

## The Virtual Crossmatch (VXM) Working Group is pleased to advise the final phase of the transition to VXM will commence from 1 February 2023.

The Australian organ donation and transplantation system historically used complement-dependent cytotoxicity (CDC) crossmatches to determine compatibility between organ donor and transplant recipients. Internationally many transplant programs have moved to conducting virtual crossmatches (VXM) which can provide greater detail regarding the compatibility of the donor organ and recipient. Over the last year, the transition from CDC crossmatching to a national VXM program has occurred. In October 2022, CDC crossmatching was ceased for Kidney, Kidney/Pancreas, unsensitised Heart and Lung patients and those with no DSA. **From February 2023 all CDC crossmatches will be ceased.**

## Why change to Virtual Crossmatches?

- ▶ The level of detail for donor HLA typing and recipient HLA antibody screening has increased substantially over time, which means the chance of 'missing' a significant antibody is now extremely low.
- ▶ Internationally there has been a shift to virtual crossmatches which can provide a more rapid assessment of compatibility without compromising transplant outcomes.
- ▶ Because the utility of CDC has reduced substantially over time, it is no longer the test of choice in most transplant programmes worldwide. This has resulted in the equipment and reagents for CDC becoming increasingly difficult to source, and reagents and consumables are in very limited supply.

Further information on the transition to VXM project can be found here ([What's new – OrganMatch | DonateLife](#))

## Organ group implementation

**Kidney / Pancreas** ▶ CDC ceased October 2022

**Lung** ▶ Algorithm implemented in December 2022  
▶ Patients with unacceptable antigens will be excluded with the donor through the algorithm  
▶ CDC ceased for all patients from February 2023

**Heart** ▶ Algorithm to be implemented in February 2023  
▶ CDC ceased for all patients from February 2023

**Liver** ▶ CDC not routinely performed  
– currently VXM / DSA assessment  
– Retrospective FXM by request only

**Intestine** ▶ CDC ceased for all patients from February 2023

## Managing sensitised patients as we phase out CDC XM

- ▶ Upon entry to waiting list: lab and clinical team review antibody profile
- ▶ Define exclusions:
  - Repeat mismatch with DSA – usually exclude at any MFI
  - MFI > threshold agreed with clinical team
  - MFI < threshold but shared epitope identified by lab
  - MFI < threshold currently but significantly higher in historic sera

**Goal:** not to leave antigens as acceptable if you would not accept them

## FXM Guidelines – February 2023 onwards

In some settings a prospective Flow crossmatch (pFXM) will be required e.g. urgent patients (any organ group) or for any patients where there is planned desensitisation. To facilitate national offers for these patients serum will

be shared across the labs. Please discuss with your tissue typing lab re sharing of patient sera for interstate pFXMs. Please note – sera sharing will be on an as needs basis and not a regularly scheduled process.

### Phase: February 2023 onwards

CDC crossmatches (XM) ceased for all organs

Replaced by Virtual XM (listed in OrganMatch)

#### Definitions

**Prospective FXM** Pre acceptance urgent FXM which is performed in after-hours on call work in the TT laboratories

**Immediate FXM** Post acceptance FXM that is offered as a 7-day per week service in daylight hours

**Retrospective FXM** Post transplant FXM, can be actioned the next business day

#### Retrospective FXM (next business day)

Recipients where the result of the FXM will change peri-transplant management

- ▶ Upon request or by local process, upon agreement with clinical unit
- ▶ DSA present (MFI > 1500 (OLI))
- ▶ Sera shipped overnight to donor testing lab for interstate offers

#### Post acceptance Immediate FXM (7-day per week)

Restricted to thoracic (heart and/or lung) and intestinal transplant recipients where the result of the FXM will change peri-transplant management and fulfil the criteria below

- ▶ Multiple low-level DSAs to HLA-A/B/DR/DQ (i.e. excluding DSA to HLA-C, DP), with each individual DSA with an MFI of > 1500 (OLI)
- ▶ Where the DSA is to HLA-C, DP and the MFI > 5000
- ▶ Sera shipped overnight to donor testing lab for interstate offers

#### Prospective FXM Pre acceptance

Restricted to thoracic (heart and/or lung) and intestinal transplant recipients and fulfil the criteria below

- ▶ Urgent listing and no SAB testing has been performed (or results were indeterminate) or testing was completed more than 6 months ago
- ▶ Known sensitising event since the previous SAB testing
- ▶ Urgent and selected patients only

## Further information

Further resources on the transition to VXM project can be found on the OrganMatch [website](#). This includes:

- ▶ Previous VXM project newsletters
- ▶ VXM glossary of terms and;
- ▶ VXM frequently asked questions

Virtual crossmatching elearning is also available through the Lifeblood transfusion online learning [site](#).

Further information or questions please contact [projects@tsanz.com.au](mailto:projects@tsanz.com.au).