THE ORAL HEARINGS IN THE INQUIRY
INTO HYPONATRAEMIA-RELATED DEATHS
BANBRIDGE COURT

Chairman: The Honourable Mr Justice O'Hara

CLAIRE ROBERTS

CLOSING SUBMISSIONS
ON BEHALF OF DR ROGER STEVENSON

Introduction

1. These closing submissions are served on behalf of Dr Roger Stevenson and deal with his involvement in the care of Claire Roberts ("Claire") in the RBHSC leading up to her tragic death on 23 October 1996. As part of its wider investigation into a series of hyponatraemia related deaths, the Inquiry will be examining his role in her treatment as part of its task to inquire into what went wrong and what lessons can be learned from these events in order to ensure, so far as possible, that they could not happen again. Needless to say, insofar as he has been able to assist, Dr Stevenson wishes to do all he can to help.

Background to Dr Stevenson's involvement.

2. At the time of these events, Dr Stevenson was a first term paediatric Senior House Officer with just under three months' experience in paediatrics, having spent the first two months working in A&E at the hospital and only about three weeks in the Allen Ward. He was the most junior SHO on the ward with comparatively little clinical experience, having done two previous six-month rotations in general and geriatric medicine. Whilst not excusing any errors made, it is not unreasonable to ask the Inquiry to keep that in mind. Outside the

relatively narrow parameters of his limited clinical experience at that stage, he would have been expected by more senior clinicians to do what he was told. One good example of this involves the medications which Dr Stevenson was asked to prescribe. As Dr Stevenson very frankly told the inquiry[1], he was told to prescribe phenytoin and midazolam to Claire without really having an understanding as to why they were said to be appropriate because the "*level of* [his] *understanding or experience*" was not high enough for him to appreciate how ill she really was, let alone to discuss it with her family.

3. Indeed, the Inquiry may already have concluded that a disturbing theme which ran right through this part of the Inquiry's evidence was the lack of direction shown by senior doctors to both junior doctors and nursing staff who were expected just to comply with instructions without really understanding them.

4. Furthermore, it may also fairly be said that Dr Stevenson was almost unique amongst those clinicians who gave evidence and who were closely involved in Claire's treatment in that he was first asked about his actions over fifteen years later when asked to make a statement for this Inquiry in December 2011. He does not even recall being told of Claire's death. He took no part in the subsequent investigation and was not contacted by the Coroner or called as a witness at the inquest. At no stage, in those intervening fifteen years has he been asked to make a statement or to recall events.

5. Without any direct recollection of these events[2], he is, therefore, in a rather different position from most other witnesses for three reasons:

[1] Transcript Day 45, 15 October 2012 page 118.
[2] Transcript Day 45, 15 October 2012 page 145

5.1. first, it really cannot be said that he should now be expected to have any recollection when first asked to think back to events fifteen years before. Others took part in the subsequent investigation and/or were asked to give evidence at the Inquest. They can or should be able to draw upon those sources of information to assist their memories now. Dr Stevenson cannot do this;

5.2. secondly, when asked questions about the level of his knowledge or familiarity with any particular condition or medication, he has no way now of being able to answer. It is quite impossible for him now to know what he knew at the time as opposed to what he may have learnt afterwards;

5.3. thirdly, he has not been involved in hospital practice since August 1998 when he was still at the bottom rung of the medical ladder, as an SHO. For many years now, he has worked in general practice in Coleraine. His spell at RBHSC was part of his rotation during training as a junior doctor. That factor is significant because, when being asked questions about his actions, he is not able to draw upon his current or even relatively recent past hospital practice in similar circumstances. He is not able to help, for example by being able to say that a particular course of action is what he would have done by reference to his invariable practice as many of those witnesses who continue to work in a hospital environment are able to do.

