How Matching Works

When are matches run?

a. Every Monday except federal holidays
b. When a chain has been terminated, additional match runs may take place on Tuesday, Wednesday, or Thursday.

Matches will not take place on the following federal holidays:

c. New Year's Day
d. Martin Luther King, Jr.'s Birthday
e. Washington's Birthday
f. Memorial Day
g. Independence Day
h. Labor Day
i. Columbus Day
j. Veterans Day
k. Thanksgiving Day
l. Christmas Day

When a federal holiday falls on a Monday, the match will occur on Tuesday.

Definitions

Bridge donor: A Kidney Paired Donation (KPD) donor who does not have a match identified during the same match run as the donor's paired candidate.

Exchange: A set of KPD matches that form a chain, a two-way exchange or a three-way exchange.

Exchange Ending Donor (EED): The paired donor at the end of the chain who will either become a bridge donor (to begin a new chain) or donate to the waitlist (at the transplant hospital who entered the original non-directed donor [NDD]).

Exchange Starting Donor (ESD): A non-directed donor (NDD) who starts a chain or a bridge donor who continues a chain

Match: A donor and the donor's matched candidate.

Match run: A match run is used to generate a set of potential exchanges for a KPD donor and candidate.

Matched candidate: The candidate that a KPD match run identifies as a potential transplant recipient of a living donor's kidney.

Matched donor: A living donor identified by a KPD match run as a potential donor for a candidate.

Matched recipient: A matched KPD candidate who has received a transplant.

Non-Directed Donor (NDD): A KPD donor who enters KPD without a paired candidate or a living donor; someone who donates an organ and does not specify an intended recipient.

Pair: A KPD donor and the KPD donor's paired KPD candidate.

Paired candidate: The KPD candidate to whom a KPD donor intended to donate his/her organ before entering into KPD.

Paired donor: A living donor who intended to donate his/her organ to his/her paired candidate before entering into KPD.
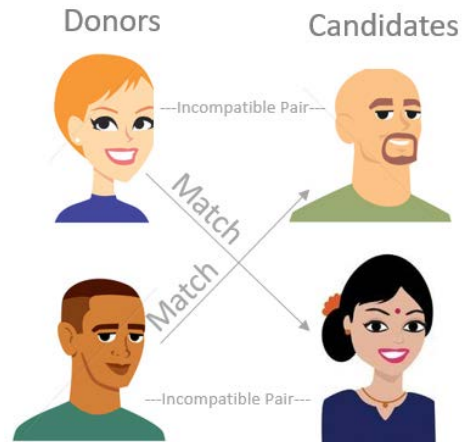
Paired donor's transplant hospital: The transplant hospital that enters the donor in a KPD program.

Paired recipient: A paired KPD candidate who has received a transplant.

