

Guidelines on Covid-19 for Blood Banks

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ABSTRACT

BACKGROUND

General measures for infection prevention and control should be followed by the health care workers as the world struggles to control Covid-19 spread. Medical professionals and researchers continue to fight with the recent global outbreak of Covid-19 and its potential impact on blood transfusion services is real and a cause of concern for transfusion medicine experts. The 2002 - 03 SARS outbreak saw 8098 reported cases resulting in 774 deaths, and a 9% mortality rate.⁽¹⁾ The mortality rates for the same spiked to 50% for individuals over the age of 60. It is accepted that the present Covid-19 outbreak originated in bats. As per the American Association of Blood banks (AABB).⁽²⁾ There is no reported or suspected case of transfusion transmitted Covid-19.^(3,4,5) Similarly, in India there is no reported case of transfusion transmission. Social distancing of blood donors is of paramount importance for blood donors while blood collection. Similarly, organizing of blood donation camps by organisers and blood bank staff should ensure the same. Facilities for hand washing for blood donors and use of mask should be ensured. Blood donation by blood donors with travel history should be deferred for 28 days.

KEY WORDS

Covid-19, Blood Banks, Safety Guidelines

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BACKGROUND

Blood services must be geared up as a rapid response, so that enough blood is available during the pandemic, during which blood sufficiency is most likely to be affected. Response should be at the national level, to ensure coordination, amongst all the states so that the public is sure of regular blood supply during the outbreak. The pandemic response plan should be activated for sufficient supply of safe blood. The major blood banks like KEM, Mumbai, AFMC Pune Red cross blood bank, Rotary blood bank and many others for supply of blood and blood components.

Globally, all blood banks have a voluntary donor base from healthy donors between the ages of 18 to 65 years and a minimum Hb of 12.5-gram percent and weighing 45 kgs. They should have no transfusion transmitted disease history and surgical procedures within the last three months. A healthy donor can donate blood every 3 months. There should be no history of tattooing, immunization, jaundice in the last 6 months to 1 year. The donor should not be a diabetic, hypertensive, epileptic and suffering from any malignancy.⁽⁶⁾

Patients of thalassemia require regular blood transfusion every 3-4 weeks. Blood is also required to save lives of people especially road traffic accidents, critically ill patients and in pregnancy. Hence, it is essential to maintain a safe supply of blood and blood components, stored in licenced blood banks in the country.

Till date, no cases of Covid-19 transmission by blood transfusion have been reported. Therefore, no action is being recommended by American Association of Blood Banks, US Food and Drug Authority and Center for Disease Control because no data is available to suggest risk of transfusion of Covid-19. Since respiratory viruses do not transmit by blood transfusion and individuals are not at risk of contracting Covid-19 through the process of blood donation or blood transfusion.

Options for Blood Safety Interventions

The Ministry of Health and Family Welfare, Government of India has issued an advisory highlighting that no mass gatherings will be permitted, or such gatherings may be postponed till after the end of Covid-19 outbreak. All state governments in the country will ensure strict adherence to this guideline. Recently in New Delhi, due to a miscommunication, migrants labours assembled at a bus station. A similar incident happened due to miscommunication where migrant labours gathered at Bandra station in Mumbai. To maintain safe and adequate supply of blood and blood components, it is recommended that blood donation may be carried out within the premises of the blood bank or by organizing blood donation camps keeping in mind social distancing norms, guidelines on infection control and biomedical waste disposal rules. The staff of the blood bank and the organizers of the blood donation camp will ensure safety of the potential blood donors and any other associated agency.

Presently no guidelines are available from FDA. Deferrals for travel to China may be used by blood banks before collection of blood from blood donors. Recommendations by AABB's Transfusion Transmitted recommendations include:

1. Voluntary Implementation of Travel Deferrals

Blood banks must have their own SOP for donor deferral.

