Consolidated report of the advisors to the Inquiry re Conor Mitchell based on the following documents:

Inquiry brief to advisers; Coroner's papers; CAGHT casenotes; RVH casenotes
DLS correspondence; Reports by Dr Bell, Dr Scott-Jupp: 4.7.13, 19.9.13, 9.10.2013.
Witness Statements: Dr Suzie Budd; Dr Chillingworth; Dr Jonathan Davis; Dr Hogan; Dr Humphrey; Dr Darrell Lowry; Dr William McCaughey; Dr Andrew Murdock; Dr Peter Sharpe; Dr Mike Smith; Dr Marian Williams; Sister Irene Brennan; Sister Cullen; Miss Bridie Foy; S/N Francis Lavery; Mr Mone; Mrs Eileen O'Rourke; Mr J Templeton

A. HISTORY

1. The brief to **Dr Scott-Jupp**, expert paediatrician, details Conor's medical history, including his final illness. His report provides a timeline from which it can be seen that Conor had been unwell for 12 days prior to admission with intermittent vomiting with diminished fluid intake, followed by drowsiness.

2. He was triaged by **Nurse Carragher** in the Emergency Department of Craigavon Hospital [088-002-021] then seen by **Dr Suzie Budd**, then staff grade doctor in Accident & Emergency, who noted he was pale with a normal pulse rate, temperature, respiration rate and blood pressure. She recorded her impression that he was dehydrated but did not record the clinical signs of that condition, apart from the comment *'Mouth dry'* nor note any estimation of the degree. [088-002-020]. In her deposition to HM Coroner, she assessed him as about 5% dehydrated. [087-029-135]. In her witness statement to the Inquiry, she states he was pale, which she interpreted as indicating poor peripheral perfusion and she believed she had assessed his capillary refill time and skin turgor as evidence of dehydration along with his dry mouth and reduced level of consciousness. [WS352/1/p5].

3. **Dr Budd** prescribed intravenous fluids and noted *'Hartmann's 220 mls'* [088-002-020]. Given that Conor weighed 22kg, this represents 10ml/kg. She states this was based on her opinion he needed a fluid bolus as *'I was concerned with his apparent rapid deterioration in the level of consciousness (as per his family) given his history of vomiting and poor oral intake'* as indicative of developing shock. She gave half the Advanced Paediatric Life Support (APLS) recommendation of 20 mls/kg, '*to give a modified/cautious fluid bolus …to prevent further deterioration to uncompensated shock'*. [WS352/1/p7]

4. It is not clear from the intake/output chart what volume of fluid he received in the first 3.5 hours (before the IV cannula ceased to function). **Dr Budd** states she ordered 220mls of Hartmann's and this was given over 40 minutes. [WS352/1/p8-9] Conor's mother and grandmother recall at least three boluses of 110mls in A&E [087-002-032, 087-004-047], which is also reported by **Dr Quinn** [087-015-086]. Conor's grandmother and **Dr Quinn** refer to more fluid being given on the admissions unit [087-004-047, 087-015-086].

5. Conor was admitted to the Medical Assessment Unit at about 1300h. **Dr Budd** states she attempted to obtain his admission to the paediatric ward *because 'he had the physiological status of an 8 year old.'* She made a note: *'Admit paeds'*. [088-020-002/WS352/1/p6] but her request was declined by the paediatric SHO, whom she then asked to discuss the issue with his consultant but the refusal was maintained. She understood hospital policy to be that children could be admitted

to the paediatric ward only until age 14. In her deposition at the Inquest she is quoted as adding that Conor's mother did not want him to be admitted to the paediatric ward as she felt paediatricians were in some way responsible for his condition. [087-029-135]

6. **Dr Quinn**, medical SHO dealt with his admission to MAU. Her diagnostic impression was of urinary tract infection. She arranged for bloods to be taken for biochemical and haematological investigation, including urea and electrolytes (U & E). [088-004-038]. In evidence to HM Coroner, she stated her last contact with Conor was at 1.45pm. She recalled prescribing 3 litres of normal saline to be given over 24 hours but, after discussion with **Dr Murdock** (medical registrar) at about 1.30 pm she changed this to 250 mls over 4 hours. [087-015-082]

7. The fluid prescription chart shows that three entries for 1 litre quantities of IV fluids had been deleted. The *'time to be commenced'* column was not properly completed, rather stating *'8 hours'*. [088-004-064]. It is unclear whether the first bag of fluid was commenced, as **Nurse Wilkinson** has signed the prescription chart [088-004-064], but the litre of normal saline has not been recorded in the intake/output chart [088-004-063].

