

**NHS BLOOD AND TRANSPLANT
ORGAN DONATION AND TRANSPLANTATION DIRECTORATE**

KIDNEY ADVISORY GROUP

REVISED KIDNEY FAST TRACK SCHEME – 12 MONTH REVIEW

INTRODUCTION

1. There have been 2 reviews of the fast track (FT) trigger points over the past 2 years following agreement at KAG. In July 2022, the number of centre declines due to organ or donor quality required to trigger fast track offering was changed from 5 for DBD and 3 for DCD, to 7 declines for both DBD and DCD. The change was implemented on October 25 2022. A review at KAG in July 2023 showed that while the proportion of kidneys offered by fast track were down overall, there had been an increase in incidents related to the length of the offering process. Following this, the number of declines to trigger fast track was reduced from 7 to 5 for kidney only donors, as of August 16 2023.
2. The changes were subject to a review, with several *a priori* metrics agreed as being essential for monitoring outcomes following the changes. The primary outcomes for the original changes were for a decrease in the proportion of kidneys transplanted via FT by 30% with commensurate increase in proportion of transplants via named patient offering. A number of secondary outcomes to be reviewed included expected and unintended consequences of the changes including CIT, offer time, hub work-load and ODMT on call authorisations for FT.
3. This paper summarises changes in offering activity, and use of the FT scheme in the period since the change was implemented in comparison with a reference period before the recent changes. Proposals are made for KAG to consider and vote on in the light of review findings.

DATA AND METHODS

4. Data on deceased donor offers and transplants were extracted from the UK transplant registry. Reasons for triggering the FT offering are identified by search of the text recorded by Hub Operations staff. Data were extracted from 3 periods:
 - Period 1, kidneys offered between 25 October 2021 and 15 August 2022. Trigger: 5 quality declines for DBD, 3 for DCD (reference period, prior to recent changes).
 - Period 2, kidneys offered between 25 October 2022 and 15 August 2023. Trigger: 7 declines DBD and DCD (first set of changes to triggers)
 - Period 3, kidneys offered between 25 October 2023 to 15 August 2024. Trigger: 5 declines for kidney only donors (DBD and DCD), 7 declines for donors of kidneys and other organs (latest review period).

RESULTS

5. Table 1 looks at all cases where kidneys were offered, and the proportion where at least 1 kidney was fast tracked. This includes both donors where a kidney was donated and cases where offering resulted in no kidneys being donated. Overall, the proportion of kidneys transplanted via FT reduced from 16% in period 1 to 13% in period 2, with a further decrease to 12% in period 3. This is a proportional reduction of 25% from period 1 to period 3. Overall, the proportion of donor offers that where at least one kidney was FT reduced from 40% in period 1 to 37% in periods 2 and 3.
6. In Table 2 the trigger points for FT offering, by the donor type are summarised. In the review period, there has been a decrease in FT due to the number of centre declines for both DBD and DCD. However, this has coincided with an increase in other reasons for fast track. For DCD donors there has been an increase in the trigger point for cold ischaemia time from 23% in the reference period to 39% in period 2. Following the changes in period 3, fast track offering due to cold ischaemia time remained similar at 38%.

Table 1 – Total number of donors where kidneys offered and proportion where at least one kidney fast tracked

| | Period 1 | | Period 2 | | Period 3 | |
|--|----------|-------|----------|-------|----------|-------|
| Donors with ≥ 1 kidney offered | 1373 | | 1453 | | 1421 | |
| Number where ≥ 1 kidney fast tracked | 551 | (40%) | 542 | (37%) | 530 | (37%) |
| Donors with ≥ 1 kidney donated | 1079 | | 1149 | | 1107 | |
| Kidneys transplanted via named offering | 1582 | (84%) | 1699 | (87%) | 1700 | (88%) |
| Kidneys transplanted via fast track offering | 298 | (16%) | 265 | (13%) | 235 | (12%) |