Dr Stevenson's part in Claire's care

6. The clinical notes reveal three errors made in the prescription of medication for Claire for which Dr Stevenson accepts that he is, at least partly, responsible:

6.1. He arranged for Claire to be given a bolus dose of phenytoin which was a little less than 50% greater than she should have had. This mistake arose because he had made a basic error of arithmetic (18 x 24 = 432, not 632 mg[3]);

6.2. The stat dose of Midazolam[4] given to Claire and which was prescribed by Dr Stevenson on Dr Webb's instructions, was based upon a rate per kilogramme which was considerably higher than was appropriate (0.5 mg/kg, rather than 0.15); and

6.3. Dr Stevenson erroneously recorded on the Cardex prescription document[5] a stat dose of 120 mg rather than the dose which was given of 12 mg.

7. The Inquiry will wish to consider how these errors came about:

7.1. Dr Stevenson accepts that the arithmetical phenytoin error must have been his and his alone. However, fortunately, according to the expert evidence (see below), it was not of such magnitude as to lead to anything other than a temporary lowering of conscious levels in an already unconscious patient;

7.2. He also accepts that he must have wrongly written 120 mg when he should have written 12 mg;

7.3. As to the Midazolam stat dose error, the Inquiry is invited to conclude that Dr Stevenson wrote and prescribed what he was told to prescribe by Dr Webb.

[3] 090-022-054
[4] 090-022-055
[5] 090-022-075

The Phenytoin arithmetical error.

8. Dr Stevenson is not able to recall how he came to make a simple arithmetical error which went unnoticed by all who looked at the notes for many years after Claire's death. Nor, of course is he able to say, by reference to his usual practice, how that error must have occurred. He does not even know whether he would have done the calculation in his head or on paper. What is clear is that nobody checked it, or, if someone did, it was not spotted at any stage until long afterwards. The evidence as to the system in place for checking medications is contained in a letter from the DLS[6] and the Inquiry heard some oral evidence. According to the DLS letter, it appears that the prescription of intravenous medication and of controlled drugs was checked by two people and all other drugs by one. Nurse McRandal's oral evidence, however, was that the process was rather less formal in practice. She said that[7]:

> "Quite often, the medical staff would have asked a nurse to double-check it with them but I honestly can't remember if that was a requirement".

If there was such a system in place then what is clear is that there was no provision on the prescription Cardex document or elsewhere to record whether and, if so, by whom, the medication was checked.

9. Crucially, in terms of the sequence of events which led to Claire's death, the expert evidence is that no lasting harm was caused by an overdose of about 50%:

[6] 302-158-001
[7] Transcript Day 49, 29 October 2012 page 50 line 7.

9.1. Professor Neville[8] concluded that, although a significant overdose which might have caused a temporary fall in conscious levels, it would not have been likely materially to have affected the outcome, nor to have had a major effect on diagnosis or management. In his oral evidence to the Inquiry[9], he said that he did not think it would have made a major difference because it seemed to have been "*tolerated reasonably*". It did not cause a cardiac side effect, the only consequence which could have followed;

9.2. Dr Scott-Jupp went further. In his report dated 11.4.11 (amended 12.6.12), he considered that the error was "irrelevant"[10]:

> "Phenytoin is a drug that is handled very differently by different individuals in an unpredictable way and therefore the stating dose suggested in the literature is somewhat arbitrary. The important thing is to check blood levels at intervals after starting medication to ensure that they are within an acceptable range. In this case this was done as appropriate and the level was acceptable and one can confidently say that this error was of no relevance."

9.3. Dr Aronson also dealt with this issue in his report. Although he attached greater importance to the phenytoin medication than others did, saying that that the overdose would have been expected to put Claire in the "*toxic range*" for the drug, leading to a longer period of time when the drug remained in her body, the most that he could say was that the overdose would have been likely to have reduced further her Glasgow coma score for a period of time. In his oral evidence, Dr Aronson could only say that the dose of phenytoin could possibly have caused the seizure at 3.30 pm but that was "*only possible, not probable*". Furthermore, he explained that

[8] 232-002-009
[9] Transcript Day 52, 1 November 2012 pages 175 to 176
[10] 234-002-006

Phenytoin is known to have caused seizures even in normal doses, a phenomenon known as "paradoxical seizures"[11].

