APPENDIX 1 Adam's perioperative fluid balance. (Assumes weight of 19 kg; surface area = 0.8 m²) Dr COULTHARD

Adam's usual daily intake (known)	Enteral intake = [2100] **ml**		
Adam's usual daily output (estimated)	Urine output = [1500] ml; insensible loss = [240] ml; dialysis loss = [up to 292] ml; faecal loss = [68] ml. **Total = [2100] ml**		
	Time between ward admission & start of preoperative fasting 2200-0500 = 7 h	**Time between start of preoperative fasting period & anaesthesia 0500-0700 = 2 h**	**Time between induction of anaesthesia & start of surgery 0700-0800 = 1 h**
Fluid losses			
a) Insensible losses	[300] ml/m²/d = [10] ml/hr = 70 **ml**	[300] ml/m²/d = [10] ml/hr = 20 **ml**	[300] ml/m²/d = [10] ml/hr = **10 ml**
b) Urine output	[62] ml/h = 434 ml	[62] ml/h = **124** ml	[62] ml/h = **62** ml
c) Blood loss	0 ml	0 ml	0 ml
d) Dialysis loss	**Likely to be much less than 292 ml: *See Note B**	0 ml	0 ml
Total fluid losses	**Between 500 and 800 ml, most likely approximately 600 ml. *See Note B**	**144 ml**	**72 ml**
Actual fluid input	**952 ml**	**0 ml**	**750 ml**
Est. fluid (+ =excess; - = deficit)	**+152 to +452 ml**	**-144 ml (cumulative =+8 to +308)**	**+678 ml (cumulative =+686 to +986)**
Comments + Estimated SODIUM BALANCES	**Input**=Dioralyte; 953 ml = 57 mmol Na^+ **Output**=Insensible Na approximately 0, + urine likely to be 75/l = 33 Na loss, + dialysis likely to be 130/l = <38 Na loss. **Na balance**=Less than 14 mmol deficit (PD loss likely to be much less than 38, so probably in POS Na balance)	**Input**= 0 mmol Na^+ **Output**=Insensible Na approximately 0, + urine likely to be 75/l = 9 Na loss. **Na balance**= -9 (Thus, cumulatively, likely to be overall approximately 0, ie, WENT TO THEATRE IN SODIUM BALANCE)	**Input**= 31 mmol/l = 23 mmol Na^+ **Output**=Insensible Na approximately 0, + urine likely to be 75/l = 5 Na loss. **Na balance**= +28 (If accept arrival in theatre in approx Na balance, now cumulative Na balance = +28 ml)
Reasons why planned fluid infusion (content or infusion rate) should change due to change in estimated loss	• Overall, the estimated water balance pre-op is close to ZERO from +12 to 312 ml • Overall, the estimated Na balance pre-op is also quite close to ZERO, given the unknowns including the UF value and the urine sodium concentration. • It is therefore reasonable to assume that Adam went to theatre in approximately normal salt and water balance.		The cumulative Na and water balance since induction of anaesthesia, assuming he was in balance on arrival in theatre, IS: Water = +678 Na = +28 The concentration of the accumulated fluid therefore = 28/678 = **41 mmol/l.**

APPENDIX 1 Adam's perioperative fluid balance. (Assumes weight of 19 kg; surface area = 0.8 m²) Dr COULTHARD

	Time from start of surgery until vascular clamps on (0800-1000)	Time while vascular clamps applied (1000-1030)	Time from when clamps released until end of surgery (1030-1130)	Time from end of surgery until arrival in ICU (1130-1215)
Fluid losses				
a) Insensible losses	20 ml	5 ml	10 ml	7 ml
b) Urine output	up to 124 ml *See Note A	up to 31 ml *See Note A	up to 62 ml *See Note A	up to 46 ml *See Note A
c) Blood loss	600 ml	200 ml	328 ml	0 ml
Total fluid losses	up to 744 ml *See Note A	up to 236 ml *See Note A	up to 400 ml *See Note A	up to 53 ml *See Note A
Actual fluid input	2300 ml *See Note C	200 ml *See Note C	250 ml *See Note C	0 ml *See Note C
Estimated fluid excess	+1556 ml (cum =+2242 to +2542)	-136 ml (cum =+2106 to +2406)	-150 ml (cum =+1956 to +2256)	-53 ml (cum =+1903 to +2203)
Comments + Estimated SODIUM BALANCES	**Input** = 226 mmol Na^+ **Output**= blood 78 *See Note D + urine = approx 9 mmol total. **Na balance**= +139	**Input** = 26 mmol Na^+ **Output**= blood 26 *See Note D + urine = approx 2 mmol total. **Na balance**= -2	**Input** = 33 mmol Na^+ *See D **Output**= blood 43 *See Note D + urine = approx 5 mmol total. **Na balance**= -15	**Input** = 0 mmol Na^+ **Output**= urine = approx 4 mmol **Na balance**= -4
Reasons why planned fluid infusion (content or infusion rate) should change due to change in estimated loss	The cumulative Na and water balance since induction of anaesthesia, carrying forward the 07:00 to 08:00 values above, is therefore: • Minimum water excess = +1956 • Sodium excess = +150 • The concentration of the accumulated fluid therefore = maximum of 150/1948 = 77 mmol/l. • This is equivalent to retaining 1071 ml of fluid with a physiological Na concentration of 140 mmol/l AND AN EXTRA 885 ml of WATER.			

Appendix 2 TABLE FOR PAEDIATRIC RENAL TRANSPLANT
Showing the involvement of personnel in the various phases

Phase of the transplant process	Paediatric nephrologist	ward staff	ICU staff	Anaesth -etists	Surgeons	Scrub nurse	Runner
1. Transplant option first mentioned to family	+						
2. Transplant surgery consent process started; risks/benefits explained	+				+		
3. Preoperative preparation on evening of admission; consent confirmed	+	+		+	+		
4. Preoperative preparation 1; fasting, i.v. fluids; blood tests; dialysis	+	+					
4 (a) Preoperative preparation 2; ultra sound of neck re: CVP line	+			+			
5. Preparing theatre for start of surgery/check monitors & equipment				+			
6. Preparing donor kidney					+	+	
7. Patient arrival in operating theatre; i.v. inserted; anaesthesia induced				+		+	+
8. Insertion epidural, arterial and CVP lines; x-ray of the CVP line				+		+	+
8 (b). Insertion urethral catheter				?	?	?	
9. Pre-transplant phase of surgery				+	+	+	+
10. Vascular and ureteric anastomoses performed; ureteric and/or suprapubic catheter inserted				+	+	+	+
11. Post-transplant phase of surgery including wound closure				+	+	+	+
12. Post-surgery; anaesthesia stopped; drapes removed; drains connected				+		+	+
13. Child transferred to ICU							
14. Communicating child's condition at end of surgery to parents	+		+		+		
15. Communicating child's death to parents	+		+	+	+		