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Proposed Kidney Offering Scheme and how this impacts on SPK and SIK patients

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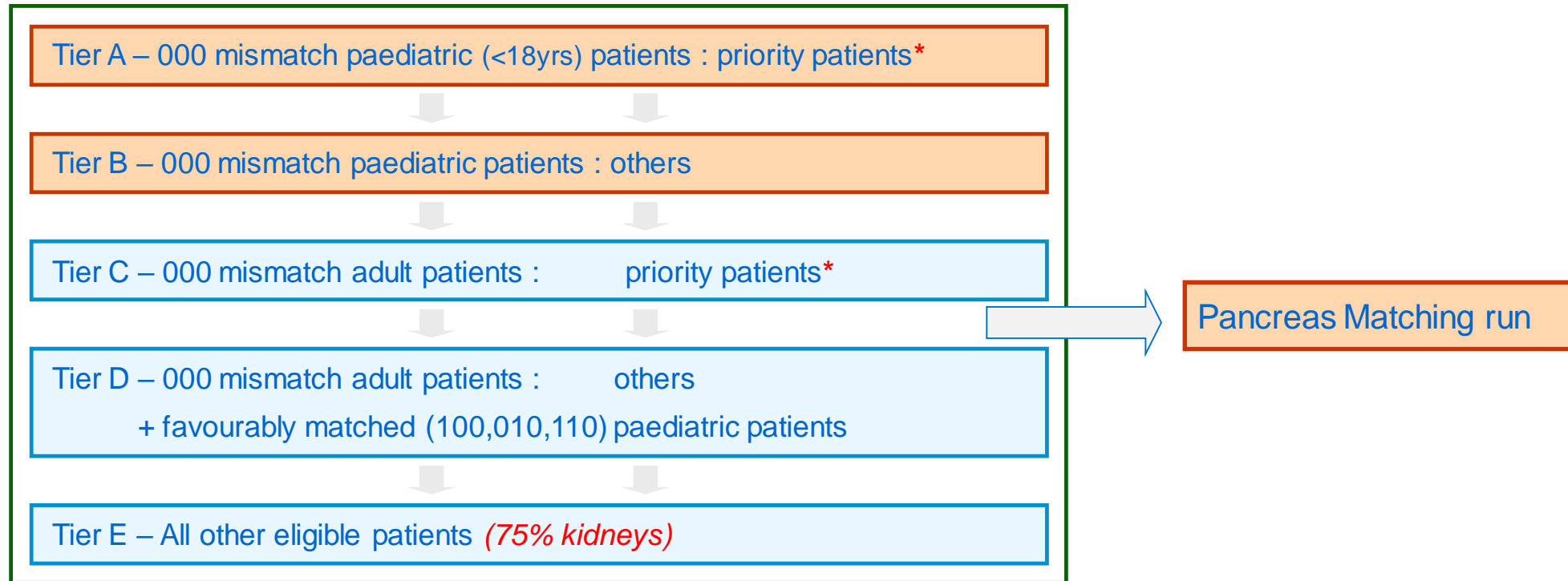
On behalf of the Kidney Offering Scheme working group

Outline

- Background
- Proposed kidney offering scheme
- Impact on SPK and SIK patients
- Waiting time from start of dialysis

