



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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

# Preparing for the Next Pandemic



William P. Jaquis, MD, MSHQS; Sandra M. Schneider, MD\*; Panelists from Preparing for the Next Pandemic Summits

\*Corresponding Author. E-mail: [sschneider@acep.org](mailto:sschneider@acep.org).

0196-0644/\$-see front matter

Copyright © 2021 by the American College of Emergency Physicians.

<https://doi.org/10.1016/j.annemergmed.2021.03.010>

## INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic has a depth and breadth similar to those of the 1918 influenza pandemic. It is possible that another emerging pathogen will present a challenge to the world again in years rather than decades. Therefore, the American College of Emergency Physicians (ACEP) convened a series of 8 webinars in September 2020 to make recommendations to prepare for the next pandemic using the lessons learned from COVID-19. Thought leaders from each of the domains concentrated their insights on local care delivery from emergency physicians and on national or regional solutions that ACEP could guide. The participants identified strategies that could be developed now and created a “playbook” for those still facing the current pandemic. That playbook is now on the ACEP website (<https://www.acep.org/corona/COVID-19-alert/COVID-19-articles/preparing-for-the-next-pandemic-a-playbook/>).

This article concentrates on topics discussed that are relevant to preparations for future public health emergencies. We provide a synopsis of the webinars through recommendations for national, state, local, and institutional responses. Our goal is to improve the response to the next pandemic, not to criticize the current response to COVID-19.

## NATIONAL/STATE/LOCAL PREPARATION

**Recommendation 1: Within the Federal Government, the US Centers for Disease Control and Prevention (CDC) exists to monitor disease burden at national, regional, and local levels. That institution should have the ability to make independent scientific judgments and recommendations.**

The CDC, an agency within the US Department of Health and Human Services (HHS), is the primary public health institution in the United States, composed of dedicated scientists and researchers. Based on past performance, they have earned their national and international reputation as the leading voice for public health matters. Together with state and local health

departments as well as with other agencies within the Federal Government, the CDC oversees the public health needs of our nation. Our recommendation is that agencies such as the CDC should not be politicized and should be appropriately resourced to respond to this pandemic as well as to prepare for the next one.

There should be a clear, consistent, and timely flow of information from this agency to hospitals, physicians, and the public, independent of political agendas. In addition, there should be consistent federal, state, and institutional policies and guidelines for testing, quarantining, contract tracing, and returning to work.

**Recommendation 2: There should be an early warning system to alert health care institutions and professional societies.**

Information is a keystone for a pandemic response. Actionable data must flow from all local hospitals to state, regional, and national data centers. A national data center should then share national, state, regional, and local data with appropriate professional societies and state and local health departments as well as hospitals and other health care entities. Data need to be real-time, transparent, and trusted.

The data system may optimally benefit from modeling the early warning system of the National Weather Service.<sup>1</sup> The National Weather Service gathers data on a local level, analyzes it on a national and international level, and distributes that data and predictive analysis to local media. It provides early warning and predictive mapping for potential events that can affect populations, allowing them to activate protective actions. Most importantly, the National Weather Service is independent of politics and trusted by local authorities. A similar system to monitor illness in the population (particularly infectious illnesses) and provide early warning would aid care and outcomes in potential pandemics.

Some of the aspects we recommend are currently available from the National Syndromic Surveillance Program.<sup>2</sup> We recommend that *all* communities provide

data to the National Syndromic Surveillance Program and that, in turn, the data received be available to health care institutions, health care providers, and the general public on a real-time basis, independent of politics.

**Recommendation 3: That the Federal Government develop programs that will ensure an uninterrupted supply chain of essential equipment, supplies, and pharmaceuticals.**

This pandemic highlighted several weaknesses in the supply chain, which quickly proved to be insufficient to provide the necessary protective equipment required by our health care systems. In our global economy, individual materials and component manufacturing often come from outside the United States. When the pandemic affected those countries, production and distribution everywhere were disrupted. The disruption was notable in the shortage of N95 masks, but it also affected gloves, gowns, face shields, and pharmaceuticals. It also diminished household cleaning supplies, such as wipes that are made from the same material as N95 masks.