8. The intake/output chart noted the IV infusion as having stopped at 2 pm and been reconnected at 4.10 pm.

9. **Nurse Lavery**, on duty in MAU, states that parents reported pain at the cannula site so he bleeped a doctor two or three times. He recorded the Venflon extravasation and informed **Dr Totten** about the spasms on the fluid chart [088-004-063]. **Dr Totten** attended and suggested flushing the cannula. He attended again at about 4 pm to resite the cannula. [WS 351/1/p7-8]

10. **Dr Murdock** asked **Dr Quinn** to seek advice from the paediatric team about her prescription (of 3 litres) [088-004-045] and then modified it to the 250 ml aliquots quoted above. He confirms he did not make an entry of his calculations, *'which would have been mental arithmetic.'* [WS 355/1/p9]

11. **Staff Nurse Bullas** admitted Conor to the medical admissions unit and during the course of admission noted 'spasms', which she reported to **Dr Quinn** [087-017-090]. She states that he commenced 250mls normal saline over 4 hours and was given IV Ciproxin and PR Voltarol. These medications were given at 1pm [088-004-061], but it is not clear whether the IV normal saline was commenced around the same time. The infusion prescription chart suggests that the first 250ml infusion was not given until 4.10pm, which would suggest any normal saline given prior to this was based on the initial prescription and may have been the bag signed by **Nurse Wilkinson** [088-004-064]. However, **Dr Quinn's** most recent witness statement states that none of the original prescription was given '*as confirmed by the record on the fluid balance chart*' [WS-356/1 p6]. The fluid balance chart does not indicate when this infusion was commenced [088-004-063].

12. **Nurse Bullas** reports urine taken for ward testing and sending to the lab, but the volume of urine and ward test results were not recorded in the 'output' or 'remarks' columns of the chart [088-004-063]. No output was recorded on the chart.

13. **Sister Brennan** reports reconnecting the IV fluids at 4.10pm, using the existing bag of fluid [087-021-101/104]. However, she and Nurse Wilkinson appear to have signed for setting up 250mls Normal Saline at 4.10pm [088-004-064]. This bag of fluid was not previously signed for by Nurse Bullas.

14. The entries for three consecutive infusions of 250 mls of normal saline were timed (in the column marked *'bottle'*) at 4.10 pm and there is again no entry in the *'time to be commenced'* column, but rather the time over which each is to be infused (4h, 6h, 8h respectively). [088-004-064]. There is an entry for 250 mls in the *'volume in'* column at 5 pm and again at 7.40 pm in the 'volume erected' column 'to *run for 6 hours'*. [088-004-063]

15. If the entry at 5pm means that a 250 ml infusion was started at this time, then it appears to have been completed in 2 hours 40 minutes rather than 4 hours. It might be that it was given at this rate to make up for the period of 2 hours 10 minutes when no fluids were given. If the 5pm entry of 250mls represented what was given to 5pm, another infusion should have been erected at this time, but nothing is entered in the volume erected column. It is unclear whether IV fluids were given between 5pm and 7.40pm and there is no record of fluid intake after 7.40pm.

16. At about 6.30 pm, **Nurse Wilkinson** called **Dr Murdock** to review Conor because of concern about a [transient] rash and spasms [087-023-107]. After noting his examination, **Dr Murdock** added that the family were *'requesting transfer to RVH'*. [008-004-006] **Nurse Wilkinson** reports that this request was due to the family being unhappy with **Dr Murdock's** explanation of Conor's problem. The family felt Conor was deteriorating and wanted him to be transferred [087-023-107]. **Dr Murdock** deposed at the Inquest that he briefed his consultant, **Dr McEneany**, who did not feel he needed to come in. [087-025-125] This was confirmed by **Nurse Wilkinson**, who stated that the plan was for referral to the paediatricians and an urgent chest x-ray [087-023-107, 088-004-092]. **Dr McEneaney's** statement to HM Coroner did not mention this conversation but rather that he was contacted after Conor deteriorated. [087-052-194]