Summary of the 2006 KAS

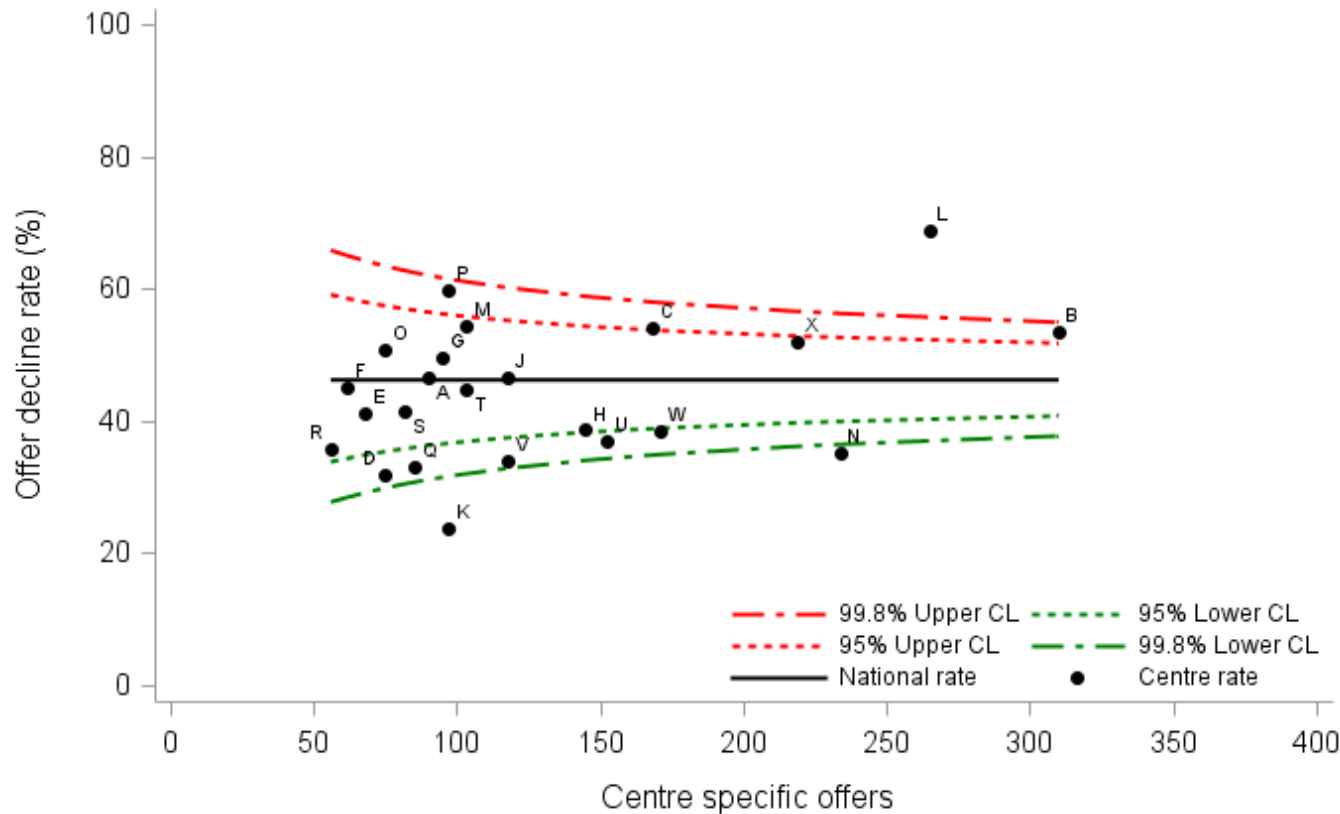
All donors after brain death kidneys allocated by national rules -



Defaulted antigens, Restricted blood group compatible matches,
No level 4 mismatches (2 B & 1 DR mm or 2 DR mm grafts)

High offer decline rates

Figure 4.1 Adult standard criteria DBD donor kidney offer decline rates for kidneys that resulted in a transplant, 1 April 2013 and 31 March 2016



