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Editorial

“Because Every Drop Counts”: Blood donation during the COVID-19 Pandemic



1. Introduction

The Coronavirus Disease-2019 (COVID-19) pandemic has trampled the health care system of many countries [1]. Blood transfusion services (BTS) in any hospital, hold the prime location and ensure smooth functioning of all elective and urgent surgical interventions of various traumas, emergency, obstetric cases, and the cancer patients throughout 24 × 7. In the wake of ongoing COVID-19 pandemic, just like many other sectors of the health care system, BTS and blood banks are also struggling to cope up with the unforeseen challenges.

1.1. Impact of Social distancing on blood donation drives

One of the major challenges ahead of us is to maintain high spirits and persistent motivation amongst the volunteer donors to keep donating blood, even during the crisis of COVID-19 pandemic which is a war-like situation. To et al. in their study found that fewer than 5% of Americans who are eligible to donate have donated blood [2]. These figures have likely worsened further during the current COVID-19 pandemic period.

We believe that there might be lots of concerns, confusion, and misleading rumors in the mind of donors with regards to blood donation during the pandemic period. Additionally, due to the government's interventions such as home sheltering, mass lockdown, and curtailment strategies towards public gatherings, amid the COVID-19 outbreak, the arrangement of the voluntary blood donation drives have been debarred. Likewise, there has been a general reluctance of the public to come to the blood centers to donate blood. This has contributed to a significant drop in the number of blood drives and storage inventory. The phenomenon of the drop in voluntary donation has been noted in many countries across the globe [3,4]. Yahia et al. recently published their eight months (from September 2019 to May 2020) experience with blood supply and demand in King Abdullah Hospital, Bisha, Saudi Arabia. They noted a significant drop of 39.5% in blood bank-based collections. At the same time, they also noted a drop in blood demand by 21.7% [3]. Wang et al. reported a similar experience from The First Affiliated Hospital, Zhejiang University School of Medicine, Hangzhou, China [4]. They reported that the major concern of the blood donors in their study was the fear of acquiring SARS-CoV-2 during blood donation.

1.2. Understanding the impact of COVID-19 pandemic on the demand-supply chain

Avoiding public gatherings and maintaining social distancing to stop community transmission of SARS-CoV-2 are the key non-pharmacological interventions that have led to a significant drop in blood donation drives. Currently, the disequilibrium in the stores of blood products at various blood banks across the world is more so because of a decline in supply (reduced blood donations) than an increase in demand (more requirement). In usual days, the blood inventory of major health care centers have a stock up a one to two weeks supply. But, as blood collections have plummeted, now most of the blood banks are under-reserved and continue to be fragile. As of June 12, 2020, 29% of America's blood center's (One of US major blood donation societies) have less than 1 day supply to meet the requirements [5]. Another major society, “American Red Cross” shared their experience from March which showed a drop-off of 86,000 fewer blood donations and 2700 blood drives cancellations.

With more liberal COVID-19 testing in the United States (U.S.), we are seeing a sharp surge in the number of case detection and admissions [6]. Most of the blood transfusions come from the inventory on the shelf.

Special blood components like platelets and thawed plasma have a further shorter storage half-life, which is further complex to manage and ensure that fresh, unexpired stocks are always ready for the needy. Special populations like COVID-19 positive pregnant women, patients with cancer, and bone marrow transplants are critically ill and their threshold of blood and platelet transfusions might vary from time to time, which is expected to make the blood demand crisis even “more complex” as these patients need specific blood parts or products like HLA matched platelets, etc. [7,8].

1.3. Strategies to replenish drying blood stores

To ensure balancing of the blood collection with social distancing, the BTS's are issuing donation appointments to the volunteers over the phone, encouraging them to come forward individually either to the blood collection centers and or mobile collection facilities based on their convenience. To tide over the “blood crisis”, FDA has recently lowered the deferral period for blood donation from 12 months of abstinence from sex to three months for men who have sex with men [9].

