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## Emergency Medicine and COVID-19: Now and Next Year

Theodore A. Christopher  
*Thomas Jefferson University*

Adrienne N. Christopher  
*Thomas Jefferson University*

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# Emergency Medicine and COVID-19: now and next year

Theodore A. Christopher<sup>a</sup>, Adrienne N. Christopher<sup>b</sup>

## Abstract

The COVID-19 pandemic is responsible for infecting to date more than 93 million people worldwide and causing more than 2 million deaths. That the vast majority of deaths have occurred in the United States (U.S.) can be attributed to nonadherence by Americans to basic public health mitigation strategies that are known to curtail coronavirus spread. Emergency Departments (ED's) throughout the U.S. experienced a dramatic decrease in patient visits during the first surge of COVID-19, followed by an ED patient visit rebound to approximately 80% of pre-COVID-19 numbers, which have remained relatively stable through the current second COVID-19 surge. The pandemic highlighted the significant role that hospital ED's and emergency physicians played in combatting COVID-19 "on the front lines." Wearing extensive and escalating personal protective equipment (PPE) layers became the norm in seeing emergency patients, and many infrastructure and process changes occurred including evaluating and treating patients in outdoor tents, cohorting confirmed and suspected COVID-19 patients in designated ED and hospital sections, and repeatedly amending COVID-19 evaluation and treatment guidelines as more information became available on a sometimes daily basis. Regarding other clinical venues in which emergency physicians were working during COVID-19 surges, Observation Unit patient visits decreased, although patient acuity increased; urgent care (UC) patient visits decreased dramatically, whereas Telehealth (TH) patient visits to our 24/7 available platform, JeffCONNECT, saw a dramatic increase in activity. Remdesivir, Dexamethazone and more recently, the monoclonal antibody Bamlanivimab, have formed the mainstay of treatment offered to our patients with COVID-19; all these agents are offered to patients in our ED's and Observation Unit. The current second COVID-19 surge, with our ED and hospital patient visits remaining essentially stable, has intensified the public health crisis as record numbers of U.S. patients continue to acquire COVID-19 and die. With ED patient care processes being optimized to treat the influx of COVID-19 patients, and ED geography being adjusted within ED's and expanding maximally to areas outside the ED's but still within the confines of hospital walls, emergency physicians have taken the lead in caring for patients remotely via on demand TH Virtual ED visits. Rather than continuing to request the patients to come to us, emergency physicians are evolving to assess patients remotely and are embracing health care delivery models that bring acute unscheduled medical care to patients at home. This will include also prioritizing health wellness, health care disparities, and health equity, as Emergency Medicine (EM) and emergency physicians begin to collectively address community and patient social determinants of health, especially in vulnerable populations and communities.

**Keywords:** Coronavirus, COVID-19, Emergency Medicine

## Introduction

At the time of this writing, COVID-19 will be responsible for more than 93 million cases and more than 2 million

deaths world-wide. In the United States, there will have been more than 23 million cases, and nearly 390,000 deaths – greater than 3000 deaths per day, or 1 citizen every 20 seconds. In the state of Pennsylvania, there are now 750,000 cases and 18,000 deaths, with Philadelphia, the city where the senior author practices Emergency Medicine, seeing greater than 100,000 cases and 4000 deaths. Comparatively, in China, a country with almost 5 times the population as the United States, there have been just a little over 97,000 cases, and only 4700 reported deaths.<sup>[1]</sup>

## Coronavirus in the United States

Why is there so much COVID-19 in the United States (U.S.) compared to other countries? As an example, one only needs to look at the COVID-19 surge history, comparing COVID-19 citizen shut down efforts between the U.S. and Europe, to garner clues. The identification of whereabouts of individual citizens is easily done by tracking mobility by phone GPS. Regarding the first COVID-19 surge, from April through June 2020, the U.S. as a country responded to the first COVID-19 surge by returning to a baseline COVID-19 positivity of 20,000 compared to a return to

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<sup>a</sup> Department of Emergency Medicine, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, <sup>b</sup> Department of Surgery, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania.