Offer decline rates vary from 24% at Leeds to 69% at Leicester

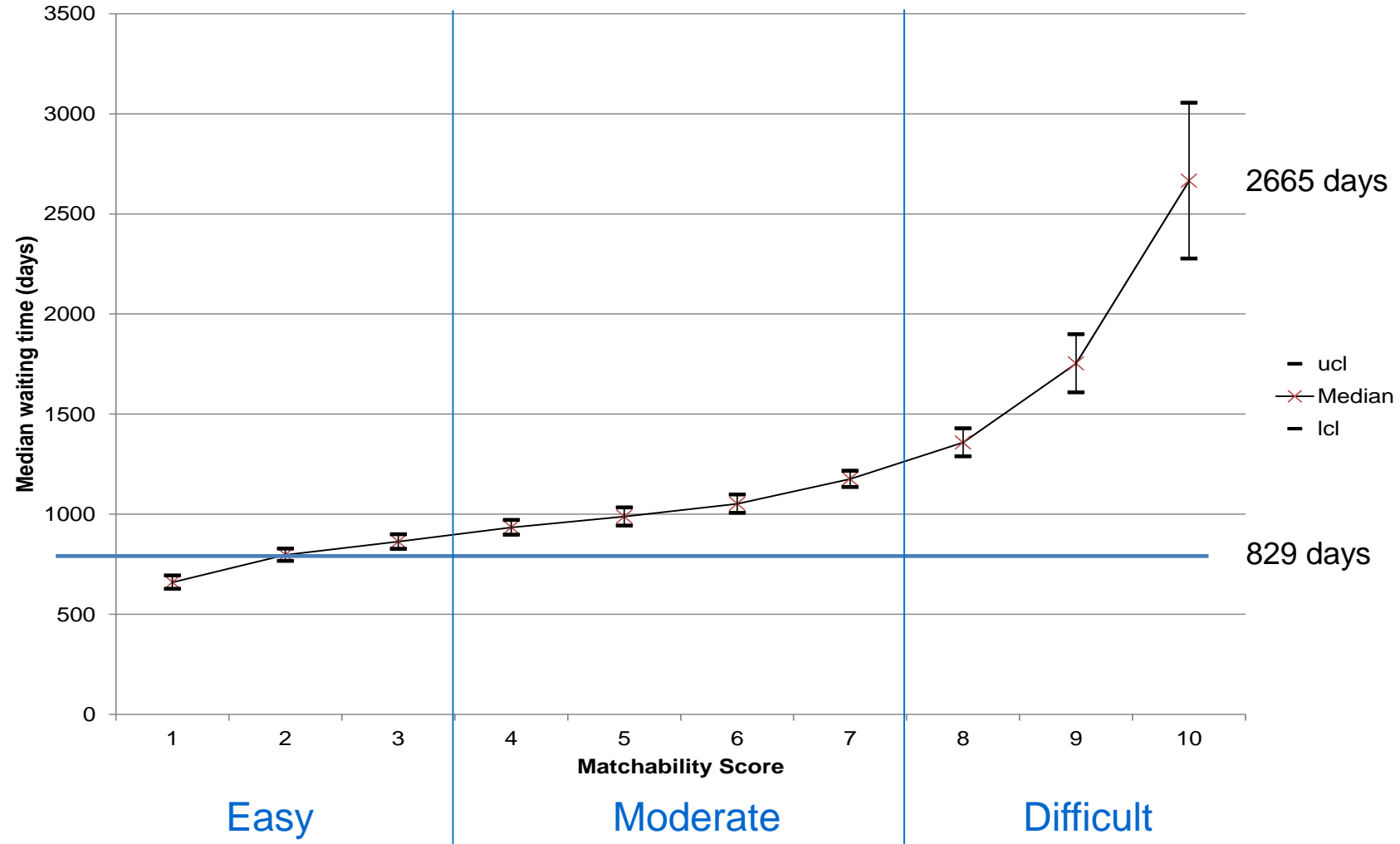
Long waiting times for difficult to match patients

Matchability score:

Number in last 10,000 donors

- blood group identical and HLA compatible (calculated Reaction Frequency)
- 000, 100, 010, 110, 200, 210, 001, 101, 201 mismatch (Level 1 or 2).
- All patients on the waiting list are then divided in to deciles.
- 1 = easy to match, 10 = difficult to match

