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.

American Journal of Emergency Medicine 39 (2021) 219–220

Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajem

The impact on outcomes of the ACS committee on trauma delayed trauma center verifications secondary to COVID19

As this report is being written (04/09), there are 1.51 million confirmed COVID-19 cases worldwide, and 434,114 in the United States. The healthcare system is overwhelmed by patient volume and changing guidelines during this uncertain time [1]. As a result, the ability of trauma centers to care for critically injured patients will be affected. To alleviate the burden on trauma center preparation for triennial verification, the American College of Surgeons Committee on Trauma (ACS-COT) has granted extensions for trauma centers that are verified or applying for verification [2].

Social distancing is recommended at this time [3]. With fewer people commuting, there is reduced numbers of injuries. A study in Anhui, China, showed the quarantine strategy resulted in significant decreases in traffic-related accidents [4]. In addition, recent vehicle crash data from the Department of Transportation showed a dramatic reduction of traffic-related accidents in Florida, New York and Massachusetts between October 2019 and March 2020 [5-7]. These states are among the top 10 for confirmed COVID-19 cases. This brings into question whether the burden on trauma centers is decreasing, and how this affects trauma center performance. However, hospitals are facing the need for beds and critical care units, trauma center personnel are being utilized to help treat COVID-19 patients [8]. On a similar note, COVID-19 infected trauma patients will have increased complexity. There is also the concern for an iatrogenic infection in the hospital. A recent study evaluated asymptomatic patients who underwent surgery during the incubation period of COVID-19 infection [9]. Results showed that 100% of patients developed COVID-19 pneumonia after surgery, 44.1% required ICU admission, and 20.5% died [9]. These outcomes portend a threat to trauma patients who often require ICU care and surgical management, and may impact trauma center performance and outcomes.

These unexpected difficulties are likely to cause temporary challenges to meet the requirements for verification by the ACS-COT. However, there may be a downside to delaying verification. Trauma center verification by the ACS-COT results in lower complications among trauma patients [10]. Major complications were three times higher among elderly patients treated at a trauma center that was not ACS-COT verified [10]. This is particularly important to consider since COVID-19 related deaths disproportionately affect the elderly [10]. This suggests that the verification process plays an important role in improving patient outcomes. It is worrisome to think that outcomes may worsen as a result of the delay. Albeit intended to relieve trauma centers of the burden associated with preparing for a site visit, it is necessary to consider all the effects on postponing verification.

After granting a one-year extension for verification, the ACS-COT is providing some guidance to maintain trauma center access and care [11]. These include recommendations on triage, resource allocation, transport limitations, separation of COVID-19 patients, PPE, and healthy social practices [11]. However, there remains uncertainty on COVID-19 specific recommendations with respect to treating patients, supplying equipment, and management. This is a challenging period that requires timely responses to the rapidly changing environment.

Scarcity of resources also needs to be considered. The New England Journal of Medicine reported on fair allocation of scarce resources [12]. Ethical considerations yielded the following recommendations: “maximize benefits; prioritize health workers; do not allocate on a first-come, first-served basis; be responsive to evidence; recognize research participation; and apply the same principles to Covid-19 and non–Covid-19 patients.” [12] The same recommendations can be applied to trauma centers. Trauma teams must consider the risks of expediting treatment potentially outweighing the risks of postponing treatment. Perhaps stabilization alone is a more appropriate course of action due to an increased risk of mortality in surgery associated with COVID-19 patients. Nonsurgical alternatives, such as pharmacologic therapy and immobilization and fixation of fractures, should also be considered. This requires individual interpretation and evaluation of patients on a case-by-case basis as some individuals may not be eligible for nonsurgical treatments. The report notes that respiratory therapists and critical care staff are the limiting factor for ventilator use, emphasizing the importance of healthy medical workforce on patient outcomes [12].