The United States has long planned for disasters by maintaining a national stockpile of supplies, which is managed by the Office of the Assistant Secretary of Preparedness and Response (ASPR) within HHS. However, that stockpile did not provide enough supplies for a pandemic that lasted months to years and involved the entire US population. In addition, some of the equipment stockpiled was no longer functional.<sup>3</sup>

There is the need for clear guidelines for supply use or reuse that are consistently followed throughout the country. Institutional, local, and state variations can lead to confusion and distrust.

There is also a need to ensure the rapid development, production, and distribution of tests and therapeutics specific to the infectious agent.

Finally, drug shortages have persisted for the past 20 years, involving everything from chemotherapeutics to intravenous therapy solutions. The causes of shortages are complex and involve manufacturing quality, natural disasters, economics, and the availability of component materials. Although most shortages are a result of production interruption, surges in demand for specific drugs during a pandemic can also lead to inadequate supply.<sup>4</sup> In some cases, there were surges in treatments known to be effective in supportive care (eg, albuterol). In other cases, speculation about a drug's effectiveness led to panic buying and therefore rapidly depleting inventory.<sup>5</sup> Systems are in place to monitor shortages, and they can help pharmacists implement conservation strategies and

recommend substitutions before a critical drug is depleted.<sup>6-9</sup> The US Food and Drug Administration must continue its ongoing work to address drug shortages.

**Recommendation 4: That there be a common national licensing process for health care personnel.**

During any large-scale emergency, physicians and other licensed personnel are needed to provide their expertise and to relieve local workers who may be overwhelmed by the local emergency. Under current licensing laws, physicians, nurses, pharmacists, and other health care personnel must apply for a license in each state where they will work and wait for the application to be processed. The Federal Emergency System for Advance Registration of Volunteer Health Professionals,<sup>10</sup> which is administered by ASPR, established a standardized state volunteer registration program for disasters and public health and medical emergencies. Although this system provides some ability to mobilize physicians, it relies on physicians to volunteer in advance and remains largely state-based. A federal system or an automated licensure recognition between states could allow much quicker responses and tailoring of human resources to need.

**Recommendation 5: That a "common application" credentialing form be developed and utilized by local hospitals like the college common application, allowing local institutions to augment the application but sparing the applicant from filling in duplicate information.**

Institutions generally gather very similar information but the construct of the application and the order of the information varies from hospital to hospital. As in recommendation 4, this inefficiency limits people sharing and care abilities; a common approach can ease this problem. Many health care systems do this already, demonstrating the feasibility of this approach. Hospitals within specific states or localities should come together and develop a common credentialing form that they can all use.

**Recommendation 6: That data sharing systems between hospitals be developed on a regional basis, crossing state lines where appropriate.**

The US system is built on strong state governmental control. The response to the pandemic often followed suit, organized at a state level. Issues arose in areas near state borders, including the transfer of patients across state lines, sharing of data on resources (eg, ventilators, beds), and deployment of personnel. This was most notable where metropolitan areas cross state lines (eg, New York City,

northern New Jersey, and southern Connecticut).<sup>11</sup> As in the previous recommendation, we believe data sharing across state borders will allow the best and most coordinated care and outcomes. The Office of the National Coordinator for Health Information Technology within HHS should help establish standards and requirements for data sharing across the country.

Emergency departments are often the first to become aware of a new illness or an unexpected increase in a known illness.<sup>12</sup> Bioterrorism attacks have been first detected in EDs.<sup>13</sup> Increased support for syndromic surveillance, broadening the scope of the current National Syndromic Surveillance Project, is recommended.<sup>2</sup>

**Recommendation 7: That the entire emergency care system be financially supported to enable rapid and sustained responses to crises.**

Many of our hospitals function on a very narrow operating margin, and each year we see the closure of some of our most vulnerable institutions.<sup>14-16</sup> Those institutions often provide care to rural and underserved populations, which lack alternative care sites.

Emergency medical services (EMS) in small towns and rural areas rely primarily on volunteer staff and local donations. Even in large municipalities, budgets are tight and provide little flexibility to respond to large-scale, prolonged crises. As seen in this pandemic, when supplies fail to meet demand, those essential supplies were sold to the highest bidder, leaving some EMS units and smaller hospitals without enough supplies to protect their employees.<sup>17</sup>

On average, EDs in the United States saw a 40% decrease in patient volume during the height of the pandemic, which led to major declines in revenue and a subsequent reduction in workforce, impacting access to care.<sup>18</sup> In this way, this pandemic magnified the fragility of the fiscal stability of the emergency care system. Therefore, considerations should be made to fund emergency care services as an essential community service to ensure its consistent receipt of resources, particularly during a time of crisis such as a pandemic.

