CITATION: *Inquest into the death of Damon Mark Cabiddu* [2011] NTMC 018

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FINDING OF:	Mr Greg Cavanagh SM
CATCHWORDS:	**Unexpected death in hospital, difficulty in diagnosing appendicitis in children**

REPRESENTATION:

Counsel:

Assisting:	Jodi Truman
Department of Health	Tom Anderson

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IN THE CORONER'S COURT
AT DARWIN IN THE NORTHERN
TERRITORY OF AUSTRALIA

No. D0225/2009

In the matter of an Inquest into the death of
DAMON MARK CABIDDU
ON 3 DECEMBER 2009
AT ROYAL DARWIN HOSPITAL,
DARWIN IN THE NORTHERN
TERRITORY OF AUSTRALIA

FINDINGS

Mr Greg Cavanagh SM

Introduction

1. Damon Mark Cabiddu ("Damon") was an Aboriginal male born on 4 November 2005 at the Royal Darwin Hospital ("RDH") in the Northern Territory of Australia. Damon was the first child of Theilia Cherie Smith and Mark Cabiddu. Damon died at approximately 4.28 am on 3 December 2009 at the RDH after cardio pulmonary resuscitation (CPR) ceased. He was 4 years of age at the time of his death.

2. His death was unexpected and thus reportable to me pursuant to s12 of the *Coroners Act*. The holding of a public inquest is not mandatory but was held as a matter of my discretion pursuant to s15 of that Act.

3. Pursuant to s34 of the Act, I am required to make the following findings:

"(1) A Coroner investigating:

a. A death shall, if possible, find:

(i) The identity of the deceased person.

(ii) The time and place of death.

(iii) The cause of death.

(iv) Particulars required to register the death under the *Births Deaths and Marriages Registration Act*"

4. I note that section 34(2) of the Act also provides that I may comment on a matter including public health or safety connected with the death being investigated. Additionally, I may make recommendations pursuant to section 35 as follows:

> "(1) A Coroner may report to the Attorney General on a death or disaster investigated by the Coroner.
>
> (2) A Coroner may make recommendations to the Attorney General on a matter, including public health or safety or the administration of justice connected with a death or disaster investigated by the Coroner.
>
> (3) A Coroner shall report to the Commissioner of police and Director of Public Prosecutions appointed under the Director of Public Prosecutions Act if the Coroner believes that a crime may have been committed in connection with a death or disaster investigated by the Coroner"

5. Counsel assisting me at this inquest was Ms Jodi Truman. Mr Tom Anderson was granted leave to appear as counsel on behalf of the Department of Health. I thank both Counsel for their assistance in this matter. There were no other formal appearances although I note that both the mother and father of the deceased, namely Ms Theilia Smith and Mr Mark Cabiddu were in attendance for each day of the inquest. I thank them for the respect that they showed throughout the coronial process.

The Conduct of this Inquest

6. A total of six witnesses gave evidence before me. Those persons were:

6.1 Senior Constable PB, the Officer in charge of the Coronial Investigation.

6.2 Dr RC, Senior Paediatric Registrar at the Royal Darwin Hospital (RDH) at the time of this death.

6.3 Dr PB, Consultant Paediatrician and Director of Paediatrics at the RDH.

6.4 Dr CM, Deputy Director, Developmental Medicine and Paediatrician to Autism Assessment Team at the Royal Children's Hospital in Victoria.

6.5 Dr JC, Paediatric Surgeon at the Royal Children's Hospital in Victoria.

6.6 Dr TS, Forensic Pathologist at the RDH.

7. A brief of evidence containing a statutory declaration from the mother of the deceased, eight medical reports (including the autopsy report), together with numerous other reports, police documentation and other medical records were tendered into evidence ("exhibits 1 and 2"). The death was investigated by Senior Constable PB and I thank him for his assistance.

