

**NAME OF CHILD: Adam Strain**

**Name: Cathy Hall**

**Title: Ergonomics Team Leader**

**Present position and institution:**  
Ergonomics Team Leader  
South Eastern Health & Social Care Trust

**Previous position and institution:**  
*[Since your Witness Statement of 5<sup>th</sup> April 2011]*  
**Unchanged**

**Membership of Advisory Panels and Committees:**  
*[Identify by date and title all of those since your Witness Statement of 5<sup>th</sup> April 2011]*  
**Unchanged**

**Other Statements, Depositions and Reports:**  
*[Identify by date and title all those since your Witness Statement of 5<sup>th</sup> April 2011]*

093-019      06.04.06 PSNI Witness Statement

104/1      05.04.11 Witness Statement to the Inquiry on Hyponatraemia

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

Ref:	Date:	
093-019	06.04.06	PSNI Witness Statement
104/1	05.04.11	Witness Statement to the Inquiry on Hyponatraemia

**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 QUERIES ARISING OUT OF YOUR INITIAL STATEMENT**

With reference to your Witness Statement dated 5<sup>th</sup> April 2011, please provide clarification and/or further information in respect of the following:

**(1) Answer to Question 1(d) at p 3:**

*"...I took over Adams care at 2pm. My roles and responsibilities would have been to care for his needs during my shift until 8pm, including; assessment of Adams needs, close monitoring and recording of his vital signs and central nervous system status, administration and recording his fluid balance and drug therapy reporting any changes to the Medical Team..."*

**(a) Describe in detail the process of how a paediatric renal transplant patient would likely/normally have been transferred from theatre to PICU in November 1995.**

Any child transferring to PICU for post operative care would likely have been transferred by the theatre team. This would have included the Anaesthetist, a member(s) of theatre Nursing Staff and most likely a Medical Technical officer. The Surgeon might also have accompanied the child but this was not routine as far as I can recall. Sometimes the Surgeon would follow shortly afterwards and go to speak with the child's family.

I do not recall if this process changed at anytime over the years but it is likely that the child would have been monitored on a portable monitor and equipment would have available for airway and respiratory management. Portable equipment would also have been available so that fluids and drugs could be administered enroute. Theatres and PICU were next door to each other so it would have been a short journey to transfer the child to ICU.

**(b) Identify the consultant and any other nurse/s in PICU to whom the care of Adam was transferred on arrival on 27<sup>th</sup> November 1995.**

I was not on duty when Adam was transferred from Theatre to PICU so I am not aware who took over Adam's medical care. According to the medical notes Dr. O'Connor was the first Consultant to record an entry ref 058-035-135.

Staff Nurse Knaggs took over Adam's Nursing Care ref 058-038-155.

**(c) State the information provided to you about the handover to the PICU clinician and PICU nurses on Adam's arrival from theatre on 27<sup>th</sup> November 1995. State what information was likely/normally given, during that handover to :**

**(i) The PICU consultant/clinician.**

**(ii) The PICU nurses**

**About:**

- Adam
- his renal transplant surgery
- the reasons for his failure to breathe spontaneously and his fixed dilated pupils post operatively
- Adam's serum sodium concentration
- Adam's fluids regime during the transplant procedure
- the position of the CVP line both during and on completion of the transplant procedure, the CVP readings during the transplant procedure and the explanation for those CVP readings, any concerns relating to the CVP line, whether the CVP line was functioning effectively and reliably

I was not present when Adam was transferred to PICU post operatively so am unable to say what information was likely to have been given other than what is recorded in the medical and anaesthetic notes. See written entry regarding the surgical procedure signed by Surgeon Ref 058-035-134. Also the anaesthetic information and post operative instructions by Dr Taylor Ref 058-003-003/008

**(d) Identify any guidance or protocols in November 1995 relating to the transfer from theatre to PICU of paediatric patients and the handover to PICU staff.**

I am not aware of any written guidance or protocols.

**(e) State whether you were informed that the position of the CVP line had been adjusted between approximately 11.30 on 27<sup>th</sup> November 1995 and the transfer of the CVP line to the PICU monitors, and if so, when, how, by whom and identify where this is recorded. If you do not recall specifically, state whether it was likely/normal that the CVP line was adjusted during that period and if so, by whom.**

I do not recall receiving such information. If a CVP were to be adjusted this would most likely have been performed by the Consultant Anaesthetist.

**(f) State whether you were aware of any concerns relating to the CVP line and if so describe them and what, if any, action was taken.**

I do not recall being aware of any concerns relating to the CVP line.

