INFECTION PREVENTION AND CONTROL CONSIDERATIONS FOR RETURN OF BLOOD COMPONENTS AND PRODUCTS TO INVENTORY

Introduction

Concerns have been raised about the possibility of the external surfaces of blood components and products, and the containers in which they are transported, as potential vectors of infectious diseases. To mitigate the potential for spread of infection, appropriate measures must be taken when handling blood components and products to ensure the potential for their return into inventory as a means of preserving supply. **This document was created to share infection prevention and control options in patient care and transfusion medicine laboratory environments and includes suggestions from various health jurisdictions.** Determining the application of these options within institutions and/or in the context of specific outbreaks is beyond the scope of this document.

Best Practice and Considerations

Principles of infection prevention and control should be followed at all times. **Staff must be familiar with related institutional policies and procedures to inform protocols for managing blood component and product issue from and return to the transfusion medicine laboratory.** Notification of patient isolation or infectious disease outbreaks on specific wards may not always occur; therefore, handling of returned blood components and products requires a consistent practice. If not already in place, policies should be developed to manage the return of inventory issued in the setting of both routine and emergency need for transfusion.

The effectiveness of disease specific decontamination procedures may be difficult to establish or validate due to the numerous biologic (infectious agent, mode of transmission, surface viability) and environmental (temperature, surface material, chemical) factors which must be considered. Institutional infection prevention and control teams and/or medical microbiologists should be consulted as part of any policy creation to ensure consistency across the health care system.

General

- Laboratory staff should wear personal protective equipment (gloves, gowns, etc.) as per policy when issuing blood components or products, and upon receiving returned product.
- Hand washing should be done frequently by all staff who may be handling blood components or products.
- Use of over-wrap plastic bags with a tamper-proof seal* at component or product issue could be implemented in either the setting of a known outbreak and/or issued to a patient with isolation precautions to ensure that any component or product returned to the laboratory will have a clean surface.

  - *Examples: plastic bag with a cable tie/zip tie placed below a tied knot; zip-lock bag with a cable tie/zip tie or staple placed through a punched hole near the zipper; use of coloured tamper-tape to seal the twisted end of a plastic bag or over the edge of a zip-lock seal.
- Application of a tamper-proof seal to blood transport containers at the time of issue will ensure a clean internal and component surfaces if returned unopened.
- Blood components and plasma protein products should not be requested from the transfusion medicine laboratory unless the following have been confirmed by the bedside care staff:
  - The order for transfusion is present on the chart; and
  - Consent to receive transfusion has been verified; and
  - Venous access is available and patent (if applicable).
- Only a single unit of blood component or vial of plasma protein product should be taken into the patient room at the time, and only immediately prior to transfusion administration.
- Pneumatic tube system carriers and associated materials should never enter the patient's room.
- In the event of a transfusion reaction when return of blood components or products is required, the component bag or bottle should be clamped with the attached blood tubing and flush solution, with the end of the tubing capped to prevent leaking, and placed in a clean plastic bag prior to delivery to the transfusion medicine laboratory.

Blood Components

- Local policies for cleansing the exterior surface of blood component bags must be developed in accordance with manufacturer recommendations (refer to Canadian Blood Services - Customer Letter # CL 2020-17. The Customer Letter can be found with the following link: https://www.blood.ca/sites/default/files/2020-04/CL_2020_17.pdf).
- Upon return of untransfused blood components to the transfusion medicine laboratory, in addition to following usual local protocols pertaining to use of personal protective equipment:
  - If an over-wrap bag with a tamper-proof seal was used and the component is returned with the tamper-proof seal intact –
    - The external surface of the overwrap bag should be wiped clean before being accepted into the laboratory and placed on any surface within the laboratory; or
    - The over-wrap bag should be opened and the contents gently emptied onto a clean surface within the laboratory, with immediate discard of the plastic bag and gloves worn when handling received product.
  - If the component is returned in an open over-wrap bag or if no over-wrap bag is utilized, and the return is within the allowable time frame –
    - The external surface of blood component bags may be cleaned as recommended by the manufacturer for return to inventory; or

  - The component may be placed back into inventory if it passes visual inspection and the ward has confirmed it was not in the room with a patient on contact/droplet precautions; or
  - The component may be placed in a dedicated quarantine environment for a predefined timeline (dependent on the infectious agent and its viability on a plastic surface within the storage environment); or
  - The component may be discarded in accordance with usual protocol (least preferable option due to waste and potential impact on inventory).
- Coolers/transport containers containing blood components should:
  - Remain in the anteroom or outside of the patient care room or operating theatre, with the exception urgent/emergent transfusion need;
    - If required within the patient room, the container should be left in a 'clean' area at least 2 meters away from the patient with the lid closed.
  - Only be opened to remove units at the time of transfusion need (blood components should never be "pre-checked" and returned to the cooler);
  - Be cleaned on the exterior surface with a disinfectant wipe or other appropriate approach (as defined by institutional policy) by ward staff prior to return to the laboratory;
    - For containers that have an exterior surface other than hard plastic, consultation with the container manufacturer may be necessary to confirm external decontamination options.
  - Be placed in a separate "dirty area" upon return to the transfusion medicine laboratory until the external and internal surfaces of the cooler have been cleaned in accordance with local protocol to permit return to use.

Plasma Protein Products

- Limit the number of product vials issued to the ward at one time.
- Upon return of untransfused plasma protein products transfusion medicine laboratory, in addition to following usual local protocol as it pertains to personal protective equipment:
  - If an over-wrap bag with a tamper-proof seal was used and the component is returned with the tamper-proof seal intact –
    - The external surface of the overwrap bag should be wiped clean before being accepted into the laboratory and placed on any surface within the laboratory, or
    - The over-wrap bag should be opened and the contents gently emptied onto a clean surface within the laboratory, with immediate discard of the plastic bag and gloves worn when handling received product.
  - If the product is returned in an open over-wrap bag or if no over-wrap bag is utilized, and the return is within the allowable time frame –
    - The external box or bottle surface may be cleaned as recommended by the manufacturer and/or institutional infection prevention and control teams for return

to inventory, as long as the cleaning agent does not adversely impact labelling on the box or bottle surfaces; or

- The product may be placed back into inventory if it passes visual inspection and the ward has confirmed it was not in the room with a patient on contact/droplet precautions; or
- The product may be placed in a dedicated quarantine environment for a predefined timeline (dependent on the infectious agent and its viability on cardboard or glass and within the storage environment); or
- The product may be discarded in accordance with usual protocol (least preferable option due to waste and potential impact on inventory).

Attachment - Appendix A: SARS-CoV-2 (COVID-19) specific information