

Reply to Jacobs et al.: Massive transfusion protocols during the COVID-19 pandemic

We thank Jacobs and colleagues for their comments on our article ‘The impact of the COVID-19 outbreak on activation of the massive transfusion protocol in the emergency department’ [1]. Jacobs and colleagues found that half of the 50 surveyed institutions had no change of monthly massive transfusion protocol (MTP) activation in the previous study [2], which was similar to our results. Jacobs and colleagues also analysed the number of traffic accident cases according to the nationwide database released by the Ministry of Transportation and Communications, Taiwan, as our study found that the most common reason for triggering MTP for traumatic cases was motor vehicle accidents. They found that traffic accidents were seemingly fewer in our study period of COVID-19 outbreak. However, our study was performed in single medical centre, which had an MTP in northern Taiwan. Hence, it may be somewhat difficult to explain totally why there was no remarkable change in the monthly MTP activation before and during COVID-19 outbreak in our study. Furthermore, we have read the article by Jacobs and colleagues with high interest and found that 12 of the 50 surveyed institutions had experienced an increase of monthly MTP activation since the COVID-19 pandemic began in the United States (March 2020) compared to the pre-pandemic period [2]. Though the aetiology of MTP activation was not disclosed in this survey, the increase of monthly MTP activation may be due to the increasing cases of gun-violence-related deaths and injuries in the recent 2 years (gun-violence-related deaths: 43,652 in 2020 and 44,912 in 2021; gun-violence-related injuries: 39,519 in 2020 and 40,540 in 2021) as disclosed in the Gun Violence Archive [3]. In contrast, most Taiwanese citizens are not allowed to have guns because of the ‘Controlling Guns, Ammunition and Knives Act’. These could explain why the most common cause of MTP activation for traumatic cases in our study was due to motor vehicle accidents rather than trauma due to violence. As a result, the strategies for MTP and patient management could vary from country to country.



Noteworthy, Jacobs and colleagues wondered whether the increased interval from MTP activation to transfusion was associated with challenges in maintaining adequate staff in Taiwan. The COVID-19 outbreak in mid-May 2021 mainly happened in northern Taiwan and a majority of COVID-19 patients with severe illness were admitted to our hospital [4, 5], which was divided into the so-called ‘dirty zone’ and ‘clean zone’ for optimized patient management. Of these, the critical care area was set as part of the dirty zone. Medical staff intending to enter into the critical care area should be equipped with adequate personal protective equipment (PPE) first, including eye protection, N95 or P100 respirator and gown. As was the case with the

time-consuming process of wearing PPE, it inevitably took time to deliver blood products into the critical care area in MTP. Importantly, however, it ensured the staff safety in case of exposure to severe acute respiratory distress syndrome coronavirus 2 (SARS-CoV-2) in the dirty zone.

Finally, we appreciate this comment by Jacobs and colleagues on our findings and hope that our work could contribute to the growing body of knowledge concerning the MTP practice during the COVID-19 pandemic.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

Chih-Chun Chang^{1,2} 
The Transfusion Committee³
Jen-Tang Sun^{4,5} 

¹Department of Clinical Pathology, Far Eastern Memorial Hospital, New Taipei, Taiwan

²Department of Nursing, Cardinal Tien Junior College of Healthcare and Management, Yilan, Taiwan

³The Transfusion Committee, Far Eastern Memorial Hospital, New Taipei, Taiwan

⁴Department of Emergency Medicine, Far Eastern Memorial Hospital, New Taipei, Taiwan

⁵College of Medicine, Tzu Chi University, Hualien, Taiwan

Correspondence

Jen-Tang Sun, Department of Emergency, Far Eastern Memorial Hospital, No. 21, Sec. 2, Nanya S. Road, Banqiao, New Taipei City, Taiwan (R.O.C.).

Email: tangtang05231980@hotmail.com

ORCID

Chih-Chun Chang  <https://orcid.org/0000-0002-4377-7026>

Jen-Tang Sun  <https://orcid.org/0000-0003-2628-9917>

REFERENCES

1. Yang CX, Lin PC, Chang CC, Tsai HW, Transfusion Committee, Sun JT. The impact of the COVID-19 outbreak on activation of the massive transfusion protocol in the emergency department. *Vox Sang.* 2022 Jan 4. <https://doi.org/10.1111/vox.13238>

2. Jacobs JW, Booth GS. Blood shortages and changes to massive transfusion protocols: survey of hospital practices during the COVID-19 pandemic. *Transfus Apher Sci.* 2021;61:103297.
3. Gun Violence Archive. Past Summary Ledgers. U.S.A [cited 2022 Feb 22]. Available from: <https://www.gunviolencearchive.org/past-tolls>
4. Huang CY, Tsai HW, Liu CY, Liu TH, Huang HL, Chang CC, et al. The predictive and prognostic role of hematologic and biochemical parameters in the emergency department among coronavirus disease 2019 patients. *Chin J Physiol.* 2021;64:306-11.
5. Tsai HW, Hung FM, Liao CH, Lin HF. Hotel-based quarantine center as a rapid response to COVID-19 outbreak, New Taipei, Taiwan, May to July 2021. *J Formos Med Assoc.* 2022 Jan 10. S0929-6646(22)00001-8. <https://doi.org/10.1016/j.jfma.2022.01.001>