Formal Findings

8. On the basis of the tendered material and oral evidence received at this Inquest I make the following formal findings:

   i. The identity of the deceased person was Damon Mark Cabiddu born 4 November 2005 at the Royal Darwin Hospital in Darwin in the Northern Territory of Australia.

   ii. The time and place of death was approximately 4.28am on 3 December 2009 at the Royal Darwin Hospital.

iii. Particulars required to register the death:

a. The deceased was a male.

b. The deceased's name was Damon Mark Cabiddu.

c. The deceased was of Aboriginal descent.

d. The death was reported to the Coroner.

e. A post mortem examination was carried out by Dr TS who investigated and identified the cause of death as acute peritonitis caused by a ruptured appendix.

f. The deceased's mother was Theilia Cherie Smith and his father was Mark Cabiddu.

g. The deceased lived at 13 Newell Crescent in Jingili in the Northern Territory of Australia.

Evidence of the Circumstances Surrounding the Death

9. At the time of his death Damon was just over four years of age and living with his mother and younger sister, Allirah, at 13 Newell Crescent in Jingili ("the Jingili address"). Damon's parents did not live with one another, however they kept in regular contact with one another and Damon's father would visit the Jingili address regularly and provide assistance when necessary. It appears that the relationship between Damon's parents was amicable and supportive.

10. The house in which Damon resided was a Territory Housing Commission home of general living standards, with three bedrooms and a relatively large yard.

11. I received evidence that up until approximately the age of two years, Damon was described by his parents as a "normal little boy". However around the

age of two years, Damon's mother began to suspect that something was wrong as Damon:

11.1 did not appear able to speak properly (in fact he had regressed upon his sister being born),

11.2 would on occasion flap his arms around,

11.3 cover his ears "a lot",

11.4 hide and not socialise or play with other children despite being extremely active,

11.5 had an erratic sleeping pattern, and

11.6 seemed unable to concentrate for extended periods.

Friends of Damon's mother also reported to her that they had noticed that Damon's behaviour seemed "different" to other children.

12. Damon was scheduled to commence school in January 2010 and as a result Ms Smith made a decision to have Damon seen and assessed by her General Medical Practitioner, Dr AF ("Dr AF") at the Humpty Doo Medical Centre.

13. That initial consultation occurred on 5 September 2009. I received evidence that at the time of that consultation, Dr AF noted that Damon:

13.1 Had a bilateral middle ear infection;

13.2 Possible Autism;

13.3 Possible Attention Deficit Hyperactivity Disorder; and

13.4 Needed his immunisations to be updated.

14. As a result, a management plan was prepared by Dr AF to deal with the infection and immunisations, but also to refer Damon to the Child and

Adolescent Mental Health Team (referred to as CAMHT or CAT) and consider urgent formal assessment of Autism Spectrum Disorder.

15. In accordance with that plan, on 7 September 2009 Dr AF discussed Damon's case with the CAMHT team, including Consultant Psychiatrist, Dr AA ("Dr AA"). As a result of that discussion, CAMHT agreed to formally assess Damon for Autism Spectrum Disorder and Damon was allocated a case manager, namely social worker Ms HM ("Ms HM").

16. On 9 September 2009, Ms Smith attended an appointment with Ms HM on her own. As a result of that appointment, an "Initial Assessment and Provision Treatment Plan" was prepared. A copy of that plan was tendered in evidence before me as part of exhibit 1. Following that interview, a decision was made for further detailed assessment of Damon for Autism Spectrum Disorder and he was placed upon a priority waiting list for assessment.

17. I received evidence that on Tuesday, 1 December 2009 Damon was playing in the back yard of his home. In her statement to the police, Ms Smith described Damon as "playing fine like he normally would" and laughing and playing with his sister. At about 1 pm Damon appeared to "get sick". His mother described him as "dry-retching and vomiting a little bit". Ms Smith suspected a 24 hour bug and as a result she gave him some panadol and had him lay down in an air-conditioned room.

18. Ms Smith stated that Damon would not eat but she was able to keep his fluids up and had him in bed throughout the night. Damon vomited "about six times" during the evening and on Wednesday, 2 December 2009, Ms Smith noted that the vomiting appeared to increase. As a result she rang Damon's father, Mr Cabiddu, and arranged for him to take them to the RDH.

19. The medical records of the RDH were tendered before me as part of exhibit 1. These record Ms Smith arriving with Damon to the Emergency

Department (ED) at approximately 1.32 pm. Ms Smith stated that when they got to RDH she told the staff that Damon "had been sick since yesterday afternoon" and that he was autistic and as a result was unable to tell her where he had pain. The RDH file shows they were put into bed 14 in the ED, shortly after Damon was assessed by a nurse at 1.45 pm.