17. **Dr Murdock** then contacted a paediatric SHO, **Dr Williams**. She states that she attended at about 7 pm, read Conor's notes and took a history from the family (the nursing notes record that the *'Paed Reg'* was still to arrive at 8pm [088-004-093]). While taking a history, **Dr Williams** observed a very brief seizure episode (seconds) followed by a longer episode which left him blue in colour with fixed, dilated pupils. She called for assistance, a crash team attended and resuscitation commenced. [087-034-160 to 087-035-165]. Following intubation, the nursing notes made by **Nurse Wilkinson** describe Conor as *'bubbly'* requiring suction [088-004-093]. There was no resuscitation record in Conor's case notes. was transferred to intensive care via CT scanning and thence to RBHSC, where he sadly died

B. Fluid management

18. Expert reports in this and previous cases examined by the Inquiry make it clear that fluid management includes:

    a) Clinical estimation of the degree of dehydration, if any.

    b) Where dehydration is suspected, laboratory measurement of urea, electrolytes, haematocrit and urinary electrolytes.

    c) Where circulation is compromised ('shock') urgent rapid resuscitation with 10-20ml/kg of isotonic fluid (e.g. normal saline or Hartmann's)

    d) Calculation of continuing requirements based on replacing estimated deficit, providing maintenance requirements and replacing ongoing losses from diarrhoea/vomiting etc.

    e) Careful recording of all intake and output.

    f) 12-24 hourly measurement of electrolytes.

19. **Dr Scott-Jupp** notes the assessment of dehydration on admission 'appears to have been somewhat subjective. [260-002-004/005]. His opinion is that, given **Dr Budd's** description of Conor in her deposition to HM Coroner [087-029-133/087-028-135], he did not require rapid resuscitation [as in 19c above]. Given that there were no signs described of actual or impending hypovolaemic shock. **Dr Scott-Jupp's** opinion is that *'a rapid bolus was unnecessary and a slower rehydration regime was more appropriate'* [than that commenced by **Dr Budd**]. He describes what was given as *'somewhere in between the two'*. In his supplementary report of October 2013, however, he states "It appears she correctly assessed that he was significantly dehydrated and at risk of developing clinical shock."

20. In his report to HM Coroner, **Dr Sumner** also stated there was no need for rapid rehydration in someone with mild dehydration and that *'It is not possible to say exactly how dehydrated Conor was'* highlighting that there was no mention of skin turgor or capillary refill. [087-056-218]

21. **Dr Scott-Jupp** states that the initial prescription for maintenance was the standard for an adult (3 litres/24 hours) but, that it was correctly revised to account for Conor's weight [of about one-third that of an average adult].

22. Because documentation on the chart does not conform to its design, **Dr Scott-Jupp** concludes that in the period from starting IV fluids to the time the cannula failed after 3.5 hours, he may have received 530 mls (330mls of Hartmann's solution and 200 mls of normal saline diluent for the prescribed antibiotic) or 430 mls (220 mls of Hartmann's and 200 mls normal saline). [088-004-063/260-002-005]. After reading Dr Budd's Witness Statement he considered the latter more likely. **Nurse Bullas** indicated that normal saline was infusing at around the time the 1pm drugs were given [088-004-061]. **Sister Brennan** reports reconnecting the existing infusion at 4.10pm [087-021-101/104]. This suggests that an additional volume of normal saline may have been infused from the original 1litre bag. This was not recorded on the fluid balance chart.

23. **Dr Scott-Jupp** has no criticism of the delay in re-siting the misplaced IV cannula apart from distress it might have caused the family. That is because fluid received to that time was sufficient for initial treatment.[260-002-007]

24. **Dr Scott-Jupp** points out that no calculation appears in the medical notes as to how the fluid requirements, volume and rate, were calculated. His opinion is that, although the 'resuscitation' volume was appropriate for his body weight, the time over which it was given suggests it was being used as replacement, not resuscitation. The recalculated maintenance fluids were *'quite a restricted quantity.* In this respect, **Dr Scott-Jupp** calculates required maintenance as 1540 mls in 24 hours rather than the 1000ml which appears to have been the intention of the prescribing doctors but notes that the latter volume might have been *'written with the anticipation of him starting to improve sufficiently to take some oral fluid later'*. [260-002-013]

25. We note that **Dr Sumner** calculated maintenance in the absence of other losses should have been 110 mls/hour.

26. **Dr Scott-Jupp** described the fluid balance chart as 'particularly poor' when summarising concerns regarding record keeping [260-002-019]. No record was made of urinary, stool or other losses and the recording of intake was limited. **Sister Brennan** states concerns regarding the lack of outputs and that the fluid chart '*does not make clear what typing (*sic) *fluid is being reconnected*' [087-021-104]. However, **Sister Brennan** reported reconnecting the fluids at 4.10pm.