Corresponding author. Address: Department of Emergency Medicine, Sidney Kimmel Medical College, Thomas Jefferson University, 1025 Walnut Street, College Building, Suite 300, Philadelphia, PA 19107. E-mail address: Theodore.Christopher@jefferson.edu (T.A. Christopher).

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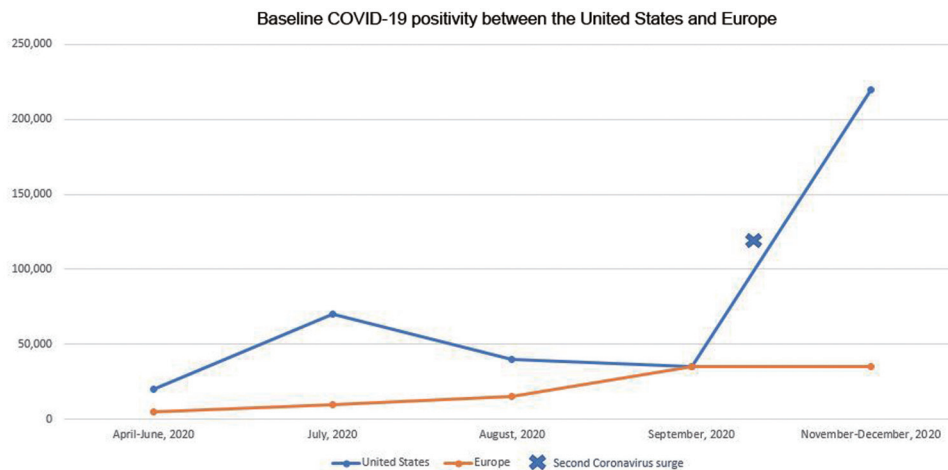
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**Figure 1.** Baseline COVID-19 positivity between the United States and Europe in the first and second COVID-19 surges.

COVID-19 baseline positivity of 5000 cases in Europe. In July, the baselines were 70,000 cases and 10,000 cases for the U.S. and Europe, respectively; in August, the baseline return cases were 40,000 vs. 15,000, and in September equal between the 2 at 35,000 baseline COVID-19 positive cases. However, during the beginning of the predictable second COVID-19 surge in the fall, in November and December, the U.S. was averaging 220,000 cases vs. only 35,000 cases in Europe, Figure 1.<sup>[2]</sup> Why? There was simply much less individual citizen adherence to basic public health measures to “shut down” coronavirus spread, such as masking and maintenance of social distancing, in the U.S. compared to Europe. Unfortunately, this lack of adherence to proven mitigation strategies to control the spread of COVID-19 was most likely due to political influences on citizen accountability for utilizing mitigation strategies. The result has been the U.S. population suffering the most deaths of any other country in the world from what is turning out to be the most deadly pandemic of this century. This is true despite the realization that mitigation strategies, while working successfully to contain the spread of COVID-19, do not necessarily have to “shut down” a country or its economy.

### The evolution of emergency medicine

In recent years, the specialty of Emergency Medicine (EM) has undergone profound changes in its scope of practice, with emergency physicians now finding themselves practicing in a variety of clinical settings other than standard emergency departments (EDs). In many institutions and enterprise health systems, emergency physicians now are the main providers in 24/7 Telehealth (TH) centers, hospital observation or clinical decision (observation) units (CDU), and urgent care (UC) centers. In many hospitals, emergency physicians with specialized critical care training provide significant coverage in both medical and surgical critical care units. Because EM also focuses on expediting care of patients, it is becoming increasingly common in many hospitals for the hospitalist medicine service to fall under the realm of EM. Finally, EM is now

becoming much more involved in the transitions of care of those patients discharged from emergency departments to their homes or other community settings. It is no longer the norm that emergency physicians are only concerned with care of the patients they treat while in their EDs.