Telehealth provided essential services to patients during this pandemic, allowing many patients to obtain care without travel or potential exposure. This technology has a lasting place in health care and should be reimbursed at appropriate levels.

Finally, it should be noted that the executive order of President Joe Biden discusses many of the recommendations put forth in this report.<sup>19</sup> That executive

order was issued January 21, 2021, after the ACEP Summit. It calls for the COVID-19 pandemic and all future public health crises to be guided by science and data. In addition, the order specifically calls for “enhancement of data collection and collaboration capabilities for high-consequence public health threats,” strengthening public health data systems and increasing innovation in public health data and analytics.

## INSTITUTIONAL PREPARATION

**Recommendation 1: That every institution maintain an active disaster readiness program in adherence to or exceeding The Joint Commission standards.**

Disaster planning must define responses to terrorism, natural disasters, and any infectious threats or pandemics. The plans should include establishment of a central command center and designation of a physician leader of that center. The incident command leadership should include a multidisciplinary team composed of central administration, logistics, finances, human resources, and clinical leaders from all affected disciplines, especially emergency medicine. Everyone has an expertise; nobody has all of it. A plan should include both short-term and long-term events. The successes and failures of the response to the COVID-19 pandemic should be used to improve future disaster readiness responses.

**Recommendation 2: That every institution develop a robust, transparent, bidirectional communication system between administration or central response and health care staff.**

Institutions must manage uncertainty and allay fear among employees, staff, patients, families, and the community. All institutions must communicate clearly and accurately to their employees and patients regarding the status of the institution during a crisis. Communication channels are best defined before a crisis, and plans should allow for daily updates and control by the central command center. Practice drills are imperative to improve and hone plans. There should be a centralized living document that contains protocols and information for providers and staff.

In addition, staff should see and know the administrative team and hospital leadership, both during a crisis and during routine operation. Daily status reporting systems from frontline services to central administration should be introduced, monitoring patient volume, resource supply, and the general well-being of the staff.

Institutions should collect key data using available tools to monitor supplies needed for patient care and worker

safety and the physical and mental well-being of the workforce. Institutions should collaborate with other institutions at local, state, and regional levels to determine which information will be shared during routine operations as well as during a crisis.

**Recommendation 3: That every institution evaluate its current infection control measures. Infection control measures in the ED should be equivalent to those required for inpatient units.**

Infection control is a critical part of pandemic care, and best practices for mitigating infection in a hospital can reduce iatrogenic infection and increase patient confidence in the system. Infection control must be a key element in new hospital construction, including the ED and any renovation of older facilities. An important component of infection control is air handling. Where possible, an adequate number of negative pressure rooms should be created, and supplies needed to convert rooms to negative pressure should be available. Air handling systems should be examined and upgraded as needed, particularly in the ED. Cleaning of patient areas in the ED should be based on knowledge of current air exchanges. Air handling in common areas, such as patient waiting rooms, breakrooms, and nursing or physician workstations, should be evaluated and upgraded as necessary. Possible upgrades include an increased number of negative pressure and infection control rooms; use of physical barriers where possible, including to separate patient beds; an increased number of private rooms; and sufficient work and break space distancing for individual staff. Plexiglass barriers should be used as much as possible to limit contact in reception areas, while performing triage, or during other conversations between patients, families, and staff.

Some infection control measures instituted during the pandemic should be continued even after the pandemic has passed. Masks should be worn by all patients with active respiratory disease. There should be routine mask wearing by all persons during infectious respiratory disease outbreaks. The staff should have available appropriate personal barriers (eg, gowns and hair, eye, and shoe coverings). Telemedicine should be available in the ED to communicate with patients, ease care of lower-acuity conditions, and improve communication for all awaiting updates. Visitors should be limited but encouraged to communicate with patients, facilitate care of lower-acuity. Adequate disinfection of rooms between patients should be routine to prevent the ED from being an infection spreading site. In the long term,

adding physical space may be necessary to combat crowding and its impact on patient care, including the potential to increase transmission of infectious diseases.

Isolation of infected patients is always important, even in the ED. When that is not feasible, the ED should have the same resources and protocols as inpatient units of the hospital for cohorting patients.