Long waiting times for difficult to match patients



Key objectives

- Unify DBD and DCD offering with all DBD and DCD kidneys allocated through the scheme
- More effective 'quality' matching between donor and recipient
- Better tailored HLA matching by age
- Geographical equity of access
- Avoid prolonged waiting times that are predictable
- Waiting time from earliest of start of dialysis or activation on the list
- Age should be a continuous factor

Proposed kidney offering scheme

Summary of basic principles

All **deceased** donor kidneys are allocated through scheme:

Tier A Patients with matchability score = 10 or 100% cRF or ≥ 7 years

Allow blood group O to B, HLA level 4 transplants

Tier B All other patients

Allow HLA level 4 transplants for matchability score 8 and 9 only

Within Tier A; patients prioritised by waiting time from dialysis only

Within Tier B, patients prioritised by point score

Factors included in points score:

Donor and recipient risk index match (D1-D4, R1-R4),

Waiting time from earliest of start of dialysis or activation date on the list,

HLA match & age points combined,

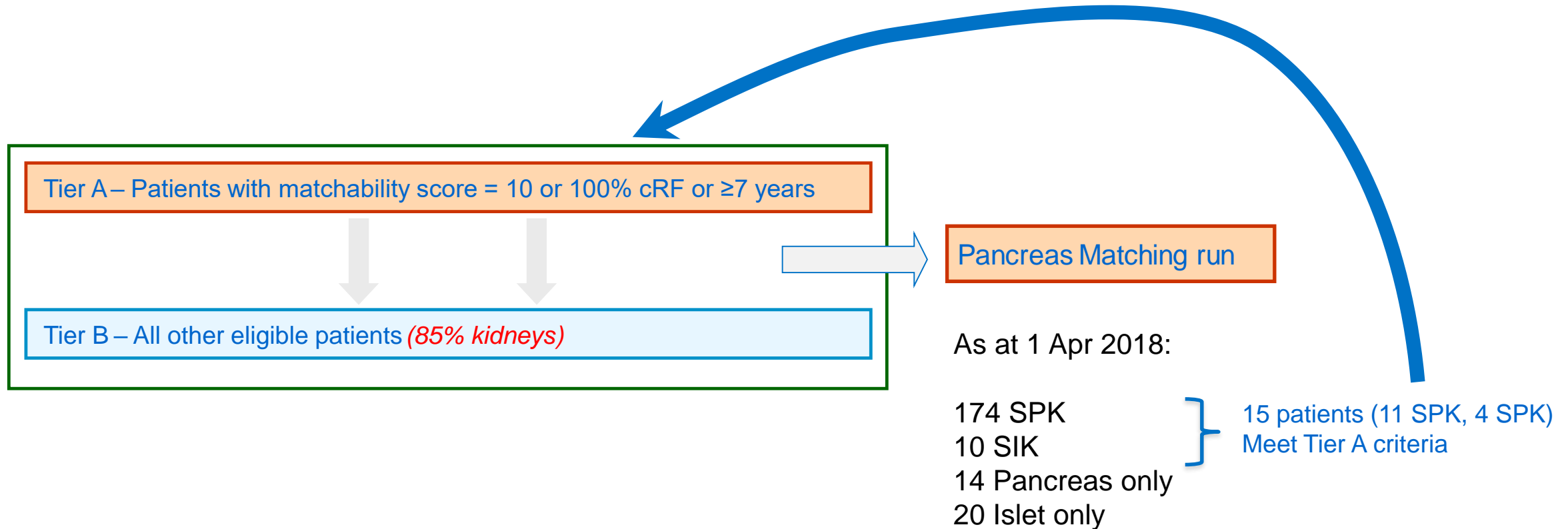
Location points,

Matchability points,

Total mismatch points,

Blood group points

Summary of the proposed 2018 KOS



Impact on SPK and SIK patients

SPK patient – Reg 19 Jul 16 (Tier A)

- Blood group and HLA compatible with 5 donors

Donor 1 Aged 68 - SPK not offered due to age

Donor 2 Aged 71 - SPK not offered due to age

Donor 3 Aged 58

Both kidneys transplanted via KMR (1 Long waiter, 15 Tier C)