27. **Sister Cullen** states that **Sister Brennan** was involved in supervising the care to Conor as she was in charge of that wing of the MAU. **Sister Cullen** expected that **Sister Brennan,** as the nurse in charge, would have ensured documents were completed accurately [WS-374/1 p5]. However she states that individual nurses were responsible and accountable for their own record keeping.

28. Blood urea/electrolytes and glucose were properly measured on admission.

29. **Dr Scott-Jupp** concludes that fluid management was not the cause for Conor's acute deterioration and subsequent death.

30. **Dr Sumner** concluded, in his report to HM Coroner, that *'the total volume of IV fluids given was <u>not</u> excessive and the type of fluid was appropriate.'* This followed **Mrs Mitchell's** observations that a nurse told her Conor was receiving 110 mls every 15 minutes. [097-001-006] **Dr Sumner** questioned whether the initial <u>rate</u> was too great, quoting as evidence in favour, the report of his face becoming puffy (given in evidence to HM Coroner by Mrs Mitchell reporting Conor's grandmother telling her Conor's face looked swollen and puffy 087-002-018) but evidence against was the absence of pulmonary oedema. **Dr Budd** states she did not observe puffiness or swelling nor was it drawn to her attention. [WS 352/1/p10] However, **Nurse Wilkinson** describes Conor as 'bubbly', requiring suction at intubation, although she did not describe the secretions aspirated on suction [088-004-093].

Issues of concern

- ***Failure, on admission and on review by Dr Budd and Dr Murdock to document physical signs and symptoms such that Conor's hydration status could be properly estimated.***

- ***Failure by both to document their calculations for 'resuscitation', maintenance and replacement fluid.***

- ***Failure of nursing staff to record and monitor fluid balance accurately.***

- ***How compliance with professional record keeping guidance was monitored at Craigavon Hospital.***

- ***The role and responsibilities of Sister Brennan in relation to identifying and addressing concerns about fluid balance monitoring when she reconnected the infusion.***

- ***The role of Sister Cullan in monitoring and maintaining the standards of record keeping on her ward.***

- ***Failure to obtain early advice from a member of a paediatric team, with regard to fluid management, given that Conor was more child than adult-sized. [See Dr Scott-Jupp's opinion 260-002-020]***

C. Concordance with the DHSSPS Guidelines on the Prevention of Hyponatraemia in Children receiving intravenous fluids 2002 ['The Guidelines']

31. The introduction to The Guidelines states that *'Any child on IV fluids or oral rehydration is potentially at risk of hyponatraemia.'* Therefore, they applied to Conor.

32. The Guidelines mandate initial weight measurement and determination of blood U & E. The case notes make clear these were done. **Dr Scott-Jupp** concludes: *'This aspect was complied with.'* [260-002-012]

33. They stipulate that *'fluid needs should be assessed by a doctor competent in determining a child's fluid requirement.*' **Dr Scott-Jupp's** opinion is that this was not complied with since none of those seeing him initially (A&E doctor, A&E consultant (briefly), medical SHO and registrar) were likely to have had the necessary skills, particularly in assessing a disabled child. [260-002-014/5]

34. The Guidelines provide a formula for calculating the volume of maintenance fluid. This would have led to the prescribing of 1540 mls in 24 hours, rather than the 750 mls in 18 hours [equivalent to 1000 mls/24 hours] actually prescribed. Thus, **Dr Scott-Jupp** concludes this part of The Guidelines was not complied with. [260-002-012/4]

35. As to replacement fluid, The Guidelines state they must reflect fluid loss. **Dr Scott-Jupp** notes this was not measured, estimated nor replacement calculated. Additionally there was confusion by **Dr Budd** between resuscitation and replacement fluid. [260-002-015]

36. In respect of the type of maintenance fluid used, **Dr Scott-Jupp** considers The Guidelines were followed although it is unusual (but not inappropriate) to use Hartmann's solution. [260-002-015/6]