Hospital disaster plans often call for conversion of space internally (eg, converting the cafeteria into patient care space) to handle a short-term disaster. Moving forward, plans will ideally include adding care space beyond the hospitals for longer periods of time (eg, convention centers, stadiums).

**Recommendation 4: That institutions develop patient flow plans that eliminate the boarding of inpatients in the ED.**

EDs frequently operate with high demand and barriers to outflow (notably to hospital destinations). Packed waiting rooms and patients receiving care in the hallway threaten infection control and impair care.

Crowding must be eliminated in the ED; this starts with flow of patients in the ED and throughout the hospital, targeting improvements to optimize care.<sup>20</sup> Inpatients should not be held (boarded) in the ED; if necessary, these patients can be distributed throughout the hospital. Care of patients in the hallway or the doubling of patients in a care space designed for a single patient increases the risk of disease spread to other patients and staff. Such spaces make adequate cleaning challenging. The ED should have the same standards as inpatient units, so if such measures are not acceptable in those areas, they should not be permitted in the ED. Hallway beds in the ED should ideally only be used for mass casualty incidents.

Ideally, plans to reduce or eliminate elective procedures should be developed with identifiable levels of capacity that would trigger the response. Such plans should be developed with all stakeholders at the table and enacted when the capacity level is reached.

**Recommendation 5: That institutions ensure adequate supplies to protect workers, patients, and families.**

By both legislation and regulation, health systems are required to provide appropriate protective equipment. Institutions must do so with attention to appropriate equipment and the intended use of that equipment. Each site must identify the optimal—not necessarily the maximal—protective equipment for a need and must carefully use either manufacturer recommendations



regarding use or evidence from testing to ensure proper protection. In disasters, decisions are often “risk versus risk.” Reuse of equipment intended to be single use only, even if there is experimental evidence to support doing so, carries varying degrees of risk, which may be unavoidable in extenuating circumstances but should be avoided if at all possible. Institutions should establish policies that permit workers to provide their own personal protective equipment when the hospital is unable to adequately supply it to all staff. The use of such personal protective equipment should follow current guidelines (conventional recommendations), not contingency or crisis capacity recommendations.

**Recommendation 6: That institutions invest in the health and well-being of their workers.**

Ensuring peak performance from clinical staff is critical and cannot occur without an ongoing effort to support and protect staff wellness and resilience. Resilience is built over time, and individual and organizational efforts to support staff wellness and resilience are best handled on an ongoing basis and not exclusively at times of crisis. It must be understood that clinical staff well-being is primarily dependent upon an organizational culture supportive of wellness as well as the efficiency of the practice environment, not on the personal resilience skills of the individual. Institutions are urged to develop both short-term strategies for coping with stressful events (eg, battle buddy system, debriefing, etc)<sup>21</sup> and resources to build resilience. Larger institutions are encouraged to provide support for programs and leadership that focus on the well-being of their workforce through such positions as chief wellness officers. Small institutions are encouraged to identify champions for wellness within their organizations and provide support and encouragement for their work.

Institutions should examine their policies regarding personal leave for stress and burnout, support for mental health treatment for staff, and compensation for quarantine restrictions.

**Recommendation 7: That institutions establish relationships with outside institutions that facilitate patient disposition from acute care and support for after acute care.**

The timely discharge of patients is necessary for optimal flow of patients through the institution.<sup>20</sup> Many patients have barriers to placement, such as homelessness, infectious diseases, complicated care needs, or poverty. Such barriers are predictable, though few institutions have established community care plans for the time following acute care.

Institutions must build on their relationships with after-acute-care facilities in their communities to enhance the flow of patients to those facilities.

**Recommendation 8: That all institutions invest in telehealth.**

The COVID-19 pandemic demonstrated the critical role of telehealth platforms.<sup>22</sup> Each institution should establish a robust system of distance care using communication tools. Such a system should connect stakeholders with their communities, including nursing homes, EMS, prisons, and other institutionalized populations. Hospitals should establish the ability to utilize telehealth to obtain consultation from specialists and oversee care in rural and community settings. Payment systems should support the use of telehealth platforms. Institutions should develop the capability to perform tele-triage when necessary.

**Recommendation 9: That institutions establish ties with local public health authorities.**

Much of the response to COVID-19 rests with state and local health departments. Strong relationships that are developed during routine operations, before a crisis occurs, allow for ideal collaboration. Local public health authorities should be linked by regular communication and invited to participate in hospital conversations to develop their disaster plans.