3 would qualify for new Tier A

Donor 4 Aged 54

Both kidneys transplanted via KMR (2 Long waiters, 56 Tier C)

5 would qualify for new Tier A

Donor 5 Aged 57 – Accepted SPK but not transplanted as kidney has not artery

SPK/SIK patient – Reg 4 Nov 10 (Tier A)

- Blood group and HLA compatible with 4 donors

Donor 1 Aged 57

SPK offered but declined due to poor function

Pancreas not transplanted, kidney is transplanted

Donor 2 Aged 70 - SPK not offered due to age

Donor 3 Aged 77 - SPK not offered due to age

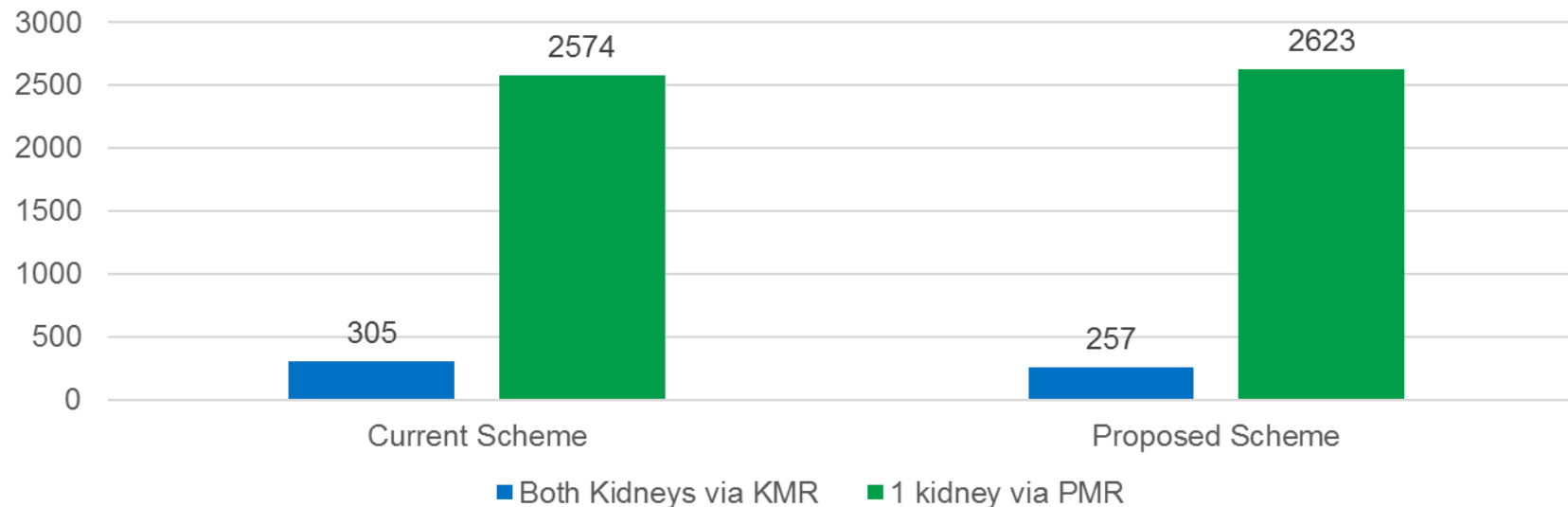
Donor 4 Aged 39

Both kidneys transplanted via KMR (1 Long waiter, 1 Tier C)

2 would qualify for new Tier A

SPK / SIK patients – Not Tier A

- Current 2006 Kidney Allocation Scheme prioritises 000 mismatched paediatric patients and priority adult patients
- For donors with common HLA type, recipients on the pancreas matching run currently miss out as 2 kidneys are generally allocated within Tiers A-C
- Simulations show kidney offered via PMR for 91% of donors (aged 0-65)



Questions for PAG

- Should SPK/SIK patients who meet Tier A criteria be included in the Kidney Matching Run?
- Should there be an age restriction the same as the pancreas matching run:
 - DBD 0 – 65
 - DCD 0 - 55
- Should SPK / SIK recipients have the option to only accept the kidney if included in Tier A?