20. Shortly after that initial assessment, Damon was seen by Emergency Department Registrar, namely Dr HG ("Dr HG"). Dr Gower gave a statement to the police which was tendered as part of exhibit 2. Dr Gower described being told that Damon had autism and he noted that communication was "limited at best". He described Damon as being:

> "upset, crying on and off and to a degree combative".

He found it:

> "extremely difficult to make a good assessment of Damon"

because of his autism and each time he approached Damon:

> "he (Damon) would let out a cry and it was very difficult to ascertain as to whether he was in pain or just did not want to be examined".

Dr HG stated that he was told by Damon's parents that he had:

> "not been himself since the day prior",

with a temperature and vomiting.

21. Dr HG examined Damon and found that he was febrile (i.e. having or showing symptoms of a fever) with a temperature of 38 degrees. I received evidence that the "normal" temperature for a child of Damon's age is 37 degrees, but that the number is not necessarily determinative of how serious the increased temperature is. The rest of his basic observations were recorded as "unremarkable" and Damon was "no longer grunting". He noted

that Damon's abdomen did feel rigid and his ear, nose and throat examination was also "unremarkable".

22. As a result of his examination, Dr HG's differential diagnoses were as follows:

    22.1 Gastroenteritis;

    22.2 Urinary tract infection;

    22.3 Acute abdomen ("? Appendicitis");

    22.4 Mesenteric Adenitis (i.e. inflammation of the lymph nodes of the abdomen); or

    22.5 Co-morbidities such as a viral infection with also constipation.

23. Because of the difficulties in assessing Damon, and the uncertainty surrounding his condition, Dr HG informed the Paediatric Registrar on duty that day, namely Dr RC ("Dr RC") of Damon's condition. Dr HG stated that he specifically voiced his concern, at the time of referral, about Damon's abdomen.

24. Dr RC was the Senior Paediatric Registrar at the RDH at the time of Damon's admission. Dr RC gave evidence before me and had also provided a statement to the police. According to the RDH file, Dr RC saw Damon at approximately 5.40 pm. Prior to her assessment, Dr RC also took a history from Damon's mother noting his past history of autism and the difficulties in communication with Damon. Dr RC also noted that Ms Smith had advised her that Damon was usually:

> "able to communicate pain to her, and would come to her if he had an injury".

Dr RC stated she was advised by Ms Smith that Damon had been:

> "unwell since the afternoon prior"

and had then:

> "suddenly developed vomiting and lethargy".

25. Dr RC's physical examination of Damon then occurred. Dr RC noted that Damon "appeared unwell" but that he allowed her to examine him "thoroughly". Dr RC noted that this "allowance" in fact concerned her as it was her experience that autistic children frequently resisted attempts by strangers to get close to them and this was consistent with the behaviour that his mother had described as usually the case for Damon.

26. Dr RC gave evidence that she had in fact had extensive involvement with autistic children prior to Damon's admission to RDH. Dr RC had been the "Community Paediatric Registrar" for a period of six months from January to July 2009 and this involved working extensively with children suspected of suffering from Autism Spectrum Disorder. In that role, Dr RC noted that she was required to work with the "Children's Development Team", Carpentaria Disability Services, the developmental paediatrician at the Royal Darwin Hospital and the Tamarind Centre.

27. Dr RC described her role as having:

> "to make the usual assessments of children who had had the question of autism been raised, be it by a parent, by a child health worker or by a GP, who had been referred to the children's development team. And also to continue ongoing assessments of children who already have the diagnosis of autism".

Dr RC also noted that in her practice as a paediatrician she had dealt with children:

> "with developmental problems and children with autism across all different levels when they present to hospital with inter-current illnesses".

28. Dr RC noted that at the time of her first examination, Damon made:

> "grunting respirations" and "appeared to be guarding his abdomen".

Dr RC stated that grunting respirations were seen in children with pain, fever, respiratory illnesses or sickness in their lungs. She also noted that abdominal guarding often suggests abdominal pain. Upon her examination she noted that Damon's temperature was 37.5 degrees and his respiratory rate was 30 with a pulse of 170. Dr RC stated that this was a rapid rate for a child of Damon's age, but she attributed this to his dry retching and pain.

