

1. Principles of Kidney-Pancreas and Pancreas TWL matching in OrganMatch

1.1 In OrganMatch, recipients listed on the kidney pancreas transplant waiting list (TWL) and Pancreas TWL with deceased organ donors using multi-tiered matching algorithm.

There are two parent algorithms:

- Kidney/Pancreas KPA v1
- Pancreas PA v1

Matching using the above parent algorithms triggers a series of functions and child algorithms.

The first version of the Kidney-Pancreas Matching Algorithm (KPAv1) and Pancreas Matching Algorithm (PA v1) is effective from September 19th, 2022.

1.2 High-level compatibility check

The first step in matching is the high-level compatibility check, which determines if recipients will progress to being matched in the next stage of the algorithm.

This is the same for both Kidney/Pancreas KPA v1 and Pancreas PA v1.

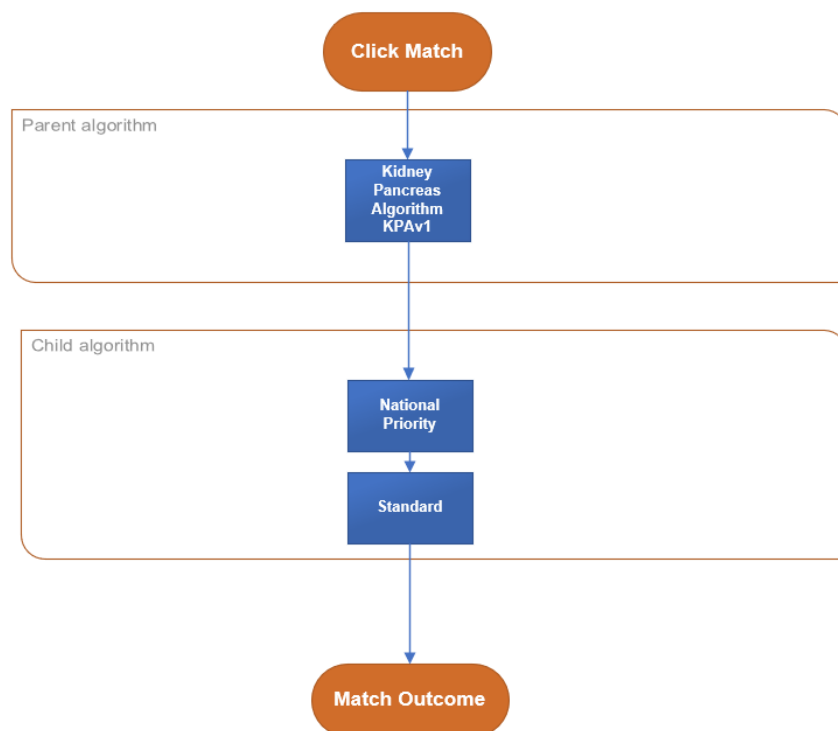
Check	Process	!	✗	✓
No Unacceptable Antigens (UA) identified	Compares donor HLA with recipient UA. Includes all HLA loci.	Potential UA for the donor are listed Will proceed to matching	UA and donor HLA match. Does not proceed to matching.	Recipient and donor compatible. Proceeds to matching.
Valid ABO for program	Checks ABO compatibility.	N/A	Does not proceed to matching.	Recipient and donor compatible. Proceeds to matching.

Principles of the Kidney Pancreas and Pancreas Matching Algorithms

If a recipient passes the high level compatibility check, they progress to matching, depending on which parent algorithm is selected:

2. Kidney/Pancreas Algorithm (KPAv1)

The kidney- pancreas algorithm consists of two child algorithms. The child algorithms are executed in a set order.



