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# OPERATIONALIZING A PANDEMIC-READY, TELEMEDICINE-ENABLED DRIVE-THROUGH AND WALK-IN CORONAVIRUS DISEASE GARAGE CARE SYSTEM AS AN ALTERNATIVE CARE AREA: A NOVEL APPROACH IN PANDEMIC MANAGEMENT

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## Contribution to Emergency Nursing Practice

- The deployment and evaluation of a telemedicine-enabled drive-through and walk-in garage care system demonstrated improved throughput of patients classified as lower acuity with influenza-like symptoms who self-presented to the emergency department during the coronavirus disease pandemic.
- This quality improvement initiative describes telemedicine opportunities to reduce onsite staff and thereby increase physical distancing and reduce staff personal protective equipment use during the pandemic.

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J Emerg Nurs 2021;47:721–732.

Available online 3 June 2021  
0099-1767

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<https://doi.org/10.1016/j.jen.2021.05.010>

## Abstract

**Objective:** Emergency departments face unforeseen surges in patients classified as low acuity during pandemics such as the coronavirus disease pandemic. Streamlining patient flow using telemedicine in an alternative care area can reduce crowding and promote physical distancing between patients and clinicians, thus limiting personal protective equipment use. This quality improvement project describes critical elements and processes in the operationalization of a telemedicine-enabled drive-through and walk-in garage care system to improve ED throughput and conserve personal protective equipment during 3 coronavirus disease surges in 2020.

**Methods:** Standardized workflows were established for the operationalization of the telemedicine-enabled drive-through and walk-in garage care system for patients presenting with respiratory illness as quality improvement during disaster. Statistical control charts present interrupted time series data on the ED length of stay and personal protective equipment use in the week before and after deployment in March, July, and November 2020.

**Results:** Physical space, technology infrastructure, equipment, and staff workflows were critical to the operationalization of the telemedicine-enabled drive-through and walk-in garage care system. On average, the ED length of stay decreased 17%, from 4.24 hours during the week before opening to 3.54 hours during the telemedicine-enabled drive-through and walk-in garage care system operation. There was an estimated 25% to 41% reduction in personal protective equipment use during this time.

**Conclusion:** Lessons learned from this telemedicine-enabled alternative care area implementation can be used for disaster preparedness and management in the ED setting to reduce

crowding, improve throughput, and conserve personal protective equipment during a pandemic.

**Key words:** Pandemic; Coronavirus disease; Disaster management; Telemedicine; Alternative care area; Emergency department

## Introduction

Pandemics and other disasters create sudden and unique challenges for emergency departments. The rapid patient-volume surges that accompany pandemics can quickly tax already crowded, resource-limited emergency departments. Crowding is known to have a negative impact on patient outcomes, including increased mortality.<sup>1,2</sup> This issue becomes more pressing when contagious infectious diseases necessitate the use of personal protective equipment (PPE) by health care workers.<sup>3</sup> Supply shortages increase the risk of exposure for both health care workers and other patients.<sup>4,5</sup> Together, potential crowding and PPE shortages necessitate novel approaches to managing ED throughput during pandemics.

The coronavirus disease (COVID-19) pandemic provided an impetus for innovation in emergency departments because previous disaster preparedness protocols may be insufficient in managing the influx of patients classified as low acuity with influenza-like illness (ILI).<sup>6,7</sup> Studies report that although ED visits decreased in the early months of the pandemic, as the rates of new COVID-19 cases increased locally, so did ED admission rates.<sup>8</sup> Multiple case studies have described new operational processes for triage, patient placement, diagnostics, and treatment in response to the pandemic.<sup>3,9,10</sup> Yet, few have proposed optimizing patient flow using telemedicine to enable physical distancing and thus reduce PPE use while interacting with patients.<sup>11,12</sup>

This paper describes a quality improvement evaluation of a novel patient flow process that uses a telemedicine-enabled alternative care area with drive-through triage to assess and test patients during the COVID-19 pandemic. The lessons learned from the implementation of the pandemic-ready, telemedicine-enabled drive-through and walk-in garage care system (Tele-Garage) can provide clinical and operational surge capacity guidance to other emergency departments in preparation for future pandemics.

