Witness Statement Ref. No. 03 038/2

NAME OF CHILD: RAYCHEL FERGUSON

Name: Peter Crean

Title: Doctor

Present position and institution:

Consultant Paediatric Anaesthetist, Royal Belfast Hospital for Sick children

Previous position and institution: Consultant Paediatric Anaesthetist, Royal Belfast Hospital for Sick Children

[As at the time of the child's death]

Membership of Advisory Panels and Committees:
[Identify by date and title all of those since your Witness Statement of 2nd August 2005]

Northern Ireland Regional Paediatric Fluid Therapy Working Group 2006.

Member of 'Paediatric Surgery Working Group Phase 1', Department of Health, N Ireland. 2008

Member of the Paediatric ENT Surgery Group, Department of Health, N Ireland, 2008-9

Guideline and Audit Implementation Network (GAIN). Member of Guideline Development Group on Hyponatraemia in Adults. 2008-9

National:

Member of Working Group on Paediatric Anaesthesia and Emergency Care in District General Hospitals 2004-6.
"Care of the acutely ill or injured child: a team response" published 2006

Member of External Reference Group, Children's Hospital Service Pilot Improvement Review, Healthcare Commission. 2004-2005

Member of the Children's Surgical Forum, Royal College of Surgeons, England 2005-07

President of the Association of Paediatric Anaesthetists of Great Britain and Ireland 2005-7

'Joint statement on the provision of general paediatric surgery provision in the District General Hospital', 2006. Member of the working group and co-signatory as President of the APA.

Member of working group revising 'Children's Surgery: a first class service'. 2006-07. 'Surgery for children – delivering a first class service' published July 2007

NICE Guideline Development Group on Sedation in Children 2008 - 2010

NCEPOD Advisor 2009 – 2011 on deaths following surgery in children. 'Are We There Yet?' Published October 2011.

Previous Statements, Depositions and Reports:
[Identify by date and title all those made in relation to the child's death since your Witness Statement of 2nd August 2005]

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

Ref:	Date:	
038/1	02.08.2005	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 an Inquiry reference number, then please provide a copy of the document attached

I. QUERIES IN RELATION TO YOUR MEDICAL QUALIFICATIONS, EXPERIENCE, TRAINING AND RESPONSIBILITIES

(1) Please provide the following information:

(a) State your medical qualifications and the date you qualified as a doctor.

MB, BCh, BAO, FFARCS, FRCA

Qualified in July 1976

(b) Describe your career history before you were appointed to the Royal Belfast Hospital for Sick Children.

I undertook my anaesthetic training in the Northern Ireland under the supervision of the N Ireland Council for Postgraduate Medical Education (1977 - 1982). I then spent two Fellowship years in the Hospital for Sick Children, Toronto, gaining further experience in Paediatric Anaesthesia, Paediatric Intensive Care and Neonatal Intensive Care.

(c) State the date of your appointment to the Royal Belfast Hospital for Sick Children and the capacity in which you were employed.

October 1984.

Consultant Paediatric Anaesthetist.

(d) State the date of your appointment to the role of Consultant Paediatric Anaesthetist at the Royal Belfast Hospital for Sick Children.

See response in 1 (c).

(e) Describe your work commitments to the Royal Belfast Hospital for Sick Children from the date of your appointment at that Hospital to the 9th June 2001, stating the locations in which you worked and the periods of time in each department/location.

When appointed I worked nine clinical sessions each week, covering both theatre and the Paediatric Intensive Care Unit. I was also on call for both these areas. By the mid 1990's my sessions had been reduced to seven each week. I usually spent one day in Intensive Care each week, with the remainder of my time in theatre. However it is difficult to give an accurate breakdown of my allocation of time to each department as I worked flexibly to provide a service to each department during consultant colleagues' leave.

(f) Describe your duties in the Paediatric Intensive Care Unit of the Royal Belfast Hospital for Sick Children on the 9th and 10th June 2001.

As this was a Saturday and Sunday I must have been the consultant paediatric anaesthetist on call for the Paediatric Intensive Care unit that weekend.

I would have carried out a ward round each morning.