9.4. The Inquiry is invited to conclude that, on balance, this very unfortunate error made no difference to the outcome.

Prescription sheet error – 12 mg or 120 mg

10. Although, quite properly, the Inquiry was invited to consider whether the dose recorded on the prescription sheet of 120 mg of midazolam was actually the dose given, in the end, all of the evidence suggested that Claire must have been given 12 mg (itself of course, too high) and that the 120 mg is an error of transcription on the part of Dr Stevenson when he completed (but did not sign) the prescription sheet:

10.1. All of the expert evidence on this issue made clear that if Claire had been given a dose of 120 mg of midazolam (about 30 times greater than the appropriate dose) the consequences would have been immediate, clinically obvious and dire in the extreme.

10.1.1. Dr Aronson[12] explained that such a dose would have caused "*major anaesthesia, coma, respiratory depression and possibly death*". In his oral evidence[13], he agreed that one could "*absolutely rule out*" the possibility that Claire was given 120 mg of midazolam;

[11] Transcript Day 56, 8 November 2012 page 188-89
[12] 237-002-010
[13] Transcript Day 56, 8 November 2012 page 289, line 19.

10.1.2. Professor Neville[14], having expressed doubt as to whether 120 mg was given, advised that Claire would have needed urgent transfer to ITU and preparation for ventilation because such a "*gross overdose*" would have been likely to have produced "*marked respiratory depression*" and "*reducing conscious level*". In oral evidence he put that in layman's language[15]:

> "She would have become deeply unconscious and stopped breathing … within about … ten to fifteen minutes"

10.2. If further evidence on this issue is required, the Inquiry heard that, in order for her to have been given such an overdose, she would have needed a greater number of ampoules of the drug than were available. The letter from DLS dated 11.7.12[16] makes clear that Allen Ward held a stock of one box containing 10 ampoules of midazolam. Given the strength of midazolam (10 mg in each ampoule), there would only have been enough for a dose of 100 mg even assuming that midazolam was not also being used for other patients. There is no evidence to suggest that the medication was obtained from some other part of the hospital.

11. It is submitted that the Inquiry can only reasonably conclude that this was an error of transcription on the part of Dr Stevenson as a result of which, fortunately, no harm ensued, rather than a record of a massive overdose.

[14] 232-002-010
[15] Transcript Day 52, 1 November 2012 page 180 line 11-12
[16] 302-085-001

0.5 mg of Midazolam

12. Dr Stevenson based his calculation of the correct bolus dose of Midazolam on a rate of 0.5 mg/kg. That was too high. The contemporaneous Roche sheet recommends a loading dose rate of 0.03-0.3 mg/kg. Dr Webb now claims that he believes that he intended that Claire should be given a loading dose rate of 0.15 mg/kg. On any view, the dose given was far too high. The question which the Inquiry rightly focussed on was how this overdose came about.

13. Dr Stevenson, of course, has no recollection to assist him or the Inquiry. As it now transpires, after five witness statements, Dr Webb appears now to accept that he has no recollection either. The evidence which Dr Stevenson gave was that he must have been told what base rate to apply to his calculations because he would not otherwise have known. This can only have come from Dr Webb, as he recorded in the notes. For the reasons set out below, the Inquiry is invited to accept that evidence and to reject the various versions of events given during the course of this inquiry and earlier by Dr Webb:

13.1. Dr Stevenson refers to his clinical note of the calculation[17] in his statement dated 9.11.12[18]:

> "I have, however, documented in the Clinical notes "S/B Dr Webb", before detailing the midazolam dosage calculation (Please see 090-022-055) which would indicate to me that I discussed further medication with Dr Webb in person in Allen Ward, at or about, the time this note was made. Although the relevant entry is not timed, it appears that it must have been made after the entry timed at 2.30pm (090-022-054) and before the Midazolam was administered (090-026-075).
>
> My understanding of Dr Webb's recent Statement (WS-138/3) is that he believes that he may have been contacted by a doctor by telephone about Lucy, gone to check the Midazolam dose in his room and then communicated the dose by telephone to the Ward. My normal practice

[17] 090-022-055
[18] WS-139/3 page 3

> was to document all contact with senior colleagues about a patient's care in the notes. If, therefore, I had had two separate contacts with Dr Webb about the Midazolam dose, either in person or by telephone, I would normally have made two separate entries in the notes. Based, therefore, on the notes I consider it likely that I only had one contact with Dr Webb about the Midazolam dose during the course of the afternoon of 22nd October."