## Problem Description

The emergency department is located in the Western United States in a county that reported the first recorded COVID-19 death.<sup>13</sup> The emergency department was among the first in the US to experience census increases with worried patients experiencing ILI after potential exposures to positive COVID-19 cases. These patients could

subsequently possibly expose staff to the virus. The hospital and ED leadership realized that an alternative care area was necessary to care for the rapidly increasing census of patients classified as low acuity who had been potentially exposed to create capacity for a possible surge of ED patients who were critically ill.

## Available Knowledge

At the time of the implementation, a literature review for ED surge and capacity response included in our previously published garage simulation for the hemagglutinin type 1 and neuraminidase type 1 virus, also known as H1N1, in 2009 described the use of a drive-through triage and care system.<sup>14,15</sup> Although there have been descriptions of various triage and patient placement strategies in the emergency department,<sup>3,16,17</sup> few focused on the use of telemedicine. More recently, 1 academic medical center used iPads (Apple Inc) to reduce exposure and conserve PPE,<sup>18</sup> whereas another has used telemedicine carts in the ED–COVID-19 isolation rooms.<sup>11</sup> None have described the use of an alternative care area to streamline ED throughput using telemedicine.

## Rationale

The fundamental premise of the proposed ED redesign hinges on an efficient patient flow using a drive- or walk-through system in an alternative care area that is enhanced with telemedicine (ie, the ED parking garage). Telemedicine refers to the provision of remote clinical services through real-time 2-way electronic communication between the patient and the health care provider.<sup>19</sup> The combination of drive-through patient flow and remote telemedicine-based assessment allows for increased physical distancing among the patients under investigation (PUI) for COVID-19, streamlining throughput and reducing overall ED length of stay (ED-LOS). The use of telemedicine also reduces the need for PPE for remote providers.

## Specific Aim

The goal was to evaluate the implementation of the Tele-Garage on ED-LOS and the use of PPE during the multiple surges of the COVID-19 pandemic in 2020.

## Methods

The design and implementation of the Tele-Garage was based on previous iterations of a drive-through triage and care system as a disaster response quality improvement project.<sup>14</sup> The addition of the telemedicine component required changes to the infrastructure and patient flow. The throughput process was designed to screen, evaluate, and test ED patients classified as low acuity and was scaled for high-volume minimal contact and PPE conservation.

### CONTEXT

Quickly operationalizing the Tele-Garage from inception to active deployment required collaboration among multiple departments, including emergency nurse and physician leaders, information technology (IT), parking and transportation service, clinical engineering, and the office of emergency management. The Tele-Garage was operationalized within 12 hours with walk-in and drive-through routes, IT infrastructure, staff, standard work, and telemedicine. The state department of public health authorized the use of the parking garage as an alternative treatment area.

### INTERVENTION

Table 1 shows the logic model of the Tele-Garage. Walk-in and drive-in patients were screened by a registered nurse (RN) to determine if they were low acuity with ILI. Eligible patients were remotely registered, and secure text messaging was used to exchange clinical information. The patients were assessed and swabbed for a COVID-19 test by physician protocol. Subsequently, they participated in a telemedicine visit with the provider and were then discharged. This process required critical elements of infrastructure and optimized patient flow, described in the Results section.

PPE was conserved through multiple mechanisms. First, instead of the requirement to don and doff PPE between encounters when in a room, RNs wore the same gown, N95 mask, and hair protection when the patient was in the vehicle—unless the patient was coughing—removing them only during breaks. Gloves were changed between patient visits with the use of a portable handwashing sink or gel. The registration clerk and the medical provider were located remotely and did not require a change in PPE between patient visits.

### STUDY OF THE INTERVENTION

We evaluated the effectiveness of the Tele-Garage to increase ED throughput for patients classified as low acuity

and reduce PPE use using continuous quality improvement methods. Operationalization challenges were tracked and resolved using Plan-Do-Study-Act methods.<sup>20</sup> A quality analyst extracted data metrics for the time period during which the Tele-Garage was in use.