**(g) State what would have been your normal practice for managing a CVP line when admitting a child to PICU from theatre and state how you would ensure that readings were accurate and reliable.**

The CVP line would normally be attached up to a transducer by the Medical Technical Officer and the system calibrated to ensure that it was functioning correctly. A constant CVP reading would then be visible on the ECG monitor. If the CVP reading showed as a straight line it might be considered to be incorrect. If the CVP readings were considered to be inaccurate the line might be aspirated for blood, to check its patency. A CVP line might also have been flushed with heparinised saline to check its patency.

**(h) We refer to you to Adam's CVP records in PICU (Ref: 058-008-022, 057-009-010). State whether you regarded the CVP readings as accurately measuring Adam's CVP, and if so, state the reasons why. If not, state why not and what was done, if anything, to remedy any inaccuracy.**

I do not recall thinking that there was a problem with Adams CVP reading. I see that Dr O'Connor referred to high CVP of 30mmhg at 12:05 ref 058-035-135. The CVP settled to a more normal range 5-15mmhg ref 057-009-010, 057-020-030

- (i) At the time of Adam's death and now, state whether there were/are any guidelines available to staff on the management of CVP lines.**

I do not recall if there were guidelines available in 1995 for the management of CVP lines. I have not worked in PICU since 2004 so am unsure if there are guidelines in place now.

- (j) State whether on the 27<sup>th</sup> November 1995 you knew how to use a blood gas analyser to measure blood gases and electrolytes, and whether you were trained and authorised to do so. If so, state how frequently you would normally have used the blood gas analyser to measure electrolytes whilst working in PICU.**

I would have been very familiar with a blood gas analyser but I was not trained or authorised at that stage to use the analyser. Blood gases would have been completed by medical staff. I attended a study day on 'Arterial Blood Gas Sampling and Blood Gas Analysis in Paediatrics' on 6<sup>th</sup> June 2002. This theoretical programme was followed by a period of observation/guided practice and supervision of the procedure of Arterial Blood Sampling, Blood Gas Analysis and Interpretation of Findings. Competence was assessed and confirmed by Glynis Worthington. (See attached 3 page appendix)

- (k) State whether on 27<sup>th</sup> November 1995 heparin would have been added to the sample syringe when a blood sample was taken for blood gas analysis. If so, state the type of heparin that was added to the sample syringes during Adam's transplant surgery and whilst in PICU on 27<sup>th</sup> November 1995 together with the form of heparin used i.e. liquid or solid. If you cannot recall specifically, state:**

- (i) what type and form of heparin would likely have been used at that time.**

Heparinised syringes were used for taking blood samples for blood gas analysis. I did not take blood gases and cannot recall the type of heparin used.

- (ii) whether the heparin used was sodium heparin, lithium heparin or lithium heparin balanced with calcium, potassium and sodium.**

I did not take blood gases and cannot recall the type of heparin used.

- (iii) State whether the type or form of heparin added to the serum sample changed after November 1995, and if so, state to what, when and the reasons why.**

I do not recall a change after that but eventually the PICU was provided with pre-heparinised syringes. I do not recall when this took place.

- (l) State whether in or prior to November 1995 you or PICU:**

- (i) Regarded or likely regarded**

- (ii) Were instructed or informed**

**that the addition of heparin to the serum sample altered the serum sodium reading on the blood gas analyser.**

I would have been aware through experience that electrolyte readings could be inaccurate on the blood gas analyser. I cannot remember at what stage in my Nursing career that this was the case. We did not rely solely on the analyser for sodium and potassium results. The gas analyser was used for checking blood gas. It gave a quick reading also of sodium and potassium but these results would have been monitored more accurately by sending a sample to the laboratory for U&E (see blood tests taken at top of page Ref 057-009-010)

- If so, state how that reading was or would have been altered, and specifically state whether the addition of heparin to the serum sample would have raised or lowered the sodium concentration result.

I was not aware of the cause of any inaccuracies.

- Identify who would have instructed/informed you/PICU of this, and whether this would have been done orally or in writing. If in writing, please identify the relevant document.

Knowledge of inaccuracies came probably from experience of the comparison between samples tested on the analyser and those sent to the labs. I do not recall any written instructions.

- (m) State whether you or PICU had any concerns regarding the accuracy of blood gas analysers to measure serum sodium concentration in November 1995. In particular state whether you or PICU had any concerns relating to the alteration of the sodium content of the sample due to the addition of heparin to the sample syringe, and if so, describe those concerns and the reasons for them.

To my recollection we did not rely solely on the blood gas analyser for serum sodium results. Sodium was monitored by sending a sample to the laboratory.

