

## NOTE

### Re: Addendum Report of Dr. Waney Squier on Adam

#### General points

1. The date on the cover sheet should be the final date
2. It would assist referencing for the Report to have the following numbered: (i) pages; (ii) sections ('Statement of Dr Armour' is numbered "1" but the subsequent sections of 'Report of Dr. Mirakhur' and 'Review of CT Scans' are not); (iii) paragraph numbers
3. An expert's declaration will need to be provided at the end of the Report when it is signed. We can provide you with a specimen expert's declaration if that assists

#### Specific points

##### Page 1, 1<sup>st</sup> para:

4. To the extent to that you feel able to do so, please provide a description/your comments on the following as an introduction to the section and the context for some of the points that you make:
  - (i) The process of carrying out an autopsy:
    - (a) What does it involve
    - (b) Who should perform it
    - (c) What grade of clinician should perform it (including in a case such as this), ie Senior Registrar, Consultant
    - (d) Whether, if a Consultant is not performing the autopsy, a Consultant should nonetheless be involved in some capacity and if so how and in what circumstances
    - (e) How the clinical history should be obtained (especially where there is an Inquest and the conduct of the treating clinicians may be under question)
    - (f) What input there should be from other disciplines or specialisms (including in a case such as this) and how that should be sought
    - (g) Who should be present (including whether the clinicians whose conduct may be under question) and for what purpose
  - (ii) The structure and content of an autopsy report:

- (a) Whether the grade of clinician performing the autopsy should be shown on the Report
  - (b) Whether it should have been reviewed by a Consultant Pathologist and if so how any such 'involvement' of a Consultant should be shown (ie whether by a counter signature)
  - (c) Whether the source of the clinical history and background information should be disclosed in the report
  - (d) Whether the fact that advice/input from Consultants in other disciplines was sought should be identified (ie Drs. O'Hara and Bharucha)
  - (e) Whether and how the input from Consultants in other disciplines should be identified, cited and used (ie Dr. Mirakhur and Professor Berry)
  - (f) Whether the Report should be dated (eg including for both the pre brain fixation part of the Report and the post-fixation part if written at different times)
5. Please provide your comments on the process of the autopsy performed by Dr. Armour on Adam and the preparation of her Report. To assist, the following would seem to be the case:
- (i) Dr. Robert Taylor (Consultant Anaesthetist) was present at some stage during the autopsy – referred to in the transcription of her evidence at the Inquest – Ref: 011-010-033
  - (ii) Dr. Armour claims that assistance was sought from the following specialisms:
    - (a) Dr. Mirakhur (Consultant Neurologist) saw the brain, spinal cord and histological slides – referred to in Dr. Armour's Report – Ref: 011-010-040 but not in her notes. Dr. Armour refers in her referral letter to Professor Berry to the "*brain and spinal cord are fixing and a neuropathological opinion will be requested*" – Ref: 011-029-152. Dr. Squier has seen the Witness Statement of Dr. Mirakhur addressing the issue of her 'involvement'
    - (b) Professor Berry (Consultant Paediatric Pathologist) saw the slides of the lungs, larynx, liver, kidney, transplanted kidney, spleen and lymph node referred to in Dr. Armour's Report – Ref: 011-010-040.
  - (iii) The Coroner's note of 8<sup>th</sup> December 1995 records a telephone conversation with Dr. Armour during which she informed him that she had showed slides etc. to Dr. O'Hara (Consultant Paediatric

Pathologist) and Dr. Bharucha (Haematologist) on 8<sup>th</sup> December 1995 – Ref: 011-025-125. You can see how Dr. Armour deals with that in her Inquiry Witness Statement, including her failure to make reference to the apparent view of Dr. O’Hara and Dr. Bharucha that there was evidence of “hypoxia” – Ref: WS-012/2 page 13

- (iv) The level of discussion that appears to have occurred amongst:
- (a) Dr. Armour as the pathologist carrying out the autopsy and providing the Report
  - (b) Dr. Robert Taylor the Consultant Anaesthetist directly involved in the surgery and fluid management under question
  - (c) Dr. George Murnaghan, Director of Medical Administration
  - (d) Dr. Denis O’Hara, Consultant Paediatric Pathologist, Royal Hospitals

See for example:

