Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

our large tertiary academic hospital to consistently staff our emergency department observation unit with on-site providers. Telemedicine has been utilized and studied as a solution to this shortage in part because it enhances access to a larger staffing pool and allows for increased flexibility without geographic constraints. While telemedicine is well vetted across the continuum of health care, there is a paucity of data regarding the use of telemedicine in the observation medicine setting. This study aimed to primarily evaluate the safety and quality of care and secondarily the satisfaction of staff and patients when using a virtual provider in an emergency department observation unit.

Design/Methods: This prospective observational quality improvement study occurred over a three month period where a virtual provider was piloted in an emergency department observation unit on dedicated night shifts at a tertiary care, academic hospital. Utilizing structured survey instruments and post shift interviews, nursing and provider perceptions of care were assessed across multiple domains of both health care quality, safety, and workflow efficiency. Secondary objectives evaluated include: patient and staff satisfaction, overall observation unit census and number of patients upgraded to a higher level of care. Patient satisfaction was assessed through surveys with questions based on Emergency Department Consumer Assessment of Healthcare Providers and Systems (ED-CAHPS) questionnaires. These were compared to the unit's ED- CAHPS results in the three month time frame prior to the pilot.

Results/Findings: 89% of nurses rated the virtual provider as equal, or better than an in-person provider when addressing clinical concerns. 96% of nurses similarly reported that the virtual provider was more or equally accessible. Moreover, 89% highlighted that the telemedicine workflow resulted in minimal or no increase to their work burden. Of the 16 virtual providers, 14 reported that they were *"extremely"* or *"very"* able to deliver appropriate care and engage with patients; the other 2 providers reported they were "*somewhat able*." 97% of patients reported satisfaction regarding their telemedicine experience. 3% of patients reported a neutral experience and none endorsed being dissatisfied. For ED-CAHP scores in the following categories: "*treated with courtesy and respect*," "*listened carefully*," "*explained in a way you understand,*" virtual providers scored "always," the highest mark possible, greater than 93% of the time. Comparatively, in-person providers scored, "*always*", 63-73% of the time in the above categories during the three month period prior to this pilot. There was only one patient upgraded to a higher level of care, which compared favorably to baseline.

Conclusions: After implementation of a virtual provider in an emergency department observation unit, clinical staff and patients perceived virtual care to be either similar or improved as compared to an in-person provider. A virtual provider may be an efficient and safe staffing solution in an emergency department observation unit. This may be particularly relevant in the context of an ongoing nationwide staffing crisis.

No, authors do not have interests to disclose

24 Emergency Department Virtual Telehealth Rounding – A Strategy for a Pandemic and Beyond

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Objective: Telehealth in the ED seems counterintuitive. However, COVID-19 surges have led to crowding and increases in patients leaving without being seen (LWBS). This study evaluated the impact of a novel virtual telehealth initiative (virtual telehealth rounding or VTR) in the ED on the prevalence of LWBS dispositions during the pandemic and its effect on mortality and patient safety.

Methods: We conducted a cross sectional study on adult patients presenting to a level 1 trauma and tertiary referral center who were triaged to the waiting room. The trial of VTR took place for 107 days in December 2021-April 2022 and was operational for 65 days (8-hours a day). The remaining 42 days without VTR served as a comparison group. During VTR patients were triaged per usual care on arrival to the ED. Those patients with triage acuity categories II to V who were triaged to the waiting room were then evaluated virtually by a remote clinician (advanced practice providers such as physician assistants, advanced nurse practitioners, and third year emergency medicine residents) after their initial screening examination using a secure virtual health platform in a private cubicle in the ED waiting room. Patients were then reevaluated at 1-2 hour intervals if necessary. ED paramedics were available onsite to take vital signs, transport patients, and communicate directly with the onsite nurses and ED physicians. Patients were evaluated virtually via an iPad by the virtual clinician and provided an initial assessment. They expedited care by ordering labs, radiography, changing the patient's triage category and determining early disposition according to usual clinical practice. Patients were then either left to wait in the waiting room, taken for radiography and/or blood work, or taken back to a room in the ED where they were seen by an onsite ED physician. The main outcome was the LWBS rate, including LWBS before and after triage, patients leaving against medical advice and elopements. Secondary patient outcomes included in-hospital mortality and improved patient safety via "great saves" defined as care that was urgently/emergently escalated by the virtual rounding provider.

