SHERIFFDOM OF SOUTH STRATHCLYDE, DUMFRIES & GALLOWAY at AYR

Inquiry held under the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976

DETERMINATION
by
DOUGLAS A. BROWN
Sheriff of South Strathclyde, Dumfries and Galloway

following an inquiry into the death of

FINDLAY DAVID ROXBURGH

AYR: 29 June 2007

The sheriff, having considered the evidence, determines –

1. in terms of section 6(1)(a) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 that Findlay David Roxburgh, born 9 November 2003, 70 Wilson Street, Girvan, died at Ayr Hospital, Dalmellington Road, Ayr, at 6.35am on 1 March 2005, and

2. in terms of section 6(1)(b) of that Act that the cause of his death was meningococcal septicaemia and bilateral adrenal infarction.

Sheriff D A Brown

NOTE

1. This was an inquiry into the death in the morning of 1 March 2005 at Ayr Hospital of Findlay David Roxburgh ("Findlay") when he was aged around 16 months. He had been brought there by ambulance late the previous evening after becoming ill at home. He survived in hospital for only seven hours. Findlay's parents, David and Philippa Roxburgh, had concerns about his care

and treatment in hospital and in particular about whether he might have survived had things been done differently. That was the main focus of the inquiry.

2. In considering this matter it is necessary to consider the facts. The facts as established to my satisfaction at the inquiry are as follows.

FINDINGS IN FACT

3. Findlay was born on 9 November 2003 and was generally healthy until 28 February 2005 when he became unwell in the family home at 70 Wilson Street, Girvan. His mother Mrs Roxburgh first thought him unwell at about 12.50pm on wakening him after a short sleep. He was lethargic and had a temperature. Other family members had recently been suffering from colds and she thought that he had picked this up. She gave him Calpol. He was sick but later perked up a bit and managed to eat something. Mr Roxburgh came home from work between 4 and 5pm, at which time Findlay was still unwell but was apparently improving. During the evening Mr Roxburgh sat in the lounge watching TV with Findlay beside him lying under a quilt on the couch. At about 10.30pm Mrs Roxburgh decided to put Findlay to bed. She noticed that he was hotter than previously, that his breathing was a bit laboured and that there was a spot on his chest and another on his leg. She became very concerned about him. At 10.44pm Mr Roxburgh made an emergency 999 call for an ambulance.

4. An ambulance arrived at 10.48pm. A paramedic examined Findlay, considered that his symptoms were consistent with meningitis and decided to take him to hospital. At 10.52pm he administered penicillin, this being an antibiotic. At 11pm he began to administer oxygen by facial mask. The ambulance left at 11.04pm and arrived at the Accident and Emergency Department at Ayr Hospital at 11.30pm. Mrs Roxburgh accompanied Findlay in the ambulance.

5. On arrival at Ayr Hospital, Findlay was taken to a resuscitation room in the Accident and Emergency Department. Within 5 minutes of arrival he was seen by Dr Ernie Ofei-Aboagye (known as “Dr Ofei”), a paediatric senior house officer.

6. There are essentially three levels of hospital doctor, these being, in ascending order of seniority,
   (a) senior house officer,
   (b) staff grade / registrar – known as the middle grade, and
   (c) consultant.

7. Dr Ofei, as senior house officer, was at the most junior level but was a very experienced doctor. He had been qualified for 14 years and had been working in the Accident and Emergency Department at Ayr Hospital for over 7 years, for the last 5 of which he had been on the middle grade as a registrar. He did not however have experience in paediatrics and in order to gain such experience had opted for a 6-month secondment to paediatrics at the lower grade of senior house officer, starting in February 2005. This for him was a training post.

8. On 28 February 2005 Dr Ofei was on a 24-hour shift which began at 9am that day and ended at 9am on 1 March. During the day until about 5pm there would generally be a more senior paediatric doctor present in the hospital but overnight he would be the only paediatric doctor on duty, though there would be more senior doctors available on call should he require their assistance. That night the on-call doctors were a staff grade paediatric doctor, Dr Usha Sengupta, and a paediatric consultant, Dr Jonathan Staines. If Dr Ofei required assistance he would contact the staff grade doctor who would, where appropriate, contact the consultant. During the night Dr Ofei could sleep if his duties allowed it.

9. Dr Sengupta, a staff grade paediatrician, had been medically qualified for 31 years, had worked in paediatrics for 22 years and had been in the staff grade post for 16 years. Like Dr Ofei she was on a 24-hour shift beginning on 28 February and ending on 1 March but during the overnight period she had no other duties apart from being on call. She was based at Crosshouse Hospital, Kilmarnock, which was about 30 minutes' travelling distance from Ayr Hospital, and was responsible for paediatric care at both hospitals. During the night she could, when not required, sleep in the on-call room at Crosshouse Hospital. Alternatively she could sleep in the on-call room at Ayr Hospital.

10. Dr Staines, a consultant paediatrician, had specialised in paediatrics for 20 years and had been a consultant paediatrician for 9 years. In the 1990s prior to his appointment as a consultant he had worked as a registrar and senior registrar in the Royal Hospital for Sick Children at Yorkhill, Glasgow ("Yorkhill"). He was based at Crosshouse Hospital. On the evening of 28 February he was, like Dr Sengupta, on a 24-hour shift which included an overnight period when he was on call but could otherwise sleep. During the overnight period he was based at home, which was about 25 minutes' travelling distance from Ayr Hospital. He had overall responsibility for paediatric care in three hospitals, namely Crosshouse Hospital, Ayr Hospital and Ayrshire Central Hospital in Irvine.

11. On examining Findlay, Dr Ofei noted his clinical history and the treatment given before arrival. He carried out a full assessment based on a recognised methodology of Advanced Paediatric Life Support, following a standard ABCDE approach of checking Airway, Breathing, Circulation, Disability and Exposure. He noted his findings in the medical records. In particular he noted that Findlay's temperature was 38.2 degrees centigrade (the norm for a child of that age being 36.5 to 37.5), that his pulse or heart rate was 162 (the norm being 120 to 150), that his respiratory rate or breaths per minute was 48 (the norm being 30 to 35), that his capillary refill time (CRT) – being a measure of peripheral perfusion or how well blood was flowing through his tissues - was 4 seconds (which was twice as slow as the norm of 2 seconds) and that there was widespread petechial rash on his trunk and limbs. He correctly made an initial diagnosis of meningococcal septicaemia.

12. Shortly after 11.30pm, Dr Ofei phoned Dr Sengupta to seek her assistance. She said that she would attend. She in turn phoned Dr Staines who also said that he would attend.

13. Following the initial assessment, Dr Ofei
    (a) secured venous access through the siting of two intravenous cannulae (tubes),
    (b) took blood samples for various tests,
    (c) administered a bolus of normal saline fluid intravenously (a "bolus" being an injection of a quantity of fluid or drug at once as opposed to gradual administration by intravenous infusion) to supplement intravenous fluids and improve circulation,
    (d) administered paracetamol to reduce temperature, and
    (e) administered a therapeutic dose of ceftriaxone – this being the appropriate antibiotic for the treatment of meningococcal septicaemia.