I would have been involved in the provision of continuing care to intensive care patients over the weekend period and provided care to all new admissions.

I would have also been involved in the management of emergencies in theatre.

II. QUERIES ARISING OUT OF YOUR INITIAL STATEMENT TO THE INQUIRY (WS-038/1)

(2) *"1. On arrival Raychel could not breath for herself and she was intubated and ventilated. She did not move purposefully and her pupils were fixed and dilated and did not react to light. A CT scan had shown brain swelling (cerebral oedema) and my initial concern was of a catastrophic event leading to brain death.*

2. The most likely cause of the cerebral oedema was a rapid fall in serum sodium.

3. At the time of her arrival at the PICU I felt that brain stem death had already taken place."

(Ref: WS-038/1 Page 2)

(a) What factors led you to the conclusion that the most likely cause of the cerebral oedema was a rapid fall in serum sodium?

Raychel had been vomiting after her operation. She received 1/5 Normal saline post operatively. Her serum sodium fell from a preoperative value of 137 to a value of 118 at the time of her collapse. There was not other apparent cause for her collapse.

(b) Do you remain of the view that the most likely cause of the cerebral oedema was a rapid fall in serum sodium?

Yes.

(c) If you do not remain of the view that the most likely cause of the cerebral oedema was a rapid fall in serum sodium, please explain your current view of the cause of the cerebral oedema, and detail the factors that you have taken into account in order to reach your current view. n/a

(d) On the 9/10 June 2001 or subsequently, were you able to reach any view on the likely cause(s) of the rapid fall in serum sodium? If so, what view did you reach?

Raychel received 1/5 Normal saline postoperatively at a rate of 80 ml/hr. Based on her weight (25kg) her estimated maintenance fluid requirement would have been 65 ml/hr. She had several vomits following her operation on the 8th of June. Electrolyte disturbances can occur in this situation.

(e) What factors led you to the conclusion that brain stem death had already taken place by the time of Raychel's arrival at the PICU?

Raychel was not making any purposeful movements and was dependant on a mechanical ventilator for breathing. Her pupils were fixed and dilated. She had developed diabetes insipidus. She had not received any sedative or muscle relaxant drugs apart from diazepam for the treatment of seizures in Altnagelvin Hospital.

(f) At the time the decision was taken, was it appropriate to transfer Raychel from the Altnagelvin Hospital to the PICU of the Royal Belfast Hospital for Sick Children? If so, please explain why it was appropriate to do so.

Yes.

Raychel had undergone an acute deterioration and she required management in a Paediatric Intensive Care environment.

(g) Insofar as you are aware, please explain the reasons behind the decision to transfer Raychel from Altnagelvin Hospital and to admit her to the PICU of the Royal Belfast Hospital for Sick Children?

See response in (f).

Also the Paediatric Intensive Care Unit in RBHSC is the only intensive care unit in N Ireland for children.

(3) *"I met with Mr and Mrs Ferguson on the 16 December 2001, at their request, to explain Raychel's post mortem results. Before this I had previously contacted Mr Leckey, the Coroner, regarding this request. He then wrote to Mr and Mrs Ferguson, confirming that I would speak to them. At the meeting I discussed the findings of the post mortem examination and answered their questions as best I could."* (Ref: WS-038/1 Page 3)

(a) What was your understanding of the post mortem results?

Cerebral oedema leading to brain stem death developed in the presence of an acutely falling sodium level, as a consequence of the infusion of hypotonic fluids, ongoing vomiting and anti-diuretic hormone secretion. Aspiration pneumonia was also present.

(b) Insofar as you are able to comment from your knowledge of the clinical findings, did you agree with the findings of the post mortem?

Yes.

(c) Insofar as you can recall, how did you explain the findings of the post mortem examination to Mr. and Mrs. Ferguson?

I am unable to recollect the discussion.

(d) Can you recall what particular questions Mr. and Mrs. Ferguson had for you?

I am unable to recollect the discussion.

(e) Can you recall how you answered their questions and the explanations that you gave to them?

I am unable to recollect the discussion.

(f) Can you recall whether Mr. and Mrs. Ferguson understood the explanations that you gave to them?