**Recommendation 10: That institutions invest in the health of their community by building durable, equitable partnerships with community-based organizations and institutions.**

Critical incidents can have substantial short- and long-term effects on team members and team cohesion. Developing and maintaining diverse teams can help mitigate this risk. Diversity improves the functioning of a team as well as patient satisfaction, and it increases the likelihood of patient compliance with prescribed treatment.<sup>23</sup> Building a diverse workforce starts early. Hospitals are encouraged to develop programs to inspire high school and early college students of all backgrounds to enter health care careers and to build programs for their existing entry-level employees to advance their knowledge and careers.

COVID-19 has had a higher burden of morbidity and mortality in certain vulnerable populations, including in persons of color and those with chronic disease.<sup>24</sup> Many of these populations routinely suffer health disparities and poor health outcomes from other communicable and

noncommunicable conditions. Those communities and individuals may have developed a distrust of the health care system, which further worsens the effects of a pandemic.

Institutions should review their systems and processes to address social determinants of health and identify and eliminate structural inequities that disadvantage vulnerable populations. Institutions should commit to establishing and maintaining ongoing relationships with community-based service and advocacy organizations (eg, sickle cell advocacy groups, homeless outreach groups, social service organizations) to improve care processes and health outcomes for vulnerable populations. Institutions should invest in partnerships that improve the data and information technology infrastructure of such community-based organizations to develop bidirectional communication and referral pathways.

*The authors acknowledge the authors who participated in the Panelists from Preparing for the Next Pandemic Summits:*

- **Communication**
  - Stephen Anderson, MD, FACEP (Lead)—Immediate Past Chair, ACEP Board of Directors
  - Nancy Calaway, CAE—Director, Member Communications and Marketing, American College of Emergency Physicians
- **Data and Analysis Session**
  - Stephen Cantrill, MD, FACEP (Lead)—Chair, ACEP Expert Epidemic Panel; Member, Colorado Governor's Expert Emergency Epidemic Response Committee, National Institute of Health COVID-19 Treatment Panel
  - James Augustine, MD, FACEP—Chairman, National Clinical Governance Board, US Acute Care Solutions; Past Member, American College of Emergency Physicians, Board of Directors
  - JT Finnell, MD, MSc, FACEP—Member, American College of Emergency Physicians, Board of Directors; Indiana School of Medicine
  - Todd Taylor, MD, FACEP—Vice Chair, American College of Emergency Physicians Health Innovation & Technology Committee
- **Deployment and Distribution of Physicians and Other Health Care Workers Session**
  - Kate Heilpern, MD, FACEP (Lead)—Senior Vice President and Chief Operating Officer, New York Presbyterian Weill Cornell Medical Center
  - Brendan Carr, MD, FACEP—Professor and System Chair, Department of Emergency Medicine, Icahn School of Medicine
- Jody Crane, MD, MBA, FACEP—Chief Medical Officer, TeamHealth
- Mansoor Khan, MD—Senior Vice President, Envision Envoy Program
- **Disparities and Vulnerable Populations Session**
  - Gail D'Onofrio, MD, FACEP (Lead)—Chair and Professor Emergency Medicine, Yale School of Medicine; Professor, Department of Chronic Disease Epidemiology, Yale School of Public Health
  - Harrison Alter, MD, FACEP—Interim Medical Director, Alameda County Health Care for the Homeless; Clinical Professor UCSF; Director, Andrew Levitt Center for Social Emergency Medicine
  - Jon Mark Hirshon, MD, FACEP—Past Member, American College of Emergency Physicians Board of Directors; Professor, Department of Emergency Medicine, Department of Epidemiology/Public Health, University of Maryland School of Medicine; Interim ED Chief, Baltimore VA
  - Lynne Richardson, MD, FACEP—Co-Director, Institute for Health Equity Research; Professor and System Vice Chair, Emergency Medicine Icahn School of Medicine at Mount Sinai
  - Aisha Terry, MD, FACEP—Secretary-Treasurer, ACEP Board of Directors; Associate Professor of Emergency Medicine and Health Policy, George Washington University School of Medicine and Department of Emergency Medicine
- **Information Flow Session**
  - Christopher Kang, MD, FACEP (Lead)—Chair, American College of Emergency Physicians Board of Directors
  - Cameron Buck, MD, FACEP—Immediate Past President, Washington Chapter, American College of Emergency Physicians; ED Director, Valley Medical Center, Renton, WA
  - Kristin McCabe-Cline, MD, FACEP—President, American College of Emergency Physicians Florida Chapter; Regional Operations Coordinator, Emergency Medicine Professionals; EMS Director, Flagler County, FL
  - Jolion McGreevy, MD, MBE, MPH—Medical Director, Department of Emergency Medicine, The Mt. Sinai Hospital, NY; Center for Bioethics, Harvard Medical School, Boston, MA
- **Research Session**
  - David Talan, MD, FACEP (Lead)—Professor of Emergency Medicine and Medicine (Infectious

