Witness Statement Ref. No. 360/1

NAME OF CHILD: Raychel Ferguson

Name: Paul Loan

Title: Dr.

Present position and institution:

Previous position and institution:
[As at the time of the child's death]

Membership of Advisory Panels and Committees:
[Identify by date and title all of those between January 2001 - present]

Previous Statements, Depositions and Reports:
[Identify by date and title all those made in relation to the child's death]

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

Ref:	Date:	

I understand the Inquiry is investigating the possible reasons for the apparent fall in the use of 0.18% NaCl in RBHSC in and around 2001 and I would like to offer the following observations from memory.

I was appointed as a consultant paediatric anaesthetist in 1996, whilst training as a fellow in the Critical Care Unit in the Hospital for Sick Children in Toronto; I returned to Belfast to take up the position in January 1997. In Canada, one of my seniors had been Dr Des Bohn, who was a senior staffman, and later became Chief of that unit. All of the senior staffmen in the CCU in Toronto were clear in their belief that excessive use of any fluid, and hyponatraemic fluids in particular, was dangerous in some children; Dr Bohn has published papers expressing this opinion, since. I remember that the strength of this opinion was a little surprising to me at the time, as it was contrary to the routine paediatric practice I had observed previously. I also believe that the use of hyponatraemic fluids was very common in paediatric practice worldwide; most of the senior intensivists in Toronto had trained in anaesthesia, which seemed to result in a different attitude to fluid therapy than paediatric/neonatal training, even in the same hospital.

On returning to Belfast I found that the belief that *iso*natraemic fluids were dangerous for children was widespread amongst paediatricians. Many juniors seemed to have been taught that 0.18% or 0.45% saline were the only fluids suitable for children. This simplistic belief is not fully supported by the textbooks current at the time, but all of the texts which I have found current at the time suggest the use of hyponatraemic fluids in circumstances which would not be acceptable in the UK today. This includes, for example, "Surgery", a continuously updated periodical textbook, in which there is little specific advice regarding which fluids to use in a child with a fluid deficit, but the use of hyponatraemic fluids is suggested by implication; I have seen a copy as late as 2005 with this advice.

I found it difficult to challenge this widespread attitude to fluid therapy. As a recently-appointed anaesthetist, I found that there was considerable resistance to any idea that previous practises might be inappropriate, especially amongst some senior paediatricians. However, soon after my return to Belfast I became educational supervisor in Anaesthesia for RBHSC, which involved co-ordinating an educational programme and assessments for junior anaesthetists and medical students during their anaesthesia attachments to RBHSC. I consistently taught my approach to fluid balance in children to these groups. For some years I also gave a regular talk on fluids and blood products to new junior staff in RBHSC. I also spoke about fluid therapy for children at several meetings outside RBHSC, but these were for anaesthetists rather than paediatricians. Many paediatricians seemed to believe, with some reason, that the evidence of any harm from hyponatraemic fluids in paediatric medical patients weaker than in surgical children, so an anaesthetist's interpretation of the literature did not apply to their own patients.

It is possible that my efforts to teach what I believed to be a rational approach to IV fluids in children may have resulted in some of the reduction in use of 0.18% saline in RBHSC over the relevant period, but unfortunately I do not think that this was more than a minor contribution. The APLS course was becoming popular, and became compulsory in many paediatric specialties: this course teaches a clear differentiation between treatment of shock and other indications for IV fluids, which results in practices close to what I had been teaching. Also, Mr Trevor McNulty was appointed as Resuscitation Training Officer in the Royal Group of Hospitals soon after my own appointment. He was a vigorous proponent of the APLS style of fluid management, and a forceful, didactic teacher; I expect that his impact on practice amongst junior staff was rather less subtle and more effective than mine.

I also remember one specific incident which may have had some effect. Following his appointment – I cannot remember the year – Mr McNulty decided to rationalise and standardise the contents of the resuscitation trolleys in RBHSC. He sent emails to a number of interested parties, including myself, describing the current contents list, and asking for suggestions for changes. I suggested (by email) that accidental use of hyponatraemic fluids during resuscitation would be counterproductive and dangerous, and that they should be removed from the trolleys. I

believe that Mr McNulty accepted my argument, and that 0.18% saline and 5% dextrose solutions were removed. Following this, I heard that the removal of hyponatraemic fluids had been extended to the entire Emergency Medicine Department in RBHSC, for similar reasons. The thinking and attitudes amongst junior staff would probably have been affected by these changes, and could have contributed to any change in prescribing at that time, as well as having a direct effect on the stocks required in these areas.

In summary, I am aware of several factors which might have contributed to the apparent fall in use of hyponatraemic fluids, most notably 0.18% saline, over the relevant years, but these would probably have resulted in incremental rather than sudden changes in attitude and practice.

In particular, I am unaware of any formal change in policy or new guideline which came into effect during that period. The first Department of Health wall chart was the first such advice of which I became aware. As I recall, it fell well short of any advice to avoid hyponatraemic fluids in many groups of children now accepted to be at risk. As a member of the working party which formulated the later 2007 paediatric fluid management algorithm, ensuring that it complied with the relevant NPSA alert and advice (which was issued while that working party was active), I can state with confidence that this algorithm was produced essentially "from scratch", and that there were no protocols in existence in RBHSC other than the DoH's first guidelines. Dr Jarlath McAloon, who chaired the working party which produced the 2007 algorithm would be in a position to confirm that this group relied on scientific papers and expert opinion (much of which was published after the relevant period), and was aware of no previously circulated guidelines or protocols to consider as "starting points".

The above describes my personal recollections of events surrounding changes in fluid management for children around that period. Unfortunately, I have a poor recollection of dates, but more precise information might be available through, for example, Mr McNulty's office or old Royal Group email records; and Dr McAloon may have records of the materials used to create the 2007 algorithm (I have had no recent contact with Dr McAloon, and cannot confirm this, myself).

I hope this information is of assistance to the Inquiry.

This statement is true to the best of my knowledge and belief.

Dr Paul Loan FRCA FRCP.

Consultant Anaesthetist, Causeway Hospital.