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nurses to bring it to his attention, he had no access to medical notes. He concurred that 'some vomiting' was not appropriate, but only in hindsight. On the telephone with Dr. Trainor he could not recall whether they discussed the low sodium reading, but said if told about it he would have directed checking it. He said the symptoms could have been caused by meningitis as this was frequently encountered, and it was in his mind with hyponatraemia, both conditions could be concurrent. He said that because of this antibiotics were administered at the time as they carry few side effects. As to the low sodium levels Dr. McCord said the picture evolved quickly, but became more obvious later on, and the standard treatment was to give reducing amounts of saline. Raychel's situation was not deemed hopeless at the time, only becoming clearly so when she reached Belfast, according to the Doctor, though he had no involvement at that stage, and Altnagelvin lacks an ICU for children. Again, he confirmed that the surgical teams look after surgical patients, but his team would assist if necessary. He said all Doctors prescribing fluids should be aware of the consequences of same. He was asked of his team's knowledge of hyponatraemia, and replied that all would be aware as there are diverse causes, though the relationship of this condition, ADH and surgery was unknown to him, his expertise being in medical patients.

Mr. McAllinden confirmed with Dr. McCord that it had taken him about five to ten minutes to travel the two miles to the hospital, arriving at about 4.45 am, just before intubation took place, Dr. Date being already there. He confirmed also that fluid correction efforts began in ward six, prior to the CT scan. The Doctor had been suspicious of a brain haemorrhage and had the scan sent through to the neurological ward in Belfast. In the Royal sodium levels had climbed to 130. He described requesting an enhanced scan but was unsure of the time. Such a haemorrhage was ruled out by the scan, but what he described as the 'fog of war' meant this took some time. He commented that low sodium could be caused by other factors such as meningitis, infection etc., all of which had to be ruled out first.

Evidence of Dr. C A Nesbitt

Dr. Nesbitt read his deposition aloud. He described himself as a Consultant anaesthetist with an interest in paediatrics. He told how he had arrived after Dr. McCord at around 5.30 am, having not been involved with Raychel previously he

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came due to the pressure on staff. He agreed that surgical patient remained in the care of the surgical team, but described care as multi-professional where needed. According to the Doctor hyponatraemia is also known in adults, but is more common in children. He had not seen a case resulting in death before, are few symptoms appear, adding that judicious treatment would bring sodium levels back. He was asked by Mr. Leckey whether a tonic seizure could cause brain damage, and said it was possible in retrospect.

As to fluids Dr. Nesbitt commented that Raychel was dealt with by Dr. Makar in the usual way in casualty, fluids not always being administered before surgery, very little having been given here pre-op. Hartman's solution was used in theatre.

He had doubts now about the safety of No. 18 solution. Practice had turned to Hartman's solution, then to half strength saline solution as the best compromise. He described the use of '+' to describe vomiting as very subjective, the appearance of ' + + ', for instance being difficult to assess, but in any event the nurses had not been unduly concerned. He agreed that a naso-gastric tube would allow fluid loss to be accurately gauged, but was not used in his practice in an uneventful case. Dr. Nesbitt agreed that hyponatraemia was more prevalent in female children, suggesting there may be a link with oestrogen. He commented that in the past there were historical reasons why children appeared in hospital being hypernataeric so hyponatrae. It was less of a concern and less expected, that surgical patients react differently than medical patients, the reaction being idiosyncratic and difficult to predict.

The Coroner asked as to whether nurses were aware of the significance of vomiting. Dr. Nesbitt said recording and measurement was very important, though here the volume had never been great, but the frequency had been. He hoped this case would raise awareness.