Types of exchanges found in the OPTN KPDPP

- 2-way & 3-way exchange (swap)
- Open and Closed NDD chain

Two-way exchange (swap): A set of matches that includes two living donor-candidate pairs where each living donor donates a kidney to the candidate in the other pair.
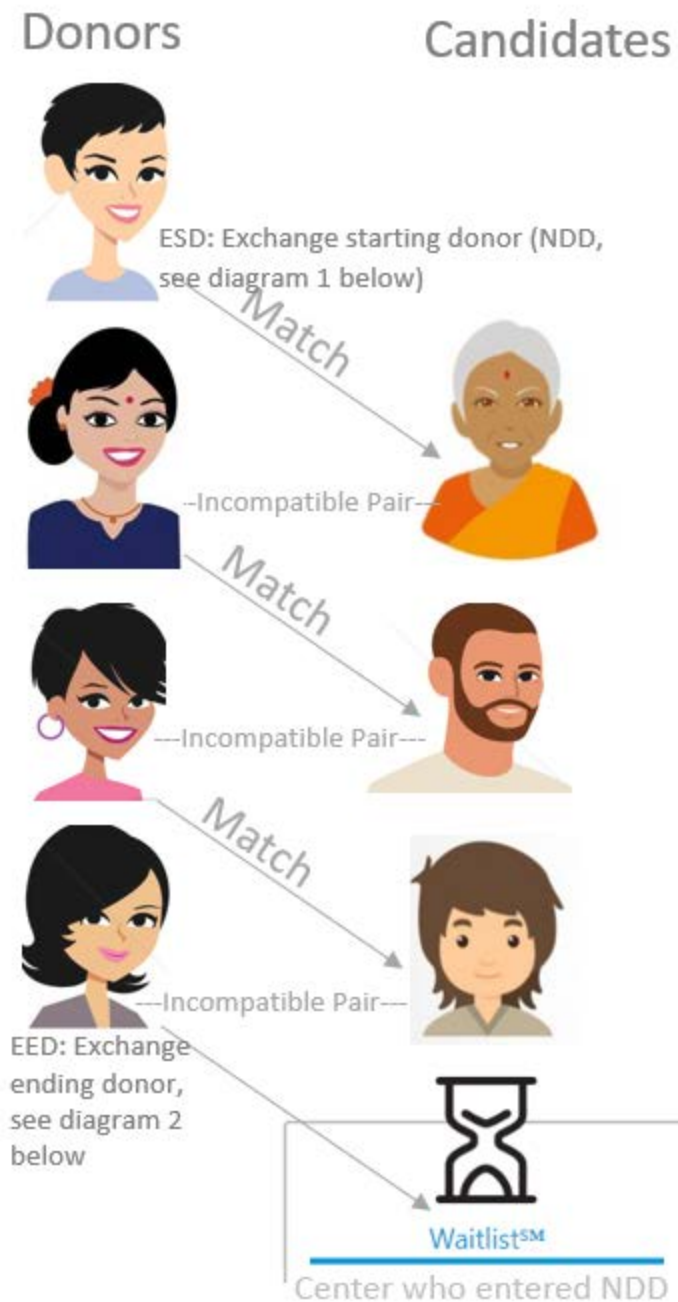

Three-way exchange (swap): A set of KPD matches that includes three living donor-candidate pairs where each living donor donates a kidney to a candidate in one of the other pairs.
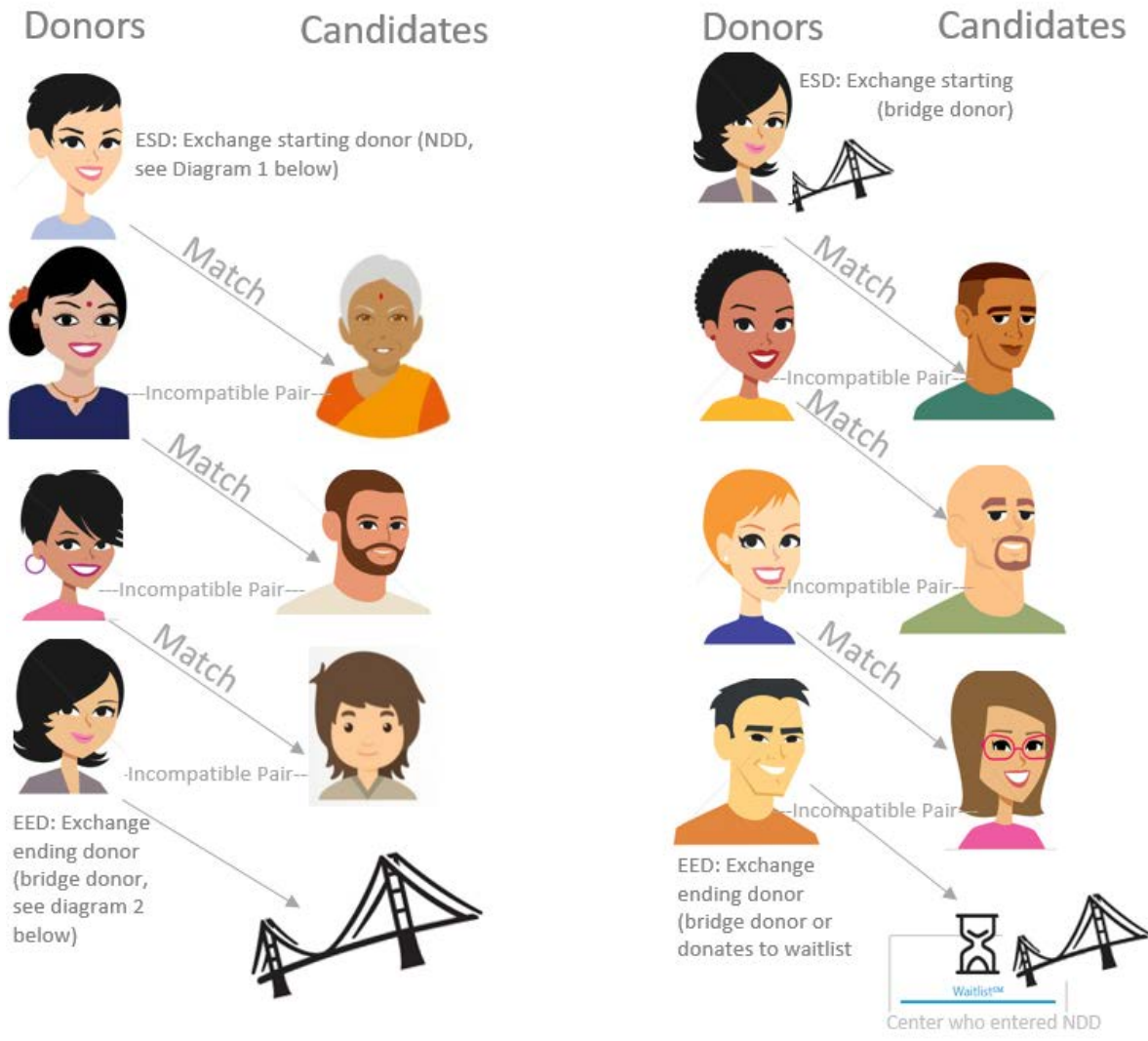
Chain: A set of KPD matches that begins with a donation from a non-directed living donor to that KPD donor's matched candidate. This candidate's paired living donor then donates to the KPD donor's matched candidate. A chain continues until a living donor donates to a waiting list candidate or is a bridge donor. There are two types of chains, closed and open.

