and how we can help. For example, with the Turkey earthquake, we found a way to support them. We did a [needs analysis, which includes](#): legal, credentialing, risk, safety, accessibility. Who do we know on the ground? Which NGO partners are already there? Because of our background and collective decades of experience in disaster response, we have many contacts already on the ground in these places. So we talk to them, figure out what their needs are, see how or if we can help. And that might not be direct to patient care. For example, in Turkey, we knew we could not get our clinicians credentialed in Turkey quickly enough to see patients, but we could support in other ways. We extended our mental health program called 3H, or helping healers heal, from Ukraine to Turkey. Another lesson from COVID – we clinicians need help too. And this is completely true of our Ukrainian providers. So we setup 3H, where we have mental health specialists specifically trained in crisis, who are working with clinicians and supporting them with everything from their emotional needs to additional clinical resources. Our 3H specialists spend most of the time unpacking the trauma that the mental health specialists on the ground are dealing with regularly. Many of them told us that they would have quit and stopped seeing their patients if they didn't have our program. We turned this program on in Turkey.

IME: When I hear what HTWB is doing, this purely digital task force, bringing a world of expertise to bear on a crisis – it makes so much sense. Connecting. It seems natural and necessary even though it is new. Should we see more of this?

JL: Everyone's doing it to some degree. Their focus – rightfully – remains on boots-on-the-ground deployments. HTWB can augment and add value to humanitarian responses digitally.

IME: To conclude, if some of our readers want to get involved, what would you suggest to them?

JL: We take volunteers of all sorts. At this point, we are fully volunteer-run, in-kind supported by our tech partners and rely on donations to continue our work. Beyond those 800 plus volunteers that I mentioned, we have volunteers from high school students to public health students. If interested, e-mail me directly (Jarone.lee@htwb.org) or e-mail our main account (wehelp@htwb.org). We need volunteers with all skills. I will warn folks that we are a small operation and HTWB is held together by bubble gum and duct tape.

IME: Well I am certainly excited to see and learn about all HTWB does from here. Importantly, I think you are providing a template for how this sort of digital humanitarian enterprise can be done. Thank you so much for your time and sitting down to talk to me today.

Jarone Lee, MD, MPH, FCCM is an Associate Professor at Harvard Medical School and the Vice Chief of Critical Care for the Division of Trauma, Emergency Surgery, Surgical Critical Care at Massachusetts General Hospital. He co-founded Health Tech Without Borders, Inc., a global non-profit organization, aiming to mitigate humanitarian disasters by leveraging digital tools and technology to provide immediate access to health resources. He regularly deploys to support federal disaster response as a Medical Officer for MA-1 Disaster Medical Assistance Team (DMAT) within the National Disaster Medical System (NDMS).

Iyesatta Massaquoi Emeli, MD, MPH, FACEP is a Distinguished Physician and Assistant Professor at Emory University. She serves as the Newsletter Editor for ACEP's Telehealth Section.

AWESOME ABSTRACTS

“In God we trust. All others must bring data.” – W. Edwards Deming

*****If there are abstracts you have found to be great, please send them to the Newsletter Editor for consideration for the next issue!*****

Shatla, I., et al. (2023). "An Analysis of Telehealth in the Outpatient Management of Atrial Fibrillation During the COVID-19 Pandemic." Am J Cardiol 192: 174-181.