- (n) Identify any guidance or instructions which would have been given to the anaesthetists/PICU/nurses prior to 27 November 1995:

- (i) on the use of heparin with Blood Gas analysers so as to minimise its effects on the serum electrolyte readings

I am not aware of any guidance or instructions.

- (ii) in relation to factoring that knowledge into the interpretation of the serum electrolyte readings produced by the Blood Gas analysers

I am not aware of any guidance or instructions

- (2) Answer to Question 5 at p. 5:

*"Nursing Care Plan (Ref: 058-038-160)..."*

- (a) State whether you completed the first column of that document and in particular made the entry "*unknown cause*" after "*Deteriorating level of consciousness due to*". If so, state when you made that entry, identify the source of that information and when you were provided with that information.

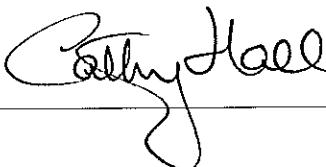
No I did not complete this entry

## II ADDITIONAL INFORMATION

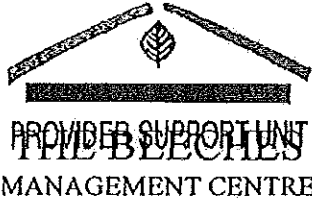
- (3) State when the post-operative chest X-ray was taken, identify who directed that this X-ray be taken and the reasons for the X-ray.

I do not know when the post operative chest X-ray was taken or who would have ordered this.

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

Signed: 

Dated: 5.10.11



NURSING & MIDWIFERY EDUCATION, DUNDONALD  
Ulster Hospital Site, Dundonald BT16 0RH

**BLOOD GAS ANALYSIS IN PAEDIATRICS**  
**Procedure for Arterial Blood Sampling, Blood Gas Analysis and Interpretation of Findings**

Trust: ROYAL GROUP

Directorate: PAEDIATRIC

Name of Nurse: Cathy Hall

Staff Number: 04289

The above named nurse has attended an educational programme on the procedure for **Arterial Blood Sampling, Blood Gas Analysis and Interpretation of Findings** delivered by The Beeches Management Centre, Nursing & Midwifery Education

Name of Nurse Education Consultant: James Aggardi

Date of Educational Programme: 6 June 2002

The theoretical programme has been followed by a period of observation/guided practice and supervision of the procedure of **Arterial Blood Sampling, Blood Gas Analysis and Interpretation of Findings**.

**Competence has been assessed.**

Signature of Clinical Assessor: C. Coetsham

Grade: E

Date of Assessment: 28/06/02

**NURSE'S STATEMENT OF COMPETENCE**

*I feel that I am competent in carrying out the procedure for **Arterial Blood Sampling, Blood Gas Analysis and Interpretation of Findings** and agree to carry out this procedure in accordance with Directorate Policy and Protocol Documentation for the procedure of **Arterial Blood Sampling, Blood Gas Analysis and Interpretation of Findings**.*

Signature of Nurse: Cathy Hall

Date: 25.6.02

Ward/Dept: Picu

PRACTICAL EXPERIENCE & COMPETENCE RECORD FOR THE  
 PROCEDURE OF  
**Procedure for Arterial Blood Sampling, Blood Gas Analysis and  
 Interpretation of Findings**

Supervision of: Cathy Hall  
 Ward/Department: Picu Trust: RHT

1. OBSERVED PRACTICE

Date	Age of Child	Signature of Nurse	Signature of Supervisor

2. SUPERVISED PRACTICE

Date	Age of Child	Signature of Nurse	Signature of Supervisor
<i>Chester typo in.</i> 11/6/02	NEONATE	Cathy Hall	<i>Byrne.</i>
<i>To.F repsil.</i> 12/6/02	newborn	Cathy Hall	<i>Hill</i>
<i>Post diac of</i> 13/6/02	$\frac{2\frac{1}{2}}{12}$ newborn	Cathy Hall	<i>Hill</i>
<i>amother</i> 13/6/02	$\frac{2\frac{1}{2}}{12}$	Cathy Hall	<i>Hill</i>
<i>2 = Bery tyosin 1 plectroca</i> 25.6.02	18 years	Cathy Hall	<i>Hill</i>

3. ADDITIONAL SUPERVISED PRACTICE

Date	Age of Child	Signature of Nurse	Signature of Supervisor





THE BEECHES  
MANAGEMENT CENTRE

Nursing & Midwifery Education

*This is to certify that*

*Cathy Hall*

*Attended a Study Day on*

**Arterial Blood Sampling**  
**& Blood Gas Analysis in**  
**Paediatrics**

*Date:* **6<sup>th</sup> June 2002**

*Signed:* *Jennifer Azzopardi*  
*Jennifer Azzopardi*  
*Nurse Education Consultant*