Living Donor Kidney Matching Run Process

1 Living donor kidney matching runs are carried out quarterly, in January, April, July and October, to identify two-way and three-way paired exchanges, and short and long altruistic donor chains:

Two-way Exchange

Three-way Exchange

Three-way with embedded two-way

Short Altruistic Donor Chain

Long Altruistic Donor Chain

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| AD |

| DR |

Key:
- D1 R1 = linked paired donor-recipient pair
- AD = altruistic donor
- DR = deceased donor transplant list recipient
- = match

2 Identify the optimal combination of exchanges from all of those possible – using the following optimality criteria:

i. maximise the number of effective two-way exchanges (including three-way exchanges with embedded two-way exchanges)  

ii. subject to (i), maximise the total number of transplants  

iii. subject to (i)-(ii), minimise the number of three-way exchanges  

iv. subject to (i)-(iii), maximise the number of embedded two-way exchanges in the three-way exchanges  

v. subject to (i)-(iv), the overall match score is maximised (ie the sum of scores calculated for each potential transplant in all exchanges in the result)

Match scores

A score is calculated for each potential transplant in an exchange, based on the following factors:

a. Previous matching run points – the number of quarterly matching runs in which the recipient has previously participated, multiplied by 50  

b. Sensitisation points – 0-50 points (for 0-100% sensitised)  

c. HLA mismatch points – 15, 10, 5 or 0 points for mismatch levels 1, 2, 3 or 4, respectively. Note: HLA mismatch requirements for an individual recipient can be specified at time of registration.  

d. Donor-donor age difference points – 3 points awarded if donor-donor age difference ≤ 20 years. Note: the maximum donor age acceptable for an individual recipient can be specified at time of registration.  

e. Local exchange points – 20 points for local exchanges within 5 areas of the UK

1 from April 2008  
2 from January 2010  
3 from January 2012  
4 from April 2015  
5 to October 2011 only

Note: compatible pairs included from January 2012