- Donor History Questionnaire (DHQ) to identify individuals who have traveled to China in the past 28 days.
- A 28-day deferral covers twice the maximum incubation period of 2019- nCoV.
- A donor deferral strategy can be implemented using the current travel deferral policy.

2. Combination of Deferrals Related to Illness and Contact and Enhanced Education

SOP should include combination of donor education, travel deferrals, deferrals for contact with SARS and for a diagnosis of SARS. Guidelines are being prepared by AABB along with Donor deferral task force.

Current Status

As of May 8, 2020, there are over 4 million active Covid-19 cases globally with 276,185 deaths and 1,382,394 recoveries. The United States currently accounts for one-third of all cases reported and one-fourth of all deaths reported globally. India on the other hand currently has 59,695 cases reported (<1% globally) with 1,985 deaths (<0.8% globally). Table 1 further provide the geographical view of cumulative number of confirmed cases and confirmed fatalities by countries and regions.

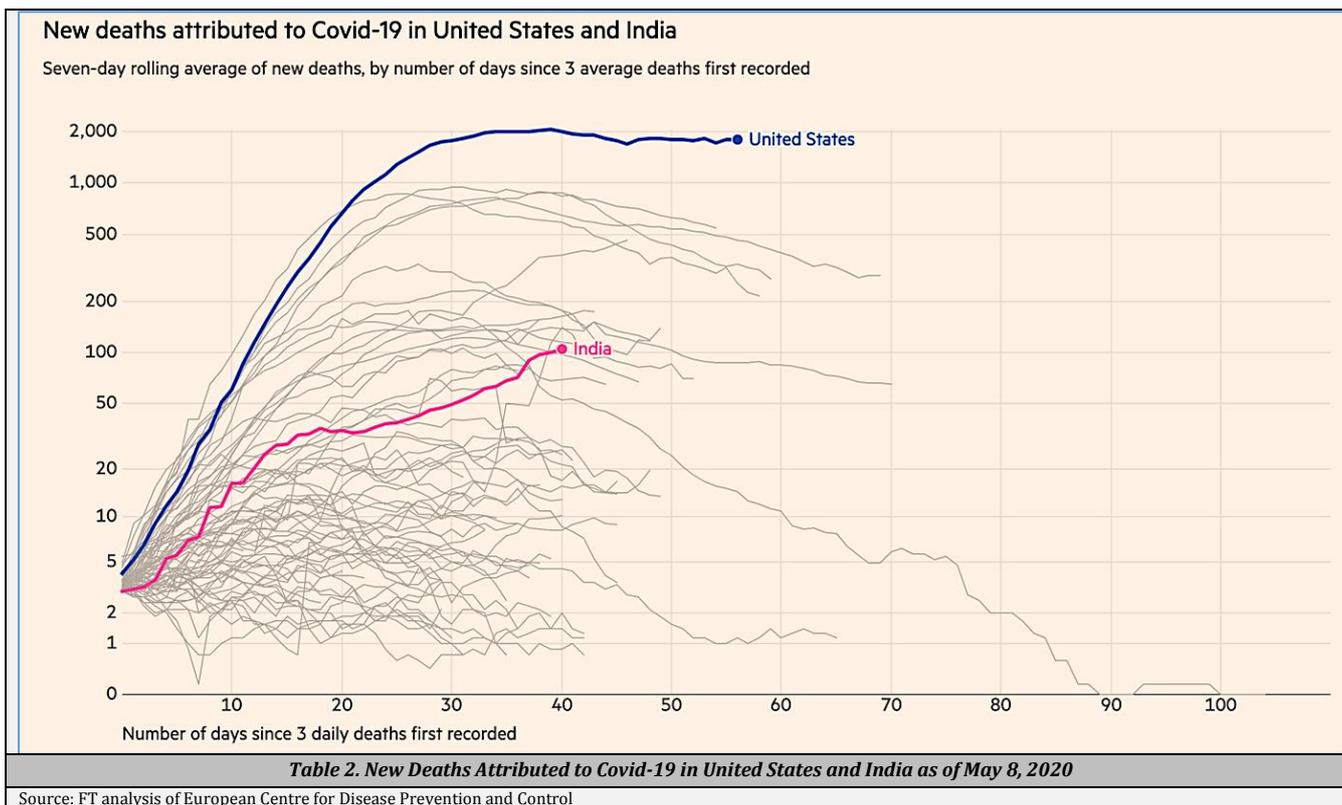
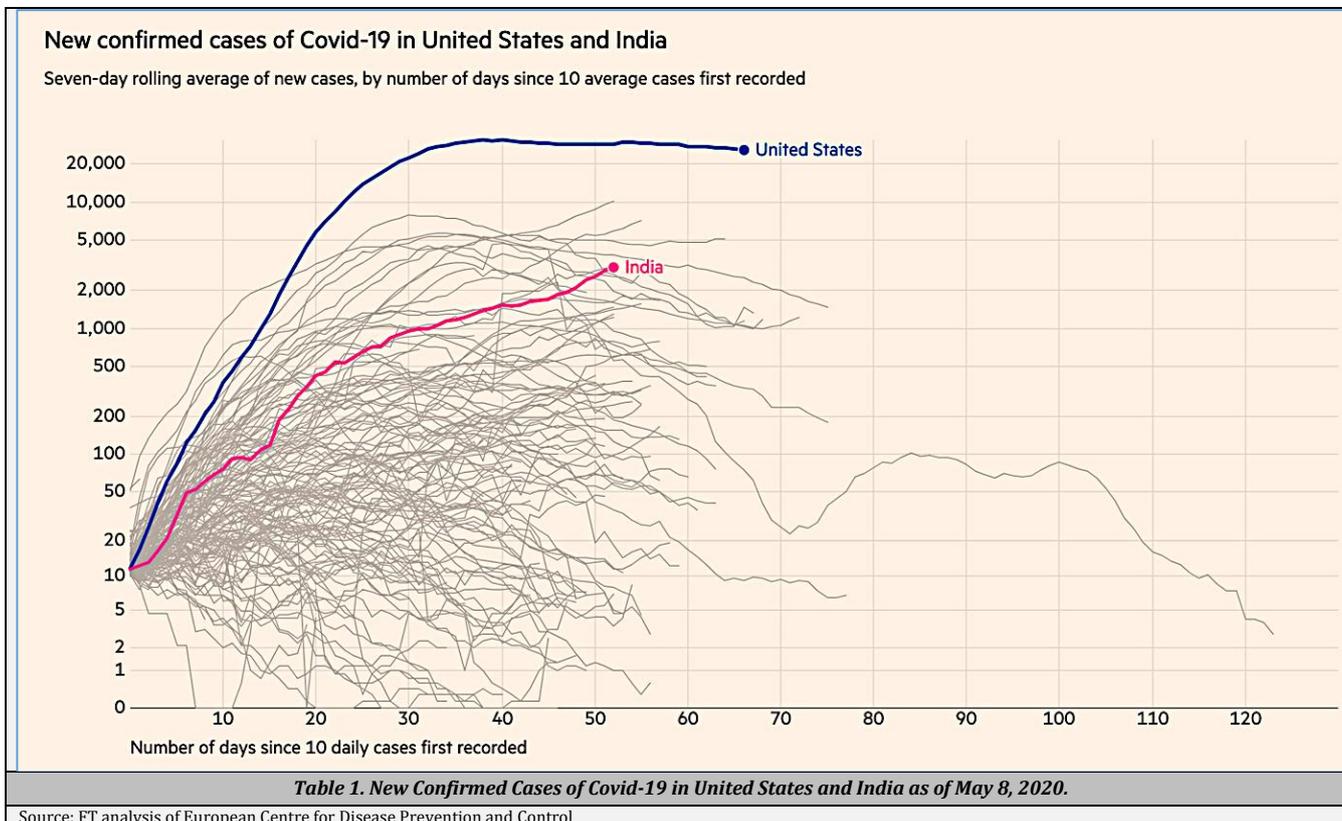
Clinical Features