Closed chain: In this type of chain, an Exchange Ending Donor (EED) donates to the waitlist at the hospital that entered the non-directed donor (NDD). Each closed chain may have up to 4 donors and 4 candidates (including the NDD and Waitlist candidate).

Open chains: In this type of chain, an Exchange Ending Donor (EED) is a bridge donor. Each open chain may have up to 4 donors and 3 candidates (including the bridge donor). There is no time limit for a chain to continue with bridge donors but each new chain has the same maximum of donors and candidates.
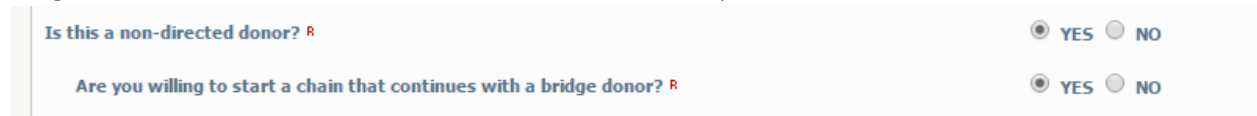
When does a chain remain open versus closed?

For a chain to be open the following questions in the KPD database must be answered 'Yes'

1. NDD: *Are you willing to start a chain that continues with a bridge donor?* *Diagram 1.*
2. Paired donor: *If matched with the opportunity to be a bridge donor, does the donor consent and the center agree to continue the chain as a bridge donor?* *Diagram 2.*

If one of these two questions is answered no, the chain will be closed.

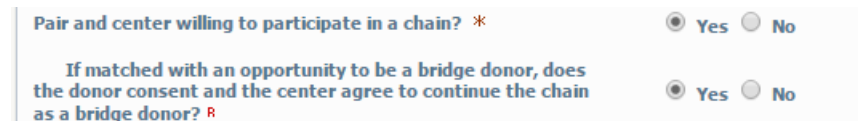Transplant hospitals can change the answers to these questions at any time.

