OrganMatch Laboratory Portal (Part 1)

What is OrganMatch

A world class clinical transplant system managing our national and local waiting lists including highly sensitised patients programs for all organs. It delivers optimal immunological matching and best practise allocation processes when assessing compatibility for solid organ transplantation.

OrganMatch is an ecosystem of three portals, Laboratory, Transplantation and Donation. It connects clinicians, tissue typing laboratories and donation coordination agencies (OPO) with each other using real-time data.

OrganMatch is integrated with external software which currently includes the Electronic Donor Record (EDR) and Laboratory information systems (e.g. TISNet for Lifeblood labs). This allows transfer of data and results into OrganMatch.

Roles and Access to OrganMatch

OrganMatch access is role based ensuring the user is only viewing information that is relevant to them.

Laboratory Portal roles range from Lab User, Advanced Lab User, Senior Lab User and Lab Manager, with functionality restricted to the specific role.

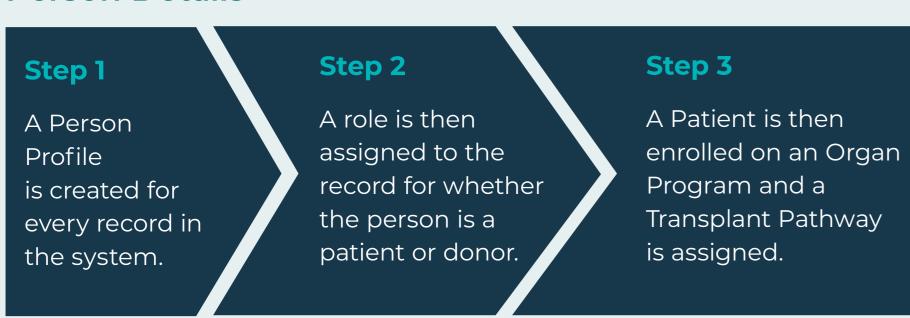
Transplantation Portal restricts the transplant and clinical units to viewing only data from patients linked to their unit, and deidentified deceased donor information.

Donation Portal restricts each state jurisdiction to view deceased donor information from their state or territory.

OrganMatch Laboratory Portal

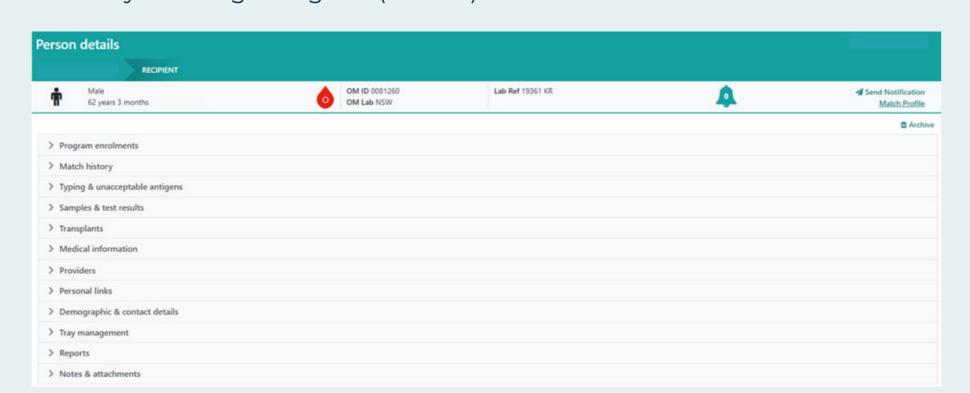
The Laboratory Portal contains all the Histocompatibility data required for matching patients and donors for a Solid Organ Transplant.

Person Details



Transplant Pathways include:

- · Transplant Waiting List (TWL)
- · Living Directed Donation (LDD)
- Kidney Paired Donation (KPD) for the Australian and New Zealand Paired Kidney Exchange Program (ANZKX)



Program Enrolments

Program enrolments lists the Organ Programs the person is enrolled on. The laboratory can view the status of the person as to whether they are active or on hold. There is also functionality to update the status. For TWL patients this is usually managed by the Transplant hospital through the Transplantation Portal. The readiness for matching is also displayed.

