Summary Details of Lucy Crawford Case

The Coroner's inquest relates to the tragic death of a seventeen month old child, Lucy Crawford, who was admitted to The Erne Hospital on 12 April 2000 at 7.30 p.m. She was deemed to have an acute viral illness and following an initial trial of oral fluids the Senior House Officer, Dr Malik, attempted to establish an intravenous line. He was unsuccessful after multiple attempts and the Consultant Paediatrician in charge of the case, Dr O'Donohoe, attended the hospital, from home, and arranged that the child receive some oral rehydrate while he organised and inserted an intravenous line. Intravenous replacement fluids were commenced. Electrolytes at that stage, indicated that the child was mildly dehydrated. The child was moved into a side-ward later on in the evening following a bout of diarrhoea and at approximately 2.55 a.m. on 13 April 2000 the patient's mother alerted staff that her daughter, Lucy, appeared to be having a fit. There appeared to be some smacking of the lips and twitching and, as a result, rectal Diazepam was administered. Blood pressure was elevated but other observations at the time were judged to be within normal limits. At around this time intravenous fluids were changed to normal Saline and, as respiratory effort appeared to be decreasing, an airway was inserted and bag and mask ventilation commenced. Intubation was performed by a Consultant Anaesthetist at 4.00 a.m. and the child was transferred to the Intensive Care Unit at the Erne Hospital and subsequently taken by the Consultant Paediatrician, Dr O'Donohoe, to the Intensive Care Unit in Belfast's Royal Hospital for Sick Children.

Sequential brain-stem tests carried out at the Royal Belfast Hospital for Sick Children, following transfer were both negative and the patient was extubated and died at 1.00 p.m. on 14 April 2000.

Post-mortem examination showed extensive bilateral bronchopneumonia and a swollen brain with generalised oedema and early necrosis. There was some distension of the large and small intestine with gas and clear fluid. Rotovirus was detected in some of the stool samples.

In response to these unexpected and tragic circumstances Dr O'Donohoe contacted myself as Medical Director that morning (13 April 2000) and, having advised the Chief Executive and the Acute Services Director of the Trust, I asked the Director of Acute Hospital Services and the Clinical Director for the Maternal and Child Health Directorate within the Trust to instigate a full clinical review of the case and asked that we seek the opinion of an external Paediatrician.

This review commenced on 14 April 2000 and was finalised on 31 July 2000. This report clearly finds fault with the manner of the prescription and the recording of fluids in this child's case. The review and, in particular, the external Paediatrician's opinion did not find fault with the type of fluids utilised and this has, subsequently, become a matter of great importance.

As a result of this review and the later review of fluid replacement regimes for children undertaken by Dr Campbell, Chief Medical Officer, Department of Health, Social

Services & Public Safety Northern Ireland, a number of changes to practice were introduced, these included:

- additional training in relation to care planning and documentation;
- introduction of an audit process of nursing records;
- introduction of lipread list of observations for children during the first 24 hour stay in hospital;
- the introduction of revised arrangements for weighing children;
- the introduction of fluid replacement and maintenance regime in keeping with the Chief Medical Officer's protocol.

There followed correspondence between the Trust and the family's advocate, the Chief Officer of the Western Health and Social Services Council, where the Trust tried to encourage the family to participate in further meetings with Trust staff so that the details of the review and the findings could be shared and explained. These offers were declined and, through the Trust's complaints process, formal letters were sent to the family providing a summarised version of the review and again encouraging contact with healthcare professionals to provide explanations.

Following this the Crawford family instigated legal proceedings initiated in April 2001.

During 2001 the issue of the use of hypotonic fluids in children both post-surgery and with acute medical illnesses became a significant subject of debate. With the identification of other problem cases of hyponatraemia, within Northern Ireland, work began to produce new regional guidelines for Northern Ireland which were issued in 2002. This was followed, in 2003, by new guidelines for the management of hyponatraemia for adults.

Ahead of these guide-lines within the Trust, and in my role as Medical Director, I circulated the BMJ article, which I enclose, and asked that we change our practices for resuscitation and intravenous fluids. As clarity emerged, in 2001/2002, in relation to the issue of potential dramatic adverse responses to Number 18 solution, it became obvious to all concerned that it was likely that the tragic case of Lucy Crawford involved an acute hyponatraemia causing cerebral oedema and possibly coning.