Table 2 – Breakdown of proportion of kidneys fast tracked by time period, donor type and reason for fast track**DBD Donors**

| | Period 1 | | Period 2 | | Period 3 | |
|---|-----------------|-------|-----------------|-------|-----------------|-------|
| Donors with ≥ 1 kidney offered | 647 | | 635 | | 633 | |
| Number where ≥ 1 kidney fast tracked | 204 | (32%) | 201 | (32%) | 206 | (33%) |
| Reason for Fast Track | | | | | | |
| Centre Declines | 95 | (47%) | 57 | (29%) | 65 | (31%) |
| Cold Ischaemia Time | 69 | (34%) | 68 | (34%) | 70 | (34%) |
| Deemed unusable | 14 | (7%) | 26 | (13%) | 9 | (4%) |
| Declined after treatment withdrawal | 1 | (0%) | 1 | (1%) | 0 | (0%) |
| Other | 8 | (4%) | 13 | (7%) | 5 | (2%) |
| ODMT/Hub Authorised | 2 | (1%) | 3 | (2%) | 2 | (1%) |
| Positive Virology | 3 | (1%) | 4 | (2%) | 11 | (5%) |
| Not available | 12 | (6%) | 28 | (14%) | 45 | (22%) |

DCD Donors

| | Period 1 | | Period 2 | | Period 3 | |
|---|-----------------|-------|-----------------|-------|-----------------|-------|
| Donors with ≥ 1 kidney offered | 726 | | 818 | | 788 | |
| Number where ≥ 1 kidney fast tracked | 347 | (48%) | 341 | (42%) | 324 | (41%) |
| Reason for Fast Track | | | | | | |
| Centre Declines | 151 | (44%) | 69 | (20%) | 87 | (27%) |
| Cold Ischaemia Time | 81 | (23%) | 134 | (39%) | 125 | (38%) |
| Deemed unusable | 31 | (9%) | 31 | (9%) | 17 | (5%) |
| Declined after treatment withdrawal | 10 | (3%) | 23 | (7%) | 13 | (4%) |
| Other | 37 | (11%) | 44 | (13%) | 33 | (10%) |
| Positive Virology | 8 | (2%) | 7 | (2%) | 13 | (4%) |
| ODMT/Hub Authorised | 6 | (2%) | 8 | (2%) | 9 | (3%) |
| Not available | 22 | (6%) | 25 | (7%) | 29 | (9%) |

7. Table 3 gives the time from first (named) offer, to first FT offer, where the trigger point for fast track was due to centre declines. Across both, DBD and DCD offering there was increase in the time between the first offer and the fast track offering from period 1 to period 2, and a small decrease from period 2 to period 3.

Table 3 – Time between first offer and fast track offer, where centre declines trigger point met

| | Period 1 | | | Period 2 | | | Period 3 | | |
|------------|----------|------------------|-----------|----------|------------------|-----------|----------|------------------|-----------|
| | N | Median (Minutes) | (Q1-Q3) | N | Median (Minutes) | (Q1-Q3) | N | Median (Minutes) | (Q1-Q3) |
| DBD | 95 | 287 | (212-434) | 57 | 438 | (289-591) | 65 | 424 | (297-884) |
| DCD | 151 | 213 | (151-414) | 69 | 387 | (299-546) | 87 | 355 | (266-507) |

8. Across all deceased donor kidney offers to named recipients, the mean offers per donor was 4.15 in period 1 (maximum of 13). This increased to 4.70 in period 2 (maximum of 16) and increased further to 5.11 in period 3 (maximum of 24). Comparing period 3 to period 2, median cold Ischaemia time for all deceased donor kidney transplants has decreased by 0.4 hours for DBD and increased by 0.2 hours for DCD (Appendix Table 3A).
9. Table 4 shows the number of centre declines for quality, before acceptance for a named offer (ie. not including kidneys that were fast tracked). The number of accepted offers for named patients after 4 declines for DBD kidneys in period 3 is 10 (1%). The number of accepted offers after 4 declines for DCD kidneys in period 3 is 6 (1%).

Table 4 - Number of quality declines before a kidney was accepted for a named patient offer

| | Declines prior to acceptance | Declines prior to acceptance | | | | | | | Total | |
|------------|------------------------------|------------------------------|----|----|----|---|---|---|-------|-----|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | | 7 |
| DBD | | | | | | | | | | |
| Period 1 | 742 | 120 | 39 | 14 | 11 | 2 | 1 | | | 929 |
| Period 2 | 728 | 109 | 24 | 29 | 13 | 5 | 7 | | | 915 |
| Period 3 | 697 | 151 | 45 | 20 | 5 | 7 | 2 | 1 | | 928 |
| DCD | | | | | | | | | | |
| Period 1 | 469 | 126 | 46 | 8 | 1 | | | | | 650 |
| Period 2 | 568 | 127 | 34 | 25 | 16 | 5 | 5 | 1 | | 781 |
| Period 3 | 565 | 113 | 50 | 21 | 20 | 4 | 2 | | | 775 |

10. Table 5 shows the time in hours between the donor referral and knife to skin, split by DBD and DCD. The median time in period 3 was 54 hours for DBD and 50 hours for DCD.