*Diseases) in Residence (Emeritus), David Geffen School of Medicine at UCLA; Chairman Emeritus, Department of Emergency Medicine, UCLA Ronald Reagan Medical Center*

- Donald Yealy, MD, FACEP—Deputy Editor, *Annals of Emergency Medicine*; Professor and Chair of Emergency Medicine, University of Pittsburgh/UPMC
- Supply Chain Session
  - Gillian Schmitz, MD, FACEP (Lead)—President-Elect, American College of Emergency Physicians Board of Directors; Associate Professor of Military and Emergency Medicine, Uniformed Services University
  - Michael Ganio, Pharm.D, MS, FASHP—Senior Director, Pharmacy Practice and Quality, American Society of Health-System Pharmacists
  - Shuhan He, MD—Associate Director, Digital Growth, Strategic Alliances, Center for Innovation in Digital HealthCare, Massachusetts General Hospital; Co-Founder, GetUsPPE
  - Megan Ranney, MD, MPH, FACEP—Associate Professor of Emergency Medicine, Brown University; Co-Founder, GetUsPPE
- Workforce Support and Sustainability Session
  - Alison Haddock, MD, FACEP (Lead)—Vice President, American College of Emergency Physicians Board of Directors; Assistant Professor, Baylor College of Medicine Department of Emergency Medicine
  - Jay Kaplan, MD, FACEP—Past President, American College of Emergency Physicians; Care Transformation Medical Director, LCMC Health; Clinical Associate Professor, LSU Health Sciences Center; Attending Physician, University Medical Center
  - Jack Rozel, MD, MSL, DFAPA—President, American Association for Emergency Psychiatry; Resolve Crisis Services of UPMC Western Psychiatric Hospital; Associate Professor of Psychiatry, Adjunct Professor of Law, University of Pittsburgh
  - Jodi Talia—Chief Development Officer, American College of Emergency Physicians

Supervising editor: Steven M. Green, MD. Specific detailed information about possible conflict of interest for individual editors is available at <https://www.annemergmed.com/editors>.

Author affiliations: From the American College of Emergency Physicians (Jaquis, Schneider); the Department of Emergency Medicine, Nova Southeastern University, Kiran Patel College of Osteopathic Medicine, Fort Lauderdale, FL (Jaquis); the Department of Emergency Medicine Residency, Aventura Hospital and Medical Center, Aventura, FL (Jaquis); and the Department of

Emergency Medicine, University of Pittsburgh, Pittsburgh, PA (Schneider).

**Authorship:** All authors attest to meeting the four ICMJE.org authorship criteria: (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) Drafting the work or revising it critically for important intellectual content; AND (3) Final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

**Funding and support:** By Annals policy, all authors are required to disclose any and all commercial, financial, and other relationships in any way related to the subject of this article as per ICMJE conflict of interest guidelines (see [www.icmje.org](http://www.icmje.org)). The authors have stated that no such relationships exist.