### MEASURES

Data were derived from the electronic health record database. Consistent with other studies,<sup>21</sup> the daily average ED-LOS was measured in hours from the time of initial presentation to the time of departure from the emergency department for all patients presenting during a 24-hour period starting at midnight. The percentage of patients with ED visits lasting less than 1 hour on the basis of the ED-LOS was calculated. The 1-hour interval was chosen because it was hypothesized to be an average time for a patient to go through the Tele-Garage. PPE use was estimated on the basis of the number of PPE sets (gloves, fluid-repellent long-sleeved gown, eye protection, and N95 mask)<sup>5</sup> expected to be used per patient classified as low acuity before and during the Tele-Garage implementation.

### ANALYSIS

Statistical process control plots were used to visualize the interrupted time series before and when the Tele-Garage was deployed. Statistical process control plots are a quality improvement tool that graph how a process changes over time when an intervention is introduced.<sup>22</sup> The X-MR chart was used to display individual measurements (X) and the moving range (MR) of ED-LOS and PPE use. The p-chart that tracked the proportion of patients with ED visits lasting less than 1 hour has properties similar to those of the X-MR chart. We expected the average proportion of patients with ED visits lasting more than 1 hour to increase with each Tele-Garage opening.

### ETHICAL CONSIDERATIONS

The project was reviewed by the facility's privacy and compliance office and was deemed quality improvement not requiring institutional review board evaluation.

## Results

### STRUCTURE

#### *Infrastructure*

To transform the ED parking garage into an operational telemedicine-enabled alternative care area, IT engineers

TABLE 1

**Logic model for the pandemic-ready, telemedicine-enabled drive-through and walk-in COVID-19 garage care system**

<b>Inputs</b>	<b>Activities</b>	<b>Outputs</b>	<b>Outcomes</b>	<b>Impact</b>
Interdisciplinary ED leadership support (nursing, physicians, transportation, IT, and engineering) Physical space in a parking garage next to the emergency department that allows vehicles to pull through to avoid reversing IT infrastructure (wireless network) Equipment (portable computers, printers, workstations on wheels, telemedicine station, and electricity generator) Clear signage Personnel: Screener RNs (1 FTE) Triage RNs (2 FTEs) Swabbing RNs (2 FTEs) Registrar (1 FTE) Telemedicine physician (1 FTE) Parking valet (1 FTE)	Set up the garage care area daily per standard workflow Secure messaging text group communication for all on-shift staff Screening patients in vehicles and walk-ins at the front of the emergency department Secure text messaging patient information for registration in the main emergency department Printing patient armband wirelessly on the garage printer and taping it on patient vehicle Nursing triage and vitals taking of the patient in vehicle or walk-in COVID-19, influenza, or streptococcal pharyngitis swab per standing physician protocol In-garage telemedicine visit with the provider located in the main emergency department Preprinted standardized discharge instructions (later in MyHealth app)	Number of patients in vehicles or walk-ins who were tested for COVID-19 in the garage care area Diversion rate to the main emergency department Duration of patient's registration Clear identification of patient in vehicle or walk-in Prompt communication between RN and telemedicine provider through comment section in EMR Physically distant interaction with provider through telemedicine while patient is in the vehicle	Reduction in overall ED length of stay Reduction in PPE use in the garage care area Improved patient satisfaction	Streamlined throughput for patients classified as low acuity during a pandemic PPE conservation during an acute disaster

COVID-19, coronavirus disease; IT, information technology; RN, registered nurse; FTE, full-time equivalent; EMR, electronic medical record; PPE, personal protective equipment.

installed the infrastructure for wireless connectivity. The Tele-Garage then supported internet-enabled equipment, including portable clinical and registration computers, a patient-identifying armband printer and a paper printer, wireless workstations on wheels (WOWs), and a telemedicine conferencing system. It was also equipped to support a wireless radiology machine for chest x-rays and a wireless point-of-care system for blood testing. An electricity generator situated outside the Tele-Garage provided power to all the wireless equipment. Processes for daily set-up and breakdown/storage were evaluated before developing a standard worksheet to promote consistency among staff. These processes included turning on the generator, attaching extension cords, and placement of WOWs, swabs, and PPE due to the added procedures for COVID-19 screening.