The Thomas Jefferson University Hospital (TJUH) ED, along with its affiliate Methodist Hospital (MH) ED, provide care to over 120,000 patients a year. The TJUH Center City (CC) ED serves as the flagship academic emergency department for the Sidney Kimmel Medical College and for a 3-year EM residency program which trains 51 EM residents annually. The 660+ bed TJUH is a level one intensive trauma center, a certified stroke center, a major cardiac care center with 24/7 cardiac catheterization capabilities, and is a major specialty and tertiary medical and surgical transfer destination for patients in the Philadelphia region.

### Managing the COVID-19 surge in a Philadelphia emergency department

During the first surge of COVID-19 (March through June, 2020), patient visits to the CC and MH ED’s fell dramatically to less than half their normal volumes. This trend of a marked decrease in ED patient visits during the first COVID-19 surge was common throughout the country, not only in academic, but also suburban, community, and rural hospitals. The first COVID-19 surge was met with grave medical uncertainty and fear of the coronavirus, affecting not only patients coming in to hospitals and emergency departments, but also providers, including physicians, residents, students, nurses, and ancillary staff taking care of patients. With its alarming number of sudden and unexpected deaths, COVID-19 was the new “great medical unknown.” When it became realized as a true lethal pandemic, COVID-19 led to an entirely new way for ED providers to see and take care of their patients. For many, it became “see my eyes only” patient care, through 3 layers of personal protective equipment (PPE), including surgical and n95 masks and

face shields, and Powered Air-Purifying Respirators (PAPR's). Some ED's were better prepared than others to protect their patients and providers. Due to superlative and rigorous disaster and pandemic planning for the past 25 years, building on the knowledge and experience learned from the Severe Acute Respiratory Syndrome, Middle East Respiratory Syndrome and Ebola pandemics, Jefferson's disaster preparedness leaders made sure all providers and staff were adequately supplied ample PPE for the COVID-19 pandemic. As an example, during the first COVID-19 surge, each ED physician working on shift was provided with their own personal PAPR, to be worn during all aerosolizing procedures, and otherwise at each provider's discretion.

During the second COVID-19 surge (October through the present time), patient visits have risen to approximately 90% of pre-COVID first surge visit levels, but our ED's, and ED's across the country, are seeing a much higher acuity level of patients, resulting in an increased admission rate of ED patients into the hospital. At the present time, there remain record numbers of Americans acquiring COVID-19 infection, and dying from the disease on a daily basis. Recent major U.S. Thanksgiving and Christmas Holidays occurring at the end of 2020 resulted in congregate gatherings and a return to nonadherence to COVID-19 mitigation strategies, accounting at least in part for the current record COVID-19 surge in numbers and deaths.

### Testing and admission procedures

State Health Departments throughout the country have encouraged EDs to test symptomatic patients and patients with significant COVID-19 exposures to close contacts. Testing is not recommended for patient convenience, especially if patients have no symptoms or no exposure concerns. Due to an overwhelming number of patients coming in to the EDs for testing on their own, or by referral from physician offices, many ED's, especially those overwhelmed with patients, refer patients out to COVID-19 testing sites. One of our health system testing sites is housed in a constructed outdoor tent in the driveway of our ED. Testing guidelines, however, continue to evolve and change almost on a weekly basis. For example, testing for patients traveling to see family was in the past strongly discouraged. However, as of mid-January, all passengers flying in to the U.S. must have proof of a negative COVID-19 test within 3 days of flying.

Commensurate with COVID-19 surges, Pennsylvania has seen a significant increase in COVID-19 testing positivity rate (presurge: 5%, surging >15%).<sup>[3]</sup> The most common COVID-19 tests used in our facility are the "gold standard" nucleic acid amplification reverse transcriptase polymerase chain reaction tests, which detect viral RNA genetic material present at a given point in time in nasal pharyngeal, nasal, oral-pharyngeal, oral, or saliva specimens. COVID-19 Antigen and antibody tests are still being developed or fine tuned, with indications for obtaining them still to be determined.