37. In respect of The Guideline advice on monitoring, **Dr Scott-Jupp** notes non-compliance in that there was no adequate description of his degree of dehydration, no attempt to quantify urinary output, no comment in the notes as to whether vomiting continued and poorly recorded fluid balance – with no record of output, no mention of oral fluids and no laboratory estimation of urinary osmolality, concentration by specific gravity or biochemistry. [260-002-016/7]

38. **Dr Scott-Jupp** concludes the recommendation for seeking advice from a consultant paediatrician, chemical pathologist or anaesthetist was not complied with and: *'even a paediatric registrar's advice not sought until he had been in hospital for about 9 hours.'* He concludes that a senior doctor with experience of young people with cerebral palsy 'may have been able to make a better clinical assessment of his state of hydration and may have asked for other action

to be taken…' [260-002-018]. In his response to SHSCT observations on his reports, Dr Scott-Jupp comments that the Guidelines are *'somewhat vague'* about the nature of the senior doctor who should be involved. He accepts that Dr Budd, as a staff grade doctor, was relatively experienced but holds to his view that most Emergency Department staff do not have the skills to deliver satisfactory fluid management to children over a number of hours.

39. **Dr Budd** considered she had applied the principles of The Guidelines when treating Conor. [WS352/1/p10-11]

40. **Dr Murdock** considers he failed to apply The Guidance [only] to the extent that he did not document the process he followed. [087-007-059; WS355/1/p15]

41. **Dr Mike Smith**, consultant paediatrician, considers that treatment in the Emergency Department was consistent with The Guidelines but there were deficiencies in documentation of IV fluids and no documentation of urinary output. [WS357/1/p8]

Issues of Concern

- ***The clinicians who dealt with Conor at the time (including Dr Smith whose advice was requested by telephone) appear to disagree with some of the opinions of Dr Scott-Jupp in regard to compliance with The Guidelines.***

- ***Given that Trust policy defined those over 14 be deemed as adults, so managed in 'adult wards', what steps did the Trust take to determine that The Guidelines were circulated to 'adult' clinical areas?***

- ***To what extent were The Guidelines not followed because NI Acute NHS Trust protocols meant that Conor was not recognised as a child, and thus a patient for whom the guidelines were designed?***

- ***To what extent were The Guidelines not followed because A&E and (adult) medical staff were not aware of them?***

- ***Craigavon had a consultant chemical pathologist who took responsibility for ensuring adult guidelines (CREST) on hyponatraemia were disseminated but who did not regard himself as having any responsibility for providing advice on fluid management to clinicians dealing with children. Where the treating clinicians were not paediatricians, it is unclear to whom this responsibility was delegated in 2003?***

D. Steps taken at CAH to ensure The Guidelines were embedded in clinical practice

42. **Dr William McCaughey** was Medical Director at Craigavon between April 1998 and May 2003 [WS-369/1 p2]. He recalls receiving The Guidelines in 2002, but was not aware of any previous guidance in children, although he was familiar with the CREST guidance in adults. He states that guidance was forwarded to Clinical Directors in all specialities with the expectation that appropriate training and guidance would be provided including displaying the poster [WS-369/1 p4]. Any problems with implementation were to be reported to the Steering Group via the Clinical Effectiveness subgroup with reporting to the Medical Executive Committee where required [WS-369/1 p5]. He recalls the posters being displayed and local guidance being developed, with an audit being undertaken in paediatrics in May 2003 [WS-369/1 p6/7].

43. **Dr McCaughey** provided evidence of training regarding fluid balance. Attachments T1 to T4 and T13/14 relate to paediatrics [WS-369/1 p57-78], and the remainder of this evidence relates to adult practice with adult case studies and calculations based on an adult 70kg man [WS-369/1 p79-142].

44. **Dr Humphrey**, Medical Director in 2004 (but not at the time of issuing of The Guidelines) states he responded to the CMO's letter requesting assurance that The Guidelines had been taken forward. (007-073-145). He believes it is likely they were incorporated into clinical practice throughout the Trust and procedures put into place to ensure they were known about and applied. [WS 354/1]

45. **Mrs Eileen O'Rourke**, Clinical Services Manager (Medicine), has no record of receiving The Guidelines or attending training relating to these. However, she states that they were discussed at a Sister's Meeting in March 2004 [329-014-122]. She had been asked by the Director to check that they were displayed on wards, but cannot recall how the wards responded. She does not remember any further action being taken [WS-370/1].