### *Patient Flow*

A multidisciplinary team developed an intuitive, guided route through the Tele-Garage, shown in [Figure 1](#). The vehicle and pedestrian flow paths started in front of the main emergency department and routed patients to the parking garage. The above-ground, open-air portion of the garage was used to reduce fume inhalation. To assist in garage navigation, clear signage was installed to augment verbal guidance on when to turn off the engine at various points along the route to decrease exhaust exposure to staff. Parking and transportation service valets were assigned to lead vehicles from the entrance of the garage to designated parking spots and guide vehicles entering the clinical area and exiting after discharge. The flow through the garage was modeled after the pull-through systems of gasoline stations in which vehicles drive forward through the parking spot to leave. This design eliminated the need for vehicles to drive in reverse at any point. This minimized the risk of injury, particularly to staff who wheeled the WOWs and telemedicine carts to vehicle windows. This design also enabled patients assessed as inappropriate for the Tele-Garage to easily exit the garage and enter the main emergency department through the standard path of travel.

## PROCESS

### *Screening*

Two RNs were stationed outside the main emergency department to screen patients: one focused on walk-in patients and visitors, and the other screened patients who presented in a vehicle. The screening RNs, experienced emergency triage RNs, shown in [Figure 2](#), used a symptoms question algorithm to direct patients classified as low acuity (Emergency Severity Index<sup>23</sup> 4-5) who had

respiratory complaints and/or required COVID-19 testing swabs to the Tele-Garage. A pulse oximeter and thermometer were available for the screener if needed to determine if the Tele-Garage was appropriate. Patients with Emergency Severity Index 1 to 3 were directed into the main emergency department through an outside path of travel. The RNs also used the infrared thermometer and pulse oximeter to recheck vital signs if the screening and clinical judgment indicated based on patient ill appearance or at-risk medical history.

[Table 2](#) presents the screening questions and inclusion/exclusion criteria. Nonleading questions were used for an initial identification of patients' presentation to the emergency department, such as "What brings you to the emergency department today?" Identification of fever, cough, sore throat, or shortness of breath and without major medical history was used to rule in patients. Patients who presented without any symptoms but were concerned about potential COVID-19 exposure were also included.

### *Registration*

Once a patient was screened as clinically appropriate for treatment in the Tele-Garage, the screener RN sent a secure text message with a picture of the patient's identification and phone number to the registrar located in the main emergency department. Secure messaging was enabled through a Health Insurance Portability and Accountability Act-compliant software platform (Voalte Platform; Hill-Rom Services, Inc)<sup>24</sup> on a hospital-issued smartphone for each clinical team member. Before each nursing shift start (7:30 AM, 11:30 AM, 3:30 PM, and 7:30 PM), a text group was created that included registration staff, Tele-Garage RNs, screener RNs, and the medical provider assigned to the Tele-Garage.

By the time a new patient arrived at the Tele-Garage, an armband was already printed remotely from the main ED registration on the printer in the Tele-Garage. The use of secure text messaging allowed the registration staff to stay within the emergency department, preventing exposure to the PUI and reducing the need to use PPE. Insurance information was obtained from the patient through a telephone call after the telemedical exam by a second registrar in the Tele-Garage with a WOW. This process eliminated the need for direct contact with the PUI and reduced the use of PPE.

### *Assessment/Triage*

Two RNs triaged and assessed patients in the Tele-Garage: one RN covered the 6 vehicle bays, and the other RN



FIGURE 1  
 Details of the Tele-Garage patient flow. RN, registered nurse; Tele-Garage, pandemic-ready, telemedicine-enabled drive-through and walk-in garage care system.

