

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

**KIDNEY ADVISORY GROUP**

SUMMARY OF CUSUM MONITORING OF OUTCOMES FOLLOWING KIDNEY  
TRANSPLANTATION

## INTRODUCTION

- 1 NHSBT monitors short-term patient outcomes following organ transplantation through centre specific cumulative sum (CUSUM) analyses. These are undertaken quarterly for kidney transplantation. These 'within centre' analyses enable prompt detection of any changes in failure and mortality rates, providing external assurance and enabling centres to compare current outcomes with their own past performance to assist in internal auditing.
- 2 The methods used in the analysis are based on CUSUM monitoring and compare current outcome rates with an expected rate.
- 3 Each quarter, CUSUM monitoring reports on 30-day mortality and graft failure following kidney transplantation are produced and sent to each centre. If a signal is detected then a letter is sent to the centre as shown in **Appendix I**. This paper summarises the results of these reports for the five month period since the last Kidney Advisory Group meeting. Where signals have occurred, actions that were taken and lessons learnt are noted.
- 4 Please note, when the CUSUMs were produced in September, the baseline expected rates were updated to be based on performance between 1 January 2012 and 31 December 2016. The monitoring period was also brought forward so that it remains independent of the period used to calculate the baseline rates.

## RESULTS

- 5 **Table 1** shows that over the five month period since the last Kidney Advisory Group meeting there have been 6 signals in kidney transplantation CUSUM reporting. The details are noted below.
- 6 Five signals in the CUSUM monitoring of 30 day graft failure following adult deceased kidney transplantation were identified at Birmingham, Bristol, Liverpool, St George's and Sheffield. Investigations were undertaken for the signals at Bristol, St George's and Sheffield and no underlying issues were identified and we will continue to monitor outcomes in the usual time frame. The investigation into the signal at Liverpool is still outstanding. The signal at Birmingham had previously been investigated and so did not require further investigation.
- 7 A signal in the CUSUM monitoring of 30 day patient mortality following adult deceased kidney transplantation was identified at Portsmouth. An investigation was

undertaken and no underlying issues were identified and we will continue to monitor outcomes in the usual time frame.

<b>Table 1</b>				
<b>Month CUSUM report issued</b>	<b>No. reports issued</b>	<b>No. signals</b>	<b>No. signals requiring investigation</b>	<b>No. investigations outstanding</b>
<b>June</b>	<b>66</b>	<b>4</b>	<b>3</b>	<b>0</b>
Adult deceased	23	4	3	0
Adult living	23	0	-	-
Paediatric deceased	10	0	-	-
Paediatric living	10	0	-	-
<b>September</b>	<b>46</b>	<b>2</b>	<b>2</b>	<b>1</b>
Adult deceased	23	2	2	1
Adult living	23	0	-	-
<b>Total</b>	<b>112</b>	<b>6</b>	<b>5</b>	<b>1</b>

## CONCLUSION

- 8 Over the five month period since the last Kidney Advisory Group meeting there have been 6 signals in kidney transplantation CUSUM reporting. One investigation is still outstanding.

**Chloe Brown**  
**Statistics and Clinical Studies**

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**APPENDIX I**

Dear ....

One of the statutory roles of NHSBT is to monitor outcomes after transplantation. In the latest quarterly **kidney** transplant analysis, your centre signalled an alert following

.....

I appreciate that the majority of such signals are subsequently found to be false signals in that the signal represents a run of adverse events. However, it is important that you review the causes for the signals (details below) and let us know the results of your investigation. Could you please include:

- Donor type - DCD or DBD
- Donor Age
- HLA mismatch
- Cold ischaemic time, and an explanation if the CIT is >18h for DBD, >12 hours for DCD
- Grade of operating surgeon and whether a consultant was present in theatre.
- Age of recipient
- Renal diagnosis of recipient
- Duration of time on dialysis before transplant
- Whether sensitised, and if so, to what level of cRF

Please give details of what actually happened and why. I would be very grateful if you would clearly state when and where the graft loss or death was reviewed and what remedial action, if any, has been taken in response or whether you believe that the signal was not a sign of any underlying problem, or otherwise, as you feel appropriate.

Would you please let us know your findings by ...**4 weeks**.....2017, once we have your response this will be discussed with the Chair of the Advisory Group and the Commissioners according to our agreed policy. In the meanwhile, we will continue to monitor performance and will contact you again if there are further signals. If you have any cause for concern or questions do please feel free to get in touch with me.

With best wishes,

Yours sincerely,

Professor John Forsythe  
Associate Medical Director  
Organ Donation and Transplantation

Copy to: **Chair KAG Advisory Group/ Chair PAG Advisory Group**  
Dr Edmund Jessop - National Specialist Commissioning Team