Mr. Foster suggested that the guidelines now apply to adults and children, the Doctor agreed but said practice is focused towards children. He said they were very prescriptive, and might be unnecessary in simple surgical cases. He described frequent testing of children difficult due to available veins being scarce. He rejected the idea that the anaesthetist should not prescribe fluids- any Doctor could do so. Fluids could then usually be reviewed twelve hours post-operatively by the surgical team. Again Dr. Nesbitt confirmed that No. 18 solution is no longer used, half strength saline being the best compromise, and that the change was prompted by Raychel's case, being appropriate as hypernatraemia is another possibility. He said

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that previously No. 18 solution could be supplemented with other solutions if a sodium deficit was apparent, at reassessment at twelve hours it could be changed if a blood test suggested so. He agreed that there appeared to be no test on the 8th of June. He said that speaking to colleagues afterwards he had not asked what their practice was but had described Raychel's particular circumstances. When asked as to how he became involved the Doctor outlined that he had been called by Dr. Date, as the on call Consultant, registrar and SHO were present and under pressure, arriving at 5.30 am he thought the situation 'absolutely critical'. Several causes were still thought possible and intubation was deemed necessary. He was asked whether Dr. Gund was part of this team. Dr. Nesbitt said he was, when asked whether Dr. Gund should have prescribed fluids he answered that this was appropriate and in any event, fluids were reassessed on a twelve hourly basis. Mr Leckey ruled that this line of questioning was not relevant to his task in finding the cause of death.

The Coroner decided to break at 12.55 p.m. and Mr. McAllinden's questions would be put to Dr. Nesbitt at 2.00 p.m.

6th February 2003, 2.00 p.m.- 3.30 p.m.

Mr. McAllinden began by discussing what appeared to be a retrospective note made at page 16 of the records. Dr. Nesbitt explained that all notes are made retrospectively to some extent, this note was filled in six days later as the Doctor had noticed the omission and felt it better to fill in than to leave blank, and to provide an explanation. He asked Dr. Jamison to change it, the purpose being to show the total fluid used in treatment for clarification. He agreed that the entries on page 39 showed volumes given pre- and post- operatively, outlining that only 150ml could be given at any one time. He was of the opinion that the Doctor appearing on page 40 was Dr. Makar.

Dr. Nesbitt then outlined the Critical Incident Enquiry conducted after Raychel's death, the first meeting taking place on the 12th of June, with a view to drawing up an action plan, reviewing available evidence of electrolyte problems with IV fluids. After reviewing the journals and speaking to colleagues it appeared to Dr. Nesbitt that use of No. 18 solution was probably not good practice, and Hartman's solution was used

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instead, other hospital units were still using No. 18 solution. It was later decided that half strength saline would be used. He thought that No. 18 solution was largely being phased out now for post-operative paediatric surgery. The Doctor said that other units were unaware of the dangers of No.18 solution, which may still be fine for medical but not surgical patients. Practice is now that No. 18 solution is no longer a routine fluid.

Mr. Foster asked one question resulting from previous answers; he put to Dr. Nesbitt that the journals and literature on the subject had always been previously freely available. He agreed it was but in journals not widely read by those in practice, as prescribed previously by the experts.

Finally, the Coroner asked whether the manufacturers should put any form of warning on the solution bags, Dr. Nesbitt felt this would be unfair to the manufacturers as responsibility rests with the Doctor using them.

Evidence of Mr. Robert Gilliland

Mr. Gilliland was asked to read his deposition out which he duly did. Mr Leckey asked for an explanation of McBurney's point, which transpired to be the right hand side of the lower abdomen, the classic site of appendicitis pain.

Mr. Gilliland made clear that he had not been directly involved in Raychel's case, being the head of surgery. He was not aware previously of the dangers of Hyponatraemia developing in such cases, but the new protocol now forms part of JHO and SHO training, and medical and surgical practitioners are aware of it. He said he had never encountered the condition before in either training or practice, nor had any colleague.

Mr. Foster confirmed with the witness that sickness was common after surgery. He agreed that he would expect continuous vomiting to be noted, but not necessarily brought to the attention of the surgical team, rather the medical staff. The Consultant did not agree that he would expect to be necessarily informed of 'coffee ground' vomit, though he would if it was ongoing 17-20 hours after surgery, he added that this had been done here. Mr. Gilliland was asked about the prescription of Valoid and Zofran on pages 34-35 of the notes, agreeing that they may be out of sequence but he stated that drugs are recorded once as a single entry. It was suggested that as there