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 EDWARD SUMNER MA, BM, BCh, FRCA – CONSULTANT IN PAEDIATRIC ANAESTHESIA, of [redacted] who being sworn upon his oath, saith

On the instructions of H.M. Coroner for Greater Belfast, Mr J L Leckey, L.L.M., I prepared a report into the circumstances of the death of Lucy Crawford.

I now produce a copy of my report marked C1

My working diagnosis is delayed onset hyponatraemia leading to cerebral oedema. If I was formulating the cause of death I would put at 1(a) acute cerebral oedema due to 1(b) hyponatraemia and at II Gastroenteritis.

TAKEN before me this 17TH 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. EDWARD SUMNER

of *(Address)*

who being sworn upon h[illegible] oath, saith

I am in agreement with Dr Sloan's evidence I am also in agreement with the basis of the reports of Dr Evans and Dr. Jenkins It is good practice to write down one's thought processes. We should have been able to see the thought processes. Prescriptions should always be written down so that nurses know what to do — if fluids are no different to a prescription for antibiotics. The rate of infusion was not written down and that is crucial. Lucy had an acute viral infection with vomiting, her tummy would have been harder. She would have felt tired, the brain swelling would have started perhaps after the first hour / 100 mls of the infusion. Adults report headache and then consciousness would have been dimmed. I would have made an assessment of the dehydration & on the basis of approx. body weight would have calculated the fluid deficit. I would have used a fluid such as Hartmann's for deficit, The 18 solution for maintenance would have been fine. There is not one fluid but a range.

P.T.O.

Mr Good: The difference in Lucy's weight between admission & post-mortem is a puzzle. She weighed more when she arrived in Belfast than in the Erne. The extra 500ml of fluid was a good deal & made a difference. I believe she was given 900 mls of fluid, unfortunately and 150 orally in the Erne. 4000 mls of dextrosaline could have triggered the problem. There is no evidence that at the Erne she was given more fluid than that recorded i.e. a non-recording of fluids. (letter of Dr. Henrietta Campbell dated 25/3/02 produced). I think this letter is the first time the CMO expressed concerns.

Mr Fee: Dilutional hyponatraemia has been known for a long time. Fluid management has for long been recognized as very important. The extent of dehydration should be assessed by pinch and recorded. At the Erne signs of dehydration had been looked for but not noted down in a formal way. I believe it is good practice to record it — bad practice not to. All input should be recorded. A fluid replacement formula should be devised & definitely recorded. Mandatory that the fluid prescription should be recorded on a properly designated chart. Scientific(s) and rate(s). No contemporaneous note was made & no working calculation was made. The actual fluid regime used for Lucy was inappropriate. The use of 18 omits error was totally

TAKEN before me this 17th day of February 2004

Coroner for the District of Greater Belfast

013-023-084a

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 MR EDWARD SUMNER

of

(Address)

who being sworn upon h ~~is~~ oath, saith

inappropriate – fine for maintenance but not for deficit or ongoing losses. The wrong solution and the wrong rate were deployed. The rate intended by Dr O'Donnell was misinterpreted from 5 to 100 ml at start 20 thereafter 5 to 100 throughout. There was fundamental error. Even if 18 solution had been used but infused as Dr O'Donnell intended Lucy may well have survived. The error occurred whilst Lucy was in the Erne, Probably the train was dwelling for up to 2 hours before the inquiry. It was a fundamental error to have changed the fluid at 3a.m. and for the infusion to be re-running. ~~to a pre-running fluid.~~ That exacerbated the existing problem. From the notes there is no evidence that the re-hydration was monitored. Nursing staff would therefore take the normal range of observations & charting the child's welfare – usually half-hourly. How busy the nurses are is a factor

G Sumner

P.T.O.

TAKEN before me this 17th day of February 2004.

Coroner for the District of Greater Belfast

The witness concerned: Dr Edward Sumner

My working diagnosis is Dilutional Hyponatraemia leading to Cerebral Oedema. If I was formulating the cause of death I would put 1(a) Acute Cerebral Oedema due to 1(b) Hyponatraemia and II Gastroenteritis.

I am in agreement with Dr Crean's evidence. I am also in agreement with the basis of the reports of Dr Evans and Dr Jenkins. It is good practice to write down one's thought processes. We should have been able to see the thought processes. Prescriptions should always be written down so that nurses know what to do – fluids are no different to a prescription for antibiotics. The rate of infusion was not written down and that is crucial. Lucy had an Acute Viral Infection with vomiting, her tummy would have been tender. She would have felt tired. The brain swelling would have started perhaps after the first hour/ 100 units of the infusion. Adults report headache and then consciousness would have been dimmed. I would have made an assessment of the dehydration and on the basis of approximate body weight would have calculated the fluid deficit. I would have used a fluid such as Hartman's for deficit. The No 18 solution for maintenance would have been fine. There is not one fluid but a range.

Mr Good: The difference in Lucy's weight between admission and post mortem is a puzzle. She weighed more when she arrived in Belfast than in the Erne. The extra 500 mls of fluid was a great deal and made a difference. I believe she was given 900 mls of fluid intravenously and 150 orally in the Erne. 400 mls of dextrosoline could have triggered the problem. There is no evidence that at the Erne she was given more fluid than that recorded i.e. a non-recording of fluids, (letter of Dr Henrietta Campbell dated 25/03/02 produced). I think this letter is the first time the CMO expressed concerns.

Mr Fee: Dilutional Hyponatraemia has been known for a long time. Fluid management has for long been recognized as very important. The extent of dehydration should be assessed if possible and recorded. At the Erne signs of dehydration had been looked for but not noted down in a formal way. I believe it is good practice to record it – bad practice not to. All signs should be recorded. A fluid replacement formula should be devised and definitely recorded. Mandatory that the fluid prescription should be recorded on a properly designated chart. Solution(s) and rate(s), no contemporaneous note was made and no working calculation was made. The actual fluid regime used for Lucy was inappropriate. The use of No 18 on its own was totally inappropriate – fine for maintenance but not for deficit or ongoing losses. The wrong solution and the wrong rate were deployed. The rate intended by Dr O'Donohue was misinterpreted from 100 mls at start and 30 thereafter to 100 throughout. There were fundamental errors. Even if No 18 solution had been used but infused as Dr O'Donohue intended Lucy may well have survived. The error occurred whilst Lucy was in the Erne. Possibly the brain was swelling for up to 2 hours before the seizure.

It was a fundamental error to have changed the fluid at 3.00 am and for the infusion to be free running. That exacerbated the existing problem. From the notes there is no evidence that the re-hydration was monitored. Nursing staff would throughout take the normal range of observations and checking the child's welfare – usually half hourly. How busy the nurses are is a factor.