14. Dr Ofei instructed that Findlay should be admitted to the paediatric ward in Ayr Hospital and he arrived there about midnight. He was placed in a single room with one-to-one nursing care from a Staff Nurse Morag Boyle.

15. Staff Nurse Boyle had specialised in paediatrics for around 25 years. That night she was on an overnight shift which commenced at 7.30pm on 28 February and ended at 8am on 1 March. She was to remain with Findlay throughout the night to take and record observations every 15 minutes, to ensure the administration of any necessary treatment and to ensure that Dr Ofei was alerted to any deterioration in his condition. Mrs Roxburgh also remained with him.

16. Dr Sengupta arrived shortly after midnight and first saw Findlay in the paediatric ward. She assessed him and noted, amongst other things, that he was irritable, had a reduced level of consciousness, was covered in a meningococcal-type rash and had a blood coagulation abnormality, which indicated a deficiency in clotting factors in the blood. Her other remaining observations were similar to those initially recorded by Dr Ofei except that there was a slight improvement in the capillary refill time from 4 to 3 seconds. She was satisfied that he was being appropriately treated and monitored and agreed with the diagnosis of meningococcal septicaemia. She gave him a further bolus of normal saline fluid to support circulation.

17. Dr Staines arrived at around 12.25am. He examined Findlay and satisfied himself that he was being appropriately treated and monitored.

18. Mr Roxburgh arrived at around 1am to join his wife. He noticed that Findlay's rash was much worse than when he had last seen him.

19. Shortly before 1.10am Dr Staines discussed the blood coagulation abnormality with an on-call consultant haematologist Dr Eynaud. They decided upon a transfusion of fresh frozen plasma ("FFP") as this contained the clotting factors which Findlay was lacking. FFP was not available at Ayr Hospital and required to be obtained from Crosshouse Hospital, Kilmarnock. This involved sending a blood sample from Findlay to the laboratory at Crosshouse Hospital for blood grouping and matching with the appropriate FFP and thereafter thawing the FFP and sending it Ayr Hospital. It was anticipated that, allowing for this process, it would be available in about an hour, this being around 2.10am.

20. Dr Staines re-examined Findlay at around 1.10am and considered that there were some signs of improvement from when he had examined him 45 minutes previously. In particular he was becoming more alert, he had good blood pressure and his rash was not extending.

21. The disease from which Findlay was suffering, namely meningococcal septicaemia, is very dangerous and aggressive with a high risk of mortality. The mortality rate in children with this disease is in the order of 25 to 35 per cent. The disease is caused by meningococcal bacteria which can also cause meningitis. These bacteria are commonly found in the back of the throat and cause no harm but occasionally, and for reasons which are not properly understood, the body's natural defence system breaks down and the bacteria enter the bloodstream. There they tend to multiply and to travel via the blood to the meninges (the lining of the brain). In some

cases the body manages to stop the bacteria multiplying in the blood but not in the meninges and these patients develop meningitis, which is a less serious disease than septicaemia. When the bacteria do multiply in the blood, this occurs rapidly and releases toxins (poisons) which cause septicaemia (blood poisoning) and this may occur before the bacteria can infect the meninges. These toxins can rapidly damage blood vessels, tissues and all the organs of the body and result in the body rapidly being overwhelmed by the infection. The disease is usually associated with a rash which results from damage to blood vessels and a consequent bleeding into the skin. Sometimes this rash does not appear until the disease is quite advanced.

22. Meningococcal septicaemia requires urgent treatment with antibiotics to kill the bacteria. This does not however remove the toxins which require to be excreted naturally through the liver or kidneys and until then have the continuing potential to cause damage. Circulation is likely to be impaired by the disease and generally requires to be supported by the administration of fluids. The first 24 hours after admission to hospital are critical as there is a risk of rapid deterioration. The principal aim during this period is to stabilise the patient and it is unlikely that there will be any sustained improvement. Close monitoring is essential in order that there can be a rapid response to any deterioration.

23. Certain children suffering from this disease may require a higher level of care than can be provided in a local paediatric ward and for this purpose may be transferred to the paediatric intensive care unit at Yorkhill where there are paediatric intensive care specialists and specialist monitoring facilities. Yorkhill accepts such transfers from hospitals throughout the west of Scotland. The decision to transfer is made after discussion at consultant level with Yorkhill, though a middle grade doctor may be authorised by a consultant to speak on his behalf to Yorkhill. Around this time the majority of children suffering from meningococcal septicaemia were being treated in local paediatric wards rather than at Yorkhill. A decision to transfer can be difficult and finely balanced due to the risks involved. In particular a child requires to be stabilised for transfer and this can involve risky procedures such as intubation to support breathing. The child also requires to be moved from bed to trolley with various attached items and to undergo a lengthy journey by ambulance. During this journey, the cramped conditions make treatment and monitoring more difficult and the constant vibration can affect sensitive monitoring equipment. Unnecessary transfers have to be avoided but on the other hand necessary transfers should not be delayed and in consequence become more difficult due a patient's deteriorating condition. The matter requires expert assessment by the local paediatric consultant and in this case the decision lay with Dr Staines. He was well-placed to make a

decision on transfer as he had worked in Yorkhill, had first-hand experience of the paediatric intensive care unit there and was well aware of the services it could offer.

24. In order to assist with a decision on whether there should be a transfer to Yorkhill, Findlay was being assessed using a system devised for that purpose by Yorkhill. This system is designed to assist in the overall assessment of a patient's clinical condition rather than being used in isolation. It involves assessing various specified factors and allocating the patient a score, known as the Glasgow meningococcal septicaemia prognostic score. The higher the score, the more serious the condition. A score of 8 at any time or an increase of 3 or more in an hour is an indication that a higher level of care and hence a transfer may be appropriate. Around 12.30am Findlay's score was 5. Around 1.30am it had reduced to 4, which suggested an improvement. Neither of these scores indicated that a transfer was appropriate.

25. At around 1.10am Dr Staines discussed Findlay's condition with Mr & Mrs Roxburgh. He said that Findlay was extremely unwell with a very dangerous disease, that he appeared to have been stabilised, that the next 24 to 48 hours were critical and that if he remained stable the outlook was good but that if he deteriorated he might need to be transferred to Yorkhill. Mr and Mrs Roxburgh accepted Dr Staines' opinion that Findlay's condition had stabilised.