13.2. The note begins with the common abbreviation "S/B" and then records Dr Webb's name. This means that Dr Webb saw Claire who, he considered, was still "in status". It is not the result of a telephone conversation, nor a record of a message passed by a third party. The Inquiry will have noted from other records that abbreviations such as "D/W" (discussed with) are commonly used in such circumstances. It is not sensible to suggest that this is not a record of a physical visit to the ward by Dr Webb some time before the prescription was given, particularly where any conscientious clinician would have been likely to have visited the patient in person given the severity of Claire's condition.

13.3. Dr Webb's evidence by the time he gave evidence to the Inquiry, was that he would have told Dr Stevenson, probably over the telephone, to give the correct dose which he now believes to have been 0.15 mg/kg and the error was not, therefore his. Dr Webb has given that account via a number of different and contradictory accounts of his involvement with Claire over the afternoon of the 22nd which should cause the Inquiry to conclude that his evidence on this issue simply cannot be relied upon:

13.3.1. In Dr Webb's initial witness statement[19], he said that he had three consultations with Claire in the afternoon (2 pm (wrongly recorded by him as 4 pm), about 3.25 pm and at 5 pm - page 3) and

[19] WS-138-1

assessed her clinical state three times (page 28). There is no suggestion of a telephone call in this statement. In response to Question 21 (on page 31), Dr Webb suggests that he was present on the Ward at or around 3.25pm;

13.3.2. In his second witness statement[20], Dr Webb says that he had been using midazolam whilst in Canada "with good results". He made no reference to having to go away and check the correct dose and to telephoning the instruction to the medical staff. He said he

> "did not have a textbook reference for intravenous Midazolam dating to 1996";

13.3.3. Before he came to make his third witness statement, the Inquiry will recall a curious exchange during questioning by Counsel to the Inquiry of Dr Stevenson on 16th October 2012[21], prior to Dr Webb giving evidence and at a time when it was not clear whether he was going to give evidence. Mr Sephton, QC (acting on behalf of Dr Webb), interrupted and, without having given any notice of his intention to do so, put to Dr Stevenson:

> Mr SEPHTON: "If I could help here: Dr Webb's recollection is that he had to go away to consult his notes that he had from Vancouver in order to find out what the midazolam doze was, do you remember that?"
>
> *A.* "No."
>
> MR SEPHTON: "He came back and said to you that, "The dose in my notes is 0.15 milligrams per kilogram"";
>
> *A.* "I don't remember that."

[20] WS-138-2 page 13
[21] Transcript Day 45 16 October 2012, page 129 et seq

13.3.4. If his Counsel was accurately setting out his instructions, Dr Webb appeared to be recalling a physical meeting between the two doctors at which the instructions were given. On the same day of the Inquiry's evidence, after Dr Stevenson had completed his evidence for the day, the Chairman raised his concerns as to this intervention. During an exchange[22] between Mr Sephton and the Chairman, Mr Sephton stated that:

> "My instructions are that Dr Webb reached the conclusion that midazolam should be prescribed. He didn't know what the appropriate dose was, so he had to go to his office to look at what the appropriate dose was in his notes that he took when he was practising, when he, Dr Webb, was practising in Vancouver. I abbreviated what should have been put. He then telephoned Dr Stevenson and told him that the appropriate stat dose was 0.15 milligrams per kilogram."