46. **Miss Bridie Foy**, acting Director of Nursing at Craigavon until September 2002, does not recall receiving or disseminating The Guidelines in 2002. However, she states that she had joint responsibility with the Medical Director for their dissemination, implementation and monitoring [WS-367/1 p6]. She states that the document would have been circulated to the relevant nursing officers, but does not state how she monitored implementation.

47. **Mr John Mone** (Director of Nursing) reports that he was not aware of The Guidelines before joining the Craigavon Hospital Trust in September 2002. He does not recall being told about or seeing them on joining the Trust and did not receive any training in their regard [WS-375/1 p4/5].

48. **Dr Bell**, consultant paediatrician, recalls receiving The Guidelines in March 2002 and *'ensuring it was clearly visible in all relevant clinical areas in neonatal and general paediatric ward.'* [WS364/1/p3-4] He also ensured all consultants and paediatric trainees were familiar with them and followed the protocol. He adds he ensured they were audited and the results brought to the paediatric departmental meeting. [ibid p4]

49. **Dr Sharpe**, consultant chemical pathologist at Craigavon Hospital from 1998 to date states that from the time he was in training in Belfast *'it was considered that fluid management for children was the responsibility of the paediatricians. I was never asked nor would I have given advice on this matter'* He regards fluid management as radically different to that in adults so should only be administered by those with paediatric expertise and training. [WS359/1/p3]

50. In June 2003, **Dr Sharpe** states he was responsible for ensuring that the CREST guidelines on hyponatraemia (for adults only) were displayed on the Trust's intranet from their inception and provided advice documents based on them to assist junior doctors and medical students, also in 2003. [359/1/p5]

51. He recalls receiving the [paediatric] guidelines from the CMO but considered it as relevant to paediatricians. He considers the same was true in regard to the poster and to developing and auditing local guidelines. [359/1/p7]

52. **Dr Lowry** was lead consultant paediatric anaesthetist at Craigavon from 2001. In that capacity he recalls attending the Castle Buildings Meeting of the Working Group on hyponatraemia in children. [WS350/1/p3; 350/2/p3].

53. He does not recall having had a role in implementing The Guidelines at Craigavon but he does recall seeing the poster in theatre, recovery area and day surgery unit. [WS350/1/p5] **Dr Lowry** also recalls developing paediatric IV fluid guidelines for Craigavon together with **Dr Mike Smith**, consultant paediatrician, after having been informed by **Dr Nesbitt** of the death of Raychel Ferguson. [WS350/2/p3]

54. He included information from these in the induction pack for trainee anaesthetists and uploaded them to the Craigavon intranet. [WS350/2/p7]

55. **Dr Smith** states he and **Dr Lowry** met informally twice in 2001 after receiving some written material from **Dr Bob Taylor**. They jointly prepared a local guideline and distributed it to anaesthetic and paediatric trainees and incorporated it in induction sessions for new doctors from August of that year. [WS357/2]

56. **Dr Bell** recalls **Dr Smith** and **Dr Lowry** providing him with the 2001 document which preceded the CMO's Guidelines and, in consequence, No 18 solution was removed from the paediatric area. [WS 364/1/p7]

57. **Doctor Hogan** recalls the Lead Consultant for paediatrics bringing The Guidelines to his attention in 2002, but he does not recall receiving a copy [WS681/1 p3]. He recalls using the posters in meetings with doctors and nurses and was responsible for implementing the changes with junior doctors. He reports no involvement in their monitoring [WS-681/1 p4].

58. **Dr Jonathan Davis** remembers receiving training regarding fluid management in paediatrics throughout his career. However, he does not remember being given a copy of The Guidelines in 2002 [WS-366/1 p4] and nor does he recall receiving training or written information relating to them [WS-366/1 p6]. Since 2005 there has been a requirement for mandatory completion of the BMJ online module on fluid management in children.

59. **Dr Smith** became a member of the NI Regional IV Fluid Guideline Development Group from 2005-7, took part in a regional audit on IV fluids in 2003 (results published in Ulster Medical Journal in 2005) and provided training to nurses and paediatric trainees in IV administration from 2005. [329-014-001; WS 357/2].