Results: There were 19,958 patients in the analysis, 6,953 (35%) were evaluated via VTR and 13,006 (65%) received standard of care. Mean patient age was 50 years (SD20), 48 (95% CI 48-49) in the VTR group and 50 (95% CI 50-51) in the standard group. Females were 49%, with 3,489 (50%) females in the VTR group and 6,204 (48%) in the standard care group. Overall acuity levels at triage were II 24%, III 54%, IV 22%, and V 1%. Mean triage levels were 2.95 (95% CI 2.94-2.97) in the VTR group and 3.07 (95% CI 3.06 – 3.09) in the standard group. The proportion of LWBS was 565 (8%) in the VTR group and 3,246 (25%) in the standard care group ($p<0.001$). Overall, 27 (0.1%) of patients did not survive to hospital discharge, 7 (0.1%) in the VTR group and 20 (0.2%) in the standard care group ($p=0.421$). VTR clinician documented "great saves" in 5% of their patient encounters.

Conclusion: This novel approach to triage in the ED significantly reduced the proportion of patients with LWBS dispositions by 17%. Although in-hospital mortality was lower in the VTR group it was not statistically significant. Furthermore, VTR clinicians documented rapid escalations in care that may have otherwise been delayed or missed. This approach has the potential to improve patient care and provide relief from crowding.

No, authors do not have interests to disclose

25 Derivation and Validation of a Clinical Decision Rule to Risk Stratify Emergency Department Patients Diagnosed With Seasonal Influenza

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Study Objectives: Seasonal influenza is diagnosed in over 1 million United States emergency department (ED) visits yearly and leads to over 12,000 annual US deaths. Evidence to aid emergency medicine providers in risk-stratifying patients diagnosed with influenza in the ED is limited.

Methods: We completed a single-center retrospective cohort study evaluating all patients with a positive influenza test collected in the ED of a large tertiary care center that evaluates more than 88,000 patients annually. We analyzed clinical factors easily measured in the ED including demographics, vital signs, chest x-ray findings, and basic laboratory test results. We then developed a clinical decision rule to predict intubation or death in a derivation cohort comprised of patients diagnosed with influenza between 2007 and 2018 using those clinical factors with the most robust associations with the composite outcome of intubation or death. The rule was then validated in a second independently collected and analyzed retrospective cohort of influenza-positive patients evaluated in the same ED from 2018 to 2020.

Results: We analyzed patient-level data from 2,196 subjects in the derivation cohort and from 933 subjects in the validation cohort. Seventy (3.2%) and twenty-one (2.3%) patients were intubated or died in the derivation and validation cohorts, respectively. The combined cohorts were 56.7% female, 72.8% black, and 21.9% white. We found that a clinical decision rule assigning increasing risk to patients with 1) age $\geq$ 50, those with 2) two or more CDC-defined medical conditions associated with increased risk for influenza, those with 3) an SpO2 $<$ 96% on room air or requiring oxygen at triage, those with 4) a respiratory rate $\geq$ 22, those with 5) multifocal opacities or 6) a pleural effusion on chest x-ray, those with 7) a blood glucose concentration $\geq$ 130 mg/dL, those with 8) a blood urea nitrogen concentration $\geq$18 mg/dL, those with 9) a blood lactate concentration $\geq$ 1.7 mmol/L, and those with 10) a red cell distribution width $\geq$ 15% could successfully predict the need for intubation or death. This 10-component clinical decision rule exhibited an area under the curve (AUC) of 0.897 and 0.809 in the derivation and validation cohorts, respectively. The decision rule demonstrated high sensitivity for severe disease and substantially better performance than CURB-65 in the same cohorts. Removing the laboratory testing and chest x-ray components of the rule (factors 5-10) did not markedly affect performance, and the AUCs decreased to 0.841 and 0.795 in the derivation and validation cohorts.

Conclusions: This clinical decision rule shows promise in the risk stratification of patients diagnosed with seasonal influenza in the ED. It can assist emergency physicians in determining which patients with a positive influenza test during ED evaluation are at risk for progression to severe disease and therefore should be considered for inpatient admission. It performs better than existing clinical decision