The COVID-19 pandemic accelerated adaption of a telehealth care model. We studied the impact of telehealth on the management of atrial fibrillation (AF) by electrophysiology providers in a large, multisite clinic. Clinical outcomes, quality metrics, and indicators of clinical activity for patients with AF during the 10-week period of March 22, 2020 to May 30, 2020 were compared with those from the 10-week period of March 24, 2019 to June 1, 2019. There were 1946 unique patient visits for AF (1,040 in 2020 and 906 in 2019). During 120 days after each encounter, there was no difference in hospital admissions (11.7% vs 13.5%, $p = 0.25$) or emergency department visits (10.4% vs 12.5%, $p = 0.15$) in 2020 compared with 2019. There was a total of 31 deaths within 120 days, with similar rates in 2020 and 2019 (1.8% vs 1.3%, $p = 0.38$). There was no significant difference in quality metrics. The following clinical activities occurred less frequently in 2020 than in 2019: offering escalation of rhythm control (16.3% vs 23.3%, $p < 0.001$), ambulatory monitoring (29.7% vs 51.7%, $p < 0.001$), and electrocardiogram review for patients on antiarrhythmic drug therapy (22.1% vs 90.2%, $p < 0.001$). Discussions about risk factor modification were more frequent in 2020 compared with 2019 (87.9% vs 74.8%, $p < 0.001$). In conclusion, the use of telehealth in the outpatient management of AF was associated with similar clinical outcomes and quality metrics but differences in clinical activity compared with traditional ambulatory encounters. Longer-term outcomes warrant further investigation.

Li, K. Y., et al. (2023). "Standard nurse phone triage versus tele-emergency care pilot on Veteran use of in-person acute care: An instrumental variable analysis." Acad Emerg Med 30(4): 310-320.

OBJECTIVES: Use of acute care telemedicine is growing, but data on quality, utilization, and cost are limited. We evaluated a Veterans Affairs (VA) tele-emergency care (tele-EC) pilot aimed at reducing reliance on out-of-network (OON) emergency department (ED) care, a growing portion of VA spending. With this service, an emergency physician virtually evaluated selected Veterans calling a nurse triage line. **METHODS:** Calls to the

triage line occurring January-December 2021 and advised to seek care acutely within 24 h were included. We described tele-EC user characteristics, common triage complaints, and patterns in referral to and management by tele-EC. The primary outcome was acute care visits (ED, urgent care, and hospitalizations at VA and OON sites) within 7 days of the index call. Secondary outcomes included mortality, OON acute care spending, and the effect of tele-EC visit modality (phone vs. video). We used both standard regression and instrumental variable (IV) analysis, using the tele-EC physician schedule as the instrument. RESULTS: Of 7845 eligible calls, 15.5% had a tele-EC visit, with case resolution documented in 57%. Compared to standard nurse triage, tele-EC users were less likely to be Black, had more prior ED visits, and were triaged as higher acuity. Calls concerning dizziness/syncope, blood in stool, and chest pain were most likely to have a tele-EC visit. Tele-EC was associated with fewer ED visits than standard nurse triage in both regression (average marginal effect [AME] -16.8%, 95% confidence interval [CI] -19.2 to -14.4) and IV analyses (AME -17.5%, 95% CI -25.1 to -9.8), lower hospitalization rate (AME -3.1%, 95% CI -6.2 to -0.0), and lower OON spending (AME -\$248, 95% CI -\$458 to -\$38). CONCLUSIONS: Among Veterans initially advised to seek care within 24 h, use of tele-EC compared to standard phone triage led to decreased ED visits, hospitalizations, and OON spending within 7 days.

Wagner, R., et al. (2023). "Assessment of Pediatric Telemedicine Using Remote Physical Examinations With a Mobile Medical Device: A Nonrandomized Controlled Trial." JAMA Netw Open 6(2): e2252570.

IMPORTANCE: The number of innovations in health care based on the use of platforms, digital devices, apps, and artificial intelligence has grown exponentially in recent years. When used correctly, these technologies allow inequities in access to health care to be addressed by optimizing care and reducing social and geographic barriers. However, most of the technological health care solutions proposed have not undergone rigorous clinical studies. OBJECTIVE: To assess the concordance between measurements from a remote physical examination using a mobile medical device and measurements from a conventional in-person physical examination. DESIGN, SETTING, AND PARTICIPANTS: This nonrandomized controlled trial was conducted from January 1 to December 31, 2020. The clinical parameters compared were heart rate; body temperature; heart, lung, and abdominal auscultation; otoscopy; throat and oral examination; and skin examination. A total of 690 patients with clinical stability and various symptoms who were seen in the emergency department of 2 Brazilian pediatric hospitals were eligible to enter this study. MAIN OUTCOMES AND MEASURES: The primary outcome was concordance between measurements from a telemedicine physical examination using a mobile medical device and measurements from a conventional in-person physical examination. The secondary outcome was the specificity and sensitivity of the digital device, considering the conventional in-person consultation as the gold standard.