26. Dr Staines was satisfied that there was nothing at that stage to warrant Findlay being transferred to Yorkhill.

27. Dr Staines decided that it was unnecessary for Dr Sengupta and him to remain at Ayr Hospital. By that time Dr Sengupta had been there for 1½ hours and he had been there for 1 hour. Findlay was being appropriately treated and monitored and that would continue with one-to-one care from Staff Nurse Boyle under the supervision of Dr Ofei. He and Dr Sengupta would only be required if Findlay's condition deteriorated and he made it clear to Dr Ofei that he should contact them in the event of any deterioration. Despite Dr Ofei's lack of paediatric experience, he had particular confidence in his clinical skill and acumen and had been impressed by the way he had assessed and treated Findlay up to that point. He was confident that Staff Nurse Boyle and Dr Ofei were sufficiently skilled as to be able to detect any deterioration, that he and Dr Sengupta would be alerted if and when any deterioration occurred and that they could respond remotely by giving instructions and returning as necessary. He therefore suggested to Dr Sengupta that they should leave and they both did so at around 1.30am. He returned home and Dr Sengupta returned to Crosshouse Hospital.

28. There was no pressing need for Dr Sengupta to return to Crosshouse Hospital. In particular there was no patient at Crosshouse Hospital in such a serious condition as Findlay and she could readily have slept in the on-call room at Ayr Hospital instead of the on-call room at Crosshouse Hospital.

29. During the night, Dr Ofei had other duties to attend to apart from looking after Findlay. He was responsible for the other patients in the paediatric ward, for assisting with any further admissions to the paediatric ward through Accident and Emergency and for dealing with any telephone calls from GPs wishing to discuss possible referrals. That night he admitted another child to the paediatric ward just before 2am and was otherwise kept sufficiently busy as to be unable to get any sleep. Staff Nurse Boyle however remained with Findlay and continued to monitor his progress.

30. Soon after the departure of Drs Staines and Sengupta at around 1.30am, Mr and Mrs Roxburgh became concerned about a lack of improvement in Findlay's condition and about his rash, which appeared to be becoming more widespread. Around 1.45am Mrs Roxburgh expressed her concern about the worsening rash to Staff Nurse Boyle. She had another nursing colleague look at it but the colleague did not agree that it was getting worse. The monitoring by Staff Nurse Boyle indicated that his condition, though not improving, was remaining reasonably stable.

31. Between 2.30 and 2.45am Findlay's condition started to deteriorate, with a trend of increasing heart rate and falling blood pressure. At 2.45am Staff Nurse Boyle noted that his heart rate was over 200 (up from 162 on admission), that his blood pressure had dropped significantly and that he was restless and agitated. She was particularly concerned about the drop in blood pressure. She asked Dr Ofei to review him and mentioned the drop in blood pressure. She also suggested that he contact Dr Sengupta.

32. Dr Ofei reviewed Findlay between 2.45 and 3am. He noted the significant drop in blood pressure. He agreed that Findlay's condition had deteriorated and noted that Mr & Mrs Roxburgh were of the same view. The fresh frozen plasma ("FFP") which had been ordered at around 1.10am had still not arrived from Crosshouse Hospital. He phoned Dr Sengupta just before 3am to advise her of the deterioration.

33. When Dr Ofei phoned Dr Sengupta, he woke her from sleep in the on-call room in Crosshouse Hospital. He discussed Findlay's condition and mentioned the drop in blood pressure. For

reasons which are not clear, there was a breakdown in communication and Dr Sengupta did not pick up on the fact that his blood pressure had dropped and that there had been a significant deterioration. As far as she was concerned, the blood pressure figure was not mentioned. She should have asked about it in order to be able to make a fully informed assessment but omitted to do so. Had she become aware of the drop in blood pressure she would have instructed the administration of a further fluid bolus and, if there was no improvement, the infusion of a drug dopamine which is designed to stimulate the heart and improve blood flow to organs, would have let Dr Staines know and would have returned to Ayr Hospital immediately. As it was, she simply instructed Dr Ofei to administer the FFP when it arrived and to keep her informed. Dr Ofei was not sufficiently experienced in paediatrics to realise that this was an inadequate response.

34. At around 3pm Findlay was re-assessed using the Glasgow meningococcal septicaemia prognostic scoring system. His score was 7, which was an increase of 3 from the previous score. This indicated a significant deterioration and that a transfer toYorkhill might be appropriate.

35. The FFP arrived shortly before 3.15am. Dr Ofei immediately started to administer it by intravenous infusion. It was anticipated that this infusion would run over a period of one hour.

36. At around 3.40am Dr Ofei remained concerned about Findlay's condition. The FFP did not appear to be making any difference. Findlay's breathing was more laboured, his heart rate remained around 200 but was so high as to be difficult to count, his temperature had increased and his rash was more widespread. He phoned Dr Sengupta. On this occasion she became fully aware of the serious nature of Findlay's condition and, in her words, was "really alarmed". She said that she would return to Ayr Hospital immediately.

37. Findlay's condition continued to deteriorate. At 4.15am Staff Nurse Boyle noted that his blood pressure continued to drop, that peripheral circulation was poor, that his rash was worsening, that the administration of the FFP was almost complete and that they were awaiting Dr Sengupta.

38. Dr Sengupta arrived shortly after 4.15am. On examining Findlay she noted that his condition had deteriorated over the previous 1 to 2 hours to the extent that he was now much worse. His heart rate was between 190 and 220 per minute, his blood pressure had dropped, his temperature had increased to 39 degrees, he was very irritable, he was becoming unresponsive, his rash was

more widespread, his feet and peripheries were cold (indicating poor circulation) and his breathing was laboured. She was "extremely worried" about him and about his rapid deterioration. She told Mr and Mrs Roxburgh that she would arrange for his transfer to Yorkhill after discussion with Dr Staines. She phoned Dr Staines at about 4.30am. He advised her to contact Yorkhill for advice on management and transfer of Findlay to a paediatric intensive care bed there and to contact the local anaesthetist to provide support for Findlay pending transfer. He said that he would return immediately. She phoned Yorkhill and they agreed to arrange a transfer by ambulance.

39. At around 5am Yorkhill phoned back to say that it would be another hour before the transfer team arrived. They suggested that in the meantime Findlay should receive another fluid bolus and an infusion of dopamine. Another fluid bolus was administered and thereafter dopamine infusion was started.

40. Around the same time Dr Sengupta phoned the on-call anaesthetist, Dr Constance Jewitt, who agreed to attend to stabilise Findlay and prepare him for the transfer. Dr Jewitt was a staff grade anaesthetist with over 25 years' experience in anaesthetics. She was on a 24-hour shift which involved an overnight period on call. When contacted by Dr Sengupta she was asleep in the on-call room at Ayr Hospital, this being located adjacent to the intensive care unit. As she was not a specialist paediatric anaesthetist she contacted the on-call consultant anaesthetist, Dr David Ryan, who was at home. Dr Ryan said he would attend.

41. Dr Staines arrived just after 5am. He noted that there had been a marked deterioration in Findlay's condition over the past 2 hours or so to the extent that he was now in a very poor condition, that he was increasingly unresponsive, that his rash was becoming progressively more confluent, that his heart rate was up to the extent that it was difficult to measure, that his blood pressure was falling and that his breathing was laboured. He agreed that transfer to Yorkhill was appropriate.