13.3.5. This is the very first reference to a telephone conversation, some sixteen years after the event. In his third witness statement which he was requested to make as a result of this intervention, Dr Webb gave some further detail of what he now recalls[23]:

> "I believe I was contacted about Claire Roberts after the seizure that she had recorded in the Nursing Notes at 3.10 on October 22nd 2012. I believe this contact was made by a Doctor but I cannot recollect by whom. I believe I suggested Midazolam as the next option for Claire but I would not have been certain of the dose and would have had to check this by reviewing papers kept in my office. I believe my communication with the Medical staff in relation to this was most likely to have been by phone as I did not attend the ward until sometime later and did not write the dose myself in Claire's notes. I cannot recall for certain the dose that I recommended but I believe this would have been a loading dose of 0.15mg/kg. I believe that this is because this was the dose recommended in the principle paper (sic) describing midazolam use in this situation at the time – Rivera R et al (Crit Care Med

[22] Transcript Day 45 16 October 2012, page 218
[23] WS-138-3 page 2

> 1993; 21(7) 991-994). There were several other shorter papers recommending a similar bolus dose".

13.3.6. Dr Webb also made clear, in that third statement, that he did visit the ward at that time (his "*second visit to the ward after 3 pm*"[24]) and that this was in response to a reported seizure. Presumably, therefore, his "recollection" at the time of making this statement was that he visited the ward some time after 3 pm and then went to check his records before calling back. However, we know that this cannot be right since it does not leave enough time for the prescription to have been recorded as being given at 3.25 pm and is contradicted by the clear evidence given by Mrs Roberts, supported by her contemporaneous note, of the time that the seizure occurred, namely, 3.25 pm[25].

13.4. When he came to give evidence, these apparent inconsistencies were put to him in detail by Leading Counsel to the Inquiry and by the Chairman[26]. Essentially, when pressed Dr Webb admitted that he could not recall what conversations had taken place and in what form. The line of questioning concluded in the following way[27]:

> 21 THE CHAIRMAN: If that's the position, doctor, why then did
> 22 you say in your third witness statement that you think
> 23 your contact was probably by phone?
>
> 24 A. Because I must have had contact –
>
> 25 THE CHAIRMAN: Yes, you did have contact. There's no doubt
> 1 you did have contact. But until that third statement,
> 2 which is the recent one, you seemed to have been working
> 3 without any clear recollection, but on the basis that

[24] WS-138/3 page 3
[25] Transcript Day 52, 31 October 2012 page 76 and 090-042-144.
[26] Transcript Day 62 3 December 2012 pages 84-89
[27] Transcript Day 62 3 December 2012 pages 88-89

4 you were probably there on the ward yourself at some
5 time soon after 3, and then that changes in the third
6 witness statement to "I probably wasn't there at some
7 time after 3, this contact was probably by phone".

8 A. And I've always had a recollection that I had some
9 conversation with a member of the medical staff by phone
10 about Claire, and I -- so that's been part of my memory
11 from the time.

12 THE CHAIRMAN: Just to spell it out because I don't want you
13 to be in any doubt about this and I want you to
14 understand the position fairly: the concern is when the
15 overprescription of drugs arose, that you have somehow
16 tried to distance yourself from that by suggesting that
17 you might not have been physically on the scene but that
18 you had done this by phone and that really, well, if
19 Dr Stevenson made a mistake in writing it down, that's
20 very regrettable but that's not what I told him.

21 A. That hasn't been my intention and I think I said it on
22 Friday that if there was a miscommunication, I was
23 partly responsible for that.

13.4.1. The Inquiry may conclude that, regrettably, Dr Webb's attempt to suggest that the instruction was given over the telephone is, indeed, an attempt to distance himself from this erroneous prescription and, perhaps to make it more likely that a misunderstanding could have arisen;

13.4.2. How does he manage now to recall this for the first time in his third witness statement, sixteen years later, if it is not a reconstruction of events to portray him in the most favourable light? How does he recall Rivera now but not mention it in his second statement[28] when he simply refers to a later article which post dated these events? Whilst it would be perfectly understandable that he might have forgotten whether he telephoned in the dosage instructions or

[28] WS-138-2 page 13

whether he did this in person, how does he now remember this when he was not able to recall this until recently? If he "always had a recollection of a telephone call" as he said in oral evidence (see above), how did he come to fail to mention this at any stage either in his earlier statements or to the Coroner? Before being able to place any reliance on what he said, the Inquiry would need to and have not had satisfactory answers to any of these questions.

