Form 20

CORONERS ACT (NORTHERN IRELAND) 1959

Deposition of Witness taken on TUESDAY the 17TH day of FEBRUARY 2004, at inquest touching the death of LUCY CRAWFORD, before me MR J L LECKEY Coroner for the District of GREATER BELFAST as follows to wit:-

The Deposition of DR PETER CREAN of ROYAL BELFAST HOSPITAL FOR SICK CHILDREN, GROSVENOR ROAD, BELFAST, BT12 6BA who being sworn upon his oath, saith

I am a registered medical practitioner and was appointed to the Royal ~~Victoria~~ BELFAST Hospital for Sick Children as a consultant in paediatric anaesthesia and intensive care in 1984. I qualified from Queen's University, Belfast and my qualifications are MB, BCH, BAO, FFARCSI.

This is a report of my involvement in the care of Lucy Crawford. I looked after her in the Paediatric Intensive Care Unit, Royal Belfast Hospital for Sick Children on Thursday 13th April 2000.

Lucy Crawford was a 17 month old girl who was transferred from the Erne Hospital in the early hours of Thursday 13th April 2000 to the Paediatric Intensive Care Unit in the Royal Belfast Hospital for Sick Children. She had a history of being unwell since Tuesday, and was admitted to the Erne Hospital on the Wednesday evening with a history of poor oral intake, vomiting and an increased temperature. Her Sodium level on admission was 137mmol L. She was given intravenous fluids in the ward, however at 03.00 hours on 13th April 2000 she developed a seizure and was give rectal diazepam. Also her breathing became erratic and she stopped breathing. Her sodium level at this time was 127mmol L. It was necessary for Lucy to be intubated and ventilated. It was noted that before leaving the Erne Hospital her pupils were dilated and unreactive.

On arrival at the Children's Hospital she was mechanically ventilated and soon required drugs to maintain her blood pressure. Her sodium level after arrival was 145mmol/L. She remained completely unresponsive and I was able to change her breathing tube without the aid of any medications. I arranged for her to be seen by Dr Hanrahan, Consultant Paediatric Neurologist in the Children's Hospital. Sadly Lucy died the following day, 14th April 2000. At the time she was under the care of my consultant colleague, Dr Chisakuta.

From the time of her arrival in the Children's Hospital there was no chance that she would survive. I cannot remember what was accompanied Lucy from the Erne. On admission to the Erne her sodium level was within normal limits. It then dropped to 127 within a short period. The rate of fall is the crucial factor. The dilated & unreactive pupils indicated some catastrophic event to the brain. I believe that at the time Lucy left the Erne hospital the situation was not retrievable. Children can deteriorate very quickly — more so than adults. 145 is at the upper range for normal sodium levels. That may have been due to the fluids she had been infused with at the Erne or possibly diabetes insipidus. On admission the working diagnosis was ~~subarachnoid~~ The formulation of the cause of death would be 1(a) cerebral oedema due to 1(b) HYPONATRAEMIA.

TAKEN before me this 17TH day of FEBRUARY 2004

Coroner for the District of Greater Belfast

CORONERS ACT (Northern Ireland), 1959

Deposition of Witness taken on the day

of 20 , at inquest touching the death of , before me

Coroner for the District of

as follows to wit:—

The Deposition of DR. PETER CREAN

of *(Address)*

who being sworn upon h is oath, saith

Managing ill children is very difficult. Fluid therapy needs to be monitored along with all therapies involving children. The foul bowel motion may have indicated some underlying gastroenteritis.

Mr. Good: Lucy had been weighed on admission to RBHSC 8 a.m. on 13th April - 9.8 Kgs. (Nurse B. Murphy). The fluid record for 9 a.m. - 9 p.m. on 13th April shows IV 1183, output 680. 9 p.m. on 13th for next 12 hours shows IV 451 & output 265. DDAVP was administered on 13th - it is for diabetes insipidus. It was given on 3 occasions that day 10.30, 11.30 & 13.20. It was not administered on the following day. After 9 a.m. on 14th until midday IV 181 and 132 out.

