American College of Emergency Physicians
Section on Telehealth

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CONTENTS

HEALTH POLICY CORNER

COVID-19 Telehealth Flexibilities: An update

By Jeff Davis | ACEP Director of Regulatory Affairs

As an update to "COVID-19 Telehealth Flexibilities: What to Expect Going Forward" in the previous edition of this newsletter, please refer to the table below for an update on telehealth policies and their status, post public health emergency (PHE).

Covid Telehealth Flexibility	*Expire at the End of the PHE*	*Extended Permanently Past the PHE*	*Extended to End of CY 2023*	*Extended to the End of CY 2024*	*Who Has the Authority to Extend Further or Make permanent?*
Codes that are Temporarily added to List of Medicare Approved Telehealth Services (Including ED E/M, Critical Care, and Observation Codes)			X		CMS
Teaching Physicians can bill for services performed by residents when virtually present		X*			CMS
Medicare Physician Supervision Requirements:	X				
Mental Health In-Person Requirements				X	Congress
Audio only Telehealth Services				X	Congress
OUD Treatment Telehealth Policies		X** (Proposed)			DEA/SAMHSA
Medicare "Geographic" and "Originating Site" Requirements				X	Congress

State Licensing Requirements* **	X				States and Congress
HIPAA Waiver	X****				Congress
Medicare Beneficiary Cost-Sharing	X				Congress
EMTALA Policy Regarding MSEs		X			CMS
All Medicaid Policies	X				States
All Private Insurer Policies	X				Private Insurers

** Only extended permanently in rural areas.

** Proposed for Opioid Treatment Programs (OTPs) and for buprenorphine prescriptions. However, on May 9, 2023, the DEA announced that as it considers permanent expansions, it will extend the current flexibilities for six months through November 11, 2023.

***Many states have already let this flexibility expire.

**** HHS announced that it was extending its enforcement discretion and will continue not to impose penalties on practitioners that do not use HIPAA-compliant telehealth technology (like skype and facetime) for 90 days post the end of public health emergency (until 11:59 p.m. on August 9, 2023).

SPOTLIGHT Section

In this edition of the newsletter, we are introducing a new spotlight section that will serve 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 imassaq@emory.edu if you have suggestions for the spotlight section.

Spotlight on Equity: Beyond the Digital Divide

By Bisan Salhi, MD, PhD | Drexel University

It is not an understatement to say that digital connectivity is a necessity in today's world. Despite its importance, however, internet connectivity and access to its advantages, like so many other essential goods and services, are not evenly distributed within our society. The "digital divide" is a phrase often invoked to describe the inequity between those who easily have access to internet connectivity and its requisite hardware, specifically computers. However, technology usage has evolved in recent decades, becoming more complex and nuanced and including things like smartphones, tablets, and multiple modes of internet connectivity.

To keep up with this complexity, telehealth nomenclature must transcend a simple binary divide to more adequately describe a person or population's access to hardware, internet, and viable connection speeds, and to the skills they need to effectively access their needs. In contrast to the "digital divide," "digital equity" describes a condition in which all individuals and communities have the information technology capacity needed for full participation in all aspects of society. "Digital inclusion," a closely related term, refers to efforts to remedy deficits in digital equity.

Achieving telehealth equity, like all other work in equity and inclusion, is complex and requires attention to the nuances of how impoverished and historically marginalized populations engage with technology. This may include, for example, flexible engagement practices (e.g., switching to voice-only visits if necessary) or employing kiosks in partnership with local shelters or community health centers to overcome transportation barriers.

In one study, for example, 89% of patients experiencing homelessness surveyed had a cell phone and nearly two thirds of them were interested in reminders to refill medications, take medications, or attend appointments. Other studies have found that cell phone communication, including text messaging, and pillbox apps and automated calls, improved medication adherence and appointment attendance in homeless patients, including those who suffered from co-occurring substance use and psychiatric disorders. Not only are these technologies useful for the patients using them, but they can be leveraged to more accurately judge if patients' treatment plans are successful without having to rely on subjective or stereotypical assessments of their "reliability" or "honesty," which are often simply problematic reflections of our own biases and misconceptions that may contribute to medical errors and suboptimal treatment plans.