→ Program enroln	nents				
Current History					☐ View Notes
⊕ Add Enrolment					1 record/s found
Role 11	Organ Program 11	Pathway ↑↓	Waiting Time ↑↓	Ready 11	Status 11
Recipient	Kidney	TWL	4 years 11 months	~	Active
		« (1 > >> 10 ~		

Match History

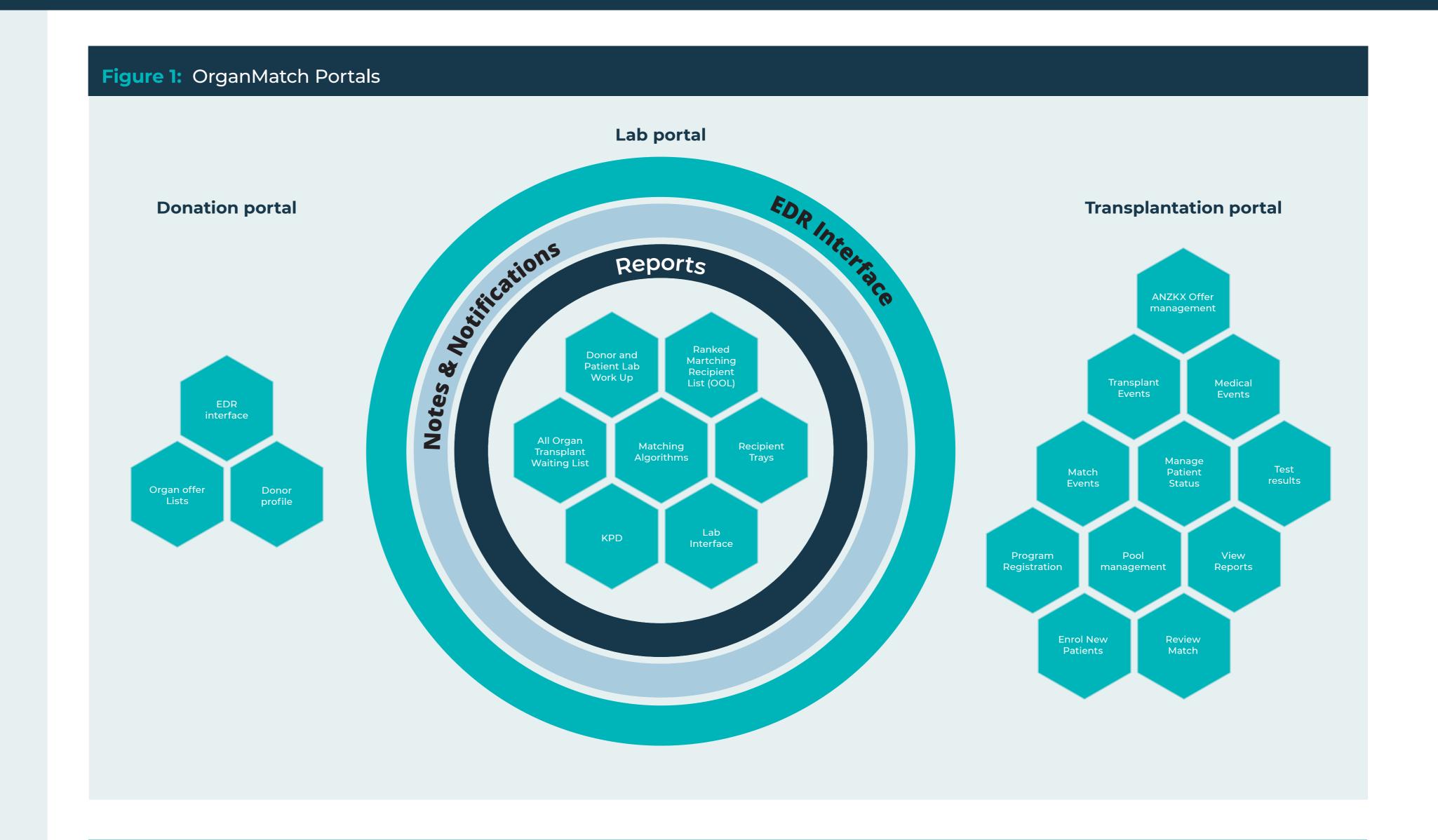
Match History allows the laboratory to view whether a patient has been matched against any donors. This is particularly relevant for Kidney TWL patients to review which donors they are being excluded from and where their position is on the waiting list.

													☐ View Not
													D THU INC
rgan Program			Transplant Pathw	ay			Algorithm Assessmen	nt				Match History 6	Generate Repor
All		~	All			~	Yes			V All			
ffer Status			Offer Response				Reason			Transplar	nted		
All		~	All			~	All			✓ All			~
om Date			To Date				OM Lab			Matched	Person		
dd/mm/yyyy			dd/mm/yyyy				All			~			
	Match Details			Matched F	Person					Outcome			
Organ Program 11	Pathway 11	Event Date 11	Name 11	OM ID 11	OM Lab 11	Donor ID 1	Algorithm Assessment 1	Blocked 11	Offer Status 11	Offer Response 11	Reason 11	Transplanted 11	Published 1
Gdney	TWL	31/10/2020 14:35		0077684	QLD	D20-1127	Yes	No	Eligible for offer	N/A	N/A	N/A	Yes
Gdney	TWL	18/09/2020 18:17		0077208	QLD	D20-0955	Yes	No	Eligible for offer	N/A	N/A	N/A	Yes
Gdney	TWL	10/03/2020 04:14		0075239	WA	D20-0291	Yes	No	Eligible for offer	N/A	N/A	N/A	Yes

Notes and Attachments

Relevant documents can be uploaded into the system via a note in Notes and Attachments. The notes can be selected to appear on reports or as an internal note which can only be viewed in the Laboratory Portal. If a note is added via the Transplantation Portal a notification is generated to the Laboratory Portal and the laboratory can reply to the note in the system.