29. Dr RC recorded that Damon was well perfused (i.e. his blood appeared to be circulating well throughout his body) and that he had a capillary refill of less than two seconds, which was normal. Dr RC noted that capillary refill was:

> "another measure of hydration status of a child, the same as perfusion".

Because of these two signs Dr RC stated that it indicated to her at that point that Damon did not look dehydrated and his cardiovascular circulation was working well.

30. On examination of his abdomen however Dr RC noted that the lower half:

> "appeared rigid and had guarding".

The tenderness also appeared:

> "most obvious in the right iliac fossa" (or the lower right part of the abdomen).

Dr RC also noted that assessment was difficult because of Damon's limited vocabulary.

31. Various blood tests, and an x-ray of Damon's abdomen, were conducted. Dr RC stated that the x-ray was something that they:

> "would do quite frequently in a child who presented, as Damon did, with abdominal pain and vomiting, to help confirm or exclude surgical cases and so in particular they would be looking to see if there was any free air … that's not inside the bowel".

Dr RC noted that the x-ray did not show any such free gas or fluid in the bowel and the blood tests had been conducted to see if they assisted in differentiating what was happening with Damon.

32. Following her assessment, Dr RC was concerned that Damon was likely to have possible appendicitis and her differential diagnoses were:

    32.1 Urinary tract infection;

    32.2 Gastroenteritis; or

    32.3 Possible pneumonia. Although I note that Dr RC stated that she considered this as "less likely".

33. Because of her concerns related to possible appendicitis, Dr RC arranged for the surgical team to review Damon. That review was conducted by Consultant General Surgeon Mr SS and occurred at 6.20 pm. Mr SS conducted his assessment in the company of his two registrars, namely Dr TLU and Dr MA Mr SS provided a report to the police which formed part of exhibit 1. That report set out his assessment and interaction with Damon.

34. Mr SS stated that he saw Damon in the presence of his parents and was aware that Damon had autism. Mr SS also took the time to take a history from the parents who once again stated that Damon had been sick for the last 24 hours, which involved vomiting and abdominal pain. Mr SS noted that upon his examination Damon was:

> "lying comfortably slightly on his right side and was attentive and watching us".

Mr SS stated that Damon was:

> "not very interactive but did not mind us straightening him out and laying him flat. He did not wince in pain when we did this and remained attentive. He did not mind me pulling his legs out straight so that I could examine his abdomen".

35. Mr SS stated that during the examination he carefully watched Damon's face to detect any changes. Mr SS found Damon's abdomen to be soft and:

> "painful only to deep palpation all over. When I pushed quite hard into his abdomen he would wince but never cried, yelled out or lifted a hand to try and stop me".

Mr SS noted that Damon did not speak to him and that he was unable to:

> "get a bigger wince on the right compared to the left".

Mr SS also noted that right sided tenderness is a strong indicator of appendicitis.

36. Mr SS spoke further with Damon's parents and they confirmed that Damon was appearing to be more comfortable and that there "seemed to be some improvement". Damon had only been given Panadol and therefore Mr SS was not concerned that there was any "masking" of symptoms due to any medication. Mr SS also noted that Damon's temperature had come down and his heart rate was "also coming down with rehydration". In addition the blood test results that were available at that time were normal and his abdominal X-ray was "featureless".

37. As a result of these factors, Mr SS stated that he informed Damon's parents that whilst Damon may have appendicitis, because of his examination, the diagnostic results and an apparent clinical improvement he did not consider it was appropriate to:

> "proceed immediately to operation".

Mr SS set out within his statement that when forming this view he was cognisant of the fact that:

> "every acute surgical operation has risk of morbidity and mortality and this needs to be balanced against the likelihood of appendicitis".

When Mr SS balanced this against the "24 hour history and signs of improvement", he determined that he should not operate "at that stage".

38. Whilst it appears clear on the evidence that Mr SS's primary diagnosis was possible appendicitis, it is clear that he also discussed with the parents the possibility of:

    38.1 Mesenteric adenitis, especially with the high temperature;

    38.2 Gastroenteritis, which was causing the vomiting and retching; or

    38.3 Urinary tract infection, which Mr SS was hoping to exclude from a urine sample.

39. Mr SS stated that it was his opinion that the:

> "clinical examination findings and radiology and laboratory results were not considered to be consistent with an acute 'intact' appendicitis within 24 hours of onset. And his clinical condition was not that seen with a more advanced (> 48 hrs) or ruptured appendicitis with peritonitis".