60. **Dr Budd**, currently still working at Craigavon Hospital A& E department, does not recall The Guidelines being drawn to her attention either before or after her treatment of Conor and had not seen them until receiving a request by the Inquiry for a witness statement. She cannot recall seeing the poster displayed in the A&E department or other location at Craigavon Hospital. [WS352/1/p10-11]

61. **Dr Murdock** is not able to state when The Guidelines were brought to his attention nor whether he was aware of them at the time of treating Conor or whether he had seen the poster displayed in A&E or elsewhere at Craigavon Hospital [WS355/1/p14-15]. However, he appears to have been aware of the death of a child in Altnagelvin following fluid overload [087-007-059].

62. **Dr Williams** does not recall if The Guidelines had been brought to her attention when an SHO at Craigavon Hospital and cannot recall the poster. [WS358/1/p5-7] She worked elsewhere from August 2003; she states she has been made aware of and received training but cannot recall when or where. [WS358/1/p6]

63. **Dr Quinn** does not recall receiving education in fluid management in children [WS-356/1 p3]. She had not been aware of The Guidelines prior to seeing Conor and had not received training, as she did not work in A&E or paediatrics [WS-356/1 p9]. In addition, she was not aware of the poster in MAU or elsewhere in the hospital, but states that it would have been useful [WS-356/1 p10].

64. **Dr Chillingworth**, who joined Craigavon as a paediatric SHO in 2004 recalls The Guidelines as part of her induction training.

65. **Nurse Lavery** does not recall being made aware of The Guidelines prior to 2003 and did not attend training in hyponatraemia until November 2009. He states that this provided him '*with the awareness to seek further guidance when dealing with people who may be termed as paediatric'* [WS-351/1 p10/11]. He was not aware of The Guidelines being displayed in the MAU or elsewhere in 2003, but states that in hindsight it would have been useful [WS-351/1 p12].

66. **Sister Brennan** reports no qualification or experience in paediatrics and no training in fluid management of children and young people until October 2009 [WS-353/1]. She states that The Guidelines had not been brought to the attention of herself or other staff and she was not aware of the poster being displayed at all [WS-353/1 p11-12]. She was not invited to attend any sessions to discuss lessons learnt from Conor's case.

67. **Sister Cullen** reports no formal qualifications in children's nursing, but worked in paediatrics as a student nurse during her general training in the 1970s. Subsequently she has cared for young people of 14 to 16 years on adult wards. She received training in paediatric fluid management in October 2009 [WS-374/1 p3/4]. **Sister Cullen** states that she received no training in and had no knowledge of The Guidelines before October 2009, when she attended hospital training and received written guidance. She was not aware of it being displayed either on the ward or in the hospital. She accepts that it would have been relevant to Conor if it had been available [WS-374/1 p 6-8]. She has no recollection of any process relating to learning lessons from Conor's care [WS-374/1 p10].

68. Information relating to induction and training for staff between 2000 and 2006 shows little evidence of content relating to fluid management in children and young people, with the exception of that provided to nurses and anaesthetic trainees in theatres [329-014-007- 119] and paediatric trainees by **Dr Smith**. There is no reference in The Guidelines to these examples of training and no evidence that nurses were provided with relevant training. It would appear that the first time training was offered to nurses outside the children's ward was in October 2009.

69. **Mr J Templeton**, states: *'the Medical Director advised me of action being taken by the Chief Medical Officer and his invitation to attend a meeting to discuss the hyponatraemia issue. My recollection was that this was being taken forward as a professionally led and managed initiative under the direction of the Chief Medical Officer in response to Coroner concerns regarding the association of the excess administration of fluids to children and their adverse effects.'* (WS 371/1),

70. He further states: *'My recollection was that the Medical Director took immediate action to meet the requirements of the Chief Medical Officer's guidance through the Medical Executive Committee which comprised all clinical directors and similarly **Miss Foy** Acting Director of Nursing and Quality through her Executive Nursing Group.'*

71. The advisors have not seen details of the management arrangements within the Trust in 2003, or any specific plan of implementation and audit of The Guidelines. However, around 2003 we would have expected to see a typical Trust implementing clinical guidelines within an organisational model as follows, whilst acknowledging that arrangements in Trusts varied considerably.

71a Most NHS Trusts would have a regular, often weekly, meeting of Executive Directors to ensure that the organisation was managing day to day issues effectively. This would include the Chief Executive, Medical Director and Director of Nursing. One function of such meetings is to ensure that significant guidance from whatever source is actioned appropriately. In other words one individual would be allocated the task to ensure that the guidance was implemented and that there was a process to ensure that it had.