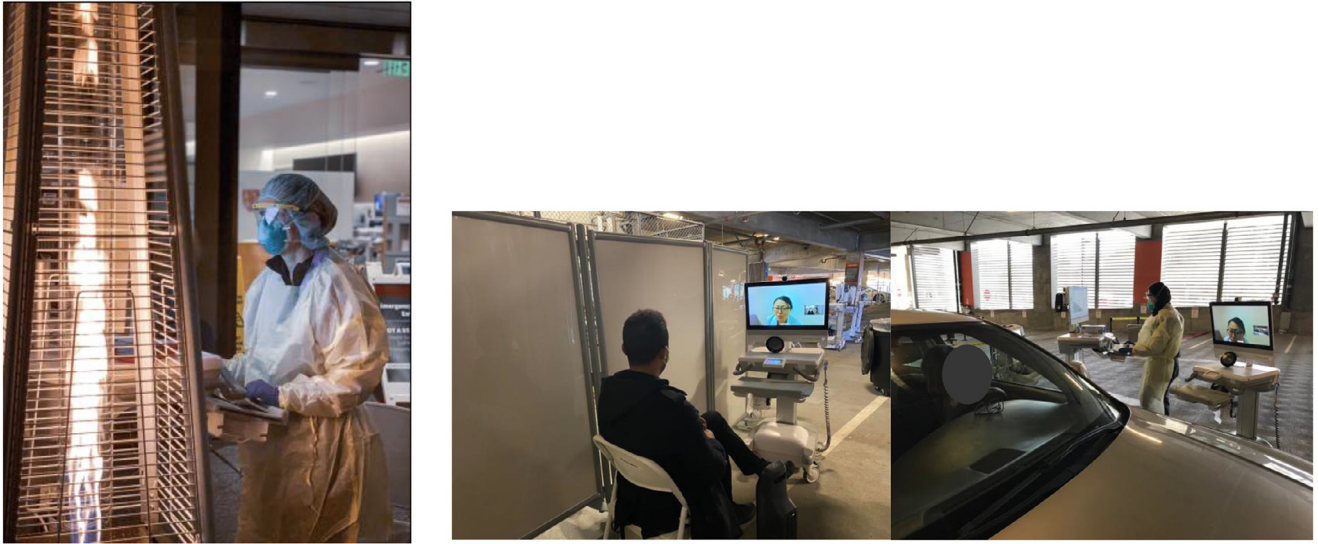


FIGURE 2  
The screening registered nurses, telemedicine visit.

TABLE 2

**Screening and inclusion criteria for telemedicine-enabled pandemic garage care system**

Categories	Parameters
Age, y	$\geq 2$ and $< 65$
Vital signs	Patients aged 2-3 y: HR $< 160$ , RR $< 40$ , SpO <sub>2</sub> $> 92\%$ Patients aged 3-8 y: HR $< 140$ , RR $< 30$ , SpO <sub>2</sub> $> 92\%$ Patients aged $> 8$ y: HR $< 110$ , RR $< 20$ , SpO <sub>2</sub> $> 92\%$
History of presenting illness	Patients with symptoms potentially due to viral etiology but without heart disease, lung disease, diabetes, or immunocompromised status
Previous testing	Not swabbed for any respiratory illness in the past 7 days
Number of resources	No resources needed other than swab testing

HR, heart rate; RR, respiration rate; SpO<sub>2</sub>, oxygen saturation.

covered the 6 walk-in chair care areas. A float RN assisted as needed for volume and meal-break cover. For each patient, an RN retrieved an armband from the printer. Because the secure text message often included the vehicle type, they knew which armband was associated with which vehicle. The RN verified the information with the patient and secured the armband above the car window closest to the patient. Once patient identification was complete, the RN measured the patient's temperature (using an infrared thermometer), oxygen saturation, and pulse and documented the results in the electronic health record.

### Swabbing

To increase throughput, a protocol was developed that allowed the RN to order a COVID-19 swab per protocol, with provider signature to follow. On the basis of patient symptoms, the RN initiated a COVID-19 swab protocol order while the patient waited for the medical provider to appear on the telemedicine display. Influenza tests were also ordered on the same COVID-19 swab until the end of influenza season. Additional orders sometimes also included a rapid streptococcal pharyngitis swab test.



The RN scanned the patient's armband taped to the vehicle's window and acknowledged the order within the electronic medical record, which allowed the patient's order sticker to be printed from the WOW. The order sticker was checked with the patient to confirm patient identification and placed on the outer container of the swab. A bright green COVID-19 sticker was also placed on the lid of every swab container to notify the laboratory to take extra precautions before it was placed in a single bio-hazard bag. A laboratory runner retrieved specimens from the Tele-Garage every 15 minutes.