- (a) Transcription of her evidence at the Inquest – Ref: 011-010-033
- (b) Coroner’s note of 8<sup>th</sup> December 1995 – Ref: 011-025-125<sup>1</sup>
- (c) Letter dated 13<sup>th</sup> December 1995 from the Coroner to Dr. Armour – Ref: 011-027-128
- (d) Letter dated 22<sup>nd</sup> December 1995 from Dr. Armour to Professor Berry – Ref: 011-029-151
- (e) Coroner’s note of 4<sup>th</sup> January 1996 – Ref: 011-033-165
- (f) Mother’s correspondence of 17<sup>th</sup> January 1996 and 6<sup>th</sup> February which is sent on to Dr. Armour by the Coroner – Ref: 011-041-173 and Ref: 011-049-182

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#### Brain weight:

6. Dr. Armour has described the weight the weight of Adam’s brain in her letter to Professor Berry as follows: “*At post mortem I found gross cerebral oedema (1,320 gms). The brain and spinal cord are fixing and a neuropathological opinion will be requested*” – Ref: 011-029-152.
- (i) Leaving aside the issue of whether there is evidence to show the accuracy of the 1,320 gms figure, please provide your comments on the description of such a weight as “gross cerebral oedema”

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<sup>1</sup> A copy of the documents at (b) to (f) are attached

7. Dr. Armour states in her Inquiry Witness Statement (Ref: WS-012/2, p.11) that the reference to Adam's "fresh" brain weight of 1,302 gms in her notes was an error, leading to a correction to 1,320 gms. She also states that the "fresh" brain weight of 1,320 gms is probably an error and calculates back from the fixed brain weight of 1,680 gms that it was more likely to be 1,520 gms. However, with reference to her letter to Professor Berry in which she referred to the gross oedema and 1,320 gms, she states in her Witness Statement that: "*In my view this is the fresh weight of the brain*" (p.14). It seems that we have no reliable evidence from the autopsy as to the precise weight of Adam's brain pre-fixing.
- (i) Is it possible to say whether the appearance of Adam's brain is consistent with the weights of 1,320 gms, 1,520 gms or 1,680 gms? If so which is the more consistent?
- (ii) Please comment on Dr. Armour's conduct and approach in relation to establishing the brain weight in the light of the fact that an Inquest was to be held at which her Report was likely to be a significant document.

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#### **Ligation of left internal jugular vein**

8. Dr. Armour concluded in her Report that the combined effect of the ligation of the left internal jugular vein (identified by a suture in situ) and the catheter tip of the CVP being on the right side would have reduced cerebral perfusion and exacerbated the effects of cerebral oedema. She also states in her Inquiry Witness Statement that the "*degree of impaired blood flow was insuffice[sic] to cause hypoxic change*" (Ref: WS-012/2, p.9).
- (i) Please comment on the extent to which the effects of cerebral oedema was likely to be exacerbated by an impaired blood flow that was insufficient to cause hypoxic change
9. Dr. Squier has described Dr. Armour's Report has been unclear in that whilst she states that "*there was no evidence of congestion or obstruction of the major blood vessels or the carotid arteries and jugular veins*", she also states that there was "*a suture in situ on the left side of the neck at the junction of the internal jugular vein and the sub-clavian vein*". Dr. Armour was provided with an opportunity to address that apparent inconsistency both through her PSNI statement and her Inquiry Witness Statement and you can see her response at Ref: 093-022-063 and Ref: WS-012/2, p.10.

- (i) Please comment on the adequacy of her response and her Report in that respect

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**How long had the suture been present**

10. Dr. Armour stated in her evidence at the Inquest that: "The suture had been there for some time" (Ref: 011-010-033) and she repeated that in her PSNI statement (Ref: 093-022-063).
  - (i) Please comment on the totality of Dr. Armour's description of her examination and her statements on the impact of the suture, in the light of your views of "*reactive processes*"
  - (ii) Please also comment on the implications of this for the Report, including Dr. Armour's failure to make any further investigations to establish the timing of the ligation