Likewise, COVID-19 ED evaluation and treatment pathways continue to be created, tweaked, and altered. Most recently, ED COVID-19 positive or presumptive

positive patients under investigation (PUI) are being discharged to home based on age risk assessment age (<55 low; between 55 and 64 moderate; >64 high) and ability to home monitor with pulse oximetry. ED patients deemed stable enough for discharge are those being deemed "low risk," and able to maintain a pulse oximetry  $\geq 95\%$ , heart rate <100, and respiratory rate <20. Those deemed unstable for discharge are being admitted to either the hospital's short stay CDU, or if sick enough, to either the hospital's inpatient service or an ICU. Patients suitable for the CDU include anyone not receiving Remdesivir who may have a pulse oximetry reading >95% but with comorbidities, ambulatory desaturation no lower than 90% to 94%, a 4C Mortality Score  $\leq 7$ , and COVID-19 "labs" as follows: D-dimer <1000 ng/mL, CRP <10 mg/L, Procalcitonin  $\leq 0.5$  ng/mL. All other ED COVID-19 positive or PUI patients, as well as any patient meeting criteria for Remdesivir and steroid treatment, or requiring oxygen, are being admitted to the hospital inpatient or ICU service.

### Evidenced-based treatment guidelines

As of this writing, U.S. hospitals by and large continue to administer Remdesivir and other agents based on federal Center for Disease Control recommendations. Evidence supporting Remdesivir administration is based on the final report of the ACTT-1 placebo controlled clinical trial study which included 1062 hospitalized COVID-19 lung involved patients from 10 countries, published in October, 2020.<sup>[4]</sup> Early on in their illnesses, patients receiving Remdesivir demonstrated a decreased time to recovery (10 vs. 15 days), and a trend toward decreased mortality. Evidence supporting dexamethasone treatment is based on results of the United Kingdom "Recovery" clinical trial published on July 17, 2020. In this study, 6425 hospitalized patients were randomized to receive 6 mg (oral or IV) of dexamethasone later in their illness course, or usual treatment course (no dexamethasone) for up to 10 days.<sup>[5]</sup> Ventilated patients treated with dexamethasone reduced their 28 day mortality rate by 36%, and by 18% in those patients additionally receiving oxygen. There was no benefit for patients not receiving respiratory support, or for patients receiving dexamethasone earlier in the course of their illness. Late administration efficacy of dexamethasone is attributed to its more efficacious affect against the patient's inflammatory response, which is thought to occur later on in the disease process. In the rare instance when corticosteroids cannot be used, the tumor necrosis factor antagonist Baricitinib is recommended only in combination with Remdesivir for hospitalized, nonintubated COVID-19 patients requiring oxygen supplementation.

The Lilly monoclonal antibody (MAB) Bamlanivimab was approved Nov 6, 2020, by the U.S. FDA, followed shortly after by approval of additional MAB's (Casirivimab, Imdevimab) for mild to moderate symptomatic COVID-19 patients at high risk but not sick enough to be admitted to the hospital. The National Institute of Health (NIH) panel recommends that all MAB's should not be considered the standard of care for COVID-19 treatment outside of a clinical trial. Out health system has chosen to mostly use Bamlanivimab in select patients. It has an

infusion time of 60 minutes, which has not deterred some hospitals and health system administrators to suggest it be administered in their EDs, despite both ED and hospital bed capacity issues resulting in excessive boarding of admitted patients in the ED during the COVID-19 pandemic. The State Department of Health (DOH) has suggested alternative hospital or outpatient sites such as infusion centers, closed clinics, or ambulatory care or surgical centers, to administer any MAB agents requiring prolonged infusion times. At my institution, we are considering administering MAB's in our CDU for specific patients, including undomiciled or psychiatric patients. To date, only 48 patients (25 in ICU's) have received monoclonal antibody infusions to date in any of our 14 hospitals within the health system, with less than a handful of patients treated in any of the health system ED's. Across the country, there is wide variation in hospitals treating COVID-19 patients with MAB's, with some institutions prescribing them only in ill patients with hypoxia who are over the age of 65, and others forgoing any MAB treatment at all for any COVID-19 or PUI patient.