Despite the enormous promise and potential for telehealth to improve patients' health and wellbeing, it is important to recognize that it is not a panacea for longstanding societal or healthcare inequities. Nevertheless, the rapid uptake of telehealth presents a critical opportunity to overcome historical barriers to healthcare, to take seriously the experiences of our most vulnerable patients, and to achieve not just digital equity, but health equity.

VOICES FROM THE FIELD

Providing Post Emergency Care (ProPEr Care) Virtually

By: Taruna Auroa, MD and Pawan Suri, MD | Virginia Commonwealth University Health System

A significant number of patients who are discharged from an Emergency Department are unable to obtain a timely follow-up because they either do not have a Primary Care Provider (PCP) or their PCP does not have available appointments. Providing access to primary care after an Emergency Department (ED) visit can reduce hospital admissions, improve chronic disease management and reduce repeat (ED) visits[1-3]. Within the first six months of the COVID-19 pandemic, there was a nationwide surge in the adoption of telemedicine to provide clinical care. This trend was supported by favorable legislative changes that removed previously existing restrictive barriers like mandating specific telehealth formats, provider licensing and reimbursement requirements. At Virginia Commonwealth University Health System, we took this opportunity to implement a pilot program for providing rapid ED based follow-up in a virtual clinic with the goal of improving patient outcomes. This clinic was called the ProPER Care Clinic. Emergency Physicians could refer patients to the ProPER Care clinic who needed expedited follow up of their acute conditions, common examples being uncontrolled diabetes or hypertension, skin and soft tissue infections, hemodynamically stable pulmonary embolism, undifferentiated chest pain, concerning incidental findings that needed a specialty referral and abnormal labs that may need to be rechecked . The clinic physicians were able to utilize existing hospital resources like care coordination and outreach workers to help indigent patients obtain medical insurance and establish long-term primary care. The clinic pilot was wildly successful and became permanent after six months. As of the time of writing of this monograph, we have seen 3,500 patients in the ProPER care clinic.

The clinic is run through the Emergency Department and staffed by both Emergency Medicine and dual trained Emergency Medicine and Internal Medicine physicians. The clinic hours are from 9am-5pm on Tuesdays and Fridays. At the time of discharge, the ED physician, at their discretion, can schedule a patient for a ProPER care clinic visit within the next 3-14 days. The desk clerk in the ED has access to the ProPER care schedule and the patient is given the date and time of their appointment prior to leaving the Emergency Department. The ED team is encouraged to ensure that the patient's contact phone number is up to date in the system. The virtual follow-up visit is done either over Epic Video Chat or phone call only option depending on patient resources and availability.

In 2021, we published an abstract at ACEP based on 916 patient follow ups in the ProPER care clinic. The majority of patients felt they were seen quickly (88%) and felt that the virtual visit was more convenient than an in-person visit (94%). The majority (72%) felt that ProPER care prevented them from coming back to the ED for the same reason. The ProPER care clinic was able to arrange referrals for all of the patients who needed specialty care (100%) and provide

electronic prescriptions for all of the patients who needed refills for their long-term medications (100%).

The ProPER care clinic has been exceptionally well received by ED physicians who welcome the ability to provide a safe discharge and reduced stress levels that come from knowing the patient will be evaluated in a timely manner. We are in the process of gathering data to evaluate cost benefits of a ProPER care clinic and its impact on hospital readmissions.

References:

1. Carmel AS, Steel P, Tanouye R, et al. Rapid Primary Care Follow-up from the ED to Reduce Avoidable Hospital Admissions. *West J Emerg Med*. 2017;18(5):870-877. doi:10.5811/westjem.2017.5.33593

2. Elliott K, Klein WJ, Basu A, et al. Transitional care clinics for follow-up and primary care linkage for patients discharged from the ED. *Am J Emerg Med.* 2016;34(7):1230–5

3. Misky GJ, Wald HL, Coleman EA. Post-hospitalization transitions: Examining the effects of timing of primary care provider follow-up. J Hosp Med. 2010 Sep;5(7):392-7. doi: 10.1002/jhm.666. PMID: 20578046.