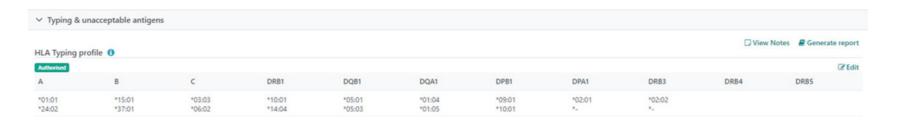
VN	Notes & attachmen	ts										
Cur	rrent History											
•	Add Note										3	12 record's fou
Sub	b-category											
A	All .	~										
	Last Updated On	Last Updated By 11	Created in 17	Sub-category 11	Title 11	Details 11		Total No. of Attachments 11	Has Attachments	Include in Reports 11	Internal Note	
0	30/07/2020		Transplantation	General	Blood transfusion	Hi, A 2U of b	paitent received	0	×	×	×	(Reply
0	23/02/2021		Transplantation	General	blood transfusion	Hi, I was informed by the	he nurse today, Mr	0	×	×	×	(Reply



Typing and Unacceptable Antigens

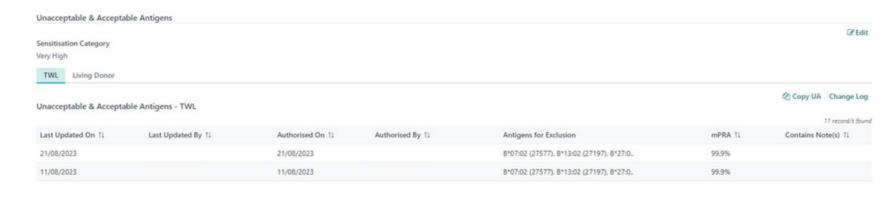
HLA Typing Profile

HLA Typing Profile displays the authorised HLA typing. This is the HLA typing that is used in matching.



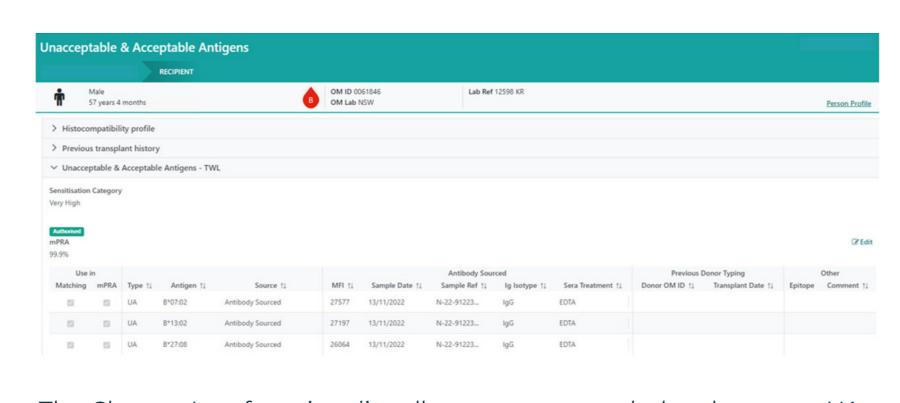
Unacceptable Antigens

The patients profile of HLA antigens that are deemed unacceptable to transplant across are managed in this section. The laboratory scientists create a consolidated panel from selected antibody results and any previous transplant mismatches to define the Unacceptable Antigen profile. This profile is used in the matching process to determine compatible donors.