### *Telemedicine Visit*

A key aspect of the Tele-Garage is the integration of telemedicine to enable remote assessment of prescreened patients. Although telemedicine was already being used in limited ways in the emergency department, it required a nurse colocated in the room with the patient to initiate the software. The platform was modified to be contactless and automatically answer after 2 rings. No physical contact was required by the patient to operate the telemedicine platform.

The telemedicine platform on wheels was positioned near the patient, and the camera was adjusted for full patient view. A speaker was positioned at the average level of a seated car driver. The RN notified the ED provider through a secure text message to initiate the telemedicine visit. The provider used a desktop computer within a consult room of the main emergency department. On conclusion of the visit, the provider communicated with the RN through the electronic medical record to initiate discharge. Occasionally, the ED provider securely texted the RN to notify them that the patient was to be brought to the main emergency department on the basis of additional information learned during the telemedicine assessment.

### *Discharge*

Preprinted, standardized discharge instructions available in multiple languages were given to each patient. These instructions included information about test results, including their availability on the hospital's MyHealth app within 9 to 12 hours. A paper printer located in the Tele-Garage printed additional discharge instructions, if needed (eg, for patients receiving a streptococcal pharyngitis test in addition to the COVID-19 swab or instructions about how to reduce a fever).

### *Follow-up*

An emergency nurse made calls to convey all positive results to patients and reinforced the preprinted discharge instructions regarding quarantine and returning for worsening symptoms. Follow-up calls were made at 7 and 14 days. The same RNs also reported positive results to the public health department for contact tracing purposes. The RNs called all patients with negative results who did not sign up for the hospital's MyHealth app.

## OUTCOMES

### *Throughput*

A total of 5493 patients received care in the Tele-Garage during the 3 times it was open (633 patients from March 12 to 25, 2020; 1204 from July 27 to August 16, 2020; and 4106 from November 23 to December 10, 2020). The average number of patients seen in the Tele-Garage was 112 per day with an average ED-LOS of 55 minutes. The throughput allowed for a 13% increase in the average daily total ED volume of patients during the 2 latter openings. During July and August, the overall ED volume increased by 11 patients from 233 patients to 244 patients per day. During November and December, the average daily ED volume increased by 117 patients per day from 311 to 429 patients per day.

Figure 3A is a chart of ED-LOS in hours per week from before to 2 weeks after opening of the Tele-Garage for each of the 3 time periods. The average ED-LOS decreased 17%, from 4.24 hours during the week before opening to 3.54 hours during the Tele-Garage operation, with a more stable, predictable process with minimal common-cause variation. The highest percentage decrease was noted in March 2020, when the ED-LOS decreased 24%, from approximately 4.99 hours during the week prior to 3.78 hours during the Tele-Garage operation.

The reduced ED-LOS resulted in a higher proportion of the total ED volume with visits lasting less than 1 hour (Figure 3B). Approximately 30% of the patient stays during the Tele-Garage time frames were noted to have ED-LOS lasting < 1 hour, a significant increase from the average 18% noted during the week prior.

### *PPE Use*

Figure 3C is a chart of PPE use. Before the Tele-Garage opening, an estimated 4 PPE sets were used per patient classified as low acuity by the registration clerk, RN for assessment and swabbing, and provider visit. When the Tele-Garage was open, the RN would wear 1 to 2 PPE sets