Fever, tiredness, dry cough, nasal congestion, runny nose and sore throat are symptoms are usually mild and begin gradually in patients. High blood pressure, heart problems or diabetes, are more likely to develop serious illness and currently stand in the high-risk category in older people.⁽¹⁾ People can contract Covid-19 from other people with Covid-19 disease. Droplet infection spread can occur. This is why, it is important to stay more than 1-meter (3 feet) person who is sick and also maintain a similar social distance, ⁽¹⁾ well as blood donors.⁽⁵⁾

INFECTION CONTROL

Social Distancing

Social distancing measures should be followed in the blood donation site should be strictly adhered to as delineated by the authorities from time to time keeping in mind 1-meter physical distancing, no shaking of hands, embracing. Protocols of hand washing and ensuring proper cleanliness of the equipment required during the blood donation camp. No overcrowding should be permitted. The blood donation couches will be kept at a distance of minimum 1-meter of each other during the blood donation.



Hand Hygiene

This is appropriate for all modes of transmission including airborne, droplet and contact. When hands are visibly dirty or soiled with blood or other body fluids or after using the toilet washing with soap and water.

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CRITERIA FOR SELECTING DONOR FOR BLOOD DONATION

1. Exclusion of At-Risk Donors to Maintain Safety

As notified with Ministry of Health and Family Welfare time to time

- a. Travel History: No blood donation in donors with travel history to countries effected with Covid 19
- b. Contact History: confirmed/suspected case of Covid-19 including those under quarantine for those people in contact with Covid 19 positive cases
- c. Confirmed Case: 28 days deferral till there is complete recovery from the disease including radiological or virological clearance.

2. Management of Blood Collection to Ensure Adequacy

No mass gatherings are permitted by Ministry of Health and Family welfare, Government of India.⁽³⁾ It is recommended that in house blood donation as well as outdoor blood donation camps, may be continued, while ensuring compliance with existing social distancing norms, infection control guidelines and biomedical waste disposal rules. The blood bank staff should along with the organisers should conduct blood donation camps as per the SOP, to ensure adequate safe blood supply.

- a. At the blood donation camp social distancing should be ensured, The blood donors advised from time to time by the concerned authorities like physical distancing of one meter between the individuals, restrictions of social norms of hand shaking and hugging, hand washing protocols, protocols for maintaining the proper cleanliness of the equipment used during the blood donation, measures to reduce the overcrowding, managing the blood donation couches such that one meter distance is maintained between the two couches of blood donation.
- b. Infection control measures should be consistent with national and state communicable disease control guidelines for Covid-19 for communities.^(4,5) Blood collection centres are not medical care facilities so general public guidelines rather than hospital guidelines can be followed.

Safe blood supply has to be made available in blood banks globally, to ensure optimal blood supply. Social distancing is a must and should be strictly adhered to. Arrangements should be in place for patients who are in urgent need of blood and blood components like thalassaemic, persons with severe anaemia, instances of severe blood loss, road traffic accidents, post-partum haemorrhage.

Although there are many queries from various blood banks with respect to temporary deferral criteria for blood donors in the light of pandemic. The WHO guidance on the issue is yet to be released, here we have listed the NBTC. Recommendations may be considered interim till revised in light of WHO guidance and upcoming evidence.

The National Guidelines for infection prevention and control for health care facilities issued by ministry of health and family welfare, Government of India may be referred for better understanding and implementation of the measures to be taken for infection prevention control in the healthcare settings

Enhanced infection control would not normally be required unless on specific advice of public health and/or infection control personnel.