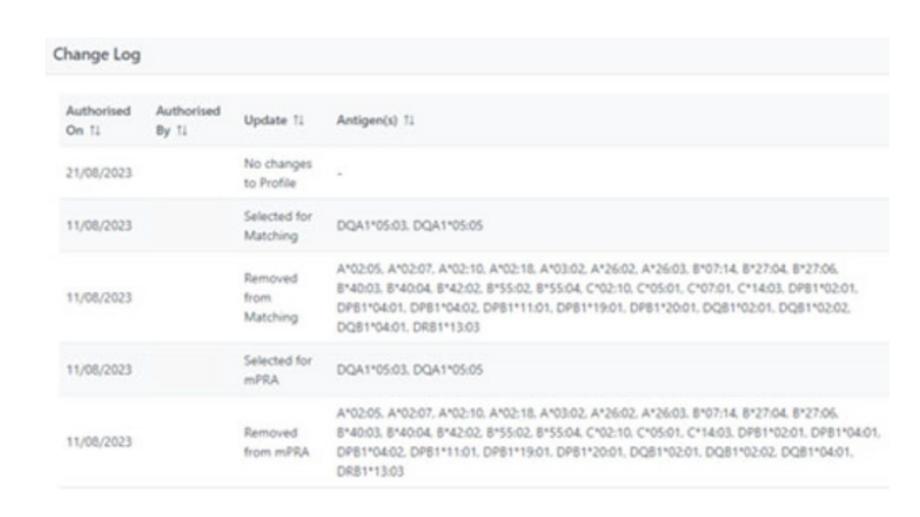


The Unacceptable and Acceptable Antigens page has functionality to edit and authorise UA, sort by loci or MFI and displays the patient typing and typing of any previous donors.

mPRA is calculated in OrganMatch, using the HLA Antigens determined as unacceptable and the frequency in the Australian donor population.



The Change Log functionality allows users to track the change to UA over time.

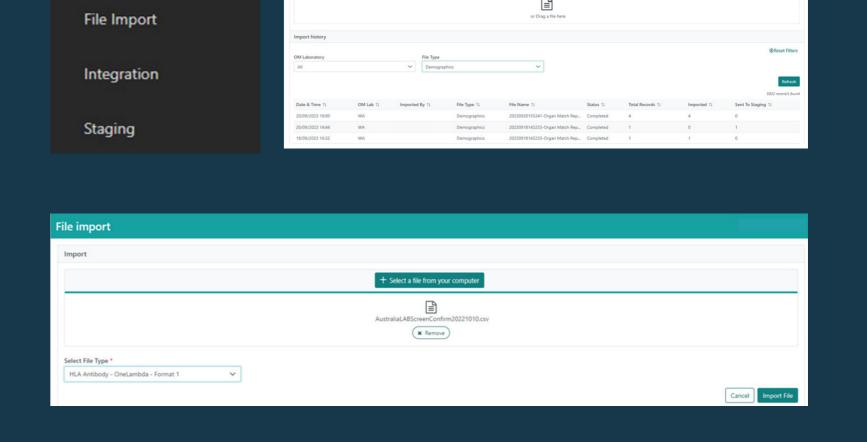


Import Management

When a patient or donor is being worked up for transplantation the hospital can register and enrol them in an Organ Program through the Transplantation Portal. Once submitted, this record can be viewed in the Laboratory Portal allowing the labs to enter their testing results into the system. A record can also be created through the integration with TISNet or via demographics import.

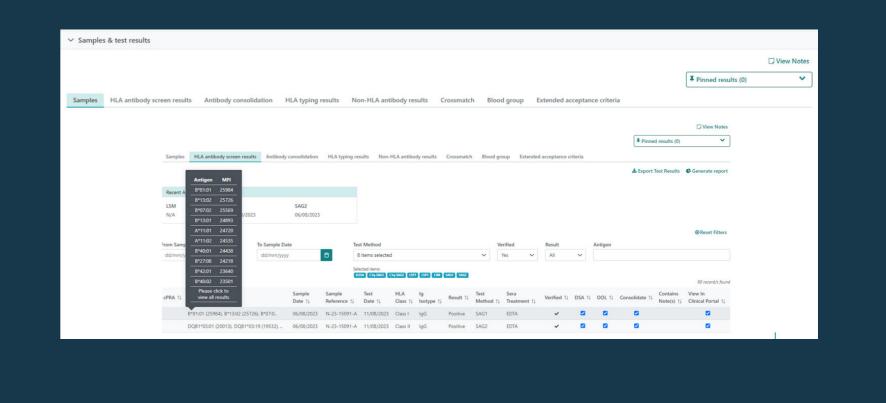
Samples and test results can be imported via File import or through integration. These results are then used by the laboratory to complete the Match Profile which includes the Unacceptable Antigens used for the patient in matching.

▲ Import Management ∨



Samples and Tests

Samples and tests captures all the samples and test results imported in the system for the person. Antibody results can be viewed, collated or reported from this section. They can also be ticked to be included in the DSA assessment when matched against donors or displayed on the Organ Offer List (OOL) of a deceased donor.