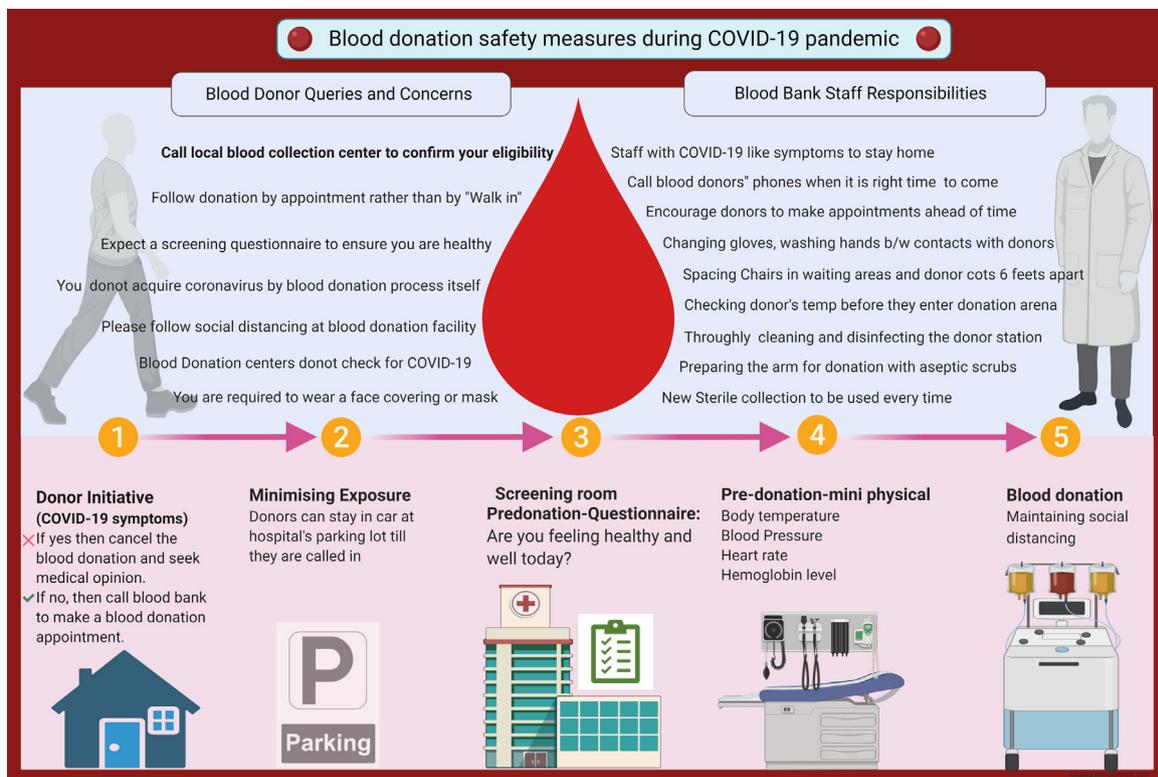


Fig. 1. Blood donation safety measures that could potentially boost up blood donation drives without compromising social distancing.

By calling for measures such as public awareness and clarification of the common queries, we believe that blood donation can be boosted up.

Furthermore, the safety of both donors, as well as the staff, should remain the priority of any BTS during this time. It includes a regular and repeated cleaning of donation stations, including surfaces of potential contamination and wearing protective face masks by the donors and the BTS staff (Fig. 1). Additionally, the staff must be optimally trained in adherence to the appropriate protocols, and management of the biological waste generated.

The above-mentioned measures are feasible to implement in well-established blood donation centers but practically difficult to manage in case of mobile blood donation centers like a Van or bus that are equipped with blood donation equipment but not resourceful enough to practice all the necessary precautions recommended to contain the COVID-19 community spread. As none of the blood transfusion societies have mentioned any specific recommendations with regards to the mobile collection units, in our opinion, the best practice would be an either restrict the number of donors in mobile collection drives or arrange a large open room with enough space to ensure donor privacy and social distancing.

A recent report by Pagano et al. discussed the drop in blood donation during the first week of COVID-19 pandemic in Washington State, (U.S.) and the measures taken to overcome the same [10]. Strategies like canceling the elective surgeries and procedures, requests of single units of red blood cells, rechecking on the indications of blood order requests, and calling for more blood donation drives proved to be fruitful as seconds week onwards, authors observed an improvement in the blood products reserve. Such interventions and constant reviewing the guidelines must be encouraged that should facilitate the BTS and hospitals to tide over the COVID-19 crisis.

Gniadek et al. studied the impact of the cancellation of elective surgeries and procedures on the demands for blood components [11]. They found that it only led to a modest, non-significant decline

in the demand for packed RBCs, platelets, and FFP units. To tackle this crisis, the transfusion medicine department at NorthShore University HealthSystem, Evanston, Chicago ramped up the in-house donor programs which led to a 5-fold increment in the storage for whole blood units [11].