Additional personal protective equipment such as P2/N95 masks, additional gloves and gowns for collection of blood is not currently considered necessary as blood is collected from the people who are healthy.

Enhanced environmental cleaning would not normally be required but may be recommended to decrease the risk of exposure or in the situation, that a suspected case was present at blood centres. This will include ensuring that all the frequently touched surfaces are sanitized, and all biomedical waste is disposed of correctly.

3. Blood Collection

This can be accomplished through recruitment of healthy individuals as blood donors should be ensured so as to have a continuity in sufficient supply of blood banks. Whenever possible, regular repeat voluntary blood donors should be encouraged to come for blood donation at sites convenient to them. In- house and outreach voluntary is avoided and social distancing as issued by respective state Governments may be adhered to with respect to numbers that define gatherings. Similarly, smaller blood donation teams may be deployed by blood centres for blood collection.

- a. In hotspot areas with large number of Covid 19 positive cases.
- b. Non-affected areas may be used for organising blood donation camps IEC campaigns should be organized blood donation camps may be organized as usual with appropriate precautionary measures. The blood donors during the blood donation sessions may be called for blood donations in a staggered manner such that crowding, and mass gathering to increase awareness and encourage donation in these areas.

4. Donor Education and Communication

This is of paramount importance during any outbreak situation. Blood donors should be explained how to fill the consent form and the action being taken. Blood centres may review the SOP for their blood collection and donor screening flow to accommodate for these changes. Donor educational materials in the form of leaflets, handouts or the posters, instructing individuals to self –defer and refrain from the donation if they have history of travel or contact or are confirmed cases for Covid-19 may be displayed prominently at the blood centre or the blood donation camp should strictly follow the routine as well as additional measures.

5. Role of Voluntary Blood Donor

Organizations can be critical in ensuring that there is a sufficient blood supply. The VBDOs should maintain close contact with local blood centres to ascertain the need for donors.⁽⁷⁾ They should work closely with health authorities to disseminate the necessary guidelines for blood donation during the infectious disease outbreak like Covid-19.^(8,9)

Post Donation Care is to be ensured for every donor donating blood at the blood centre or in outdoor locations as per standard of care. In the present context:

a) Blood Donor Related

If a blood donor has symptoms of dry cough and fever, there may be-

1. Post donation illness suspicious of Covid -19 in self.
2. Been confirmed positive for Covid-19.
3. A close contact having been confirmed positive for Covid-19.

It is to be ensured by the Blood Centre Medical officer that if clinical intervention is required for the donor, he should be appropriately referred for further management as per extant guidelines. The SBTC should ensure that the details with respect to facilities where such services for diagnosis and treatment of Coronavirus disease are made available with all licensed blood centres in their State.

b) Blood and Blood Component Related

The unutilized whole blood or blood components collected from such individuals as under and above should be recalled and discarded.

6. Guidelines on Appropriate Clinical Use of Blood and Blood Components

The Hospital Transfusion Committee of the hospitals should be regularly apprised of the developments of the epidemic in the region. The committee should be empowered to take the appropriate decision and provide the necessary guidelines to the treating physician and the surgeons of the hospital for the appropriate clinical use of blood and blood product during the period of outbreak of Covid-19.

7. Hemovigilance has an important role to play. Since a National Hemovigilance Program is in place in National Institute of Biologicals, and any hazards of blood transfusion should be reported to the authorities. All possible cases post donation and post transfusion infections should be reported to HvPI of NIB with copies to respective SBTC and State FDA and properly investigated.

8. The Drugs and Cosmetics Rules and NBTC guidelines permits the sharing and transfer of blood and blood components screened for transfusion transmitted

diseases. This step is helpful as the number of blood donors decreases during a disease outbreak leading to less supply of blood. However, the requirement of blood and blood component continues at the usual level. Hence, the provisions may be utilized by licenced blood banks and facilitated by State blood transfusion councils to reduce the less supply of blood in the hot spots of the country.