40. I heard evidence from Dr RC that she received notice of the assessment by the surgical team and their decision not to operate on Damon at approximately 7.00 pm. Dr RC stated that she was "really worried" by this decision and as a result she questioned extensively the assessment made by the surgical team and went through with them each of her concerns, including:

> "the fact that he had autism, the fact that the signs were subtle".

Dr RC stated that she "actually outlined exactly what the signs that I saw were" and the team:

> "went through those with me and said that those signs had resolved and that they weren't … there anymore and the presentation of the child that they saw was quite different to the child that I'd seen".

41. Dr RC gave evidence that she wasn't completely satisfied by what she had discussed with the surgical team and as a result she went and saw Damon again at approximately 8.00 pm. Dr RC stated that on this occasion Damon did indeed appear to have improved since she had last seen him and:

> "he looked a lot better. … the signs that I'd seen that had been particularly worrying to me the first time, they weren't there, so I agreed with what the surgeons had said and in particular when I tried to examine him this time, he did push me away and he rolled over from his back onto his side away from me towards his mother and he verbalised. He didn't say words but he verbalised trying to … get me away and I actually commented to his mother 'Oh, he looks a lot better' and she agreed that he did look better and that he was behaving a little bit more like himself".

42. At that time, Damon's blood test results were also available and Dr RC noted there was an:

> "essentially normal white cell count with a lymphopaenia, making me suspect a viral cause as most likely"

and in evidence Dr RC stated that this:

> "made it seem less likely that these more severe and serious illness, in particular appendicitis or pneumonia – they became less likely a possibility".

43. Dr RC noted that the "C-reactive protein test" was not yet available at that time and that was a test to measure inflammation in the body. Dr RC did note however that this test measured inflammation and not infection and was therefore "not a specific test" but was helpful in indicating "that the child is sick". Dr RC was quick to point out however that the test:

> "wouldn't have helped specifically to say that this was appendicitis or not".

44. The plan was therefore to continue to monitor Damon and, as a result, Damon was admitted under the joint care of care of Paediatrics and Surgical and Damon was transferred to Ward 5B (the Children's ward at RDH). The

plan also included a surgical review of Damon the following morning. Dr RC commenced a plan to continue intravenous fluids overnight and continue fasting in preparation for the surgical review the following morning. A further urine sample was also requested to identify any possible urinary tract infection.

45. At 10.00 pm Dr RC conducted a hand over with the night Paediatric Senior Registrar, namely Dr RS ("Dr RS"). Dr RS also provided a statement to the police which formed part of exhibit 2. Dr RS confirmed that he received a hand over from Dr RC and that during that handover he was advised of the initial concerns about Damon's abdomen, the review by the surgical team with a planned review by them the following morning, and the improvement that had occurred in Damon's condition since his admission.

46. Dr RS stated that his next involvement with Damon was at about 1.30 am on Thursday, 3 December 2009 when he received a page from one of the nurses advising that Damon's temperature had risen to 39.4 degrees. As a result, Dr RS reviewed Damon with a nurse at 1.45 am. Dr RS records that at the time of that examination:

> "Damon had a temperature of 39.4, respiratory rate of 52, heart rate of 103 and saturations of 98% on room air. There was no increased work of breathing or grunting. He was easily rousable".

Dr RS then:

> "removed his sheet and lifted his shirt to examine his abdomen. His abdomen was examined in all four quadrants and the flanks. His abdomen was soft with no evidence of guarding or rigidity. As I persisted with my examination, he roused and turned onto his back to purposefully push my hand away. I interpreted this as normal behaviour by any four year old being examined at this time of night and felt he was not in any discomfort. He was well perfused in his peripheries".

47. Dr RS went on to state to the police that at the time of his examination:

> "I felt his abdominal examination was reassuring and I did not have reason for concern. At no stage during the examination did I feel he had an acute surgical abdomen. Had this been the case I would have immediately re-consulted the surgical team. I had no evidence to suggest that he was in a pre-arrest state. I was reassured by his pulse rate and perfusion".