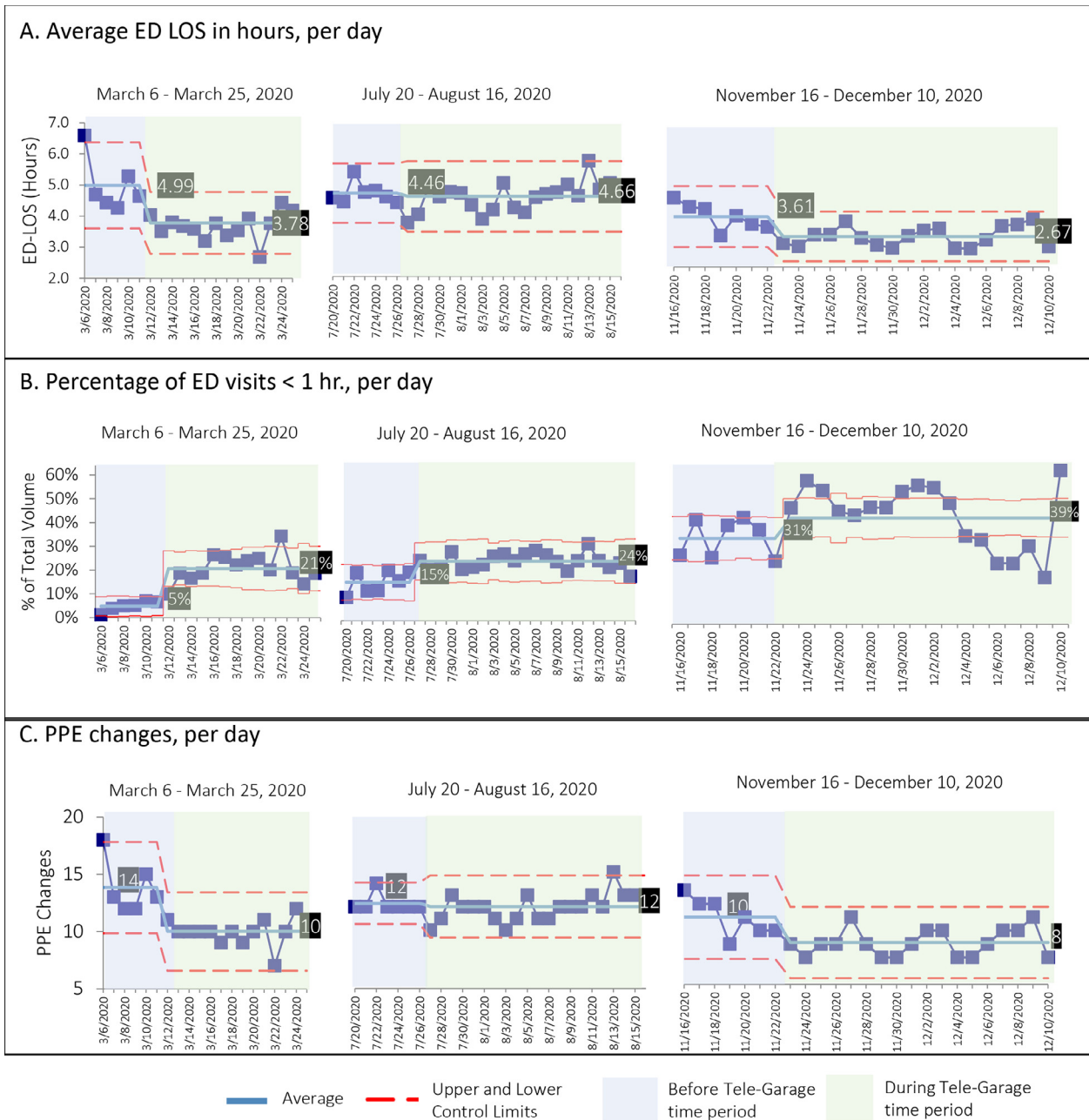


FIGURE 3

Tele-Garage metrics for the 3 operational periods in 2020. ED, emergency department; LOS, length of stay; PPE, personal protective equipment; Tele-Garage, pandemic-ready, telemedicine-enabled drive-through and walk-in garage care system.

for most of the shift as described previously. On the basis of the number of presenting patients classified as low acuity, this change in workflow resulted in an estimated 25% to 41% reduction in PPE use for this cohort.

### Discussion

The Tele-Garage, located in close proximity to the main emergency department, was an essential component in the

optimization of care for patients classified as low acuity with ILI, ED throughput, and staff and patient safety from exposure during the COVID-19 pandemic. It resulted in a reduction in both face-to-face patient interactions and contact time. Physical distancing was maintained, except for the necessary swabbing, which consequently provided an additional level of protection to patients who were concerned about exposure from other patients at an emergency department.