## REFERENCES

1. National Weather Service. National Oceanic and Atmospheric Administration. <https://www.weather.gov/>. Accessed February 28, 2021.
2. National Syndromic Surveillance Program. Centers for Disease Control and Prevention. <https://www.cdc.gov/nsssp>. Accessed February 28, 2021.
3. Feds send supplies from stockpiles but some items are old or expired, officials say. ABC News. <https://abcnews.go.com/Health/feds-send-supplies-stockpiles-items-expired-officials/story?id=69770784>. Accessed February 28, 2021.
4. Dabestani A, DeAngelo D, Chhay SR, et al. Medication utilization in patients in New York hospitals during the COVID-19 pandemic. *Am J Health Syst Pharm*. 2020;77:1885-1892.
5. Vaduganathan M, van Meijgaard J, Mehra MR, et al. Prescription fill patterns for commonly used drugs during the COVID-19 pandemic in the United States. *JAMA*. 2020;323:2524-2526. <https://doi.org/10.1001/jama.2020.9184>.
6. Drug shortages list. American Society of Health System Pharmacists. <https://www.ashp.org/Drug-Shortages/Current-Shortages/Drug-Shortages-List?page=CurrentShortages>. Accessed January 31, 2021.
7. FDA drug shortages. U.S. Food & Drug Administration. <https://www.accessdata.fda.gov/scripts/drugshortages/default.cfm>. Accessed January 31, 2021.
8. Product shortages. American Society for Parenteral and Enteral Nutrition. <https://www.nutritioncare.org/ProductShortages/>. Accessed January 31, 2021.
9. ASHP Guidelines on Managing Drug Product Shortages. American Society of Health System Pharmacists. <https://www.ashp.org/-/media/assets/policy-guidelines/docs/guidelines/managing-drug-product-shortages.ashx>. Accessed January 31, 2021.
10. The emergency system for advance registration of volunteer health professionals. U.S. Department of Health and Human Services. <https://www.phe.gov/esarvhp/pages/about.aspx>. Accessed February 28, 2021.
11. Rosenthal BM, Pinkowski J, Goldstein J. 'The Other Option is Death': New York starts sharing of ventilators. <https://www.nytimes.com/2020/03/26/health/coronavirus-ventilator-sharing.html>. Accessed February 28, 2021.
12. Varney SM, Hirshon JM. Update on public health surveillance in emergency departments. *Emerg Med Clin North Am*. 2006;24:1035-1052.



13. Williams AA, Parashar UD, Stoica A, et al. Bioterrorism-related anthrax surveillance, Connecticut, September–December, 2001. *Emerg Infect Dis.* 2002;8:1078-1082.
14. Mensik H. Operating margins plummet at US hospitals, Kaufman Hall says. <https://www.healthcarediver.com/news/Kaufman-hospitals-operating-margin-decline/576491/>. Accessed February 28, 2021.
15. Ellison A. 7 latest hospital closures. <https://www.beckershospitalreview.com/finance/7-latest-hospital-closures-021121.html>. Accessed February 28, 2021.
16. Ellison A. State-by-state breakdown of 130 rural hospital closures. <https://www.beckershospitalreview.com/finance/state-by-state-breakdown-of-130-rural-hospital-closures.html>. Accessed February 28, 2021.
17. Burt R. In New York, COVID compounds rural services' struggles. <https://www.emsworld.com/news/1224918/new-york-covid-compounds-ems-rural-services-struggles>. Accessed February 28, 2021.
18. Harnett KP, Kite-Powell A, DeVies J, et al. Impact of COVID-19 pandemic on emergency department visits—United States, January 1, 2019–May 30, 2020. <https://www.cdc.gov/mmwr/volumes/69/wr/mm6923e1.htm>. Accessed February 28, 2021.
19. White House. Executive order on ensuring a data-driven response to COVID-19 and future high-consequence public health threats. <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/21/executive-order-ensuring-a-data-driven-response-to-covid-19-and-future-high-consequence-public-health-threats/>. Accessed February 18, 2021.
20. Powell ES, Khare RK, Venkatesh AK, et al. The relationship between inpatient discharge timing and emergency department boarding. *J Emerg Med.* 2012;42:186-196.
21. Albott CS, Wozniak JR, McGlinch BP, et al. Battle buddies: rapid deployment of a psychological resilience intervention for health care workers during the COVID-19 pandemic. *Anesth Analg.* 2020;131:43-54.
22. Using telehealth services. Centers for Disease Control and Prevention. <https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html>. Accessed January 20, 2021.
23. McQuaid EL, Landier W. Cultural issues in medication adherence: disparities and directions. *J Gen Intern Med.* 2018;33:200-206.
24. COVID-19 racial and ethnic health disparities. Centers for Disease Control and Prevention. <https://www.cdc.gov/coronavirus/2019-ncov/community/health-equity/racial-ethnic-disparities/index.html>. Accessed January 30, 2021.

The 2021 Council Resolutions, including any amendments to the ACEP Bylaws, will be posted to the ACEP Web site at <https://www.acep.org/council/> no later than September 23, 2021.