OrganMatch Laboratory Portal (Part 2)

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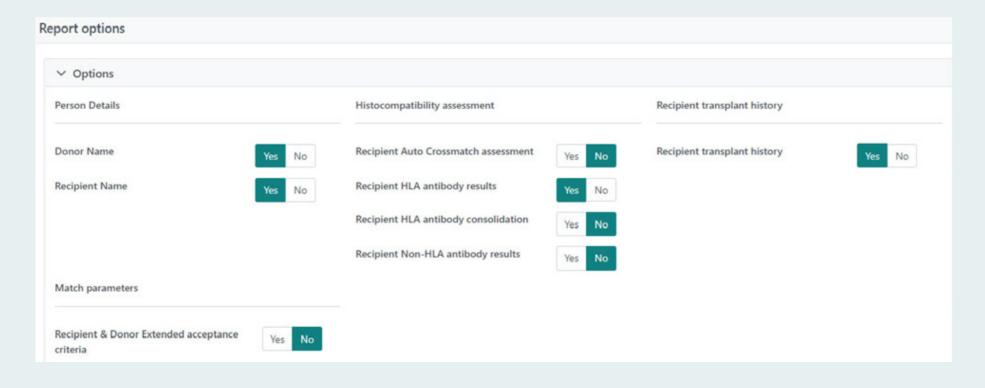
OrganMatch is integrated with external software which currently includes the Electronic Donor Record (EDR) and Laboratory information systems (e.g. TISNet for Lifeblood labs). This allows transfer of data and results into OrganMatch.

Reports

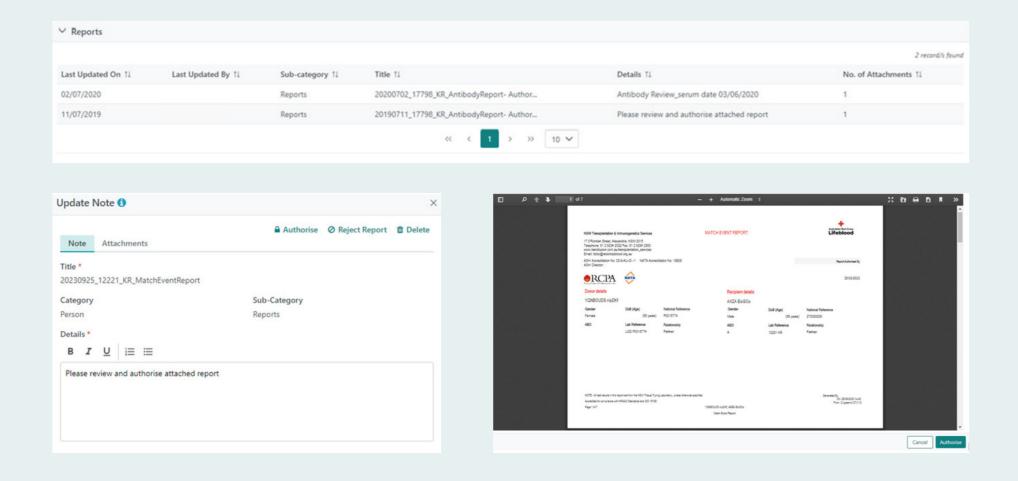
The Laboratory Portal has functionality to generate various types of reports. These include:

- · Antibody Reports
- · Laboratory Reports
- Match Event Report

Report generation is flexible to allow the user to select test results to appear on a report. Notes to appear on the reports can also be selected.