13.5. Quite apart from all of these inconsistencies and contradictions, the Inquiry will wish to consider how likely it is that a consultant would consider it appropriate to pass on an instruction to prescribe a drug which required special precautions to be taken, without satisfying himself that the junior colleague was aware of the steps which should be taken to ensure that the bolus dose is administered safely. Those steps included not administering it too rapidly, not giving it as a single bolus and providing continuous monitoring of cardio-respiratory function after administration[29]. As Professor Neville explained, the consultant ought to have explained those steps to the junior medical and/or nursing staff before the drug was given[30]. The Inquiry will have noted no reference to any instruction to monitor this child after the administration of midazolam. The only reference in Dr Webb's statements is in answer to a question in his second statement[31] where he indicates that, if he had been told of the error in the dose, then he would have given instructions for Claire to be monitored for ill effects. Alarmingly, this rather suggests that Dr Webb was, even at the

[29] See Dr Aronson's report at 237-002-013
[30] Transcript Day 53, 5 November 2012 page 46
[31] WS-138-2 page 12

time of making his statement, unaware of the need for close monitoring in any event;

13.6. Furthermore, if Dr Webb's account was correct and the error was a "miscommunication" of some sort as he would now wish the Inquiry to accept, then he could not have failed to spot such an error when reviewing the notes. Not only did he have to review the notes when he saw Claire later as a matter of course, but his note[32], which is immediately below and on the same page as Dr Stevenson's note of the bolus specifically refers to the earlier "*bolus of midazolam*".

13.6.1. It is bordering on the inconceivable that a competent consultant would have failed to spot an error by his junior colleague in circumstances in which, if his recollection is correct, the rate would have been at the "*forefront of his mind*" (to use an expression used in evidence – see below) because he had to make a point of looking it up only 90 minutes before;

13.6.2. Dr Webb's explanation for overlooking this is that it was not his practice to check other clinicians' arithmetic but there was, of course, no need for him to check any arithmetic. The error appears on the face of the notes;

13.7. Moreover, if as he now claims, this is an error by a junior colleague rather than one by him, it is quite extraordinary that he failed to spot it when reviewing the notes at every stage thereafter until asked about it as part of this Inquiry, including:

[32] 090-022-055

13.7.1. in the early hours of the following morning when he came back to hospital;

13.7.2. in the next few weeks when reviewing the case notes (as presumably he did) after Claire's death; and

13.7.3. when he prepared his deposition for the Inquest[33]. Indeed, in that document, he specifically refers to the bolus dose of midazolam but, even then, fails to spot the error;

Given what had happened, it would have been quite extraordinary if he had failed to spot that a junior colleague had not done what he had told him to do shortly before. Very much more likely it is that it was he who had made the error in the first place, perhaps because he did not have or could not find the reference material to which he now claims to have referred in his office. If he was really under the impression that this was the correct dose (when it was not), that, and only that, can sensibly explain why he failed to spot it on all of these occasions.

13.8. Finally, the Inquiry will recall the evidence about giving midazolam to other patients. As often happens when witnesses are attempting to dissemble and to reconstruct events in a way which is favourable to them, answers which are given to seemingly unimportant questions return to catch them out:

13.8.1. In the course of questions about prescribing midazolam, Dr Webb indicated that he had not used it since returning from Canada[34]. He

[33] 090-053-165

accepted that this was the reason why he needed to check the dosage because it would not have been "*at the forefront of* [his] *mind*";

13.8.2. After he had completed his evidence, the Inquiry was able to discover that another patient on the ward, known as "W2", had been prescribed Midazolam by him just two days before on 20 October 1996[35].

13.8.3. Dr Webb's explanation, in his fifth statement[36], is that he was referring specifically to the use of midazolam for epilepsy.