2.1 National Priority

The National Priority flag will be auto generated in OrganMatch for recipients enrolled on Kidney /Pancreas if the following criteria are met:

- Patient has an authorised mPRA > 75%
- Patient is on dialysis

The National Priority child algorithm will check the following:

Algorithm name	Check	Process	!	x	✓
Kidney Pancreas National Priority	Valid National Flag	Check	N/A	Does not proceed to matching.	Recipient and donor compatible. Proceeds to matching.
Kidney Pancreas National Priority	Valid ABO for National Priority (See Section 4)	Checks ABO compatibility.	N/A	Does not proceed to matching.	Recipient and donor compatible. Proceeds to matching.

2.1.1 National Priority Score

The base score is calculated for each matched recipient.

Level	Description	Score
National Priority Listing	Base Score	80 000 000
National Priority Listing	National Priority Flag	Add 10 000
	Waiting time	+ Number of months x 1

2.2 Standard Algorithm

A recipient will be included if:

- Not matched in the National Priority Listing
- their ABO type is compatible with donor as determined by the ABO Type Selection Rules (Section 4)

The donor OM lab will determine the group of recipients which be included as the home state match.

Algorithm	Donor OM Lab State*	Recipient transplant unit
Standard	WA NSW (includes ACT) QLD	Westmead – Renal unit
	VIC (includes TAS)	Monash MC adult – Renal Unit
	SA (includes NT)	Royal Adelaide – Renal Unit

All patients will be included in the match, and the score will determine the sort order.

The Kidney/Pancreas Standard child algorithm will check the following:

Algorithm name	Check	Process	!	×	✓
Kidney Pancreas Standard	Valid ABO for Kidney/Pancreas (See Section 4)	Checks ABO compatibility.	N/A	Does not proceed to matching.	Recipient and donor compatible. Proceeds to matching.

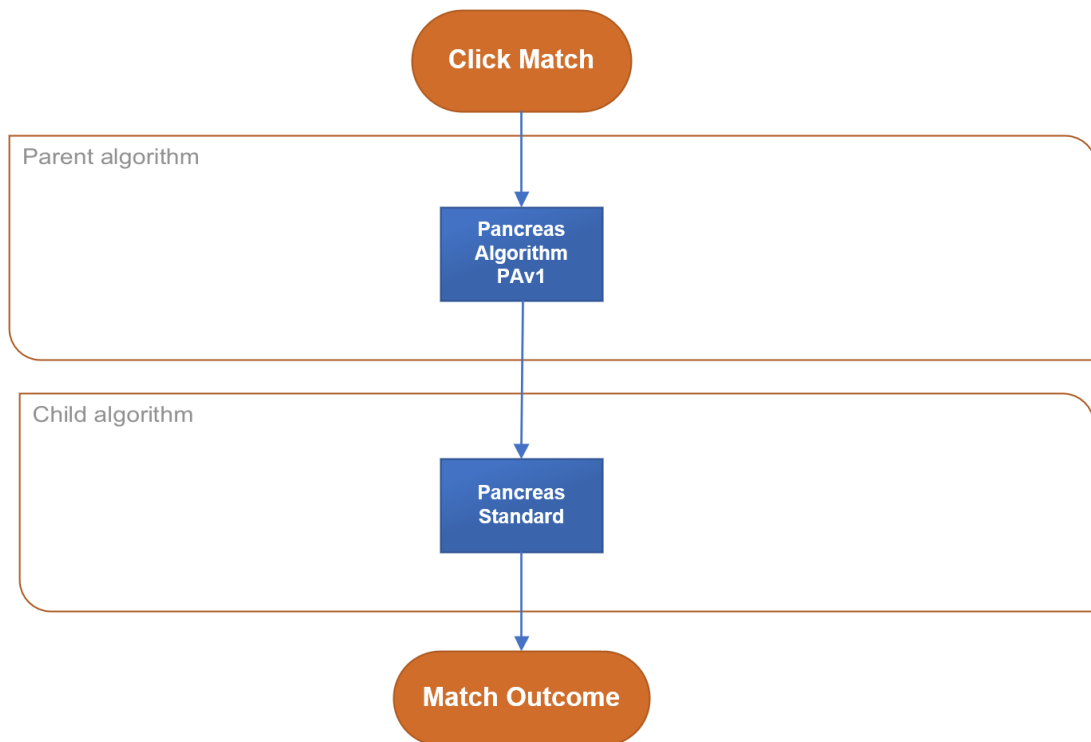
2.2.1 Kidney/Pancreas Standard algorithm score