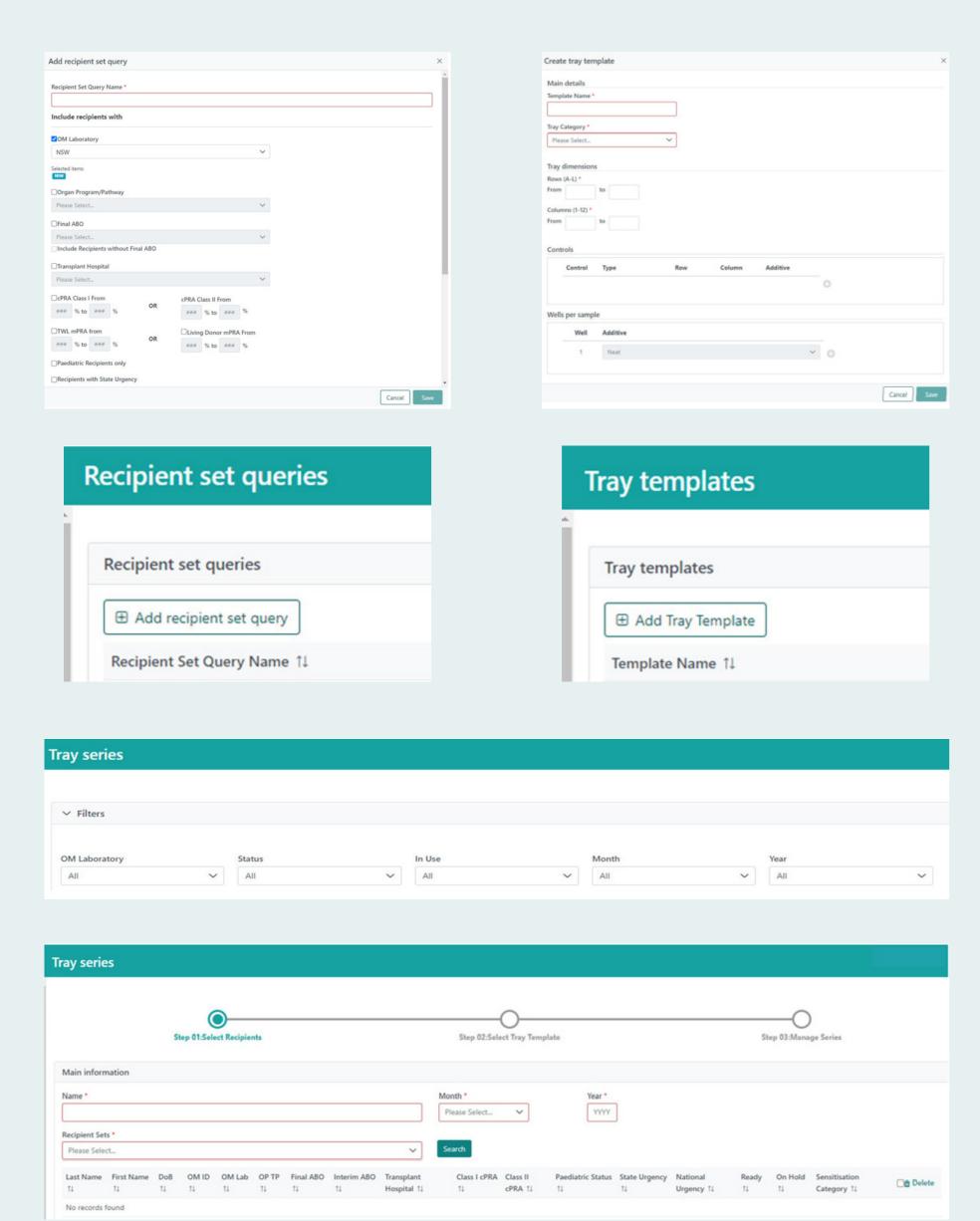


After the laboratory scientist generates the report, it must be authorised by the Lab manager or delegate. Once authorised a notification is generated to the Transplantation Portal where the report can be viewed in the patient record.



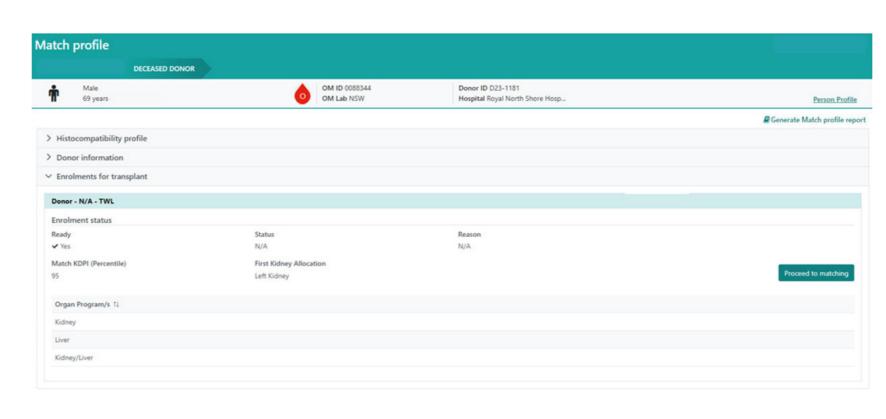
Tray Management

The Tray Management module in the Laboratory Portal has the functionality to create a data set of recipients that meet a specific criteria. This allows users to find a list of people or samples to include on a crossmatch or screening tray. This Recipient Set Query (RSQ) can be run repeatedly to create an up to date recipient set. The users can also create a tray template in a specific format which the RSQ is added to, to form trays. These trays can be registered and used in the matching algorithms.



Deceased Donor Matching

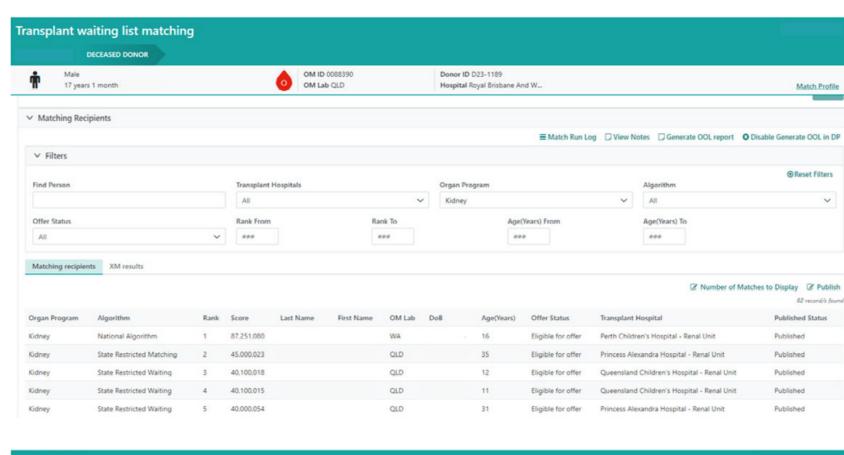
The EDR transfer creates the Deceased Donor profile in OrganMatch and populates the clinical information that is required for matching. The Laboratory enter the Histocompatibility results for the donor into the person profile and authorise the Match Profile. Once all the testing is complete the donor is ready for matching.