RESULTS: Among 690 patients, the median (IQR) age at study entry was 5 (1-9) years; 348 (50.4%) were female, and 331 (48.0%) presented with a chronic disease. Regarding the primary outcome, the concordance values were 90% or greater for skin examination (94% for rash, 100% for hemorrhagic suffusion, and 95% for signs of secondary infection), characteristics of the mucosa (98% for hydration and 97% for coloring), and heart (95% for murmur, 97% for rhythms, and 98% for sounds), lung (91% for adventitious sounds, 97% for vesicular sounds, and 90% for fever), and abdominal (92% for abdominal sounds) auscultations. Concordance values were lower for otoscopy (72% for the ear canal and 86% for the tympanic membrane), throat and oral examination (72%), and rhinoscopy (79% for mucosa and 81% for secretion). The specificity was greater than 70% (ranging from 74.5% for the ear canal to 99.7% for hemorrhagic suffusion) for all variables. The sensitivity was greater than 52% for skin examination (58.0% for rash and 54.8% for signs of secondary infection), throat and oral examination (52.7%), and otoscopy (66.1% for the ear canal and 64.4% for the tympanic membrane).

CONCLUSIONS AND RELEVANCE: In this study, measurements from remote physical examination with a mobile medical device had satisfactory concordance with measurements from in-person physical examination for otoscopy, throat and oral examination, skin examination, and heart and lung auscultation, with limitations regarding heart and lung auscultation in infants and abdominal auscultation in children of all ages. Measurements from remote physical examination via a mobile medical device were comparable with those from in-person physical examination in children older than 2 years. These findings suggest that telemedicine may be an alternative to in-person examination in certain contexts and may help to optimize access to health care services and reduce social and geographic barriers.

TRIAL REGISTRATION: Brazilian Registry of Clinical Trials Identifier: RBR-346ymn.

Atuhairwe, I., et al. (2023). "Leveraging tele-mentoring and remote learning to strengthen the emergency care capacity of health workers in Uganda." *Afr J Emerg Med* 13(2): 86-93.

BACKGROUND: A robust emergency care system is a cost-effective method of reducing preventable death and disability, especially in low-and middle-income countries. To scale emergency care expertise across the country, the Uganda Ministry of Health and Seed Global Health established the Emergency Medical Services (EMS) ECHO program. We describe the process of establishing the program in a resource-limited setting, best practices, and lessons learned in Uganda. **METHODS:** Investigators conducted a mixed-methods evaluation to assess the initial 4 months' implementation of the EMS ECHO. We conducted pre/post-program assessments of healthcare worker knowledge, self-efficacy, and professional's satisfaction with the program. The analysis compared the differences between pre/post-test scores descriptively. **RESULTS:** The EMS ECHO was initiated in November 2021. A phased curriculum was developed with the initial phase focusing on the ABCDE (Airway, Breathing, Circulation, Disability, and Exposure) approach to the emergency patient. This phase reached 2,030 health workers cumulatively across 200 health facilities. The majority of the participants were medical

doctors (n = 751, 37%), and nurses (n = 568, 28%). Majority of participants (95%) rated the sessions as informative. On whether the ECHO sessions diminished professional isolation, 66% agreed or strongly agreed. CONCLUSIONS: Similar to other ECHO program evaluation results, Uganda's EMS ECHO program improved knowledge, skills, and the development of a virtual community of practice thereby diminishing professional isolation. It also demonstrates that through a planned stepwise process, virtual learning and telementorship can be used efficiently to improve healthcare worker knowledge, skills and multiply the limited number of emergency care experts available in the country.