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**Report of Dr. Mirakhur**

11. You state in your first paragraph that: "*The procedures seem less than satisfactory and this is not the standard of practice which would be expected today*". At present the documents show:
  - (a) During a discussion between the Coroner and Dr. Armour on 8<sup>th</sup> December 1995 (recorded by the Coroner at Ref: 011-025-125) there is reference to showing slides to Drs. O'Hara and Bharucha and obtaining an expert opinion from Professor Berry. There is no reference to showing slides to or seeking an opinion from Dr. Mirakhur
  - (b) There is reference to Prior to the provision of her Report, Dr. Armour wrote to Professor Berry on 22<sup>nd</sup> December 1995 stating that: "*The brain and spinal cord are fixing and a neuropathological opinion will be requested*" (Ref: 011-029-152)
  - (c) Dr. Armour stated in her Autopsy Report that: "*The brain, spinal cord and histological slides were seen by Dr. M. Mirakhur, Consultant Neuropathologist*" (Ref: 011-010-040). That is the same form of wording used in relation to Professor Berry
  - (d) Dr. Armour's position in her Witness Statement is that she showed the slides to Dr. Mirakhur for a second opinion. She also states that: "*As far as I am aware what is written in my autopsy report was concurred[sic] by her*" (Ref: WS-012/1, p.2). Furthermore she does not identify having received anything in writing from Dr. Mirakhur and claims all she has is the notes held at the Department of Pathology

- (e) Dr. Armour's notes from the Department of Pathology make no reference to Dr. Mirakhur
- (f) Dr. Mirakhur states in her Witness Statement that Adam's case was "*never formally referred to me or to the Neuropathology Department*" (Ref: WS-223/1, p.2).
- (g) The procedure for a pathologist who is conducting a post mortem in the State Pathologist's Department requesting a neuropathological examination, was that a formal letter was sent to the Consultant Neuropathologist, the case would be issued with a reference number and a copy of the report would be retained
- (h) Dr. Mirakhur's position in her Witness Statement is that at its height Dr. Armour may have asked for her "*informal opinion on histological slides*" but that she would have seen nothing else nor did she provide anything in writing (Ref: WS-223/1, p.2). She goes on to state clearly that: "*I saw Dr Armour's autopsy report for the first time on 28<sup>th</sup> October 2011*" (p.3)

You have assumed what might have happened. In the interests of clarity:

- (i) Describe exactly the 'procedures' to which you refer in your statement "*procedures seem less than satisfactory*" and explain the basis upon which you have determined that those were the procedures in operation
  - (ii) Describe the procedures considered acceptable as at November 1995 for a state pathologist to seek a second opinion and provide the basis of your view by reference to any:
    - (a) Protocols, guidelines, guidance from professional bodies
    - (b) Established or otherwise good practice
    - (c) Anything else
  - (iii) Please comment on the acceptability of the 'procedures' in operation in Adam's case in the light of the standards that were regarded as acceptable in November 1995
12. You refer to: "*it would have been better practice, as well as a matter of professional courtesy, to give Dr. Mirakhur the opportunity to express her opinion formally and to produce a signed report*". You also state that: "*best practice would have been to ask a neuropathologist to undertake a formal and complete brain examination*". In the interests of clarity
- (i) Would it have been required or advisable in the light of the acceptable standards in 1995 to give Dr. Mirakhur that opportunity?

- (ii) Was it best practice to ask for such a brain examination according to the acceptable standards in 1995?
- (iii) Please comment on the implications of the Report not having been provided to Dr. Mirakhur for her comment and having been complied without the benefit of a formal and complete brain examination by a neuropathologist

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#### Review of CT scans with Dr. Anslow

- 13. You state that: *"He has given an opinion via email [of the scans dated 7<sup>th</sup> July 1995] but I have not had the opportunity to review these scans with him"*. We appreciate you expediting matters to get us your view pending the outcome of your review with Dr. Anslow. However:
  - (i) Please provide your comments on that review and finalise your report in the light of it
- 14. The Coroner refers in a letter dated 13<sup>th</sup> December 1995 to Dr. Armour getting the impression from Dr. O'Hara that some of her: *"findings of gross cerebral oedema could be explainable by the time the child was on the ventilator (Ref: 011-027-128). You refer to the post-operative scan that was taken just over 2 hours after the transplant surgery as being: "the most accurate reflection of the state of the brain immediately after surgery". Dr. Armour refers in her Report to an "emergency CT scan at 1.15pm revealed gross cerebral oedema" (Ref: 011-010-035).*
  - (i) Should Dr. Armour have asked for an expert opinion on the CT scans (ie those of 27<sup>th</sup> November 1995 and 7<sup>th</sup> July 1995)? Would that have been required in 1995 by either acceptable or best practice?
  - (ii) Please comment on the implications of the Report having been complied without the benefit of such an opinion
- 15. There would appear to be a typographical error in your statement: *"A number of when secondary effects may have taken place in the brain ... already severe swelling"* (emphasis added).
  - (i) Has *"when"* been included in error? Please clarify the position.