

Advice on safety of blood products / solid organ donations during outbreak of SARS-CoV-2

Question:

Should additional safety precautions be taken?

Current situation:

No pandemic, high levels of transmission in China + several other regions (see case definition [on website Sciensano](#)), low-level community transmission in several other regions

Donor deferral during 28d (ie 2x incubation period) for travelers returning from China

Available guidelines:

WHO:

General: <https://www.who.int/publications-detail/protecting-the-blood-supply-during-infectious-disease-outbreaks-guidance-for-national-blood-services>

Specific

No specific recommendations on SARS-CoV-2

During SARS epidemic: Deferral of blood donations from donors in the categories listed. The blood transfusion services (BTSs) to ask the blood donors who have donated blood, to report if diagnosed as suspect or probable SARS case within 1 month after blood donation and the BTSs to recall the blood products still not transfused. For countries with existing systems and facilities to trace recipients of blood, to follow up the recipients who have received blood/blood products from the donors presenting within one month after donation fulfilling the probable case definition of SARS.

ECDC:

In [Risk Assessment 22-01-2020](#): The potential for transmission of the 2019-nCoV through substances of human origin (SoHO) is **unknown**. (...) Therefore, until more information is available on the epidemiology and pathogenesis of this infection, SoHo safety authorities in the EU/EEA countries may **follow the recommendation used for SARS-CoV and MERS-CoV**. This implies a precautionary **deferral from donation of blood, cells and tissues donors for 21 days after possible exposure** to a confirmed case or after returning from Wuhan, China [65,66]

American Association of Blood Banks / CDC:

[guideline updated 20/02/2020](#):

No transmissions by blood or other substances of human origin have been documented or alleged for 2019-nCoV. This is true, as well, for the other two coronaviruses that have emerged over the past two decades (SARS, the Severe Acute Respiratory Syndrome Coronavirus and MERS-CoV, causing Mideast Respiratory Syndrome). **AABB, FDA, and CDC are not recommending any action by blood collection establishments at this time because there are no data or precedent suggesting risk of transfusion transmission**

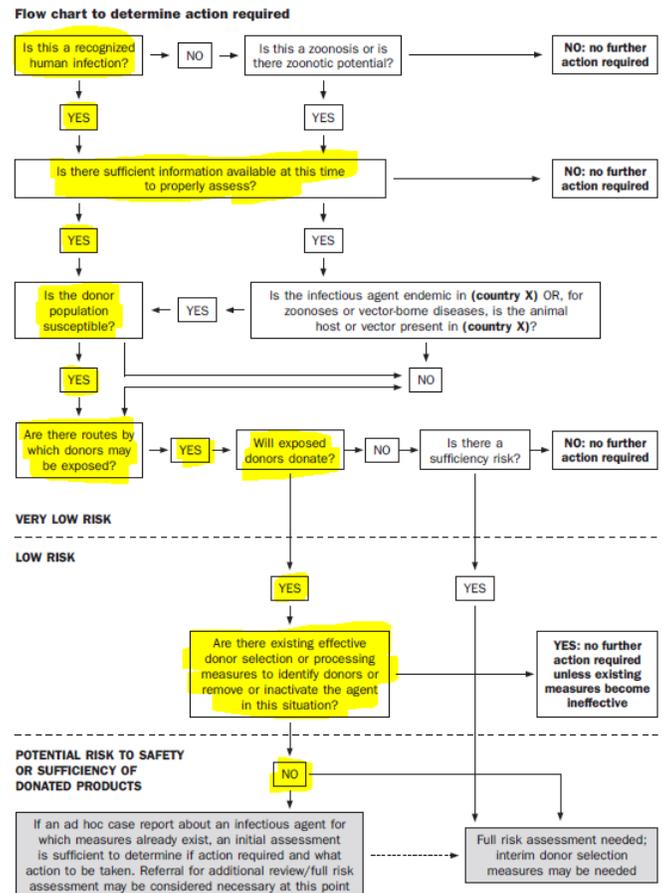


Figure 1. WHO Flow Chart for risk assessment during outbreak

Voluntary implementation of donor deferral for travel to China may address public concerns about the safety of the blood supply

Available evidence:

Le Chang, Ying Yan, Lunan Wang. Coronavirus Disease 2019: Coronaviruses and Blood Safety. Transfusion Medicine Reviews. e-pub 21 Feb 2020. doi: <https://doi.org/10.1016/j.tmr.2020.02.003>

Previous studies indicated that viral RNA could be detected from plasma or serum of patients infected with SARS-CoV [5-8], MERS-CoV [9], or SARS-CoV-2 [1] during different periods after the onset of symptoms. However, the detection of viral RNA by polymerase chain reaction (PCR) is not equivalent to the detection of intact infectious virus.

Limited data have shown that viral RNA could be detected in plasma or serum from COVID-19 patients. In the first 41 patients in the city of Wuhan, viremia was found in 6/41 (15%) patients. The median PCR cycle threshold value was 35.1 (95% CI: 34.7-35.1), suggesting a **very low RNA concentration with no difference found between intensive care unit patients and patients with mild symptoms.**

Usually, **coronaviruses are vulnerable to acid-pH, basic-pH, and heat [43] but seem to be more stable at 4°C [44].** The infectious titer of virus did not show any significant reduction after 25 cycles of thawing and freezing [44] MERS and SARS-CoV could be inactivated by eg treatment with methylene blue + ultraviolet light.

In China, most of blood centers or blood banks have taken the following measures during the current outbreak: (1) **taking body temperature before blood donation**; (2) additional questions in the donor screening questionnaire regarding **whether the donor or relatives have related symptoms, have traveled to areas with local transmission of SARS-CoV-2 (Wuhan or Hubei province) within 28 days**, or are donors with high risk; (3) calling back all blood donors and asking the donors and their family about their current **physical condition after donation**; and (4) recalling untransfused blood products from infected donors [57].

Suggested action:

Refer to case definition as regularly update and evaluated by RMG.

For potential donors returning from high-risk areas (intensive transmission) or contact with confirmed case: defer donation for 28 days after return.

For all other donors usual precautions: no donation when unwell/febrile, contact transfusion service when developing symptoms within 14 days after donation.