Tele-emergency medicine utilization of Project ECHO platform

By Project ECHO

Public health emergency response requires an informed workforce supported by ongoing training and robust infrastructure. Patients depend on the knowledge of local health care workers during a public health emergency, but as we have learned through the COVID-19 pandemic and recent conflicts, in Ukraine and elsewhere, these emergencies can sometimes overwhelm health workers and systems and they need the best, most up-to-date information pertinent to the emergency, in order to respond effectively.

In the last 20 years, Project ECHO has emerged as a leader for sustainable and profound change in health care using the ECHO Model. The Model uses videoconferencing technology and enabling software to connect providers in underserved communities with teams of specialists and experts at regional, national, and global expert institutions for long-term tele-mentoring, collaboration and case-based learning across disciplines on urgent topics and conditions.

Prior to 2020, the ECHO model was used to address outbreaks of H1N1, Rocky Mountain Spotted Fever and hantavirus in the U.S., Zika in Puerto Rico and the Pacific Island Territories, and Ebola, Rift Valley Fever and cholera in Africa. When COVID-19 struck, the ECHO Network was ready to respond to the new challenge.

Project ECHO's successful response to the COVID-19 pandemic demonstrates the usefulness of the ECHO model as an essential tool for emergency preparedness and response, allowing experts to distribute knowledge where people live through digital learning and mentorship. Also, recent uses of the ECHO Model in conflict zones have shown how critical the use of ECHO's tele-mentoring can be to rapidly disseminate best practices in the areas of greatest need. Below, we briefly highlight three of the efforts ECHO supported in recent years to respond to emergencies:

Project ECHO Clinical Rounds: Patient Care, Clinical Operations, and Workforce Training

As the COVID-19 pandemic hit the United States, Project ECHO, in partnership with U.S. Department of Health & Human Services Administration for Strategic Preparedness & Response and over two dozen leading organizations, rapidly created a nationwide network connecting the leading experts in COVID-19 and emergency response clinicians across the United States for a real-time, virtual, peer-to-peer tele-mentoring initiative called Clinical Rounds. The program delivered 125 learning sessions to participants from all 50 states and more than 100 countries between March 2020 and February 2021. Due to its success, Clinical Rounds expanded beyond the pandemic to address patient care, clinical operations, and workforce training for emergency preparedness and response. Project ECHO continues to offer these sessions every other Tuesday from 1:00–2:00 PM Eastern Time. Registration and past session materials are available on our website.

WHO AFRO - Africa CDC - Project ECHO Emergency Preparedness and Response Initiative

The COVID-19 pandemic struck the world hard and fast, laying bare the critical importance of emergency preparedness. In Africa, countries have taken that lesson to heart, recognizing that emergency preparedness requires an ongoing, systematic yet flexible approach to training health workers for future public health emergencies. Prior to the pandemic, several African governments launched digital workforce training networks to address priorities such as HIV and Tuberculosis using the Project ECHO tele-mentoring model. When the pandemic hit, these governments pivoted their existing ECHO networks to support the COVID-19 response and numerous additional national and regional COVID-19 response tele-mentoring networks were created.

Now that the pandemic is subsiding, African countries are pivoting again so that they are prepared for future emergencies. WHO AFRO partnered with Project ECHO, as a part of their digital learning initiative with Africa CDC, to connect, train and mentor public health emergency responders and other health workers across all of the member states so that they are ready for future pandemics and other emergencies. Local disease experts and frontline health workers share invaluable lessons in real time, creating communities of practice using the ECHO model as guidance. By the end of this year (2023), ECHO-supported emergency preparedness and response digital learning platforms will be established in 47 African countries for rapid responder training and mentorship. Since ECHO joined this initiative, nearly 14,000 health workers have joined from across the continent.