Waiting time from start of dialysis

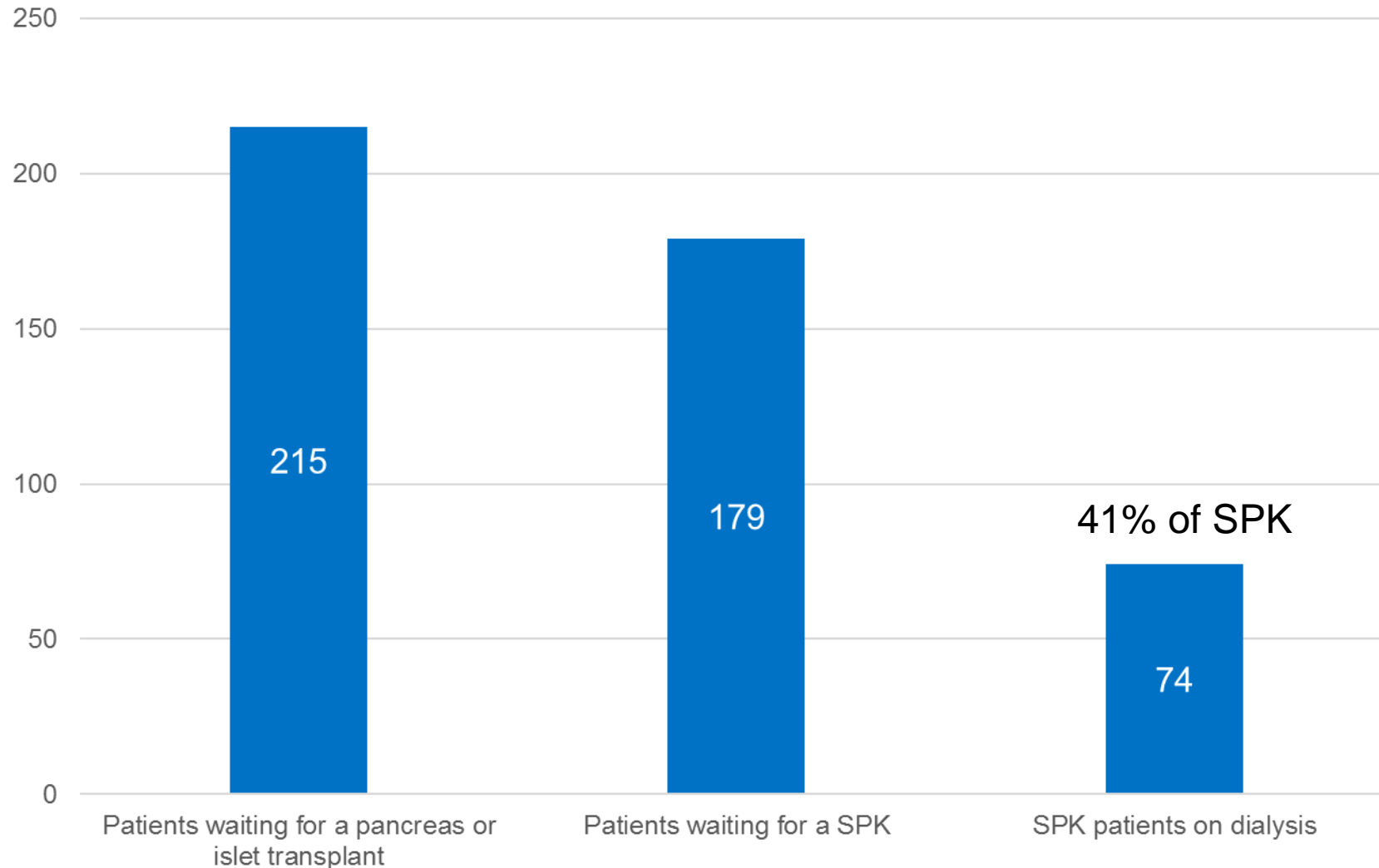
KAG agreed waiting time from start of dialysis