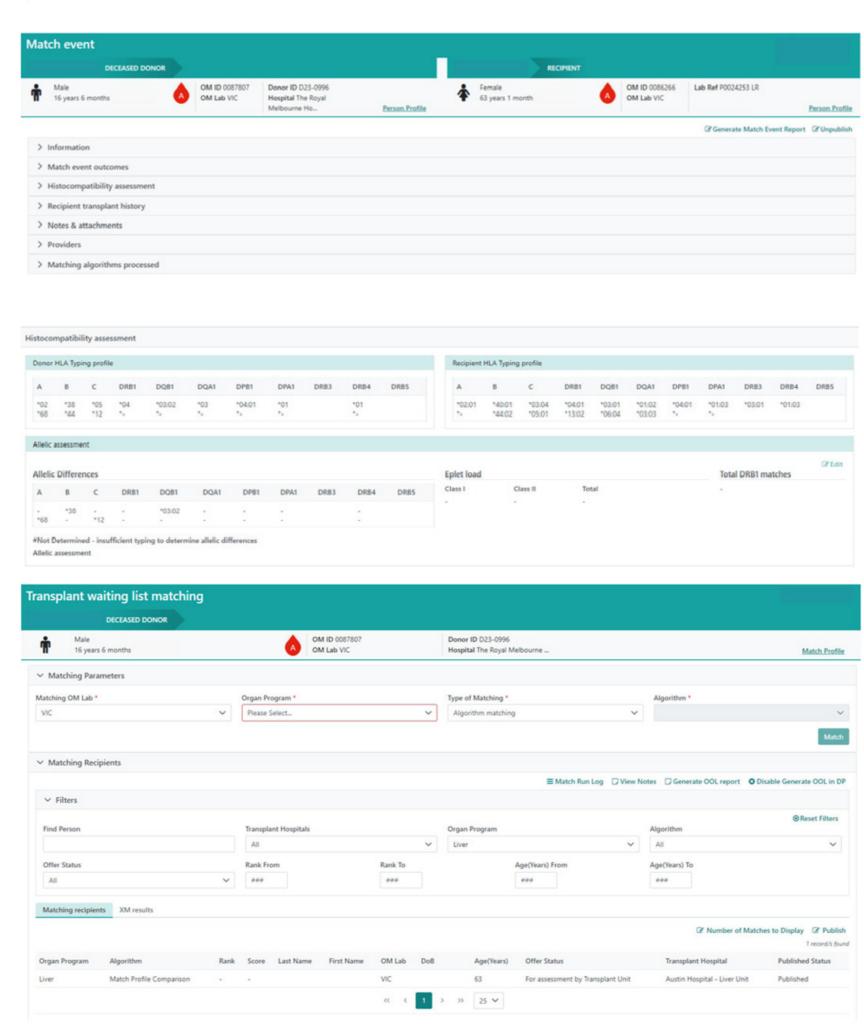


Once the user proceeds to matching, the Transplant Waiting List (TWL) Matching screen is created. The Organ Specific matching algorithm can be selected and run.

The recipients are then listed in order of score or ranked if the patient is for a renal transplant. Each patient has a row to navigate to the match event. A match event is the comparison of the donor and patient information on one screen.

The Histocompatibility assessment is completed including Donor Specific Antibody assessment for Virtual Crossmatch.

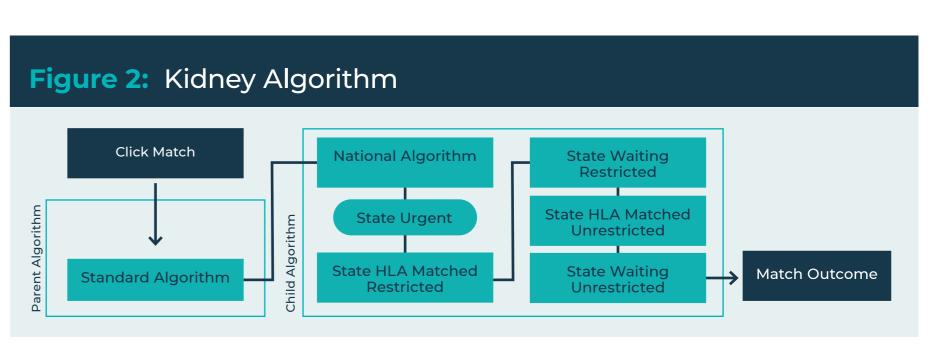




Donor Specific Antibody Assessment is automated in OrganMatch and is triggered by clicking on "Check for recipient DSA". OrganMatch is programmed to check the recipient antibody test results and the donor HLA, and assign as either specific or potential DSA based on HLA serotypes.



