

# Communique: Update on Implementation of Inter-Provincial Organ Sharing of Hearts for High Status Recipients

## Background

Building on foundational policy work by the Canadian Cardiac Transplant Network (CCTN), the Heart Transplant Advisory Committee (HTAC) led by Canadian Blood Services, developed policies outlining a consistent national approach that defines eligibility and prioritization requirements for listing and interprovincial sharing of high status hearts (HSH). At present, heart transplant programs in Canada are listing all transplant candidates in the Canadian Transplant Registry (CTR) but would also like to use the CTR to allocate hearts interprovincially to sensitized ( $\geq 80\%$  cPRA) and/or medically urgent (status 4) patients and improve the tracking of the outcomes of organ sharing in this patient population.

## Current Status

Canadian Blood Services has entered the final implementation phase of the Interprovincial Organ Sharing of Hearts for High-Status Recipients project (referred to hereafter in this document as the “IPOS Heart project”). Currently, heart transplant patients of all statuses are continuing to be listed through the National Organ Waitlist (NOW) however allocation and offers for medically urgent and highly sensitized patients will be conducted through the CTR once the implementation is completed. Implementation is currently scheduled to be completed in July 2021.

The requirements were finalized in December 2019 and have been sent to all provinces to inform impact analyses. The first round of implementation impact meetings with provinces was concluded in December 2019. A second round of impact meetings are currently underway.

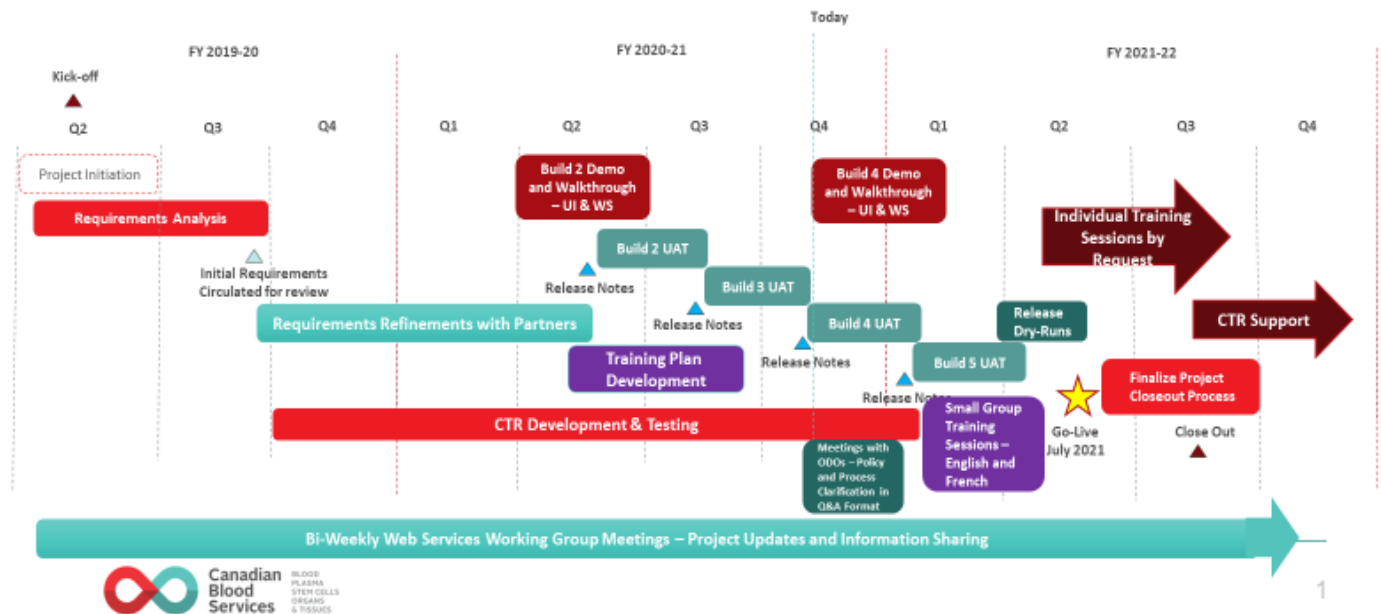
Interprovincial policies were approved by provincial funders for implementation within the CTR in January 2019 and CCTN have updated their eligibility and listing criteria endorsing the use of these policies. Organ Donor Organizations (ODOs) and Transplant Centres are encouraged in the interim to review the national policies and prepare for potential impact on local processes.

