

## Heart Allocation algorithm

1. Allocation is determined after documentation of neurological death and consent for organ donation.
2. Waiting lists within a category are prioritized by list time.
3. HTPs are responsible for the ongoing verification that their patients are listed at the correct status code in light of medical interventions, PRA etc.
4. After an offer is made for a recipient, changes to the waiting list do not affect allocation unless deferral occurs.
5. HTPs will identify seropositive / sensitized recipients in the TGLN database.
6. After notice, HTPs will be provided 60 minutes to respond to an offer before TGLN offers to another program.
7. ABO incompatible offers will be made to recipients identified as candidates for incompatible ABO donations in the TGLN database
8. Hearts from donors < 18 years of age will be offered to recipients < 18 years of age before other recipients (\*see notes for status 4 recipients)

1. ABO Identical or compatible recipients listed by Ontario HTP
  - a. Status 4 (**see notes**)\*
2. ABO Identical or compatible recipients listed by Canadian HTP
  - a. Status 4 (**see notes**)\*
3. ABO Identical or compatible recipients listed by Ontario HTP
  - a. Status 4s (**see notes**)\*
4. ABO Identical or compatible recipients listed by Canadian HTP
  - a. Status 4s (**see notes**)
5. ABO identical or compatible recipient listed by Ontario HTP
  - a. Status 3.5
  - b. Status 3
6. ABO identical recipient listed by Ontario HTP
  - a. Status 2
  - b. Status 1
7. ABO compatible recipient listed by Ontario HTP
  - a. Status 2
  - b. Status 1
8. Recipients listed on Canadian National list
9. Recipient listed by a US transplant program (UNOS)

***\* For pediatric donor heart offers, status 4 and 4s pediatric recipient steps will be offered before adult recipients***

***\*All Ontario donor hearts will be offered to the highest status recipient in Ontario first. TGLN will also notify all other Canadian program(s) with a Status 4 and 4s recipient of the potential donor heart. The discussion to defer to an out of province recipient will be made by the Ontario program. If there are competing status 4 and 4s recipients, mandatory discussion is required in a timely manner, physician to physician. If consensus is not reached, final decision about allocation will be made by the Ontario program.***

***\*All out-of-province and out-of-country donor hearts will be offered nationally to all programs with eligible Status 4 and 4s recipients. If there are competing Status 4 and 4s candidates, mandatory discussion is required in a timely manner, physician to physician, prior to allocation of the donor heart. If consensus is not reached, final decision about allocation will be made by the Canadian program with the longest listed Status 4 or 4s recipient.***

### Donor Criteria

1. age ≤70
2. donor weight (or height and BMI) within any parameters entered by HTP
3. no confirmed history of significant CAD, chronic LV dysfunction or valve dysfunction
4. for USA donors, primary offer only
5. DCD donor heart offers to HSC only

## Status Criteria: Adult Cardiac Transplantation

### **Status 4 (All Status 4 patients should be discussed and approved as Status 4 with all other centres supported by the regional OPO prior to listing)**

- 1) Mechanically ventilated patient on high-dose single or multiple inotropes  $\pm$  mechanical support (eg. IABP, ECMO, abimed BVS5000, or biomedicus), excluding VAD.
- 2) Patient with VAD malfunction or complication, such as thromboembolism, systemic device-related infection, mechanical failure, or life-threatening arrhythmia.
- 3) Patient should be reconfirmed every 7 days as a Status 4 by a qualified physician, if still medically appropriate.

### **Status 4S**

- 1) High PRA (>80%), or PRA >20% with 3 prior positive crossmatches (in the setting of negative virtual or actual donor/recipient-specific crossmatch and appropriate size and blood-type of the prospective donor).

### **Status 3.5**

- 1) High-dose or multiple inotropes in hospital, and patients not candidates for VAD therapy or no VAD available.
- 2) Acute refractory ventricular arrhythmias.

### **Status 3**

- 1) VAD not meeting Status 4 criteria.
- 2) Patients on inotropes in hospital, not meeting above criteria.
- 3) Heart/Lung recipient candidates.
- 4) Cyanotic congenital heart disease with resting saturation <65%.
- 5) Congenital heart disease – arterial-shunt-dependent.
- 6) Adult-sized complex congenital heart disease with increasing dysrhythmic or systemic ventricular decline.

### **Status 2**

- 1) In-hospital patient, or patient on outpatient inotropic therapy not meeting the above criteria.
- 2) Adult with cyanotic CHD: resting O<sub>2</sub> saturation 65–75% or prolonged desaturation to less than 60% with modest activity (i.e., walking).
- 3) Adult with Fontan palliation with protein-losing enteropathy or plastic bronchitis.
- 4) Patients listed for multiple organ transplantation (other than heart-lung).

**Status 1.** All other out-of-hospital patients

## Status Criteria: Paediatric Cardiac Transplant

### **Status 4 (All Status 4 patients should be discussed and approved as Status 4 with all other centres supported by the regional OPO prior to listing)**

- 1) VAD in a patient <8 kg
- 2) Mechanically ventilated  $\pm$  mechanical support (eg. IABP, ECMO, abimed BVS5000, or biomedicus), excluding VADs
- 3) VAD malfunction or complication such as thromboembolism, systemic device-related infection, mechanical failure, or life threatening arrhythmia
- 4) Patients should be reconfirmed every 7 days as a Status 4 by a qualified physician if still medically appropriate

### **Status 4S**

- 1) High PRA (>80%) or three prior positive crossmatches  
Assuming negative virtual or actual donor/recipient specific crossmatch.

### **Status 3.5**

- 1) Hospitalized patient with a VAD
- 2) Prostaglandin dependent less than 6 months of age with congenital heart disease –
- 3) High dose or multiple inotropes in hospital and patients not candidates for VAD therapy or no VAD available
- 4) Acute refractory ventricular arrhythmias

### **Status 3**

- 1) VAD not meeting Status 4 criteria including outpatient VAD
- 2) Less than 6 months of age with congenital heart disease
- 3) Cyanotic congenital heart disease with resting saturation less than 65%
- 4) Congenital heart disease – *arterial* shunt dependent (i.e. Norwood)
- 5) Patients on inotropes in hospital, not meeting above criteria
- 6) Inpatient with CPAP/BIPAP support *for HF management*
- 7) Heart-Lung recipient candidates

### **Status 2**

- 1) At Home with intermittent CPAP/BIPAP support *for HF management*
- 2) In Hospital *for management of heart disease/HF* not meeting the above criteria
- 3) Growth failure: <5<sup>th</sup> percentile for weight and/or height OR loss of 1.5 SD of expected growth (weight or height)
- 4) Cyanotic congenital heart disease with resting saturation 65-75% OR prolonged desaturation to less than 60% with modest activity (i.e. walking, feeding)
- 5) Fontan palliation with protein-losing enteropathy or plastic bronchitis
- 6) Multiple organ transplant recipient candidates

### **Status 1**

- 1) All other out of hospital patients
- 2) *In Utero* (congenital heart disease or heart failure)

All Status 4 patients, whether adult or pediatric, are reviewed semi-annually at a meeting of representatives from a majority of transplant centres (i.e. Canadian Cardiac Transplant Network meetings) as a means of quality assurance.