There are four Deceased Donor Matching Algorithms in the Laboratory Portal. These algorithms are the Kidney Matching Algorithm, the Kidney and Pancreas Matching Algorithm, the Lung Matching Algorithm and the Heart Matching Algorithm. All fours algorithms comprise of a High Level Compatibility Check (HLCC) where the system checks if patients meet the criteria to proceed to matching. These checks involve ABO compatibility and unacceptable antigens. If the patient passes through the HLCC they will then be given a score depending on different criteria based on the organ they require. The Kidney recipients are also ranked as the algorithm is used for allocation of the organ. The three other algorithms are used to provide a list of compatible recipients which the Transplant unit can choose from to the proceed to transplant.



A Match Event is created for all recipients that are Active and Ready for matching and the ones that have proceeded to matching will be listed in the TWL Matching Screen.

														☐ View Not
Organ Program				Transplant Path	way			Algorit	hm Assessment		Pair Blocked		Filters	Match History
All			~	All			,	All		~	All			~
Offer Status				Offer Response				Reason			Transplanted			
All			~	All			`	/ All		~	All			~
rom Date				To Date				OM La)		Matched Pers	on		
dd/mm/yyyy				dd/mm/yyyy				All		~				
N	Match Details				Matched P	erson				Outco	ome			
Organ Program 11	Pathway 1	Event Date 11	Nan	ne 11	OM ID 11	OM Lab ↑↓	Donor ID 11	Algorithm Assessment	Blocked 11	Offer Status 11	Offer Response 1	Reason ↑↓	Transplanted ↑↓	Published
Liver	TWL	11/09/2023 08:28	wdF	riE IBuUFAQ	0083139	NSW		N/A	No	For assessment by Transplant Unit	Accepted	N/A	Yes	No
Heart	TWL	07/09/2023 16:43	KCsJ	Axaq sarwj	0082113	VIC		Yes	No	For assessment by Transplant Unit	N/A	N/A	N/A	Yes
Lung	TWL	07/09/2023 15:51	GpT	MAF CbaeEH	0014808	QLD		No	No	N/A	N/A	N/A	N/A	No
Lung	TWL	07/09/2023 15:51	dYB	VQOqg sOdPYk	0015154	QLD		No	No	N/A	N/A	N/A	N/A	No

The Match History tab of the donor displays all the Match Events with the recipients that proceeded to matching listed as Yes under Algorithm Assessment. By clicking on the Match Event the user can view the information as to why a patient may have been excluded from matching. This information can also be viewed in the Transplantation Portal in the patient record.

	Date & time	Parent Algorithm	Child Algor	rithm	Match	Score	Rank
	07/09/2023 15:51	Lung Algorithm v1	High Level (Compatibility Check	No	-	-
I	Algorithm criteria		Result	Details			
	Donor Height is within Recipient Ac	ceptable Height Range	~				
	Matched As OM Lab		1	NSW			
	No Potential UA Identified		~	-			
	UA Identified		×	B*38:01, B*44:02, B*44:03, C*05:01			
	Valid ABO for program Matching algorithms processed		•				
· N	Natching algorithms processed	Parent Algorithm			Match	Score	Rank
· N		Parent Algorithm Heart Algorithm v1	Child Algorith		Match No	Score -	Rank -
N	flatching algorithms processed Date & time		Child Algorith	nm			
N	Date & time 07/09/2023 15:50 Algorithm criteria		Child Algorith High Level Co	nm mpatibility Check	No		•
N	Date & time 07/09/2023 15:50 Algorithm criteria	Heart Algorithm v1	Child Algorith High Level Co Result	nm mpatibility Check Details Donor Predicted Heart Mass: 224.1; Recipient Predic	No		•
N	Date & time 07/09/2023 15:50 Algorithm criteria Donor and Recipient Predicted Heart	Heart Algorithm v1	Child Algorith High Level Cor Result	mpatibility Check Details Donor Predicted Heart Mass: 224.1: Recipient Predic Mass Ratio Range: From 0 To ±30%	No		•

Living Directed and Non Directed Donor Matching

The Laboratory Portal has the functionality to match Living Directed Donors (LDD) to a specific recipient and Living Non Directed Donors (LNDD) to the TWL.

Once testing has been completed and the patient and donor are ready for matching, the user matches through the donor record to create a match event. The match event assessment can be completed in the same way as a deceased donor match event and the DSA can be reported. If the patient has unacceptable antigens to the donor, which are captured in the LDD UA, these are listed in the unacceptable antigen assessment. A Match Event Report can be generated to collate the Histocompatibility data and report to the Transplantation Portal.