Table 5 – Time from donor referral to knife to skin in hours

| | Period | N | Median | Q1-Q3 |
|------------|--------|-----|--------|-----------|
| DBD | 1 | 579 | 51 | (39 – 69) |
| | 2 | 577 | 54 | (43 – 70) |
| | 3 | 491 | 54 | (44 – 69) |
| DCD | 1 | 490 | 45 | (31 – 69) |
| | 2 | 559 | 48 | (33 – 69) |
| | 3 | 482 | 50 | (35 – 75) |

CLINICAL GOVERNANCE INCIDENTS

In the previous review of the changes made in period 2, the increase in time taken to confirm placement due to process elongation resulted in potential delays at donor centres and/or delay in mustering retrieval teams. This was captured in at least 3 Clinical Governance incidents during period 2. The number of Clinical Governance reported incidents were thought to be an under-estimate of the concerns from SNOD teams and the Hub and many more have been raised informally, specifically in the setting of kidney only donors. Since the changes made to the trigger points in period 3, there have been no incidents related to the elongation of the offering process.

SUMMARY

This review identifies:

Comparing period 3 to period 1:

- (1) a 25% proportional (from 16% down to 12%) reduction in proportion of kidneys transplanted via FT route
- (2) Reduction in centre declines as reason trigger for FT
- (3) increase in other reasons for triggering FT, including CIT for DCD
- (4) The take-up of named offers after 5 declines for quality reasons is limited

Comparing period 3 to period 2

- (5) Small reduction in proportion of kidneys transplanted via FT route
- (6) Similar time between donor referral to knife-to-skin for DBD and an increase of 2 hours in DCD
- (7) Reduction of incidents due to the prolonged named offering process
- (8) Proportion of offers accepted by named offering after 4 declines remains small (1%)

ACTION

In light of the review findings, KAG members are asked to consider the following options:

- (1) To remain with the current FT trigger points
- (2) To revise the number of declines for quality to 5 for all donors (ie. not just for kidney only donors).

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October 2024

Appendix Table 1 - Reasons for decline of named kidney offers by time period

| Reason | 25 Oct 2021 – 15 Aug 2022 | | 25 Oct 2022 – 15 Aug 2023 | | 25 Oct 2023 – 15 Aug 2024 | |
|---|---------------------------|--------------------------|---------------------------|--------------------------|---------------------------|--------------------------|
| | No. of declined offers | % of all declined offers | No. of declined offers | % of all declined offers | No. of declined offers | % of all declined offers |
| Clinical | 3 | 0 | . | . | . | . |
| Donor unsuitable - cause of death | 5 | 0 | 11 | 0 | 5 | 0 |
| Donor unsuitable - age | 106 | 5 | 148 | 6 | 173 | 6 |
| Donor unsuitable - past history | 693 | 34 | 846 | 33 | 883 | 30 |
| Donor unsuitable - size | 19 | 1 | 20 | 1 | 14 | 0 |
| Donor unsuitable - virology | 2 | 0 | 11 | 0 | 9 | 0 |
| Donor unsuitable – medical reasons | 1 | . | 2 | 0 | . | . |
| Poor function | 231 | 11 | 398 | 16 | 320 | 11 |
| Medication | . | . | . | . | . | . |
| Infection | 27 | 1 | 29 | 1 | 24 | 1 |
| Tumour | 3 | . | . | . | 2 | 0 |
| Other disease | . | . | . | . | . | . |
| All donor reasons | 1090 | 53 | 1465 | 57 | 1430 | 49 |
| Recipient died | 1 | 0 | . | . | . | . |
| Recipient unfit | 90 | 4 | 140 | 5 | 118 | 4 |
| No suitable recipient | 1 | 0 | 1 | . | 2 | 0 |
| Recipient unavailable | 40 | 2 | 55 | 2 | 51 | 2 |
| Recipient refused | 73 | 4 | 94 | 4 | 136 | 5 |
| Recipient did not need transplant | 211 | 10 | 287 | 11 | 401 | 14 |
| Better match required | 62 | 3 | 79 | 3 | 36 | 1 |
| X match positive | 11 | 1 | 18 | 1 | 17 | 1 |
| HLA/ABO type | 3 | 0 | 4 | 0 | 19 | 1 |
| Other recipient reason | . | . | . | 0 | 103 | 4 |
| All recipient reasons | 492 | 24 | 678 | 26 | 883 | 30 |
| Anatomical | 41 | 2 | 62 | 2 | 48 | 2 |
| Poor perfusion | 11 | 1 | 16 | 1 | 17 | 1 |
| Contamination | . | . | 8 | 0 | 2 | 0 |
| Ischaemia time too long - cold | 20 | 1 | 19 | 1 | 19 | 1 |
| Organ damaged | 8 | 0 | 17 | 1 | 8 | 0 |
| Organ unsuitable | . | . | . | . | 18 | 1 |
| All organ reasons | 82 | 4 | 122 | 5 | 112 | 4 |
| Centre criteria not achieved | . | 0 | 1 | 0 | 1 | 0 |
| Centre already retrieving/transplanting | 66 | 3 | 79 | 3 | 57 | 2 |
| No beds | 33 | 2 | 24 | 1 | 12 | 0 |
| No time | 1 | 0 | 1 | 0 | . | . |
| No staff | 3 | 0 | 3 | 0 | . | . |
| No theatre | 1 | . | 1 | 0 | 1 | 0 |
| Distance | 1 | . | . | 0 | . | . |
| Other centre reason | 7 | 0 | 4 | 0 | 44 | 2 |
| All centre reasons | 112 | 5 | 113 | 4 | 115 | 4 |
| Other | 266 | 13 | 181 | 7 | 359 | 12 |
| TOTAL | 2042 | | 2559 | | 2899 | |