- Earliest of dialysis start date or activation on the kidney transplant list
- If re-transplant then waiting time calculated from point of graft failure or re-activation on the kidney transplant list
- If graft fails within 180 days then waiting time from prior to transplant is added to current waiting time

Should waiting time start from dialysis for SPK/SIK patients?

- SPK/ SIK patients do not currently compete with kidney only patients
- There is already an extra 180 points added for patients on dialysis in the pancreas allocation scheme
- Will such a change disadvantage patients waiting for a pancreas only or islet only transplant?

Current waiting list – 9 April 2018



The median time on dialysis prior to activation is 237 days (IQ Range 76 – 514)

Simulations

S0 Baseline Simulation

The baseline simulation is set to simulate allocation according to the existing Pancreas Allocation Scheme (PAS) protocols.

S1 Dialysis waiting time for SPK patients

A simulation was run to explore the impact of changing the existing formulae used within PAS to calculate waiting time points. For SPK patients on dialysis the formulae were calculated based on the start date of dialysis.

Transplant Activity

	Year 1		Year 2		Year 3	
	N	(%)	N	(%)	N	(%)
S0: Transplant type						
SPK	185	(78)	167	(72)	184	(73)
Isolated pancreas	24	(10)	44	(19)	43	(17)
Islet (first)	13	(5)	14	(6)	14	(6)
Islet (regraft)	16	(7)	7	(3)	11	(4)
S1: Transplant type						
SPK	200	(84)	179	(77)	177	(70)
Isolated pancreas	22	(9)	32	(14)	52	(21)
Islet (first)	6	(3)	14	(6)	14	(6)
Islet (regraft)	10	(4)	6	(3)	10	(4)

End of year transplant list

	Year 1		Year 2		Year 3	
	N	(%)	N	(%)	N	(%)
S0: Transplant type						
SPK	177	(69)	187	(71)	190	(71)
Isolated pancreas	56	(22)	50	(19)	53	(20)
Islet (first)	22	(9)	21	(8)	22	(8)
Islet (regraft)	3	(1)	4	(2)	4	(1)
S1: Transplant type						
SPK	174	(67)	173	(66)	186	(70)
Isolated pancreas	59	(23)	65	(25)	56	(21)
Islet (first)	25	(10)	24	(9)	24	(9)
Islet (regraft)	0	(0)	1	(<1)	1	(<1)

Median waiting time to transplant

	Year 1		Year 2		Year 3	
	Median	[IQR]	Median	[IQR]	Median	[IQR]
S0: Transplant type						
SPK	441	[195]	392	[343]	376	[267]
Isolated pancreas	346	[406]	353	[251]	437	[222]
Islet (first)	322	[317]	561	[270]	540	[295]
Islet (regraft)	130	[107]	100	[111]	118	[68]
S1: Transplant type						
SPK	390	[428]	380	[509]	350	[476]
Isolated pancreas	458	[530]	382	[301]	610	[253]
Islet (first)	456	[538]	712	[192]	663	[351]
Islet (regraft)	143	[184]	3	[6]	3	[9]

Summary

- The Kidney Advisory Group have identified the best solution for the next Kidney Offering Scheme in line with key recommendations
- Positive impact on SPK and SIK patients following the proposed change
- Pancreas Advisory Group are asked to consider whether SPK and SIK patients meeting the criteria for the proposed Tier A should be included.
 - What age and acceptance criteria should be set?
- Simulations have shown that calculating waiting time from start of dialysis for SPK patients in the pancreas allocation scheme will result in longer waiting times for pancreas only and islet only patients (approximately 150 days).