48. It is clear that Dr RS was also aware of Damon's autism and that this was a matter that he took into account at the time of his examination. Dr RS also discussed his examination (even at that early hour) with Damon's mother and recorded that Ms Smith "expressed no further concerns at this time". Observations were due to occur every 1 ½ hours and a further routine observation was conducted by Dr RS at 3.00 am. The RDH records note the observations at that time to be a temperature of 37.6, respiratory rate of 50, heart rate of 100 and saturations of 98% with Damon recorded as asleep and no obvious discomfort. It is clear from those observations that Damon's temperature had dropped, so too had his pulse and respiratory rate.

49. Unfortunately things did not improve for Damon and a code blue was called at 3.53 am when Damon was found to be unresponsive and not breathing. Various staff, including those from the Intensive Care Unit (ICU) and Dr PB (Director of the Paediatric Department of the RDH) immediately attended and resuscitation was attempted however it was unsuccessful. Damon was declared deceased at 4.28 am, some 35 minutes after CPR had first commenced.

Cause of Death

<u>Dr TS</u>

50. Dr TS gave evidence before me. He conducted the autopsy upon the child at 2.00 pm on 3 December 2009 (the same day that Damon passed away) and the report prepare by him consequent to that autopsy was tendered in evidence before me as part of exhibit 1. Dr TS noted that the significant autopsy findings were as follows:

50.1 "An inflamed vermiform appendix (acute appendicitis) in the abdomen, which had ruptured, causing the extrusion of a quantity of faecal material directly into the abdominal cavity.

50.2 As a consequence of the above, inflammation of the bowel membranes (acute peritonitis), along with the production of yellow pus in the peritoneal cavity.

50.3 Acute swelling of the brain (cerebral oedema)".

51. Dr TS noted in his report, and confirmed in his evidence before me, that acute peritonitis caused by faecal contamination of the abdomen had a high level of morbidity with death being a frequent outcome. Dr TS opined that Damon died from:

> "acute suppurative (i.e. pus causing) peritonitis following the rupture of an inflamed vermiform appendix".

52. One of the matters of particular concern to me during the course of this inquest was the fact that in this day and age, with all the medical assistance that was made available to Damon at the RDH, this child died from a ruptured appendix. As I stated during the course of these proceedings, you do not expect that if you have appendicitis that you are going to die in hospital from that condition. One of my main concerns was therefore to ensure that all matters had been properly considered by the medical staff and that this was not a case of a failure by staff to properly diagnose Damon's condition and treat him appropriately. In this regard I note that evidence

was received from two experts who addressed these issues, namely Dr CM and Dr JC.

Dr CM

53. Dr CM is currently employed at the Royal Children's Hospital ("RCH") in Parkville, Victoria, as the Deputy Director of Developmental Medicine and is the Paediatrician to the Autism Assessment team of the RCH Integrated Mental Health Service. Dr CM has held that position for the last 16 years and prior to that was a Consultant Paediatrician in London. In the last 13 years much of Dr CM's practice has been the assessment and management of children with autism and also undertaking research into autism; however she has been involved in the management of children with autism since about 1986. I consider Dr CM to be eminently qualified and her evidence was of great assistance to me during the course of this inquest.

54. Dr CM provided a report dated 18 May 2010, which was tendered in evidence before me as exhibit 5. That report was provided to specifically address the issue of Damon's possible autism, its impact upon the care provided to him at RDH and whether proper consideration was given to that condition when he was being treated and assessed at RDH. I note that in providing her report, Dr CM carefully reviewed all of the material tendered in evidence before me, including the statements of all relevant persons, and the RDH medical file.

55. Dr CM also reviewed the material relied upon to assess whether Damon was suffering from autism and noted that in her opinion it was likely that Damon did suffer autism, but there were other possible diagnoses being:

> "global developmental difficulties, an isolated language disorder or profound sensorineural deafness".

Dr CM stated that Damon would still have required a formal multidisciplinary assessment to make the diagnosis of autism and I note that

such assessment is a reference to the kind of testing that Damon was on the "priority list" to undertake following his assessment by Ms HM with the CAMHT.