42. Dr Jewitt, the staff grade anaesthetist, arrived just after Dr Staines, this being within about 5 minutes of the phone call to her. As the transfer team were not due for another hour and as Findlay was extremely ill, she and Dr Staines decided to transfer him to the general intensive care unit in Ayr Hospital for preparation for transfer.

43. Prior to Findlay's transfer to the intensive care unit, Dr Staines took Mr and Mrs Roxburgh into a side room and spoke to them about Findlay's condition. He told them that Findlay had deteriorated, that he needed more care than they could give him in Ayr Hospital and that he was therefore being transferred to Yorkhill.

44. Findlay arrived in the intensive care unit at 5.30am, by which time he was apparently unconscious. Dr Ryan, the consultant anaesthetist, was already there. After sedating him, Dr Ryan intubated him by inserting a tracheal tube and started to support his breathing with a ventilator. This was a necessary preliminary to any transfer. Dr Jewitt tried to insert a cannula into an artery at his wrist but did not manage to do so, partly because of the extensive rash and associated swelling and partly because his pulse was so faint that it was difficult to detect an artery. Dr Staines arrived, having spoken with Mr & Mrs Roxburgh, and they arrived shortly afterwards.

45. At 6.17am Findlay suffered a cardiac arrest. Drs Staines and Ryan began resuscitation attempts.

46. At 6.30am the paediatric transfer team from Yorkhill arrived. They did not become involved as they considered that everything which could be done was being done.

47. Resuscitation attempts were unsuccessful and were abandoned at 6.35am, when Findlay died.

48. Dr Staines certified the cause of death as meningococcal septicaemia.

49. Mr and Mrs Roxburgh consented to a post mortem examination and this was carried out on 2 March 2005 at Crosshouse Hospital by Dr Edwin Nairn, Consultant Pathologist. The cause of death was established as (1) meningococcal septicaemia and (2) bilateral adrenal infarction. There was no evidence of meningitis.

50. Adrenal infarction is a recognised complication of meningococcal septicaemia and involves irreparable damage to adrenal tissue. The adrenal glands have various functions, one of which is to produce hormones essential to maintain blood pressure.

THE DETERMINATIONS

51. In the course of a fatal accident inquiry there may be extensive investigation of the circumstances surrounding a death and this may be helpful in ventilating the facts. When it comes to a determination however, a sheriff is bound by the remit set out in section 6(1) of the Fatal Accidents and Sudden Deaths Inquiry (Scotland) Act 1976 to make a determination setting out "the following circumstances of the death so far as they have been established to his satisfaction -

(a) where and when the death and any accident resulting in the death took place;

(b) the cause or causes of such death and any accident resulting in the death;

(c) the reasonable precautions, if any, whereby the death and any accident resulting in the death might have been avoided;

(d) the defects, if any, in any system of working which contributed to the death or any accident resulting in the death; and

(e) any other facts which are relevant to the circumstances of the death."

There is no power to make a determination about any other matter. As explained by Lord President Hope in *Black v Scott Lithgow Ltd* 1990 S.L.T 612 at p.615 H-J,

"There is no power in this section to make a finding as to fault or to apportion blame…It is plain that the function of the sheriff at a fatal accident inquiry is different from that which he is required to perform at a proof in a civil action to recover damages. His examination and analysis of the evidence is conducted with a view only to setting out in his determination the circumstances to which the subsection refers, in so far as this can be done to his satisfaction. He has before him no record or other written pleading, there is no claim of damages by anyone and there are no grounds of fault upon which his decision is required."

Similarly, Sheriff Principal Mowat, in a note appended to his determination following the Lockerbie inquiry, stated that

"It is generally recognised that such an inquiry is not the proper forum for the determination of questions of civil or criminal liability. This was reaffirmed in the case of *Black v Scott Lithgow Ltd.* The reasons for such a decision are clear. In a criminal case, or in a civil action based on delict, the accused or the defender is given full notice of the allegations against him either in the form of an indictment or by the written pleadings. In the vast majority of cases he is entitled to hear all the evidence against him before putting forward his defence. In a fatal accident inquiry no such notice is given and the bulk of the evidence, indeed in most cases all the evidence, is led by the Crown with a view to eliciting the facts of the situation surrounding the death or deaths. It is true that one of the purposes of the inquiry is to ascertain the facts in such

a way as to enable the relatives of the deceased to consider whether they provide the basis for a civil action but it is not for the presiding sheriff to make a judgement on that question in his determination…It is clear that in some cases a statement that a reasonable precaution might have prevented the deaths carries with it the implication that a certain person or organisation owed a duty to take that precaution and so was negligent. The same situation applies even more clearly to a finding under sub-paragraph (d). It is for that reason, it seems to me, that section 6(5) of the Act provides that the sheriff's determination in a fatal accident inquiry may not be founded on in any other judicial proceedings. In that situation I have come to the view that any finding under section 6(1)(c) should avoid, so far as possible, any connotation of negligence. Accordingly it should not contain any indication as to whether any person was under a duty either at common law or under statute to take the precaution identified in the finding."

52. A sheriff at a fatal accident inquiry has accordingly to bear in mind that fatal accident inquiries are not designed to determine questions of fault or blame and should avoid expressing an opinion on these matters.

53. I have made determinations in terms of section 6(1)(a) of the 1976 Act as to where and when Findlay's death took place and in terms of section 6(1)(b) as to the cause of his death. These are formal and uncontroversial matters. The real issue at the inquiry was whether I should make a determination in terms of section 6(1)(c) that there were "reasonable precautions" whereby Findlay's death might have been avoided.

54. As regards what falls to be regarded as a reasonable precaution in this context, given that it is not the purpose of a fatal accident inquiry to find fault or apportion blame, I am of the opinion that the purpose of a determination in terms of section 6(1)(c) is not to establish whether there was a negligent omission to take a reasonable precaution which ought to have been taken but rather to establish whether the death might have been avoided by the taking of a precaution which could reasonably have been taken. This is obviously a worthwhile aim in the public interest in that it may help to avoid a death in similar circumstances in the future. In order to achieve that purpose it is necessary to examine the whole circumstances of the death with the benefit of hindsight rather than being restricted to the perspective available at the time. It may be that some will take the view that a precaution thus identified ought to have been taken and was negligently omitted whereas others will argue a contrary view to the effect that it is only with the benefit of hindsight that the potential effect of the precaution can be appreciated. That

issue is not for the court at a fatal accident inquiry to determine and is in my opinion irrelevant to a determination in terms of section 6(1)(c).

