

Witness Statement Ref. No. 008/5

**NAME OF CHILD: ADAM STRAIN**

**Name: Robert Taylor**

**Title: Dr**

**Present position and institution:**

**Consultant Anaesthetist, Belfast Health and Social Care Trust**

**Previous position and institution:**

*[Since your Witness Statement of 28<sup>th</sup> September 2011]*

N/A

**Membership of Advisory Panels and Committees:**

*[Identify by date and title all of those since your Witness Statement of 28<sup>th</sup> September 2011]*

N/A

**Previous Statements, Depositions and Reports:**

*[Identify by date and title all those since your Witness Statement of 28<sup>th</sup> September 2011]*

N/A

**OFFICIAL USE:**

**List of previous statements, depositions and reports:**

<b>Ref:</b>	<b>Date:</b>	
011-002	30.11.1995	Draft Statement
011-014	21.06.1996	Deposition of Witness
008/1	18.07.2005	Inquiry Witness Statement
093-038	17.10.2006	Transcript of PSNI interviews
008/2	16.05.2011	Second Inquiry Witness Statement
008/3	28.09.2011	Third Inquiry Witness Statement
008/4	28.09.2011	Fourth Inquiry Witness Statement

**IMPORTANT INSTRUCTIONS FOR ANSWERING:**

Please attach additional sheets if more space is required. Please identify clearly any document to which you refer or rely upon for your answer. If the document has an Inquiry reference number, e.g. Ref: 049-001-001 which is 'Chart No.1 Old Notes', then please provide that number. If the document does not have such a number then please provide a copy of the document.

**I FLUID BALANCE TABLE**

(1) Please find attached a blank table regarding Adam's fluid balance. We should be grateful if you could fill in the table as follows:

(a) State what you consider Adam's daily fluid intake to have been prior to his admission to Royal Belfast Hospital for Sick Children (RBHSC) on 26<sup>th</sup> November 1995.

2100 mls

(b) State what you consider Adam's average daily fluid output to have been prior to his admission to RBHSC on 26<sup>th</sup> November 1995.

2100 mls

(c) State what you consider Adam's fluid losses to have been at each of the indicated stages on 26<sup>th</sup> and 27<sup>th</sup> November 1995, including your calculations and losses due to:

(i) Insensible losses

These were estimated at 225 mls/day or 10 mls/hr (based on 300 ml/m<sup>2</sup> body surface area) SA=0.75.

(ii) Urine output

1875 mls/day. I have no records of when the urine output occurred during the specific time periods so have estimated an hourly volume of, 78 mls/hour

(iii) Blood loss

Total estimated blood loss 1211 mls throughout the procedure. I have no records of when the blood loss occurred but I have estimated the following based on the time periods;

Stage 4 From 08.00-10.00 there would have been significant blood loss during surgery. This was confirmed by a haemoglobin estimate at 09.30 and led to the decision to administer a blood transfusion at this time. Estimated blood loss = 800 mls

Stage 5 Estimate 200 mls

Stage 6 Estimate 211 mls

(iv) Dialysis loss

0 mls

- (d) State what fluid was actually received by Adam at each of the indicated stages on 26<sup>th</sup> and 27<sup>th</sup> November 1995.

Stage 1 0.18 NaCl/4%Glucose and Dioralyte

Stage 2 Nil

Stage 3 0.18 NaCl/4%Glucose

Stage 4 0.18 NaCl/4%Glucose, Hartmanns, HPPF, Blood (Packed Red Blood Cells)

Stage 5 0.18 NaCl/4%Glucose

Stage 6 0.18 NaCl/4%Glucose, Blood

Stage 7 0.18 NaCl/4%Glucose

- (e) Given what you consider Adam's fluid losses and fluid intake to have been state what you calculate as his fluid excess/deficit at each of the indicated stages on 26<sup>th</sup> and 27<sup>th</sup> November 1995.

Stage 1 Estimated 353 mls excess

Stage 2 Estimated 176 mls deficit

Stage 3 Estimated 662 mls excess

Stage 4 Estimated 826-910 mls excess

Stage 5 Estimated 160-181 mls deficit

Stage 6 Estimated 27-69 mls excess

Stage 7 Estimated 43.5 mls excess

THIS STATEMENT IS TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF

Signed:

A handwritten signature in black ink, appearing to be "Bodejck".