Trauma care has variable risks and benefits. The scales have changed, and we must re-evaluate the risks and benefits to ensure the best outcomes during this pandemic. Trauma centers need to be aware of the potential negative effect the delay in verification may have on their patient outcomes. This should be supplemented by COVID-19 specific guidelines from the ACS-COT. In addition, guidance on developing prioritization schema, potential impacts on health disparities, what to expect in terms of patient outcomes, and how to communicate these changes with patients is needed. This will allow trauma centers to provide the best care to the most patients.

References

[1] Phua J, Weng L, Ling L, et al. Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations. Lancet Respir Med. 2020;0(0). https://doi.org/10.1016/S2213-2600(20)30161-2.
[2] Impact on surgical meetings and activities. American College of Surgeons. https://www.facs.org/covid-19/meetings. [Accessed 8 April 2020].
[3] Sen-Crowe Brendon, McKenney Mark, Elkbuli Adel. Social distancing during the COVID-19 pandemic: staying home save lives. Publication stage: in press journal pre-proof. Am J Emerg Med. April 2, 2020 pii: S0735-6757(20)30221-7. doi: . 10.1016/j.ajem.2020.03.063. PMID:32305155.
[4] Zhu W, Li X, Wu Y, et al. Community quarantine strategy against coronavirus disease 2019 in Anhui: an evaluation based on trauma center patients. Int J Infect Dis. 2020. https://doi.org/10.1016/j.ijid.2020.04.016 April.

https://doi.org/10.1016/j.ajem.2020.04.087

[5] Injuries and fatalities. Florida Department of Transportation. . https://gis-fdot.opendata.arcgis.com/datasets/injuries-and-fatalities. Accessed April 25, 2020.
[6] NYPD. Motor vehicle collisions - crashes: NYC open data. Motor vehicle collisions - crashes | NYC open data. . https://data.cityofnewyork.us/Public-Safety/Motor-Vehicle-Collisions-Crashes/h9gi-nx95. [Accessed 12 April 2020].
[7] 2020 vehicle level crash details. MassDOT Impact Open Data Hub. . https://massdot-impact-crashes-vhb.opendata.arcgis.com/datasets/2020-vehicle-level-crash-details. Accessed April 12, 2020.
[8] Sen-Crowe Brendon, McKenney Mark, Boneva Dessy, Elkbuli Adel. A state overview of COVID-19 spread, interventions and preparedness. Publication stage: in press journal pre-proof. Am J Emerg Med. April 7, 2020 pii: S0735-6757(20)30248-5. doi: . 10.1016/j.ajem.2020.04.020. PMID:32334894.
[9] Lei S, Jiang F, Su W, et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. EClinicalMedicine. 2020(0):0. https://doi.org/10.1016/j.eclinm.2020.100331.
[10] TCs with American College of Surgeons verification have fewer complications. American College of Surgeons. https://www.facs.org/media/press-releases/2017/trauma060617. [Accessed 8 April 2020].
[11] Maintaining Trauma Center Access &amp. Care during the COVID-19 pandemic: guidance document for trauma medical directors. American College of Surgeons. https://www.facs.org/quality-programs/trauma/maintaining-access. [Accessed 9 April 2020].
[12] Fair allocation of scarce medical resources in the time of Covid-19 | NEJM. . https://www.nejm.org/doi/full/10.1056/NEJMsb2005114. [Accessed 8 April 2020].

Amanda Baroutjian
Department of Surgery, Division of Trauma and Surgical Critical Care, Kendall Regional Medical Center, Miami, FL, USA

Mark McKenney MD, MBA
Department of Surgery, Division of Trauma and Surgical Critical Care, Kendall Regional Medical Center, Miami, FL, USA
University of South Florida, Tampa, FL, USA

Adel Elkbuli MD, MPH
Department of Surgery, Division of Trauma and Surgical Critical Care, Kendall Regional Medical Center, Miami, FL, USA
Corresponding author at: 11750 Bird Road, Miami, FL 33175, USA
E-mail address: Adel.Elkbuli@hcahealthcare.com

9 April 2020