9. The Italian National Blood Centre recommends donor deferral who in the last 14-days prior to blood donation had fever more than 37.5C and respiratory tract infection symptoms (cough, breathlessness, sore throat, running nose) or had come in contact with a suspected or confirmed case of Covid-19. The importance of setting up a SOP to collect post donor information was emphasized.⁽¹⁰⁾

10. Information, education and communication of blood donors is important during Covid-19 outbreak. All blood donors should be informed regarding any changes in the process of donor selection, blood donation screening and the workflow in the blood bank and blood donation camps. Educated donors will be able to comprehend the situation and will be able to follow self-deferral or easily answer the questions accurately. All SOPs in the blood bank should be reviewed for collection of blood and screening of blood donor flow so that these changes can be implemented. Leaflets, handouts, posters with instruction for self-deferral in case of any history of travel or contact or a positive Covid-19 case should be displayed prominently at the gate of the hospital, in the OPD, at the entrance of the blood bank, at the reception of the blood bank and at the blood donation camps.

Role of blood donor organizations is of paramount importance to ensure optimal supply of blood and blood components. Countries where voluntary blood donor organizations are available can easily supply blood and blood components as per the requirements of the hospital. Constant and close contact with local blood banks and health authorities to inform necessary guidelines during outbreak of Covid-19 are adhered to.

CONCLUSIONS

Over the decades, there have been multiple instances of emergence of Corona viruses that have caused human and veterinary diseases, and this is expected to continue in the future due to their ability to recombine, mutate, and infect multiple people.

1. Propensity to Jump Species: The virus may jump species and has to be vigilantly investigated.
2. Protein Characterization: Many of the proteins need to be characterised. More research is required to develop a vaccine and alleviate suffering of mankind. Guidelines for

blood banks have been issued by the Ministry of Health, GOI.

3. It is the responsibility of National Blood Transfusion Council, and State Blood Transfusion, to ensure safe and optimal supply of blood for the needy patients.
4. Blood Banks and blood donation camp organisers should ensure strict adherence to guidelines to ensure safety of blood donors, blood bank staff and blood donation camp organisers.

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REFERENCES

- [1] Zhao L, Jha BK, Wu A, et al. Antagonism of the interferon-induced OAS- RNase L pathway by murine coronavirus ns2 protein is required for virus replication and liver pathology. *Cell Host Microbe* 2012;11(6):607-16.
- [2] AABB's Transfusion Transmitted Disease Committee. Update: Impact of 2019 Novel Coronavirus and blood safety, Feb 25 2020.
- [3] Discharge Policy of nCoV Case, Ministry of Health and Family Welfare, Government of India. 2020.
- [4] Advisory for the mass gatherings issues by MoHFW through an Office Memorandum dated 5th March 2020.
- [5] National Guidelines for Infection Prevention and Control in Healthcare Facilities as issued by Ministry of Health and Family Welfare, GOI. 2020.
- [6] AABB's Optional Resources for FDA's Communication to Blood. Establishments regarding the Covid-19 outbreak, February 2020.
- [7] Voluntary Blood Donation Program: an operational guideline by NBTC. Guidelines on bulk transfer of blood and the blood components by NBTC. The AABB Inter-organizational Task Force Statement on Coronavirus and Blood Donation. <http://www.aabb.org/advocacy/regulatorygovernment/Pages/Statement-on-Coronavirus-and-Blood-Donation.aspx>
- [8] <https://www.fda.gov/emergency-preparedness-and-response/mcm-issues/coronavirus-disease-2019-Covid-19-frequently-asked-questions>
- [9] <https://www.who.int/news-room/q-a-detail/q-a-coronaviruses>
- [10] Centro Nazionale Sangue. [Coronavirus, precautionary measures updated]. Accessed on 31/03/2020. [In Italian]. <https://www.centronazionale sangue.it/node/831>.