55. That however does not alter the fact that any suggestion that a reasonable precaution could have been taken is almost inevitably investigated at an inquiry on the basis of whether it ought to have been taken, and this inquiry was no different. To a certain extent such an approach may be useful to interested parties and relevant to the aim of a full ventilation of the facts in that it may result in a better understanding of the decisions made. This approach involves considering whether a precaution could properly be regarded as reasonable in the circumstances at the time, rather than with the benefit of hindsight. The question addressed is similar to that which would arise in civil proceedings for negligence, being, in a case such as this, whether the precaution was one which an ordinarily competent clinician exercising reasonable care would have taken as being an appropriate and sensible response to a reasonably foreseeable risk. As a fatal accident inquiry is not designed to determine such a question, the court cannot express a view on this issue but it is unobjectionable to set out the relevant facts and competing arguments following investigation at the inquiry.

56. As regards the separate question in terms of section 6(1)(c) of whether "the death…. might have been avoided", this is a matter which requires in terms of that section to be "established" and is accordingly a matter of evidence, including of course expert evidence, and reasonable inferences from the evidence as opposed to speculation about remote or unlikely possibilities for which there is no evidential foundation.

57. It is helpful and probably necessary in an inquiry such as this, in order to enable the court to take an informed view of a patient's care and treatment, to have the benefit of expert opinion from a doctor who is independent in the sense that he has no connection with the relevant hospital and had no involvement in the care and treatment. The expert in this case was Dr Ishaq Abu-Arafeh, a consultant paediatrician based at Stirling Royal Infirmary, who had specialised in paediatrics for 25 years and had been a consultant paediatrician for 12 years. His experience was similar to that of Dr Staines. I was impressed by the careful and considered manner in which he gave his evidence and attached considerable weight to it. He had examined all aspects of Findlay's care and treatment and it is worthwhile briefly setting out his views.

58. He considered that the ambulance response to the 999 call made by Mr Roxburgh and the management of Findlay prior to his arrival at Ayr Hospital were of a high standard and that

there was appropriate assessment, appropriate treatment with antibiotics and oxygen and appropriate monitoring. I accepted that view.

59. In relation to Dr Ofei's assessment and management of Findlay in the Accident and Emergency Department between 11.30 and 12pm, he commented that he followed the appropriate assessment procedure, started appropriate treatment without delay, informed Dr Sengupta of the admission and transferred Findlay to the paediatric ward where expert nursing care was available. He described Dr Ofei's performance in these tasks as "exemplary". Again I accepted that view.

60. In relation to what happened between 12pm and around 1.30am when Drs Staines and Sengupta left, this was in his opinion largely unexceptional. He noted that Drs Staines and Sengupta assessed Findlay, confirmed the diagnosis of meningococcal septicaemia and confirmed that the treatment and monitoring was appropriate. He also noted that Drs Staines and Eynaud agreed that the blood coagulation abnormality should be corrected by a transfusion of fresh frozen plasma ("FFP") which was ordered at around 1.10am and was expected to be available about an hour later.

61. There was an issue as why the FFP did not become available until 3.15am, a delay of some two hours. There was no explanation in evidence as to why this delay occurred and no suggestion of any reasonable precaution which might have avoided the delay. It is however appropriate to consider the evidence led about this matter as there was understandable concern as to whether the earlier administration of the FFP would have made any significant difference.

62. The FFP was ordered for the specific purpose of remedying the deficiency of clotting factors in the blood. Dr Staines explained that this illness can result in blood starting to clot very slightly within the blood vessels, that this process uses up coagulating or clotting factors, that if bleeding starts such a deficiency could result in uncontrolled haemorrhaging and that the deficiency therefore requires to be corrected. Dr Abu-Arafeh mentioned that FFP may help to improve circulation if there is active bleeding but not otherwise and that if the purpose in using plasma is to improve circulation, another substance known as PPS, which is more readily available, can be used. That however was not the purpose here.

63. As regards the delay, Dr Abu-Arafeh explained that FFP cannot simply be picked up off the shelf. It has to be matched with the patient's blood group by analysing a blood sample from the

patient and as it is frozen, it has to be thawed. Thawing rather than warming is necessary in order to preserve the effectiveness of the proteins. He said that a delay of around an hour before availability for use was inevitable. As regards the delay of two hours which occurred in this case, he said that he did not think that this would make a big impact one way or another.

64. There was no evidence of any connection between the adrenal infarction, one of the causes of death, and the coagulation problem, except that both were caused by this illness. There was also no evidence that the FFP would have prevented the adrenal infarction.

65. There was no other evidence to suggest that the delay in administering the FFP had any significant impact. Accordingly there was no basis on which it could be concluded that the earlier administration of FFP would have improved Findlay's condition. It may not be without significance then when it was eventually administered it made no apparent difference.

66. There was then the issue of whether it was appropriate for Drs Staines and Sengupta to leave Ayr Hospital at about 1.30am, which was one of the main issues at the inquiry. If either had remained it would have been Dr Sengupta as the middle grade doctor, with Dr Staines being available elsewhere on call. The issue was not whether she should have remained at Findlay's bedside but whether she should have remained in the hospital, even if asleep in the on-call room, so as to be immediately available if and when required. In relation to availability while asleep, it was noteworthy that the anaesthetist Dr Jewitt who was sleeping in the on-call room was available within 5 minutes of being called. The question accordingly was whether it would have been a reasonable precaution for Dr Sengupta to have remained at Ayr Hospital.

67. If this question is addressed in the context of a possible determination in terms of section 6(1)(c) and with the benefit of hindsight, which as previously indicated I consider to be the correct approach, the answer is plainly yes. This was a precaution which could reasonably and readily have been taken as there was no need for Dr Sengupta to leave and she would then have been immediately available when Findlay started to deteriorate. This retrospective view was not challenged at the inquiry by Dr Staines in that he accepted that with the benefit of hindsight the conclusion could be drawn that it would have been prudent for Dr Sengupta to have remained to see how things developed.

68. This issue was however, as I have indicated, examined at the inquiry on the basis of whether this precaution should have been perceived at the time as a reasonable precaution which ought

to be taken. Dr Abu-Arafeh was asked for his view. He said that at the time Drs Staines and Sengupta left, Findlay was stable and that it was probably a reasonable decision to leave Dr Ofei in charge on the basis that he would contact them if Findlay's condition deteriorated. He commented that Dr Staines may have considered that Dr Ofei was as reliable as a middle-grade doctor. He did not therefore support the suggestion that the continuing presence of Dr Sengupta was a precaution which ought to have been taken. Given the significance of this matter however, it is appropriate to consider it further.

69. Responsibility for the decision as to whether Dr Sengupta should remain at Ayr Hospital lay with Dr Staines. He said in evidence that if he had assessed Findlay as needing Dr Sengupta's continuing expertise he would not have hesitated in instructing her to remain. This was a clinical decision made on the basis of his assessment of the circumstances at the time.