Because of the pro-thrombotic nature of COVID-19 illnesses, prophylactic dose anticoagulation based on venous thromboembolism prevention guidelines should be prescribed for hospitalized COVID-19 patients. As of mid-January, 2021, other potential COVID-19 treatment modalities, including additional antivirals, antiparasitic agents (Ivermectin), blood-derived products such as convalescent plasma and hyperimmune globulins, and immunomodulators (besides corticosteroids) such as cytokine inhibitors and interferon, are considered investigational or as yet unproven therapies and are not currently recommended for routine COVID-19 treatment. Similarly adjunct therapies such as Vitamin C, Vitamin D, or zinc supplements are not currently recommended beyond dietary allowance. For COVID-19 treatment decision-making assistance for outpatients as well as inpatients, the newest up-to-date therapeutic guidelines can be found at [COVID19treatmentguidelines.nih.gov](https://www.covid19treatmentguidelines.nih.gov).<sup>[6]</sup> It is best to treat these National Institute of Health Expert Panel Treatment Guidelines as a "living document," as changes are often made based on new research evidence or clinical experience in treating this novel disease.

### **How COVID-19 affected telemedicine and urgent care facilities**

In response to the COVID-19 pandemic, many EDs have dramatically changed their operational processes and geographic landscapes. To minimize exposure to ED staff, some ED's have implemented virtual remote teletriage of presenting patients. Obtaining vital signs at the same time as teletriage remains a challenge in some clinical ED settings, as has recognizing and quickly acting upon critical imaging and other testing results ordered from teletriage. Effective communication among physicians, advanced practice practitioners, nurses, and technicians becomes paramount while working in such challenging new ED geographies. Identifying both COVID-19 and PUI ED patients, and deciding where they go, both within and outside the ED, for additional evaluation and treatment needs to be carefully planned for. It often involves moving

existing ED patients to alternative treatment and evaluation sites within the hospital, and cohorting patients in designated areas of the ED. The highest level of cooperation and support from hospital administration at the most senior level is needed for these ED process changes to happen. This is in addition to customary measures (ie, surgery schedule soothing, "pulling" and transporting admitted ED patients rapidly to clean and ready inpatient beds, admitting and transferring appropriate patients to affiliated hospitals with bed capacity, expediting discharge of inpatients, or transferring them to a designated discharge lounge, etc.) that need to be taken to alleviate the ED boarding of admitted patients now exacerbated by the COVID-19 pandemic. Chaotic ED environments from the COVID-19 pandemic are now rampant across the country.

Other adaptive ED process changes have included expanding ED consultation options. In addition to the customary in-person, traditional face-to-face ED consultation by our specialist colleagues, optimizing virtual telemedicine consults via IPADs and Robots, and utilizing phone and virtual internet technology has given rise to the electronic medical record remote "interprofessional collaboration" consultation, which is then documented in the patient's medical record. The latter 2 new consultation modalities have allowed consultation by specialists for ED patients to occur remotely from anywhere.

A sicker ED patient population has coincided with more less ill, nonurgent patients seeking medical care via TH. "Virtual ED visits" have increased exponentially during both COVID-19 surges. EM physicians can now provide "acute unscheduled care" to these patients 24/7 via a TH health care delivery platform outside of the ED. After their virtual ED visits, patients can now be referred to the best clinical follow up setting – UC, the ED, outpatient radiology suites for imaging, private physician offices or clinics, or these days, the appropriate COVID-19 testing site. COVID-19 related delayed care for critical time dependent diagnoses like stroke, myocardial infarction, or sepsis is now reduced as these patients, who previously avoided seeking health care, now are being evaluated by TH, with appropriate patients referred immediately to the ED to address these time dependent illnesses. In addition to resulting in better medical care, these TH visits are a fraction of the cost to patients, who save money not paying for unnecessary ED visits. As an added benefit, TH patient care requires adoption of new technical and communication skills for some EM physicians, who now have more time to interact warmly and empathetically with patients they see via TH. These physicians realize improved patient experiences and better work-life balance.

