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This file reports an investigation into the death of Adam Strain, 4 yrs, on 28 November 1995 in the Royal Belfast Hospital for Sick Children. It is one of a number of deaths which are closely associated with hyponatraemia and are the subject of police investigation and Public Inquiry, chaired by John O'Hara QC. The Public Inquiry has adjourned for the duration of the ~~police~~ criminal investigation and this has imposed some urgency on our investigation.

Background.

1. Adam Strain was born on [] and suffered from birth from various kidney ailments which led to a series of operations in his short life.
2. Adam's kidneys did not improve with medical treatment and ~~even~~ he became polyuric - that is producing large quantities of urine which was of poor quality.
3. Adam required to commence dialysis to sustain his metabolism.
4. On 26 ~~April~~ November 1995 a kidney from a 66yr old female who had died in Scotland became available to Adam for transplant. He was admitted to hospital on that date and underwent a transplant operation on 27 November.
5. It is generally the position of the medical and nursing staff that the operation proceeded normally but at its end, Adam could not be revived. He did not respond to resuscitation and was pronounced dead ~~the~~ on 28 November after life support was turned off.
6. An inquest was held on [] and the cause of death was found to be []
7. A Public Inquiry into hyponatraemia-related deaths in NI

~~announced~~ announced that the death of Adam Strain would be included in the report, with the deaths of Lucy Crawford and Kaychel Ferguson. A file has already been forwarded to the PPS regarding the investigation into the death of Lucy Crawford, and the ~~case~~ an investigation into the death of Kaychel Ferguson will be reported to the PPS.

MEBECA ASPECTS.

The primary cause of

The post-mortem and the inquest concluded that Adam's ~~death~~ ^{was} cerebral oedema, which is a swelling of the brain cells due to increased water content. The cause of the cerebral oedema is described by Dr Armour, pathologist, as the worst she had ever seen. The cause of cerebral oedema was pronounced as dilutional hyponatraemia. This describes a mechanism whereby water will enter the brain cells when the sodium concentration of the blood falls below the sodium concentration of in the brain cells. The sodium concentration in the blood will fall if intravenous fluid is given which contains a lower concentration of sodium (hypotonic) than blood. Sodium concentration in blood will also fall as a result of the body reducing water excretion, which results in water retention ~~and~~ This is common in patients undergoing surgery, as the body responds to the trauma by inappropriately secreting anti-diuretic hormone (ADH) which reduces the kidney's excretion of water. [Cerebral perfusion?]