56. With this possible diagnosis in mind, Dr CM then gave evidence concerning whether the various medical staff dealing with Damon at the RDH appreciated the significance of Damon's possible autism with respect to his clinical presentation. In this regard I note that Dr CM gave evidence that it was her opinion that all relevant staff did in fact appear to have carefully considered Damon's possible autism when dealing with him. Dr CM noted in particular that:

> "every doctor and nurse he came into contact with recorded the fact that he had autism or communication difficulties"

and that:

> "this was taken into account when making the clinical assessments to decide whether he had appendicitis".

57. One of the issues raised specifically with Dr CM was whether, because of Damon's difficulties in communicating, this resulted in a failure to properly diagnose him and identify that he was suffering from appendicitis. I note that it had in fact been alleged in a report by Dr AF (which formed part of exhibit 1) that there is a higher threshold to pain for children with autism.

58. In this regard, Dr CM stated that autism was a disorder with a wide spectrum and:

> "there are three areas that always are affected. The triad of impairments are to do with the use of language to communicate, peer relationships and the ability to make social interaction and the third area that must exist is limited interests and circumscribed patterns of interests and limited ability to play in a creative and imaginative way in small children and generally it is said those impairments exist before the age of three years".

59. Dr CM stated in her report that therefore not all children with autism have a higher threshold to pain and gave examples of some children with autism being reported to have broken an arm and not been aware of it, whilst others suffering from autism will react in a completely different way and scream in response to the:

> "most minor, inconsequential injury or painful stimuli".

60. Dr CM noted that in terms of Damon and his response to pain, his mother had reported (and this is set out the mother's statement to the police in exhibit 1) that:

> "Damon could communicate with us quite well. If he ever got hurt he was able to tell us. For example if he was bitten by a mosquito he would come to me and show me. He would put my hand on it to show me where to scratch".

As a result of this information, Dr CM stated that it was clear Ms Smith knew her son was in pain and that she told staff who then reviewed the deceased. As stated however by Dr CM, all this indicated was that Damon had a:

> "significant illness but not a specific illness. So the diagnosis of appendicitis was very difficult to make".

61. In terms of Damon's difficulties in communication, Dr CM also helpfully noted that:

> "Paediatricians and paediatric surgeons are used to working with non-verbal infants and toddlers and rely on the parents to give them the history and clinical information from their examination to make a diagnosis. Therefore these skills would be used in a non-verbal child whatever their age or diagnosis".

After also having heard Dr RC's evidence in particular, I have no doubt that this is true, and was particularly so in this case.

62. Dr CM went on to say in her report that in relation to the issue of autism:

> "I firmly believe the difficulty with making the diagnosis of appendicitis is attributable to his young age and unusual presentation and is not related to his autism"

63. In relation to the question of diagnosing Damon as suffering from appendicitis, Dr CM provided her opinion based on her perspective as a general practitioner and also her experience in paediatrics since 1982. With that experience in mind, Dr CM stated that it was her experience that appendicitis was very difficult to diagnose in children under the age of four years and that the reasons for this were:

> "most young children don't have the communicative skills to give a clear history themselves. That's the first thing. So we are very reliant on the history from their carers. The second thing is that many, many different diseases in early childhood present with very similar problems. So a child who presents with abdominal pain, a fever, vomiting, can have a whole range of possible diagnoses. The other reason that it's difficult to make the diagnosis is that in adults the description that's classically associated with appendicitis is that the pain moves from the centre of your tummy to the right-hand side. That doesn't occur in small children and neither are they able to be so specific".

64. Dr CM gave evidence that in terms of the material she had reviewed concerning Damon's treatment at RDH:

> "I would have considered that the approach taken was entirely appropriate. I don't believe an ultrasound would have contributed in any way but I do have to qualify that by saying I am - I do not see acutely unwell children with appendicitis now. I haven't really been involved in the acute care of children with appendicitis but I doubt that I would have, in this particular case, even considered an ultrasound on the basis of the findings reported".

65. Dr CM stated that as a result of her analysis and review of all the material she would "most definitely not" have determined that Damon required immediate surgical intervention, and in terms of whether appropriate consideration had been given to Damon's possible diagnosis of autism:

> "My opinion was that there had been great consideration given to that possible diagnosis … I do remember Dr Rebecca RC making a

> very pointed note of the possibility of autism and the changes there are in children with autism because of their sometimes unusual perception of pain and I think throughout there was good reference made back to mother to ask, asked by the doctors whether or not she thought the symptoms and the signs that were found were correct and really, you know, my opinion is that it's irrelevant in a small child of this age when confronted with this sort of problem whether or not they have communicative skills because most children in a situation like this in a hospital with strangers around them will often - even the most verbal children will often find it quite difficult to communicate what they're feeling accurately and you are very dependent on clinical skills and the history given by the parents and the help of the parents in advising you about what's going on".