72. The CMO's Guidance (ref 007-001-001) was issued along with a letter to Medical Directors, Nursing Directors and selected consultant groups and not to the Chief Executive who was the accountable officer. Nonetheless, it might have reasonably been expected that such guidance would be included on the agenda for such a meeting.

73. Most Trusts also had a Management Team (usually meeting monthly which included Executive Directors together with Clinical Directors and other senior managers). Such meetings could include discussion on the receipt of significant advice or guidance and what was expected to be done by whom. It might have reasonably been expected that such guidance would be included on the agenda.

74. However if Medical and Nursing Directors felt that this Guidance was a specific clinical issue, rather than something that had an impact on all Trust services and staff, it might reasonably be expected that they would agree together an implementation plan, (including the development of local protocols and audit). This would ultimately enable the Trust to respond to the CMO on how the implementation had proceeded.

75. Some Trusts would have had a Medical Staff Committee or Medical (and Nursing) Executive Committees which might take responsibility for implementation of clinical guidelines. Some Trust Boards would have expected to be informed of significant guidance and its associated plan of implementation, but a Trust Board cannot reasonably be directly responsible for reviewing the implementation of all guidance. Some Trust Boards might devolve this function to committees such as a Clinical Governance Committee, or a Clinical Standards/ Effectiveness Committee. (The names of these committees vary widely.) Such committees would be expected to ensure that guidance had been introduced effectively and that audits had been done to confirm this.

76. **Dr McCaughey** provides details about the early development of clinical governance structures within the Trust, including the sub-groups and the reporting arrangements to the Board [WS-369/1 p35-55]. Minutes of February

2000 of the Clinical Governance Steering Group demonstrate variable development of the different subgroups at that time. It was not until much later that the structures outlined above are seen in the introduction of the 2007 guidance (329-020a-010 to 029), although there is evidence of some audit of practice relating to hyponatraemia in 2005 (329-020a-004).

Issues of Concern

- ***To what extent The Guidelines (or a local variant) had been implemented within Craigavon Hospital at the time of Conor's admission, both in regard to trainee paediatricians and anaesthetists but also all other clinicians who might be responsible for the care and treatment of children and young persons.***

- ***To what extent nurses were working outside their scope of practice as defined by the NMC Code of Conduct 2002[1].***

- ***Whether training was provided for nurses working outside theatres and paediatrics in relation to The Guidelines prior to 2009 (other than any offered by Dr Smith to paediatric staff) and for doctors prior to introduction of the BMJ online training in 2005.***

[1] NMC (2002), *Code of Professional Conduct*. London: NMC

- ***To what extent the Trust had a systematic method of introducing guidance and means of ensuring such guidance was implemented successfully.***

E Other Matters

77. A procedure for adverse incident reporting was introduced into the Trust in 2003 – *'Procedure for Adverse Incident Reporting'(*329-022-003 dated March 2003). **Dr Humphrey**, Medical Director at the Trust did not consider Conor's case as an adverse incident that should be reported to the Southern Health and Social Services Board (329-022-017). **Dr Farrell**, Consultant in Public Health at that Board considered it to be a serious adverse incident as defined in Circular HSS (PPM) 06/04.

78. Evidence from a number of the witness statements fails to show that a clinical incident review took place and there were few examples quoted of clinical staff having learned lessons from Conor's death. **Dr Humphrey** (329-022-020) states that groups were set up *'to examine…the appropriateness of the environment for care of adolescent patients and to review the Trust's fluid balance chart…'*. **Mr Mone** reports that IV fluid recording was included in educational sessions for qualified nurses following Conor's case [WS-375/1 p7]. The evidence provided includes aspects of fluid management and record keeping, but there is little

reference to application to children/young people in this information [WS-375/1 p19 -106].

79. In his supplementary report of October 2013, Dr Scott-Jupp notes that Dr Murdock states he first learned of Conor's death 5 months after the event from a member of the family. He notes further that Dr Williams received no feedback after his death. He concludes there was a lost opportunity for staff to learn from Conor's death.

Issues of concern

- ***To determine whether the Clinical Governance Committee and subgroups were fully functioning at the time of Conor's case.***
- ***To determine whether it would have been appropriate for an adverse incident review to have taken place.***
- ***To establish what lessons were learned, if any, from Conor's case.***
- ***To determine whether the nurse education programmes developed included reference to management of fluids and fluid balance recording in children and young people***

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15.10.2013