13.9. With respect, the doctor has been caught out. There was no such qualification to the question nor in the answer. If Dr Webb had intended this, he would have said so. This was a prescription which he gave two days earlier. How does it come about that he needed to check his notes on the 22nd if he had used it on the 20th? If he was as unfamiliar with the drug as he says he was, he would have gone back to the reference books on the 20th, not the 22nd. The Inquiry has no way of knowing, of course, whether there are other examples of patients being prescribed midazolam, not a particularly common medication, by Dr Webb at about this time. If not, then it must be a remarkable coincidence that, of the few patients whose records have been examined and found to contain entries from Dr Webb, two were prescribed midazolam as a result of his recommendation.

[34] Transcript Day 61 30 November 2012 page 245 lines 17-20
[35] 150-016-005
[36] WS-138/5 page 6

14. It is submitted on Dr Stevenson's behalf that, either subconsciously or consciously, Dr Webb is giving an account of a series of events which portrays him in the best possible light and incidentally casts the blame on a junior colleague who has no recollection of events to help him. Although Dr Stevenson can put forward no positive case, other than by reference to his notes, the Inquiry is invited to reject the various accounts given by Dr Webb and to conclude that by far the most likely explanation for this error is that Dr Webb gave the wrong dose rate to Dr Stevenson who then prescribed a dose to Claire which was far too high.

The effect of the increased Midazolam dose.

15. Professor Neville deals with the likely effect of the overdose in his report[37]:

> "The overdose of 12 mg IV stat dose of midazolam at approximately 15.25 could have caused or contributed to this fall in Claire's GCS. The effect of this drug could have lasted at least 1-2 hours. There was no evidence that Claire needed this dose of medicine. It was a big dose. It likely reduced her conscious levels and therefore reduced her breathing and increased her PCO2. Therefore it was likely to have exacerbated her condition. It is possible that this medicine tipped her over to a higher PCO2 level which caused greater cerebral oedema. It is also possible that it just added to what was already happening. Most important is the failure to treat Claire's underlying condition which was treatable. The main point is that clinicians missed what was wrong with her and had slender reasons for a diagnosis of non-convulsive status epilepticus. The midazolam did not treat her underlying condition or the cerebral oedema."

16. Asked in his oral evidence whether the combination of the doses of diazepam, phenytoin and midazolam were likely to have contributed to the seizure, the Professor said that, whilst it was possible, it was:

> "<u>much more likely</u> that these [seizures] were due to low sodium levels or they were the effect of hyperextension attacks, which were not seizures"[38]
>
> *(underlining added)*

[37] 232-002-016
[38] Transcript Day 52 1 November 2012 page 177 lines 2-4.

17. Dr Aronson, in oral evidence could only say that it was possible, "*bordering on the probable*" or "*on the cusp of the balance of probability*" that the midazolam could have contributed to Claire's respiratory arrest[39].

18. In the context of the series of clinical errors which led up to Claire's death, it will be for the Inquiry to determine the extent to which Dr Webb's prescription dose error was a causal or contributory factor.

Conclusion.

19. The Inquiry has heard about a catalogue of errors leading to Claire's death against a background of a lack of direction and leadership from senior clinicians. What is striking is the extent to which junior medical and nursing staff were simply expected to carry on treating patients on the ward without any real understanding of the reasons for any particular course of treatment. Even when that treatment took a different direction, no attempt was made to explain this to those junior staff. Perhaps that explains why Mr and Mrs Roberts felt that they were not kept informed about what was happening and how ill Claire, in fact, was. Nor was there any culture of being able to question decisions or to carry out a proper review of previous treatment.

20. Tragically, Claire was misdiagnosed, then given medication which was not appropriate and, finally, her fluid intake was grossly mismanaged. If there is responsibility for those matters then it is submitted that it lies squarely with the senior medical staff responsible for her care and treatment.

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4 December 2013

[39] Transcript Day 56, 8 November 2012 page 263.

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CLOSING SUBMISSIONS
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