Diagram 1: For Non-directed donor: on the Donor Summary>Details>KPD Information

Is this a non-directed donor? R	● YES ○ NO
Are you willing to start a chain that continues with a bridge donor? R	● YES ○ NO

Diagram 2: For the paired donor: on the Donor Summary>Donor Choices

Pair and center willing to participate in a chain? *	● Yes ○ No
If matched with an opportunity to be a bridge donor, does the donor consent and the center agree to continue the chain as a bridge donor? R	● Yes ○ No

For more help on entering data in the KPD system see KPD Help Documentation or email kidneypairedonation@unos.rog

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U Net – KIDNEY PAIRED DONATION

KPD Home ▶   Manage Data ▶   Matches ▶   Reports ▶   Resources ▶   Help ▾   Administrative ▶

Changing an open chain to a closed chain

At some point, a hospital that began an open chain with a NDD may want a donor offered to their waitlist before one is automatically offered.
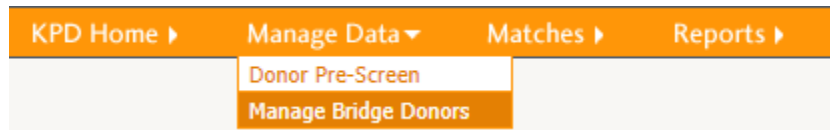
To end a bridge donor chain to your waitlist, email kidneypaireddonation@unos.org. UNOS staff will work with the bridge donor hospital to change the donor status from 'Pending bridge donor' to 'Donating to Waitlist'

_____

Managing Bridge donors

When a chain is offered and accepted with a Bridge Donor, their status will be automatically be set to 'Pending bridge donor'. The bridge donor will automatically participate in the next match run.

There is no defined timeline for how long a donor can remain a bridge donor.

You can change the status of your bridge donor to 'On hold', 'Donating to the waitlist', or 'Declined to donate' by clicking on the Manage Bridge Donors tab under Manage Data.

On hold

You can prevent your bridge donor from participating in match runs by putting them on hold. Bridge donors can be placed on hold at any time and for any reason.

**When you have a bridge donor identified at the end of a chain, is important that you immediately place your bridge donor on hold until crossmatches in the current exchange are complete. This prevents bridge donors from initiating a new chain before it is known if the previous matches will move forward.

Once the crossmatch results have been reported and hospitals begin talking about surgery dates, remove your bridge donor from hold so they can initiate a new chain.

Donating to the waitlist

You can change your donor from a bridge donor to 'donating to the waitlist' at any time. When donating to the waitlist the kidney will be offered to the transplant hospital that entered the NDD who began the original chain.
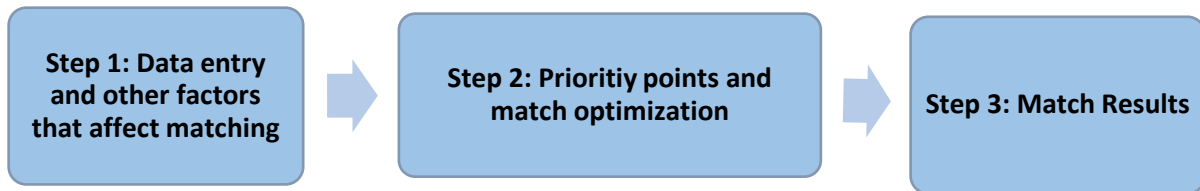
Declined to donate

A bridge donor can decline to donate at any time for any reason.

If a bridge donor declines to donate the original NDD hospital who began the chain will not receive an offer to their waitlist.

How does the computer matching system work?

There are several steps to the matching process in the OPTN KPD.

Step 1: Data entry and other factors that affect matching	→	Step 2: Prioritiy points and match optimization	→	Step 3: Match Results

Step 1a. Data entry

Donors and candidates are screened to match based on the following information entered by the transplant hospitals:

a. Donor and Candidate ABO: Candidates and donors will only match if their blood types are compatible; this includes non-A1 and non-A1B matching.
b. Antibodies entered on a candidate page as "UNACCEPTABLE ANTIGENS" **will not** match with a donor with the corresponding HLA.
c. Antibodies listed as "ALL OTHER ANTIBODY SPECIFICITIES" **will** match with a donor with the corresponding HLA.
d. In the donor "CHOICES' and candidate 'CHOICES' tabs, matches will be based on corresponding data entered.