70. This decision has to be considered from Dr Staines' perspective at the time. At around 1.30am Dr Sengupta had been there for around 1½ hours and he had been there for 1 hour. They were both satisfied with how Findlay was being treated, supported and monitored and though they had provided some limited assistance, with Dr Sengupta instructing the administration of a further fluid bolus and Dr Staines instructing the administration of fresh frozen plasma, there was nothing further they could usefully do at that time. Findlay's condition was stable and there had been some signs of improvement. There was nothing to suggest the need for a transfer to Yorkhill and in particular the Glasgow meningococcal prognostic score had reduced from 5 to 4, which suggested a decreased likelihood of transfer. Even during the day they would have left and gone about other duties, possibly at a different hospital. Their further involvement would of course be required if Findlay's condition deteriorated but provision was made for this in that the one-to-one monitoring by Staff Nurse Boyle and the continuing supervision by Dr Ofei were designed to ensure that any deterioration was quickly identified – in Dr Staines words he was leaving Findlay "under eyes which were expert enough to recognise any deterioration" - and Dr Ofei had clear instructions to contact them in the event of deterioration. Dr Ofei, although inexperienced in paediatrics, was an experienced and skilled clinician and Dr Staines was entirely confident that he would both alert them to any deterioration and competently carry out any instructions given pending their return. (It is perhaps noteworthy in relation to Dr Ofei's skill and expertise that by the end of 2005 he had been promoted to consultant in Accident and Emergency.) This was what Dr Staines anticipated happening and he was of course proved right about Dr Ofei recognising a deterioration, which he did at around 2.45am, and making contact,

which he did by phoning Dr Sengupta shortly before 3am. Dr Staines could not have anticipated the breakdown in communication which occurred during that phone call.

71. As regards any criticism that Drs Sengupta and Staines, having returned to their original on-call locations at Crosshouse Hospital and home respectively, went back to sleep, although neither made anything of it at the inquiry it is only fair to recognise that they had both worked a full day shift on 28 February and after being on call overnight would require to be fit for duty the following day. That almost inevitably necessitated some sleep and it was in the interest of their current and future patients that they should sleep when not required. The question was not what they were doing when not required but how readily they could intervene if they were.

72. Having set out this matter from Dr Staines' perspective, it is only right to set out the arguments to the effect that the precaution of Dr Sengupta remaining at Ayr Hospital should have been perceived at the time as a reasonable precaution which ought to be taken. These are as follows -

(a) Meningococcal septicaemia is a very dangerous disease with a high risk of mortality. That was emphasised by the various clinicians who gave evidence and by what happened in this case, in that an apparently healthy child died within about 18 hours of appearing mildly unwell. The first 24 hours after admission to hospital are critical as there is a risk of rapid deterioration, which calls for rapid intervention. Rapid and appropriate intervention in this case was dependant upon rapid and well-informed assessment by Dr Sengupta. If she was not present such assessment would be dependant upon the timely communication of comprehensive and accurate information by Dr Ofei. It was at least questionable whether such remote assessment would be as satisfactory as her own personal assessment. It was also possible that due to this difficulty she might wish to assess Findlay herself and that such assessment would be delayed pending her return.

(b) In the absence of Dr Sengupta, too much responsibility was placed upon Dr Ofei. Dr Staines indicated in evidence that Dr Ofei's previous experience and clinical acumen were significant factors in his decision that Dr Sengupta need not remain and that if it had been a less experienced senior house officer his decision may have been different. Dr Ofei however was new to paediatrics and was specifically there because of that gap in his knowledge. He had never previously treated a child suffering from this dangerous disease. It was questionable whether it was appropriate that someone with so little relevant expertise should be left in sole charge of such a patient as there was a risk that he would miss something which would be picked up by an experienced paediatrician or that he would not fully appreciate the significance of a change in condition. It was not unlikely that he would be conscious of his lack of relevant

experience and be reluctant to express an opinion such as might usefully supplement the available factual information. He indicated in evidence that when communicating with Dr Sengupta he saw it as his function simply to pass on information rather than to express an opinion, leaving it to her to decide on an appropriate response and in particular whether she should return. When he phoned Dr Sengupta at 3am he did not even by implication express an opinion and although "very concerned" did not convey any such impression to her and she did not detect any sense of alarm. He also did not have the expertise to appreciate that her response was inadequate. Had Dr Sengupta been readily available, Dr Ofei's appreciation of the significance of the deterioration and of the need for intervention would not have been an issue but in her absence it was.

(c) One of the possible responses to deterioration was a decision to transfer to Yorkhill. This was a difficult decision, usually made at consultant level, and was likely to require a skilled re-assessment by Dr Sengupta. If she was not present, this could be delayed pending her return. That was what in fact happened after the phone call at 3.40am in that Dr Sengupta returned to Ayr Hospital to assess Findlay and did not contact Dr Staines in relation to a transfer until about 4.30am.

(d) Dr Ofei's responsibilities in relation to other patients throughout the night meant that there was a risk that at the point of deterioration he would not be immediately available.

(e) There was no good reason as to why this simple precaution could not be taken.

73. As I have indicated, I am not expressing any opinion on this issue of whether the precaution of Dr Sengupta remaining at Ayr Hospital was one which ought to have been taken as a fatal accident inquiry is not designed to determine such an issue. I simply proceed on the basis that, with the benefit of hindsight, this was a reasonable precaution. The question then is whether this reasonable precaution might have avoided Findlay's death.

74. Before considering that matter, it is appropriate to comment on the phone call by Dr Ofei to Dr Sengupta at around 3am. There was conflicting evidence as to what was said in that phone call. It had come about as a result of Staff Nurse Boyle alerting Dr Ofei to Findlay's deteriorating condition and in particular to the drop in blood pressure. Having satisfied himself about the deterioration, Dr Ofei was in turn alerting Dr Sengupta in accordance with his earlier instructions. Dr Ofei said in evidence that when making this call he had Findlay's medical records with him and that he provided all the relevant monitoring information from these records, including the information about the drop in blood pressure. He said that he had been aware that this detailed information would be required by Dr Sengupta and that the medical

records were necessary in order that he could provide it. Dr Sengupta on the other hand said that the blood pressure information was not provided and that if it had been, she would have acted very differently. She accepted that she should have asked for this information and that this was an omission on her part. There was nothing to suggest that she had deliberately disregarded her responsibilities in this matter and she appeared to me to be giving an honest account of her understanding of what was said. Neither did I doubt Dr Ofei's evidence. Accordingly it appeared that there had simply been a breakdown in communication, though the reason for that was not clear. The most likely explanation was that Dr Sengupta was not fully alert at the time of the phone call, having just been woken from sleep. This would also explain why she omitted to ask for the information. That is perhaps one of the hazards of relying on a clinician to make an assessment of a patient on the basis of detailed information provided immediately on being woken from sleep.

75. Reverting to the issue of whether the precaution of Dr Sengupta's continuing presence at Ayr Hospital would have avoided Findlay's death, had Dr Sengupta been present at around 2.45am she would have noticed the deterioration then occurring. She said in evidence that in the light of that deterioration she would have contacted Dr Staines at around that time with a view to his authorising a transfer to Yorkhill. Dr Staines suggested in evidence that a decision to transfer may not have been taken until around 3.40am. Even however if it had been taken as early as 2.45am, there would still have been the delay pending the arrival of the transfer team from Yorkhill. As regards the length of that delay, when contacted at 4.30am they did not arrive until 6.25am and there was no reason to believe that the delay would have been any shorter if they had been contacted at 2.45am. If so, they would have arrived at 4.40am.