Further external paediatric opinion, sought through the Medical Litigation process, confirmed this opinion and the Trust, therefore, sought to achieve a settlement on the case with family that would include the issuing of a direct apology for clear failings in its care of this child. This settlement was achieved in December 2003 in advance of the Coroner's inquest.

The delay to the Coroner's inquest was unusual in this particular case. The Coroner's office had issued the Death Certificate at the time of death. A hospital post-mortem had been performed at the Royal Belfast Hospital for Sick Children.

Following the publicity surrounding a post-operative, paediatric, hyponatraemia related death, in a different Trust, the Chief Officer of the Western Health and Social Services Council (advocate for the Crawford family) wrote to the Coroner, in 2003, indicating that this particular case may well represent a similar hyponatraemia problem. The Coroner applied to the Attorney General to have the case re-opened in a Coroner's inquest setting.

At the Coroner's inquest the key expert witness utilised by the Coroner indicated that it was unacceptable practice, even in the year 2000, to use Number 18 solution. The Trust, including its own Northern Ireland based external Paediatric opinion, maintains that in the year 2000, at the time of Lucy Crawford's tragic death, there was widespread lack of awareness of this issue and that many Paediatric departments in Northern Ireland and in both the United Kingdom and the United States were utilising this particular type of replacement fluid. This is, in our belief, supported by the BMJ article *'Lesson of the Week"*, published in March 2001, advocating a change of practice and that the Northern Ireland guide-lines were not produced until 2002 and this was as a direct result of two tragic cases in Northern Ireland.

The Trust has, from the outset, acknowledged that there was poor prescribing and recording of the fluid regimen and that there were problems with communication between senior and junior medical staff and nursing staff and that particular attention was given to these matters as part of the outcome of the initial review.

The Trust, in response to the Coroner's inquest, will be examining the outcome of the inquest to identify lessons for both the Trust and other organisations with responsibilities for these issues.

Enc ~ BMI Lesson of the week (?March 2001)

MacSherry, Eavan

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- introduction of a minimum list of observations for children during the first 24 hour stay in hospital;
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Following the death of Lucy, there was correspondence between the Trust and the family's advocate, the Chief Officer of the Western Health and Social Services Council, where the Trust tried to encourage the family to participate in further meetings with Trust staff so that the details of the review and the findings could be shared and explained. These offers were declined and, through the Trust's complaints process, formal letters were sent to the family providing a summarised version of the review and again encouraging contact with healthcare professionals to provide explanations.

Following this the Crawford family instigated legal proceedings initiated in April 2001.

During 2001 the issue of the use of hypotonic fluids in children both post-surgery and with acute medical illnesses became a significant subject of debate. With the identification of other problem cases of hyponatraemia, within Northern Ireland, work began to produce new regional guidelines for Northern Ireland which were issued in 2002. This was followed, in 2003, by new guidelines for the management of hyponatraemia for adults issued by the CMO for N. Ireland.

Ahead of these guide-lines within the Trust, and in my role as Medical Director, I circulated the BMJ article, which I enclose, and asked that we change our practices for resuscitation and intravenous fluids. As clarity emerged, in 2001/2002, in relation to the issue of potential dramatic adverse responses to Number 18 solution, it became obvious to all concerned that it was likely that the tragic case of Lucy Crawford involved an acute hyponatraemia causing cerebral oedema and possibly coning.

Further external paediatric opinion, sought through the Medical Litigation process, confirmed this opinion and the Trust, therefore, sought to achieve a settlement on the case with family that would include the issuing of a direct apology for clear failings in its care of this child. This settlement was achieved in December 2003 in advance of the Coroner's inquest.

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At the Coroner's inquest the key expert witness utilised by the Coroner indicated that it was unacceptable practice, even in the year 2000, to use Number 18 solution. The Trust, and its Northern Ireland based external Paediatric opinion, maintains that in the year 2000, there was widespread lack of awareness of this issue and that many Paediatric departments in Northern Ireland and in the United Kingdom and the United States utilised this particular type of replacement fluid. The BMJ article 'Lesson of the Week' was published in March 2001, (almost 12 months after Lucy Crawford's tragic death), which advocated a change of practice, and in 2002 the Northern Ireland guidelines were produced as a direct result of two tragic paediatric deaths in Northern Ireland.

The Trust has, from the outset, acknowledged that there was poor prescribing and recording of the fluid regimen and that there were problems with communication between senior and junior medical staff and with nursing staff. Particular attention was given to these matters as part of the outcome of the initial review.

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Enc ~ BMJ Lesson of the week (31 March 2001)

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