Data used to match donors and candidates	
This data…	**With this data…**
Donor ABO	Candidate compatible ABO
Donor HLA	Candidate unacceptable antigens
Donor choices questions:	Based on candidate data entered:
a. Distance willing to travel b. Which centers is willing to travel to c. Willing to ship kidney d. Donor donating R or L kidney	a. Name of transplant hospital b. Name of transplant hospital c. Willing to accept a shipped kidney d. Accept R, L, or either kidney
Candidate choices questions:	Donor data entered:
a. Distance willing to travel b. Which centers willing to travel to c. Willingness to accept shipped kidney d. Min and max donor age e. Max donor BMI f. Min donor creatinine clearance or GFR g. Max acceptable donor blood pressure h. Willing to accept R, L, or either kidney i. Willing to accept donor Hep B core, CMV status, EBV positive donors	a. Name of transplant hospital b. Willingness of donor to travel c. Preference of having a kidney shipped d. Date of birth e. Height & weight f. Creatinine clearance or GFR g. Blood pressure h. Donor can donate R, L, or either kidney i. Serology marked as positive or negative

Step 1b. Other factors that affect matching:

Donor pre-selection

The purpose of the donor pre-select tool is to decrease the number of match offers that are immediately refused, increasing the efficiency of the KPD system.

How it works

Donors and candidates in the donor pre-select are updated in real time as they are added or their information is updated in the system.

The Donor Pre-Select allows transplant centers to preview potential donors and indicate whether they would refuse or preliminarily accept the donor if matched with their candidate in a Match Run.

Entering a pre-acceptance does not commit you to accepting future match offers.

Entering a refusal will prevent your candidate from ever matching with this donor.

If a candidate has a CPRA less than 90%, they will have the ability to match any of the donors in the pre-selection except those they have pre-refused.

If a candidate has a CPRA greater than or equal to 90%, they will **only** have the ability to match with donors that have been pre-accepted.

Refusing an offer:

When refusing an offer, if you answer "NO" to the FUTURE MATCHING question "Would your candidate be willing to match to this donor in a future match run?" on the Match Response page, then this candidate **will never** match with this donor again.

If you answer "YES" to the FUTURE MATCHING question "Would your candidate be willing to match to this donor in a future match run" on the Match Response page, then this candidate **will** match with this donor again – probably in the next match run. The only way to prevent this is to inactivate or remove the candidate.

Answers to the following donor questions will affect matching:
- Pair and center willing to participate in a 3-way match?
- Pair and center willing to participate in a chain? *(Must say yes for NDDs)*
- Paired donor: If matched with an opportunity to be a bridge donor, does the donor consent and the center agree to continue the chain as a bridge donor?
- NDD: If matched with an opportunity to be a bridge donor, does the donor consent and the center agree to continue the chain as a bridge donor? *(This indicates the NDD would like the chain to end with a bridge donor versus to the waitlist)*

Step 2: Assigning priority points and optimizing results

Matching pairs and assigning points

The computer finds Matches, then Exchanges, then multiple Solutions.

1. *Match:* A donor and the donor's matched candidate

The computer finds all possible donor and candidate matches. Each match is assigned priority points per OPTN policy 13. https://optn.transplant.hrsa.gov/media/1200/optn_policies.pdf#nameddest=Policy_13

Table 13-2: OPTN KPD Prioritization Points

If the:	Then the match will receive:
Candidate is a 0-ABDR mismatch with the potential donor	200 points
Candidate has a CPRA greater than or equal to 80%	125 points
Candidate is a prior living organ donor	150 points
Candidate was less than 18 years old at the time the candidate was registered in the OPTN KPD program	100 points
Candidate and potential donor are registered for the OPTN KPD program in the same region	25 points
Candidate and potential donor are registered for the OPTN KPD program in the same DSA	25 points
Transplant hospital that registered both the candidate and potential donor in the OPTN KPD program is the same	25 points

2. *Exchange:* A set of KPD matches that form a chain, a two-way exchange, or a three-way exchange.

    The computer finds all possible exchanges from the set of matches found. Each exchange is assigned points. Exchange points are the sum of all the match priority points in that exchange.

3. *Solution*: a group of exchanges in which each donor can only donate once and each candidate only receive once.

    The computer finds all possible solutions from the set of exchanges. Each solution is assigned points. Solution points are the sum of all the exchanges in that solution.

Sept 3. Matches results

The solution is the result of a match run with the greatest number of points. These are the exchanges/matches offered.