The ED-LOS for patients seen in the Tele-Garage was notably lower compared with usual care in the main emergency department during the week prior. The processes implemented allowed for appropriate resource allocation and maximization of ED rooms for patients classified as higher acuity with ILI and patients with non-ILI chief complaints. In addition, telemedicine eliminated the need for PPE for registrars and providers. Of note, we could not perform a cost-estimate analysis of PPE savings owing to unreliable data from the supply chain.

Telemedicine has been embraced during the COVID-19 pandemic as an alternative care modality to minimize frontline provider exposure and conserve PPE.<sup>25</sup> Few case studies have explored using it in the emergency department to provide physical distancing and reduce interactions with PUI during the COVID-19 pandemic.<sup>11,18</sup> Our project is the first that combined using an alternative care area such as a parking garage to streamline patient flow for high-volume triage in addition to using telemedicine for patient assessment.

Although the Tele-Garage was deemed an overall success, it had to overcome several challenges in the 3 iterations of its deployment. The flow changed with each opening to become even leaner. At first, the screener RN would take a picture of the driver's license or identification card and send it securely to registration. With higher patient volume in December 2020, it became more efficient to station registration outside—at the opening of the garage—to perform a 2-minute registration with a WOW. Triage was also moved to a position right after registration to leave the treatment area for treatment only. We had the driver turn off the engine to avoid exhaust during the registration, triage, and treatment stages. Each day, a car would not restart. We obtained jumper cables and would jump start the car by asking the driver of the car next to them if they could assist.

### Limitations

There are limitations to the generalizability of our approach. Other health care facilities may not have the

facilities (eg, physical garage space) or the resources to quickly enable wireless connectivity for remote communication with the main emergency department and telemedicine visit. In addition, this alternative care area would still be prone to weather elements, especially in harsher climates. The Tele-Garage did not have climate control, with neither heat in the winter nor cooling in the summer, which could have affected staff productivity and satisfaction. Because our facility is in a mild-climate area, this was not identified as a pressing issue. Future work may focus on evaluating staff and patient satisfaction with care in the Tele-Garage.

### Implications for Emergency Health Care Team

Rapid change during disaster situations will continue to challenge emergency nurses. The COVID-19 pandemic is one of these untested challenges. The American Nurses Association Code of Ethics states that nurses have the same obligation to self as to others. The ED leadership worked with staff to find ways to keep staff safe while meeting our ethical obligations to care for patients classified as infectious or potentially infectious. The development of the Tele-Garage is an example of a patient care and flow process that greatly assisted in meeting staff safety and the ethical obligations of patient safety and treatment.

A disaster event can be acute, such as an act of terrorism/natural disaster, or evolving, such as the COVID-19 pandemic. The safety of the health care team and conservation of safety equipment such as PPE must be considered during any disaster situation. We have demonstrated the Tele-Garage is a safe and feasible way to provide care for patients classified as low acuity during a pandemic. In the future, this model can be transitioned to care for patients classified as low acuity during natural disasters, influenza surges, and potentially contaminant scenarios, creating capacity for patients classified as higher acuity within the ED footprint.

### Conclusion

Our proposed and evaluated new model of telemedicine-enabled, alternative care area patient workflow, the Tele-Garage, can be used as a blueprint by emergency departments to develop and rapidly implement their own plans to manage patients classified as low acuity safely and effectively. This model can be applied to other surge capacity situations such as infection contamination scenarios with a surge of communicable infection complaints or to treat minor injuries after a natural disaster.

## Acknowledgments

We would like to thank all the multidisciplinary team members involved in this effort, including Gabe Gammon, OEM; Kathy Harris, OEM; Shenee Lawrence, emergency nurse; Karen Stuart, emergency nurse; Jean Reyes, emergency nurse; Maria Cheung, emergency nurse; Mauricio Simas, emergency nurse; Alison Kerr, executive; Brendalyn Uncol-Co, emergency nurse; Richard Tan, emergency nurse; Emily Brown, emergency nurse; Sam Shen, ED physician; Ryan Ribeira, ED physician Susan Tall, editor; Jimmy Yu, IT; Ann Marie Yap, IT; interpreter services; facility services; Jennifer Fralick, laboratory; supply services; and many more.

## Author Disclosures

Conflicts of interest: none to report.

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