To support our provincial partners through this transition, Canadian Blood Services has developed an IPOS Heart Project website that provides project updates and includes a resource

section with the latest versions of the approved policies and frequently asked questions (the latest copy of the FAQs is included with this communique). The website can be accessed [here](#). An overview of the current IPOS Heart Project timeline is included below:

## IPOS High-Status Heart Project

### High-Level Project Milestone Timelines



## Clarification of Policy CTR10.002 – Heart Allocation

The heart allocation policy outlines the matching algorithm that is followed in allocating to medically urgent and highly sensitized heart patients. The ranking attributes listed after “medically urgent (status 4)” are tie breakers for “Highly Sensitized” patients with medical statuses of 1 to 3.5 (not medically urgent). When an organ heart is available for allocation, the priority is to allocate to a status 4 recipients first. Medically urgent in this context refers to the hemodynamic status only so if the recipient is also highly sensitized (i.e. status 4 and “S”) they are also considered a priority for allocation. In other words, the hemodynamic status of the 4S recipient would outweigh the priority of any recipient with a lower hemodynamic status but higher cPRA. Please refer to the below and the **accompanying flow chart** for further clarification:

1. Heart first goes through Status 4 recipients **including 4S recipients**
2. If multiple Status 4 recipients are listed then the tiebreaking ranking would proceed as follows: organ
  - a. Donor <19 years & Recipient < 19 years old Rank 1
  - b. Pediatric recipient <19 years of age Rank 2
  - c. Number of days listed at Current medical Status Rank 3
  - d. Donor / Recipient in the same region Rank 4
3. **If no match or allocation within the status 4 patients (if any), the heart is then offered nationally through highly sensitized recipients with a hemodynamic status of 3.5 and below: nationally**
  - a. Higher cPRA ranked above lower cPRA Rank 1
    - I. cPRA = 100
    - II. cPRA = 99
    - III. cPRA = 98
    - IV. cPRA 90-97
    - V. cPRA= 80-89
  - b. Pediatric recipient <19 years of age Rank 2
  - c. Medical Status Rank 3
    - i. 3.5
    - ii. 3
    - iii. 2
    - iv. 1
  - d. Number of days listed at current medical status Rank 4
  - e. Donor and Recipient are in the same region Rank 5

## HLA Typing Requirements at the time of Listing High Status Heart Recipients in the Canadian Transplant Registry

HLA requirements for the listing of medically urgent and highly sensitized heart recipients through the CTR was reviewed with the following confirmed by representatives of HLA Laboratories nationwide:

- Single antigen bead testing for class I and II anti-HLA antibodies will be completed prior to listing medically urgent (status 4) recipients in the CTR. Results will be verbally communicated to transplant center physicians upon completion and entered into the CTR on the next business day. Medically urgent (Status 4) recipients can still be listed and activated in the CTR without entry of these results. Single antigen bead testing for class I and II anti-HLA antibodies is not required to be completed prior to listing for medically urgent (status 4) paediatric recipients.

- Single antigen bead testing for class I and II anti-HLA antibodies will be completed and entered into the CTR prior to listing highly sensitized ( $\geq 80\%$ cPRA) recipients, including highly sensitized paediatric recipients.
- Recipient molecular HLA typing (A,B,C,DRB1,DRB3/4/5,DQA1, DQB1, DPA1, DPB1) will be completed and entered into the CTR as is done currently. Molecular HLA typing results are not required to be entered into the CTR at the time of listing a recipient.

## Virtual Crossmatch Functionality in the CTR

On June 4 and 5, 2019 a national consultation workshop was held to discuss current state, opportunities and challenges, and developing an implementation plan. The June meeting resulted in a request to start using functionality currently available in the CTR that allows for virtual cross-match (vXM) of donor hearts with recipients on the NOW. This functionality was implemented through the CTR in October 2019 and continues to be available to use in identifying those candidates that are known to be vXM negative to the donor heart being allocated. This immediate, interim function has helped reduce the allocation time of highly sensitized hearts, resulting in a more efficient process for donor coordinators and reduced wait times for donor families.

## Next Steps

The next steps toward the implementation of the IPOS Heart Project will be scheduling a series of meetings with ODOs in February and March with the current CCTN President, Dr. Brian Clarke, and past CCTN President and current HTAC Chair, Dr. Michael McDonald to answer any questions about and clarify any confusion about the policies.

In parallel to the development of the above, training materials in support of our provincial partners are currently being developed. Training will be delivered to our users across Canada in the Spring with a series of virtual training sessions.

For any questions or concerns, please contact the CBS team at [listing.allocation@blood.ca](mailto:listing.allocation@blood.ca).