Mirroring the decrease in number of patients going to ED's during the first COVID-19 pandemic surge because of fear of contacting COVID-19 was the dramatic decrease in patients seeking care in UC centers – from 70 to 90 patients per day pre-COVID-19 to currently 10 to 25 patients per day. This has resulted in 2 of our UC centers closing. Interestingly, like in the ED's, UC patient volumes rebounded during the time between the first and second COVID-19 surges, but not to previous pre-COVID-19 UC patient volumes. However, during the current second COVID-19 surge, both ED and UC patient volumes have

**Table 1****How COVID-19 Affected ED Metrics**

ED Metrics	Post-COVID	Details
Personal protective equipment	Increased	Gown, gloves, mask, face shield in every patient room
ED patient volume	Decreased	More patients treated virtually from home Patients less inclined to come to hospital due to the pandemic
ED patient acuity	Increased	Higher acuity patients presenting for medical care
Number of ED to hospital admissions	Increased	Despite lower volume, admissions numbers rising due to acuity
Boarding hours (ie, length of ED stay 2 hours after admission)	Increased	More ED to hospitals admissions leading to increased ED crowding
Telemedicine visits	Increased	Increasing number of virtual visits and triaging
Urgent care visits	Decreased	Triaging via telemedicine means less patients in urgent care and observation units
Observation unit patients	Decreased	

not experienced the dramatic decreases seen in the first COVID-19 surge; rather, patient care volumes at both these clinical venues have remained steady if only slightly decreased. This has pleased hospital administrators as all hospitals in our health system have also been able to maintain a full elective surgery schedule, avoiding the extreme negative financial impact that occurred from the first COVID-19 surge. Individual DOH are once again watching hospital bed capacity closely. In Pennsylvania during this second COVID-19 surge, if hospital staff shortages begin to affect more than 33% of hospitals, COVID-19 patient surges are greater than 50% and bed capacity reaches greater than 90%, the State DOH will demand hospitals decrease their elective procedures and surgeries by 50% to accommodate medical needs of patients in their communities. Table 1 describes the impact of COVID-19 on various ED metrics.

### The pandemic's impact on healthcare workers

In any pandemic, the degree of psychological impact always greatly exceeds the degree of medical impact. This has been especially true with health care workers (HCW's) in ED's across the country. Nearly 300,000 physicians, nurses, EMS providers, and hospital staff have tested COVID-19 positive, with greater than 1000 deaths occurring. Physician burnout, depression, substance use disorder, and suicide are at all-time highs. For many HCW's, re-integration into their lives postpandemic are more stressful than actually working through the pandemic.

Fortunately, all HCW's, including all staff that interfaces with ED's, have been deemed priority 1 status to receive the COVID-19 vaccine. To date, in the U.S. only 2 vaccines have received FDA emergency use authorization (EUA) approval for administration. The BioNTech-Pfizer vaccine was approved on December 10, 2020 with the first dose administered the following week. The Moderna vaccine was approved on December 17, 2020. Second doses for both vaccines began to be administered early in January, 2021, with 95% efficacy expected for both. Unfortunately, the process of vaccinating mass numbers of people has been woefully slow with far less vaccinated by the end of December (4–5 million) than expected (35–40 million). At this time, many distribution sites are still in the process of vaccinating Group priority 1 individuals, with the low-risk general public, assigned Group 3 priority, expected not to

receive vaccination until late Spring or Summer. Because it is not known if vaccinated individuals will still be contagious, or how long immunity will last, it has been recommended that vaccine recipients maintain mitigation strategies of mask wearing, social distancing, avoidance of congregate settings, meeting outdoors rather than indoors as much as possible, and strict handwashing.

### Emergency medicine next year

It may be that Emergency Department providers caring for patients are going to be wearing masks and adhering to some degree of social distancing for many years to come. The COVID-19 pandemic will have lasting effects on patient and public perceptions about the health risks, including possible death, from infectious disease and other possible health pandemics. It may be quite some time before ED's begin allowing multiple visitors to accompany and stay with ED patients during their evaluations. Within the house of medicine, EM will lead the way to work more closely and intimately with the public health sector to prepare not only health care providers, but also citizens adequately for the inevitable next pandemic. Stockpiles of PPE, including masks, face shields, PAPR's, gowns, and gloves will be plentiful, as will supplies of medications and medical equipment such as respirators.