76. There was an issue as to whether Yorkhill should have been involved much earlier. In particular Mr & Mrs Roxburgh questioned why Findlay had not been transferred to Yorkhill immediately upon his arrival at Ayr Hospital, believing that this would have given him the best chance of survival. As indicated in the findings in fact however, most children suffering from this disease are treated in a local hospital and a transfer to Yorkhill is only made if it is clear that a higher level of care than can be provided locally is required. Up to the point when Drs Staines and Sengupta left Ayr Hospital at around 1.30am it did not appear that a transfer could have been justified or would have been accepted by Yorkhill, given that Findlay appeared to be stable and responding to treatment. There were also the Glasgow meningococcal septicaemia prognostic scores of 5 at 12.30am and 4 at around 1.30am, which fell far short of the figure of 8 which

would have suggested that a transfer was appropriate. Dr Abu-Arafeh described the decision not to transfer up until 1.30am as reasonable and I accepted this evidence.

77. Had the Yorkhill team arrived at 4.40am, the question is what they would have done. It appeared that their intervention would have resulted in Findlay receiving a higher level of monitoring and intensive care nursing support than could be provided by Ayr Hospital. This could have occurred immediately on their arrival and prior to any transfer. It was indicated in evidence that they may have remained for several hours with Findlay at Ayr Hospital if he had not been sufficiently stable for transfer.

78. The question then is whether such intervention would have avoided Findlay's death. This question had obviously been carefully considered by Dr Abu-Arafeh in anticipation of his being asked for a view at the inquiry and he was examined at length upon it. Ultimately his position was that he was unable to say that Findlay could have survived this illness if he had been treated differently. In relation to the intervention of the Yorkhill team, he was asked by the Procurator Fiscal whether there was a "real and lively possibility" (reflecting the terminology used in Carmichael on Sudden Deaths and Fatal Accident Inquiries, 3rd edition, at para. 5-75) of saving Findlay, even as early as 2.30am. This question was apparently based on a suggestion by Dr Abu-Arafeh that it may have been appropriate for arrangements for transfer to have been started that early but did not take account of the time it would have taken for the Yorkhill team to arrive. He replied that it was impossible to say yes. He could not identify anything which could have been done to prevent the death. He did not suggest any better treatment than the administration of the antibiotics given to Findlay to kill the bacteria which were poisoning his bloodstream. He talked about the early signs of circulatory collapse, the early unsuccessful attempts to improve circulation by the administration of two fluid boluses, the lack of any sustained response to treatment, various other poor prognostic signs within the first two hours of admission, the drop in blood pressure around 2.45am and the further significant drop in blood pressure at 4am. He said that a drop in blood pressure such as there was at 4am is usually a very late event in an illness and that it was "very, very unlikely" that Findlay could have been resuscitated. At one point in his evidence he said that Findlay would "probably" have had a better chance of survival with the expert care of the Yorkhill team but specifically qualified this remark by saying that it could not be known for how long he would have survived and suggested the possibility of survival for another couple of days. The clear impression from his careful and considered evidence was that he did not think that Findlay's death could have been avoided, whatever had been done.

79. There was no other evidence to justify a different conclusion being drawn. Dr Ryan commented on the period of relative stability until around 2.30am and the commencement of a fatal deterioration thereafter, coinciding with the drop in blood pressure. Dr Staines commented on the speed of the deterioration and expressed the view that by the time it became apparent at around 2.45am it was unstoppable. He said that this view was based on his own previous experience and was supported by the views of colleagues. There was comment about the bilateral adrenal infarction, which was one of the causes of death, and opinion to the effect that this condition, if not inevitably fatal, significantly increased the risk of fatality. Drs Ryan and Abu-Arefeh suggested that the adrenal infarction may have occurred at around 2.45am or even earlier.

80. Accordingly I was not satisfied that it had been established that Findlay's death might have been avoided, even with the higher level of care resulting from the intervention of the Yorkhill team. It followed that I was not satisfied that it had been established that the reasonable precaution of Dr Sengupta's continuing presence at Ayr Hospital might have avoided the death and that I was not therefore in a position to make any determination to that effect in terms of section 6(1)(c) of the 1976 Act.

81. In terms of section 6(1)(d) of the 1976 Act I am required to set out, so far as established to my satisfaction, "the defects, if any, in any system of working which contributed to the death". There was no suggestion of such defects and I have made no such determination.

82. In terms of section 6(1)(e) of the 1976 Act I am required to set out, so far as established to my satisfaction, "any other facts which are relevant to the circumstances of the death". I have already set out, as findings in fact, the relevant facts in respect of the circumstances of the death and that might be regarded as satisfying this requirement. It is however common practice to make a specific determination in terms of this subsection where there are particular facts which it is appropriate to highlight in the public interest. Such facts may for example relate to risks associated with certain activities, poor working practices or defects in procedures and a determination covering these matters may usefully highlight the need for precautions or for improvements to practices and procedures. Such a determination acts as a warning, with it being left to others to decide on appropriate action in response. In certain circumstances the court may feel it appropriate to go further and recommend appropriate action, particularly where there has been persuasive evidence on the matter, but such a recommendation is no more than that as there is no power in section 6(1) to require anyone to take action. A determination in terms of

section 6(1)(e) may thus be used to highlight the need for change and provides a means of ensuring that significant matters of public interest which have been canvassed at an inquiry are not thereafter overlooked and disregarded.

83. In relation to a death in medical care, the court has to be cautious about recommending changes to practices and procedures as an inquiry is not designed to determine best practice and does not usually have the benefit of a range of views from clinicians, nurses, managers and other interested parties such as might be derived from a process of consultation.

84. I did not consider it appropriate in this case to make a determination of this nature in terms of section 6(1)(e), largely because changes to the provision of paediatric care have already been made and work is currently in progress with a view to further improvement in the quality of care.

85. In particular, paediatric care is now centralised in the larger hospitals throughout Scotland. In Ayrshire it is centralised in Crosshouse Hospital and a child in Findlay's condition would now be taken there rather than to Ayr Hospital. One of the main advantages of centralisation is that limited resources are concentrated at one site rather than being dispersed over a number of sites and the higher throughput of patients results in a higher level of experience and expertise. Such centralisation enables a middle grade doctor to be continually and immediately available rather than being elsewhere at the end of a phone. It also reduces the reliance on services provided by a remote hospital, such as the supply of FFP by Crosshouse Hospital in this case.