The base score is calculated for each recipient that proceeds to matching

Level	Description	Base Score
	All patients	80 000 000
1	Home state allocation Pancreas TWL only	+ 7000
2	Home state allocation Kidney/Pancreas TWL Patients in the transplant unit of the Donor state	+ 5000
3	Non home state Kidney/pancreas recipients	0
	Waiting time	+ Number of months x 1

3. Pancreas Algorithm (PAv1)

The pancreas algorithm consists of one child algorithm. The child algorithm is executed in a set order.



3.1 Pancreas Standard Algorithm

A recipient will be included

- their ABO type is compatible with donor as determined by the ABO Type Selection Rules (Section 4)

The donor OM lab will determine the group of recipients which be included in the home state match.

OrganMatch

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Algorithm	Donor OM Lab State*	Recipient transplant unit
Standard	WA NSW (includes ACT) QLD	Westmead – Renal unit
	VIC (includes TAS)	Monash MC adult – Renal Unit
	SA (includes NT)	Royal Adelaide – Renal Unit

*OrganMatch Lab refers to the Tissue Typing lab that performs the donor testing

All patients will be included in the match, and the score will determine the sort order.

Algorithm name	Check	Process	!	x	✓
Pancreas Standard	Valid ABO for Pancreas	Checks ABO compatibility.	N/A	Does not proceed to matching.	Recipient and donor compatible. Proceeds to matching.

3.1.1 Pancreas Standard algorithm score

The base score is calculated for each recipient that proceeds to matching

Level	Description	Base Score
	All patients	80 000 000
1	Home state allocation Pancreas TWL only	+ 7000
	Waiting time	+ Number of months x 1

4. ABO compatibility rules

Algorithm	Donor ABO type	Patient ABO type
Kidney Pancreas National Priority	A	A
	A	AB
	B	B
	B	AB
	AB	AB
	O	O
	O	A
	O	B
	O	AB
Kidney Pancreas Standard Pancreas standard	A	A
	B	B
	B	AB
	AB	AB
	O	O

5. Organ Offer List Order

The list will be sorted in score order.

6. Recipient Readiness Criteria to be matched

Recipients must be ready and active to be included in matching. They do not need to be on a crossmatch tray.

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The readiness criteria must be met in order to be matched in the algorithm

The current readiness criteria for patients listed for Kidney/Pancreas TWL is as follows:

Recipient requirement	Current settings
HLA Typing	HLA A - 1 field HLA B - 1 field HLA C – 1 field HLA DRB1 – 1 field HLA DQB1 – 1 field HLA DQA1 – 1 field HLA DPB1 – 1 field HLA DPA1- 1 field
Location	OM Lab Transplant Hospital
Samples	ABO final and ABO confirmed
Luminex Antibody Screen SAG1 tested SAG2 tested	Yes within 100 days Yes within 100 days
Unacceptable antigens List authorised	Yes
Waiting Time	Yes

7. Waiting time calculation

Waiting time starts at

- i. the date the referral is received (if eGFR <15 already)
- ii. the date eGFR became <15 (if referral occurred at eGFR ≥15)

Abbreviations

Abbreviation	Definition
KPAv1	Kidney Pancreas Matching Algorithms version 1
PAv1	Pancreas Matching Algorithms version 1
OM	OrganMatch
TWL	Transplant waiting list
eGFR	Estimated Glomerular Filtration Rate. A key indicator of kidney function.

Definitions

N/A

Change history

Version number	Effective date	Summary of change
1	1/8/2022	First version

Electronic signature

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