Emergency Care in Conflict Settings: Ukraine

Caring for trauma patients in areas of armed conflict is challenging, and health care systems run the risk of becoming overwhelmed trying to care for an influx of patients. Project ECHO co-developed and deployed the Armed Conflict Trauma Training (ACTT) program together with the Swiss Foundation and Ukraine Ministry of Health in May 2022. The program was designed as a 8-week tactical online trauma course with 16 hours of content following the WHO Basic Emergency Care, and also includes conflict-related mental health content. Attendees provided positive feedback, with 89% saying they would definitely or probably recommend the session to colleagues.

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!******

Mohr, N. M., et al. (2023). "Outcomes Associated With Rural Emergency Department Provider-to-Provider Telehealth for Sepsis Care: A Multicenter Cohort Study." Ann Emerg Med 81(1): 1-13.

STUDY OBJECTIVE: To test the hypothesis that provider-to-provider tele-emergency department care is associated with more 28-day hospital-free days and improved Surviving Sepsis Campaign (SSC) guideline adherence in rural emergency departments (EDs). METHODS: Multicenter (n=23), propensity-matched, cohort study using medical records of patients with sepsis from rural hospitals in an established, on-demand, rural video tele-ED network in the upper Midwest between August 2016 and June 2019. The primary outcome was 28-day hospital-free days, with secondary outcomes of 28-day inhospital mortality and SSC guideline adherence. RESULTS: A total of 1,191 patients were included in the analysis, with tele-ED used for 326 (27%). Tele-ED cases were more likely to be transferred to another hospital (88% versus 8%, difference 79%, 95% confidence interval [CI] 75% to 83%). After matching and regression adjustment, tele-ED cases did not have more 28-day hospital-free days (difference 0.07 days more for tele-ED, 95% CI -0.04 to 0.17) or 28-day inhospital mortality (adjusted odds ratio [aOR] 0.51, 95% CI 0.16 to 1.60). Adherence with both the SSC 3-hour bundle (aOR 0.59, 95% CI 0.28 to 1.22) and complete bundle (aOR 0.45, 95% CI 0.02 to 11.60) were similar. An a priori-defined subgroup of patients treated by advanced practice providers suggested that the mortality was lower in the cohort with tele-ED use (aOR 0.11, 95% CI 0.02 to 0.73) despite no significant difference in complete SSC bundle adherence (aOR 2.88, 95% CI 0.52 to 15.86). CONCLUSION: Rural emergency department patients treated with provider-to-provider tele-ED care in a mature network appear to have similar clinical outcomes to those treated without.

Bouzid, Z., et al. (2023). "Incorporation of Serial 12-Lead Electrocardiogram With Machine Learning to Augment the Out-of-Hospital Diagnosis of Non-ST Elevation Acute Coronary Syndrome." Ann Emerg Med 81(1): 57-69.

STUDY OBJECTIVE: Ischemic electrocardiogram (ECG) changes are subtle and transient in patients with suspected non-ST-segment elevation (NSTE)-acute coronary syndrome. However, the out-of-hospital ECG is not routinely used during subsequent evaluation at the emergency department. Therefore, we sought to compare the diagnostic performance of out-of-hospital and ED ECG and evaluate the incremental gain of artificial intelligence-augmented ECG analysis. METHODS: This prospective observational cohort study recruited patients with out-of-hospital chest pain. We retrieved

out-of-hospital-ECG obtained by paramedics in the field and the first ED ECG obtained by nurses during inhospital evaluation. Two independent and blinded reviewers interpreted ECG dyads in mixed order per practice recommendations. Using 179 morphological ECG features, we trained, cross-validated, and tested a random forest classifier to augment non ST-elevation acute coronary syndrome (NSTE-ACS) diagnosis. RESULTS: Our sample included 2,122 patients (age 59 [16]; 53% women; 44% Black, 13.5% confirmed acute coronary syndrome). The rate of diagnostic ST elevation and ST depression were 5.9% and 16.2% on out-of-hospital-ECG and 6.1% and 12.4% on ED ECG, with approximately 40% of changes seen on out-of-hospital-ECG persisting and approximately 60% resolving. Using expert interpretation of out-of-hospital-ECG alone gave poor baseline performance with area under the receiver operating characteristic (AUC), sensitivity, and negative predictive values of 0.69, 0.50, and 0.92. Using expert interpretation of serial ECG changes enhanced this performance (AUC 0.80, sensitivity 0.61, and specificity 0.93). Interestingly, augmenting the out-of-hospital-ECG alone with artificial intelligence algorithms boosted its performance (AUC 0.83, sensitivity 0.75, and specificity 0.95), yielding a net reclassification improvement of 29.5% against expert ECG interpretation. CONCLUSION: In this study, 60% of diagnostic ST changes resolved prior to hospital arrival, making the ED ECG suboptimal for the inhospital evaluation of NSTE-ACS. Using serial ECG changes or incorporating artificial intelligence-augmented analyses would allow correctly reclassifying one in 4 patients with suspected NSTE-ACS.