86. As regards further improvement in the quality of care, it was indicated at the inquiry that a group led by the Royal College of Physicians in Edinburgh is looking at a range of common diseases and identifying and disseminating best practice in relation to care and treatment. They started work in respect of meningococcal disease earlier this year and anticipate completing it by the end of this year. The aim is to develop a consensus statement or protocol, based on past experience and expertise, as to how this disease is best diagnosed and treated and thus achieve a consistently high standard of care and treatment. As regards the question of transfer to Yorkhill, the expert medical view remains that it is unnecessary for all children with this disease to be treated there but it is anticipated that the recommended practice will be for Yorkhill to be contacted at an early stage so that there will be greater use of their expertise, in particular to inform the continuing process of assessing whether a child needs be transferred there.

THE PARENTS' PERSPECTIVE

87. I am conscious that this objective analysis of the evidence for the purposes specified in the 1976 Act does not adequately reflect the experience of Mr & Mrs Roxburgh and I think it only fair to record various concerns they had during Findlay's time in hospital and which made this a difficult experience for them.

88. When Drs Staines and Sengupta left Ayr Hospital at about 1.30am, Mr and Mrs Roxburgh did not appreciate that they were leaving and thought that they were simply going to be working elsewhere within it. Neither reappeared until just after 4.15am. During the intervening period of 1 hour 45 minutes there was a dramatic deterioration in Findlay's condition. Until about 2.45am Mr & Mrs Roxburgh were concerned that Findlay's condition was not improving and that his rash was getting worse. At around 2.45am it became obvious that he was deteriorating and Dr Ofei confirmed this. It was not clear when Mr & Mrs Roxburgh became aware that Drs Staines and Sengupta were no longer in the hospital, this being something they learnt from Staff Nurse Boyle, but as time went on and Findlay continued to deteriorate they could not understand why they were not returning as Findlay was clearly and increasingly needing their attention. They were increasingly expressing their concern to Staff Nurse Boyle. Mr Roxburgh spoke about them shouting about why a doctor was not there. Mrs Roxburgh spoke about being "raging" at the lack of attention and insisting to Staff Nurse Boyle that Findlay needed help. Staff Nurse Boyle was of course simply complying with instructions on Findlay's care and treatment and Mrs Roxburgh said that she did not know whether to be angry at or sorry for her. Staff Nurse Boyle confirmed that Mr & Mrs Roxburgh were very concerned about the absence of Drs Staines and Sengupta and said that by the time they were awaiting the return of Dr Sengupta after the phone call at 3.40am they were "very distressed". When Dr Sengupta did return shortly after 4.15am Mrs Roxburgh held onto her and demanded to know where she had been, which indicated the strength of her feelings. It is entirely understandable that Mr & Mrs Roxburgh should have felt as they did.

89. A further concern which Mr & Mrs Roxburgh had during this period was that nothing was being done about transferring Findlay to Yorkhill. Before leaving Ayr Hospital, Dr Staines had told them that if Findlay's condition deteriorated he might have to be transferred to Yorkhill. Dr Staines said in evidence that parents in these circumstances tend to misunderstand information unless it is conveyed in simple and straightforward terms. Accordingly he simply flagged up the possibility of transfer and did not explain that this was likely to be a difficult decision which

would depend upon further assessment and consideration of the various risks involved. It was entirely reasonable for him to do this but the problem was that Mr and Mrs Roxburgh were left with the impression that if there was any deterioration, Findlay would require to be transferred to Yorkhill and that a failure to make this transfer would increase the risk that he would succumb to his illness. Their initial understanding about this matter may not have been a problem if further explanation had been given as time progressed but that of course did not happen. As Findlay's condition deteriorated they became increasingly anxious that the anticipated and apparently necessary transfer was not occurring and that no one was even considering it.

90. During the period between the ordering of the fresh frozen plasma at around 1.30am and its arrival at around 3.15am, Mr & Mrs Roxburgh were aware that it had been decided that it should be administered and that its delivery was awaited. They could not understand the reason for the delay and were asking about it but no one seemed to know when it would be arriving. They were becoming increasingly anxious that this apparently necessary treatment was being delayed.

91. While Drs Staines and Sengupta were absent there were problems with monitoring machines. Readings could not be obtained from one machine, that was swapped with another machine but readings could still not be obtained and then a third machine was ordered from another part of the hospital but still no readings could be obtained. It was not clear from the evidence what the precise difficulty was though there was evidence that Findlay's hands and feet were becoming so cold due to poor circulation that it was becoming increasingly difficult to obtain readings from devices attached to them. Mr & Mrs Roxburgh's impression from the changing of the machines was that the use of defective equipment was resulting in inadequate monitoring. That added to their anxiety.

92. Mr and Mrs Roxburgh were concerned about Findlay being in pain and about nothing being done to relieve it. Mrs Roxburgh spoke of her son "dying in agony" and said that he was "in so much pain" and was "writhing in agony". Mr Roxburgh spoke of him "thrashing about in pain". They asked at the time why he was not being given pain relief but there was no satisfactory explanation. He did in fact receive some mild analgesia in the form of paracetamol and ibuprofen which were administered to reduce temperature and should have provided some pain relief. There was no apparent reason as to why he could not have been given further pain relief if required, though Dr Abu-Arafeh commented that care has to be taken to ensure that

symptoms are not masked by powerful analgesics. As Mr & Mrs Roxburgh perceived it at the time, this distressing matter was simply not being addressed.

93. Shortly after Dr Staines returned to the hospital at 5am he took Mr & Mrs Roxburgh into a side room to discuss Findlay's condition and while that was happening Findlay was transferred to the intensive care unit in Ayr Hospital. When Mr & Mrs Roxburgh emerged from the side room they did not know where he was and were left standing in a corridor for some minutes, becoming upset and angry, before Mrs Roxburgh shouted for assistance and Staff Nurse Boyle took them to the intensive care unit. By the time they arrived there, Findlay was obviously unconscious. They felt they had been deprived of the chance to say goodbye to him.

94. The main issue however as far as Mr & Mrs Roxburgh were concerned was that, for the various reasons previously discussed, Findlay was not transferred to Yorkhill or at least given the benefit of the Yorkhill team's expertise at Ayr Hospital. That for them meant that he was not given the best chance of survival. Even though Findlay's deterioration may have been unstoppable, it was clear that as late as 5am and beyond the medical opinion was that he could benefit from a transfer in that preparations for transfer were proceeding. It was equally clear that had Dr Sengupta remained at Ayr Hospital, this transfer would have been organised earlier and that the Yorkhill team would have arrived at a time when they would have had a chance to intervene. It is all very well and in fact necessary at an inquiry such as this for witnesses to speculate about what might have happened if things had been done differently but although such speculation may be well-informed and carefully considered it remains speculation and a degree of uncertainty is inevitable. As Dr Abu-Arafeh indicated in evidence, even though a transfer to Yorkhill may only have prolonged Findlay's survival rather than avoided his death, at least Mr & Mrs Roxburgh would then have had the reassurance of knowing that everything which could have been done for Findlay, had been done. Whatever they may have learnt from this inquiry, the fact remains that they do not have that reassurance.