I am unable to recollect the discussion.

III. ISSUES ARISING OUT OF YOUR DEPOSITION TO THE CORONER [REF: 012-032-159 & 160]

(4) *"It was obvious she had sustained a catastrophic insult to the brain. It was clear that she was suffering from severe hyponatraemia."* (Ref: 012-032-160)

(a) In your evidence to the Coroner at Raychel's Inquest, were you seeking to draw a connection between the insult to Raychel's brain and the fact that she was suffering from severe hyponatraemia?

Yes

(b) In any event please clarify what you were seeking to explain to the Coroner in this context?

See response in 3 (a) and (d).

(c) If you are of the opinion that there was a connection between the insult to Raychel's brain and the presence of hyponatraemia, please explain your opinion and the factors that you took into account in reaching the conclusion that you have?

See response in 3 (a) and (d).

(5) *"In Belfast we would use a naso-gastric tube not routinely. It is used commonly following bowel surgery. It would not be used for every child having their appendix removed."* (Ref: 012-032-160)

(a) What is the purpose of using a naso-gastric tube?

To drain the stomach of gastric contents.

It also allows for accurate measurement of gastric losses.

(b) From what you know of Raychel's post-operative condition, would you have directed the use of a naso-gastric tube in the management of Raychel?

It is not usually to use a naso-gastric tube following a routine appendicectomy.

(c) From what you know of Raychel's post-operative condition, what advantages could have been derived from using a naso-gastric tube as part of her management plan?

A naso-gastric tube allows for accurate measurement of gastric losses.

IV. OTHER MATTERS

(6) Insofar as you are aware, please explain the circumstances in which the Royal Belfast Hospital for Sick Children ceased the practice of prescribing Solution 18 to post-operative children, and state:

(a) On what date was the practice of prescribing Solution 18 to post-operative children ended?

I have no recollection of the date on which the practice of prescribing Solution 18 to post-operative children ended at Royal Belfast Hospital for Sick Children. I am, however, aware that the NPSA issued an alert in 2007 entitled 'Reducing the risk of hyponatraemia when administering intravenous fluids to children' which addresses the issue.

(b) Who took that decision?

I have no recollection of this.

(c) What were the reasons for that decision?

I have no recollection of this.

(d) Was the decision taken in response to any particular incident(s) or circumstances? If so describe the incident(s) or circumstances which brought about this decision?

I have no recollection of this.

(e) Was any other person or group of persons consulted before the decision was reached to end the practice of prescribing Solution 18 to post-operative children? If so, identify all of those who were consulted in relation to the decision?

I have no recollection of this.

(f) If you were consulted in relation to the decision, did you contribute any view and if so what view did you express?

I have no recollection of this.

(g) Was the decision by the RBHSC to end the practice of prescribing Solution 18 to post-operative children communicated to any of the following organizations or bodies:

I have no recollection of this.

(i) Any other hospital or trust;

(ii) The Eastern Health and Social Services Board;

(iii) The office of the Chief Medical Officer;

(iv) DHSSPS;

(v) Any other organization or body.

And if the decision by the RBHSC to end the practice of prescribing Solution 18 to post-operative children was communicated to any of the above organizations or bodies, please state:

- What were they told about the reasons for discontinuing the use of Solution 18 with post-operative children?

- When were they given this information?

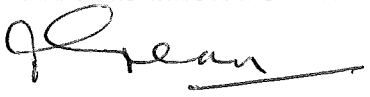
(h) If the decision by the RBHSC to end the practice of prescribing Solution 18 to post-operative children was not communicated to any of the above organizations or bodies, please explain why the decision was not communicated?

I have no recollection of this.

(7) If you are unable to answer any of the questions set out at (6) above, please identify any person who may be in a position to address those questions.

NPSA brought out an alert in 2007 'Reducing the risk of hyponatraemia when administering intravenous fluids to children'. RQIA made several recommendations to the Belfast Trust following this alert and a Working Group was set up to implement these **within the Belfast Trust.** The chairman of the Group was Professor Ian Young. Each Health & Social Care Trust would have received the NPSA Alert directly.

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

Signed:  **Dated:** 18 JUNE 2012