Evans, C. S., et al. (2023). "A Natural Language Processing and Machine Learning Approach to Identification of Incidental Radiology Findings in Trauma Patients Discharged from the Emergency Department." Ann Emerg Med 81(3): 262-269.

STUDY OBJECTIVE: Patients undergoing diagnostic imaging studies in the emergency department (ED) commonly have incidental findings, which may represent unrecognized serious medical conditions, including cancer. Recognition of incidental findings frequently relies on manual review of textual radiology reports and can be overlooked in a busy clinical environment. Our study aimed to develop and validate a supervised machine learning model using natural language processing to automate the recognition of incidental findings in radiology reports of patients discharged from the ED. METHODS: We performed a retrospective analysis of computed tomography (CT) reports from trauma patients discharged home across an integrated health system in 2019. Two independent annotators manually labeled CT reports for the presence of an incidental finding as a reference standard. We used regular expressions to derive and validate a random forest model using open-source and machine learning software. Final model performance was assessed across different ED types. RESULTS: The study CT reports were divided into derivation (690 reports) and validation (282 reports) sets, with a prevalence of incidental findings of 22.3%, and 22.7%, respectively. The random forest model had an area under the curve of 0.88 (95% confidence interval [CI], 0.84 to 0.92) on the derivation set and 0.92 (95% CI, 0.88 to 0.96) on the validation set. The final model

was found to have a sensitivity of 92.2%, a specificity of 79.4%, and a negative predictive value of 97.2%. Similarly, strong model performance was found when stratified to a dedicated trauma center, high-volume, and low-volume community EDs. CONCLUSION: Machine learning and natural language processing can classify incidental findings in CT reports of ED patients with high sensitivity and high negative predictive value across a broad range of ED settings. These findings suggest the utility of natural language processing in automating the review of free-text reports to identify incidental findings and may facilitate interventions to improve timely follow-up.

Kilduff, C. L., et al. (2020). "Creating the Moorfields' virtual eye casualty: video consultations to provide emergency teleophthalmology care during and beyond the COVID-19 pandemic." BMJ Health Care Inform 27(3).

BACKGROUND: The COVID-19 crisis forced hospitals in the UK dramatically to reduce outpatient activity. To provide continuity of care and to assist patients reluctant or unable to leave their homes, video consultations were rapidly implemented across routine and emergency ophthalmology services. OBJECTIVE: To describe the deployment and scaling to a large volume of teleophthalmology using a video consultation platform 'Attend Anywhere' in Moorfields Eye Hospital's accident and emergency (A&E) department (London, UK). METHOD: Patient satisfaction, waiting time, consultation duration, outcome and management were audited following the launch of the new virtual A&E service. RESULTS: In the 12 days following the service launch, 331 patients were seen by video consultation. 78.6% of patients (n=260) were determined not to need hospital A&E review and were managed with advice (n=126), remote prescription (n=57), general practitioner referral (n=27), direct referral to hospital subspecialty services (n=26) or diversion to a local eye unit (n=24). Mean patient satisfaction was 4.9 of 5.0 (n=62). The mean consultation duration was 12 min (range 5-31 min) and the wait time was 6 min (range 0-37 min). CONCLUSION: Video consultations showed greater than expected usefulness in the remote management of eye disease and supported a substantial reduction in the number of people visiting the hospital.