Through a recent letter (dated 12 March 2020) to Robert R. Redfield, M.D. [The Director of Centers for Disease Control and Prevention (CDC)], major blood centers of US, namely, America's Blood Centers, AABB, and American Red Cross have expressed their fear over the negative impact of social distancing in the form of cancellations of multiple blood donation drives and decreasing number of volunteers showing up due to the fear of acquiring infection in the donation process. Dr. Peter Marks, M.D., Ph.D. Director of the Center for Biologics Evaluation and Research (CBER) has also requested the general public to come forward for blood donation [12]. American Association of Blood Banks (AABB) and other blood collecting organizations are regularly updating their websites with the latest developments to clarify blood volunteers' general concerns and to guide the various blood bank centers and donation camps worldwide [13]. With views to the eligibility criteria, specific guidelines have been made considering the COVID-19 pandemic that needs to be observed (Fig. 2). We recommend following sites to our readers to refer for the latest updates on blood transfusions in COVID:

- AABB: www.aabb.org;
- America's Blood Centers: www.americasblood.org;
- American Red Cross: www.redcrossblood.org;
- Armed Services Blood Program: www.militaryblood.dod.mil;
- Blood Centers of America: www.bca.coop

2. Encouraging for convalescent plasma donation

It has already been 6 months since the first case of COVID-19 disease was reported [14]. But we still do not have any definitive

FACTS ABOUT BLOOD DONATION AND CORONA VIRUSES

- ✓ No known/suspected case of transfusion-transmitted COVID-19 reported till today to US as per FDA
- ✓ No documented cases of transfusion-transmission during SARS and MERS epidemics in the past.
- ✓ There is no risk of contracting COVID-19 through the blood donation process.

ELIGIBILITY CRITERIA

It is not recommended to donate blood if in the past 28 days:

- ✗ You have cared for, lived with, or otherwise had close contact with an individual(s) diagnosed with or suspected of having COVID-19.
- ✗ You have been diagnosed with or suspected of having COVID-19.
- ✗ You have traveled to an area impacted by an outbreak of COVID-19 (refer to the CDC's website).

[http://www.aabb.org/advocacy/regulatorygovernment/Documents/COVID-19 Toolkit.pdf#search=COVID](http://www.aabb.org/advocacy/regulatorygovernment/Documents/COVID-19%20Toolkit.pdf#search=COVID) (updated till 01.23.2020)

Fig. 2. Showing the facts related to transfusion related infections and eligibility criteria.

treatment and most of the available therapeutics are being tried based on either previous outbreak experience, or preliminary results on COVID-19 patients. Recently, convalescent plasma therapy has been under consideration as a potential therapeutic strategy to transfer passive immunity from recovered individuals to active patients [15,16]. While the strategy seems logical and is based on positive evidence from the SARS outbreak, convalescent plasma therapy could be challenging to execute. Finding an ABO matched compatible donor, significant neutralizing antibody titers, complete recovery from COVID-19 symptoms, a documented negative COVID-19 PCR, and willingness to donate are only a few amongst the many challenges to accomplish convalescent plasma therapy donation. Proper education, counseling, awareness of civic responsibility, and an established and structured taskforce play a key role in encouraging recovered patients to donate plasma. Hospital-based blood donor centers have the advantage to readily identify the potential candidates while they are still recovering from COVID-19 and to initiate the documentation process for collection of convalescent plasma at a later date, which should save a lot of time and effort. Mayo Clinic is leading the COVID-19 expanded access program and is helping all the health care facilities, transfusion medicine programs, and blood donation societies for effective execution of the convalescent therapy program [17].

3. Conclusion

In conclusion, COVID-19 is a pandemic crisis that needs a collaborative effort from blood donors, community, blood transfusion services, and administration. A message should be clearly sent out that “To wipe out COVID-19, we bid for social distancing, not social disengagement”.

Disclosure of interest

The authors declare that they have no competing interest.

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Kamal Kant Sahu^{a,*}

Manish Raturi^b

Ahmad Daniyal Siddiqui^a

Jan Cerny^c

^a *Department of Hematology and Oncology, Saint Vincent Hospital, 01608 Worcester, MA, United States of America*

^b *Immunohematology & Blood Transfusion, Himalayan Institute of Medical Sciences, 248016 Dehradun, Uttarakhand*

^c *Division of Hematology/Oncology, Department of Medicine, University of Massachusetts Medical Center, Worcester, MA, USA*

* Corresponding author at: Department of Internal Medicine, Saint Vincent Hospital, 01608 Worcester, Massachusetts, United States of America.
E-mail addresses: drkksahu@gmail.com (K.K. Sahu),
manishraturi@srhu.edu.in (M. Raturi),
a.daniyal.siddiqui@stvincenthospital.com
(A.D. Siddiqui), Jan.cerny@umassmemorial.org
(J. Cerny)

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