Dated:

9/1/2012

Adam's perioperative fluid balance. (Assumes weight of 21 kg; surface area =0.75 ) From Dr Savage (058-035-133)

Adam's usual daily intake (known)	Enteral intake = [ 2100 ] ml
Adam's usual daily output (estimated)	Urine output = [1875 ] ml; insensible perspiration loss = [ 225 ] ml; dialysis loss = [ 0 ] ml; faecal loss = [ ] 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
<b>Fluid losses</b>			
a) Insensible losses	[ ] ml/kg/h = [70 ] ml (300ml/day/m2)	[ ] ml/kg/h = [20 ] ml	[ ] ml/kg/h = [ 10 ] ml
b) Urine output	[ ] ml/kg/h = [547 ] ml	[ ] ml/kg/h = [156 ] ml	[ ] ml/kg/h = [ 78 ] ml
c) Blood loss	[0 ] ml	[0 ] ml	[ 0 ] ml
d) Dialysis loss	[ 0 ] ml	[ 0 ] ml	[ 0 ] ml
<b>Total fluid losses</b>	[617 ] ml	[176 ] ml	[88 ] ml
<b>Actual fluid input</b>	[970 ] ml	[0 ] ml	[750 ] ml
<b>Estimated fluid excess</b>	[353 ] ml	[ -176 ] ml	[662 ] ml
<b>Comments + relevant information regarding Na<sup>+</sup> content of : a) input fluids b) losses</b>	<p>Comments:</p> <p>Na<sup>+</sup> content of fluids given: 0.18NaCl/4% Glucose= 30mmol/l Dioralyte= 35 mmol/l Na<sup>+</sup> content of losses: Urine estimate= 30-40 mmol/l Insensible Loss= 0 mmol/l</p>	<p>Comments:</p> <p>Na<sup>+</sup> content of fluids given: None given Na<sup>+</sup> content of losses: Urine estimate= 30-40 mmol/l Insensible Loss= 0 mmol/l</p>	<p>Comments:</p> <p>Na<sup>+</sup> content of fluids given: 0.18NaCl/4% Glucose= 30mmol/l Na<sup>+</sup> content of losses: Urine estimate =30-40 mmol/l Insensible Loss= 0 mmol/l</p>

<p>Reasons why planned fluid infusion (content or infusion rate) should change due to change in estimated loss</p>	<p>Fluid input exceeded estimated loss due to the fact that urine losses had occurred during the day prior to admission and would normally have been replaced by giving 1500 mls of feed overnight.</p>		<p>I had planned to correct fluid deficit and increase the circulating blood volume at this stage.</p>
--	---	--	--

Adam's perioperative fluid balance. (Assumes weight = 20 kg; surface area = 0.8 m<sup>2</sup>)

	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)
<b>Fluid losses</b>				
a) Insensible losses	[ 2- 4 ] ml/kg/h = [ 84-168 ] ml	[ 2-4 ] ml/kg/h = [ 21-42 ] ml	[ 2-4 ] ml/kg/h = [ 42-84 ] ml	[ ] ml/kg/h = [ 7.5 ] ml
b) Urine output	[ ] ml/kg/h = [156 ] ml	[ ] ml/kg/h = [ 39 ] ml	[ ] ml/kg/h = [ 78 ] ml	[ ] ml/kg/h = [ 59 ] ml
c) Blood loss	[ approx 800 ] ml	[ approx 200 ] ml	[ approx 211] ml (1211 total)	[ 0 ] ml
<b>Total fluid losses</b>	[ 1040-1124 ] ml	[ 260-281 ] ml	[ 331-373 ] ml	[ 66.5 ] ml
<b>Actual fluid input</b>	[ 1950 ] ml 400ml 0.18NaCl/4%Glucose 500 ml Hartmanns 800 ml HPPF 250 ml Blood	[ 100 ] ml 100ml 0.18NaCl/4%Glucose	[400 ] ml 150ml 0.18NaCl/4%Glucose 250 ml Blood	[100 ] ml 100ml 0.18NaCl/4%Glucose
<b>Estimated fluid excess</b>	[ 910 - 826 ] ml	[ -160 - -181 ] ml	[ 69-27 ] ml	[ 43.5 ] ml
<b>Comments + relevant information regarding Na<sup>+</sup> content of : a) input fluids b) losses</b>	<b>Comments:</b> Na <sup>+</sup> content of fluids given: 0.18NaCl/4% Glucose= 30mmol/l Hartmanns=130 mmol/l HPPF=130-150 mmol/l Blood= 135-145 mmol/l Na <sup>+</sup> content of losses: Urine estimate= 30-40 mmol/l	<b>Comments:</b> Na <sup>+</sup> content of fluids given: 0.18NaCl/4% Glucose= 30mmol/l Na <sup>+</sup> content of losses: Urine estimate= 30-40 mmol/l	<b>Comments:</b> Na <sup>+</sup> content of fluids given: 0.18NaCl/4% Glucose= 30mmol/l Blood= 135-145 mmol/l Na <sup>+</sup> content of losses: Urine estimate= 30-40 mmol/l	<b>Comments:</b> Na <sup>+</sup> content of fluids given: 0.18NaCl/4% Glucose= 30mmol/l Na <sup>+</sup> content of losses: Urine estimate= 30-40 mmol/l

<p>Reasons why planned fluid infusion (content or infusion rate) should change due to change in estimated loss</p>	<p>I had planned to increase the circulating blood volume at this stage. There were insensible operative losses of approximately 4 ml/kg/hr during open abdominal surgery. Blood transfusion given at this stage to increase the haemoglobin.</p>		<p>This was done to maintain the circulating blood volume at this stage following releasing the clamps. Blood transfusion given at this stage.</p>	
--	---	--	--	--