Appendix Table 2 – Donors in each period by 2019 Kidney Offering Scheme risk group

| Risk Group | Period 1 | | Period 2 | | Period 3 | |
|------------|----------|----|----------|----|----------|----|
| | N | % | N | % | N | % |
| D1 | 286 | 27 | 295 | 26 | 275 | 25 |
| D2 | 228 | 21 | 262 | 23 | 281 | 25 |
| D3 | 255 | 24 | 275 | 24 | 245 | 22 |
| D4 | 310 | 29 | 317 | 28 | 313 | 28 |

Appendix Tables 3 –**A- Cold Ischaemia time by period and donor type**

| Donor Type | Period 1 | | | Period 2 | | | Period 3 | | |
|------------|----------|----------------|-------------|----------|----------------|-------------|----------|----------------|-------------|
| | N | Median (Hours) | (Q1-Q3) | N | Median (Hours) | (Q1-Q3) | N | Median (Hours) | (Q1-Q3) |
| DBD | 940 | 12.7 | (9.9-17.0) | 927 | 13.5 | (10.4-18.4) | 836 | 13.1 | (10.0–17.6) |
| DCD | 776 | 12.7 | (10.3-17.0) | 872 | 13.1 | (10.3-17.7) | 781 | 13.3 | (10.3-17.8) |

B - Cold Ischaemia time by period and donor type – donors with no centre quality declines (0 declines in Table 4), kidney only transplants

| Donor Type | Period 1 | | | Period 2 | | | Period 3 | | |
|------------|----------|----------------|-------------|----------|----------------|-------------|----------|----------------|--------------|
| | N | Median (Hours) | (Q1-Q3) | N | Median (Hours) | (Q1-Q3) | N | Median (Hours) | (Q1-Q3) |
| DBD | 613 | 12.0 | (9.6-15.0) | 596 | 12.9 | (10.2-16.5) | 533 | 12.6 | (9.9 – 16.4) |
| DCD | 399 | 11.8 | (10.0-14.7) | 470 | 11.8 | (9.7-14.6) | 442 | 12.0 | (9.9 – 15.5) |

C - Cold Ischaemia time by period and donor type – Fast tracked kidneys

| Donor Type | Period 1 | | | Period 2 | | | Period 3 | | |
|------------|----------|----------------|-------------|----------|----------------|-------------|----------|----------------|---------------|
| | N | Median (Hours) | (Q1-Q3) | N | Median (Hours) | (Q1-Q3) | N | Median (Hours) | (Q1-Q3) |
| DBD | 112 | 17.4 | (12.9-22.2) | 101 | 19.6 | (14.9-23.7) | 83 | 18.8 | (14.2 – 22.1) |
| DCD | 179 | 17.8 | (14.0-21.7) | 158 | 18.7 | (15.0-22.1) | 118 | 18.2 | (14.6 – 21.5) |