Mr. Fee: (Expression of gratitude on behalf of the parents). By the time Lucy was transferred her condition was irretrievable. It would have been important to have had the fluid management records from the time Lucy had been in another hospital & any such information as possible was essential. I was frustrated not to have the records.

P.T.O.

They could have been faxed or information given by telephone. Often the paper record arrives with the patient. The drop from 137 to 127 would ring alarm bells. There is no reason why information cannot be faxed. Fluid sheets from Erne are with the medical records at the RBHSC 100 mls per hour from 11 p.m. on 12th April to 2 a.m. on 13th. At 3 a.m. the fluid was changed from No 18 to normal saline. It was not the fluid management that I would advocate. The record from the Erne does not contain any formula for fluid management. It was wrong to use No 18 for both replacement and maintenance purposes. So far as I am concerned the major issue relates to the appropriate fluids for the deficits. Using only one fluid - No 18 - had the potential to lead to hyponatraemia. One fluid for deficit, one for maintenance + monitoring. There is no evidence that the problem was approached in that way at the Erne. Fluid management for Lucy was inappropriate.

X

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Mr. Good: The fluid management chart arrived at RBHSC at 8.53 p.m. on 13th April. [signature]

TAKEN before me this 17th day of February 2004

[signature] Coroner for the District of Greater Belfast

The Witness Concerned: **Dr Peter Crean of Royal Belfast Hospital for Sick Children**

From the time of her arrival in the children's Hospital there was no chance that she would survive. I cannot remember what notes accompanied Lucy from the Erne Hospital. On admission to the Erne Hospital her sodium level was within normal limits. It then dropped 10 to 127 within a short period. The rate of fall is the crucial factor. The dilated and unreactive pupils indicated some catastrophic event to the brain. I believe that at the time Lucy left the Erne Hospital the situation was not retrievable. Children can deteriorate very quickly – more so than adults, 145 is at the upper range for normal sodium levels. That may have been due to the fluids she had been infused with at the Erne Hospital or possibly Diabetes Insipidus. On admission the working diagnosis was Gastroenteritis. My formulation of the cause of death would be 1(a) Cerebral Oedema due to 1(b) Hyponatraemia.

Managing ill children is very difficult. Fluid therapy needs to be monitored along with all therapies involving children. The food bowel motion may have indicated some underlying Gastroenteritis.

Mr Good: Lucy had been weighed on admission to Royal Belfast Hospital for Sick Children 8.00 am on 13th April 2000 – 9.8 KGs (Nurse B Murphy). The fluid record for 9.00 am – 9.00 pm on 13th April 2000 shows IV 1183, output 680 (9.00 pm on 13th for next twelve hours shows IV 451 and output 265. DDAVP was administered on 13th April – it is for Diabetes Insipidus. It was given on three occasions that day, 10.30, 11.30, and 13.20. It was not administered on the following day. After 9.00 am on 14th April until midday IV 181 and 132 output.

Mr Fee: (Expression of gratitude on behalf of the parents)

By the time Lucy was transferred her condition was irretrievable. It would have been important to have had the fluid management record from the Erne Hospital. Lucy had been in another hospital and as much information as possible was essential. I was frustrated not to have the records. They could have been faxed or information given by telephone. Often the paper record arrives with the patients. The drop from 137 to 127 would ring alarm bells. There is no reason why information cannot be faxed. Fluid sheets from the Erne Hospital are with the medical records of the Royal Belfast Hospital for Sick Children 100 mls per hour from 11.00 pm on 12th April to 2.00 am on 13th April. At 3.00 am the fluid was changed from No. 18 to normal saline. It was not the fluid management that I would advocate. The record from the Erne does not contain any formula for fluid management. It was wrong to use No 18 for both replacement and maintenance purposes. So far as I am concerned the major issue relates to the appropriate fluids for the deficits. Using only one fluid – No 18 – had the potential to lead to Hyponatraemia.

One fluid for deficit, one for maintenance and monitoring. There is no evidence that the problem was approached in that way at the Erne. Fluid management for Lucy was inappropriate.

Mr Good: The fluid management chart arrived at Royal Belfast Hospital for Sick Children at 8.53 am on 13th April 2000.