“Emergency Medicine” is now morphing into a discipline being labeled as “Acute Unscheduled Care,” defined by an ever-expanding scope of practice for emergency physicians to include working in hospital observation medicine, UC, EMS-based mobile home care, and telemedicine. Specifically, Emergency Medicine Virtual Care seems here to stay. Rather than requiring patients to come to the hospital or doctor's office, bringing health care to the patient's home will become the most logical, cost-effective, and patient centered health care delivery modality. Emergency physicians no doubt are at the forefront of this sweeping change in U.S. health care. Patients are now seeking out emergency physicians for their on demand health care by accessing telemedicine platforms, where they are being directed to the most appropriate venue and location to address their acute unscheduled medical care needs.

When patients do arrive to an ED, it may well be a stand-alone facility with its own laboratory, CT and MRI scans, and staff separate and far from the hospital. Patient care from emergency physicians will not end upon their

discharge from the ED. Rather, tele-navigators stationed in ED's will help patients schedule referral care or follow up visits, and will assist them in connecting to resources and other support systems in their communities. Emergency physician based TH "House calls" will help extend emergency care beyond hospital walls to patient's homes. This will be especially important for patients who do not have a primary care physician. "Virtual Callback" follow up visits by the emergency physician who took care of an ED patient yesterday will be a huge patient satisfier. "Never Discharge!" will become the new slogan and culture of emergency physicians practicing in ED's. Rather, care continuity way beyond the ED visit will be the new norm, provided by the emergency physician, resulting in better long-term outcomes for all ED patients.

Finally, COVID-19 has highlighted the racial and ethnic health care disparities within the U.S. health care system as we know it. African Americans, Hispanic/Latinos, Native American Indians, Alaska Natives, and Asian/Pacific Islanders have been the victims of profound COVID-19 infectivity, transmission, serious illness, and mortality.<sup>[7]</sup> With our health care infrastructure stressed to the maximum, ED's have become the medical home to increasing numbers of mental health, substance use disorder, homeless, and poor patients. Providing compassionate care to ED patients has like never before, become priority in health care, and this has required the acknowledgement and recognition of provider and staff conscious and unconscious biases, not only toward patient gender and race, but also toward patients identifying as obese, refugee, LGBTQ, and being victims of sex and labor trafficking and PTSD. Emergency physicians have now become major health care stakeholders and providers addressing the social determinants of health of patients. Only 20% of a patient's health is determined by traditional medical care provided at a hospital or physician office, while 80% is determined by that patient's surrounding social structure at home or in the community. Remarkably, the U.S. is first in health care costs/patient capita, but dead last in spending on social services to assist patients in addressing their social determinants of health – food, housing, education, income, poverty, transportation, and neighborhoods. It is long overdue for EM and emergency physicians to get on board with extending their patient care skills outside the walls of the ED, and become involved in these real determinants of patient health. It is time for EM physicians to work not only in the acute unscheduled care business, but also in the patient wellness, prevention, and health care equity business. Securing the health and welfare of our patients and communities, in fact, needs to become a shared responsibility that we, as emergency physicians, have with other sectors of our society. As Health Care giant Don Berwick, M.D. suggests, is it not our societal and medical obligation to address these "moral" determinants of health?<sup>[8]</sup> As more and more emergency physicians rise to the occasion to fulfill

this obligation, so will our EM culture be redefined as we embrace not only acute unscheduled health care delivery beyond the walls of the traditional ED, but also this new frontier of health care prevention, wellness, and health equity.

### Conflicts of interest statement

Theodore A. Christopher is an Editorial Board member of *Emergency and Critical Care Medicine*. The article was subject to the journal's standard procedures, with peer review handled independently of this Editorial Board member and their research groups. The authors declare no conflict of interest.

### Author contributions

TAC – Participated in research design, performance of the research, writing of the paper, and critical revisions of the manuscript.

ANC – Participated in writing of the paper and critical revisions of the manuscript.

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