<u>Dr JC</u>

66. Dr JC is a paediatric surgeon also currently employed at the Royal Children's Hospital ("RCH") in Parkville, Victoria. Dr JC specialised in paediatric surgery in 1996 and also has specialisation in trauma and thoracic surgery. I consider Dr JC to be well qualified and his evidence was, like that of Dr CM, of great assistance to me during the course of this inquest.

67. Dr JC provided a report dated 20 July 2010, which was tendered in evidence before me as exhibit 6. That report was provided to specifically review the decisions made in relation to the assessment and treatment of Damon from the perspective of a paediatric surgeon. In providing his report, Dr JC also reviewed all of the material tendered in evidence before me contained in exhibits 1 and 2.

68. Dr JC noted within his report that "the diagnosis of appendicitis in the preschool child is an exceptionally difficult diagnosis to make". During the course of his evidence, Dr JC stated that "preschool aged child" is the age group covering "four years and under". Dr JC stated that in his experience diagnosing appendicitis in such children was more difficult:

> "and that's largely because it's a diagnosis you don't expect in such young children because it's much more uncommon".

69. Again, within his report Dr JC went on to note that:

> "there is no specific test for appendicitis and it is long recognised that the ability to make the diagnosis is based on review of a range of information that can be obtained both from clinical assessment and investigations",

and then based on such information there is then:

> "an assessment of the likelihood of appendicitis". Dr JC also noted that "unfortunately ultrasound is not always that reliable especially in early appendicitis".

70. During the course of his evidence, Dr JC expanded on this issue and stated:

> "…of the great difficulties with appendicitis is at the moment there is no definitive test of appendicitis and we would still, as paediatric surgeons, largely see it as a clinical diagnosis, and by that I mean a diagnosis that is made by interaction and examination of the patient. I will examine and I will say that there are test that can be done to help exclude or make you more suspicious about the diagnosis and these can be a series of blood tests and more recently people have advocated the value of ultrasounds in the diagnosis and I am aware in some adult practices overseas people even go to the extent of using a CT scan to help make the diagnosis but all of those tests if you use them have false negatives, which means that they can still miss some children or adults who have the disease."

71. It is clear from Dr JC's evidence that once that assessment has been made then a decision needs to be made:

> "as to whether the likelihood of appendicitis outweighs the potential complication s that can arise from a negative laparotomy or laparoscopy".

I note that these are the procedures that would be undertaken when appendicitis is diagnosed. Dr JC also noted within his report that:

> "If we did operate on a lot of these children when they first presented with a history of vomiting and lower abdominal pain then it is likely we would be putting children through unnecessary operations".

72. During the course of his evidence, Dr JC also stated that in terms of possible dangers of surgery:

> "… you're basically putting someone through an operation, so they have to weigh up the risks of an anaesthetic and that is giving an anaesthetic in a young child and here, more specifically, we have to remember we're applying an anaesthetic to a child that we know had some illness. We don't know at this point whether it's appendicitis or not but there - so it's not a perfectly well child either and then if we're doing a laparotomy we are making a hole in the tummy, there is the ability, especially with keyhole surgery when you are pushing things through small holes in the tummy, there is ability to damage the bowel. There is ability to damage the blood vessels and then once you're inside even if you don't find a cause, because you are manipulating tissue on the inside of the tummy, you can get what they call adhesions or bands form on the inside and that can (inaudible) lead to things like bowel obstructions or other problems later on. Now, those risks, I'll concede, are all very small and thankfully very small, but they're still things we have to weigh up if you're going to put a person through an operation".

73. I should comment here that it is in fact reassuring to me that there is this kind of caution taken by surgeons, particularly so in relation to children, rather than simply immediately deciding to undertake surgery which is, in and of itself, dangerous.

74. Dr JC then noted that even with his vast years of experience and expertise:

> "most of the children I see through my practice who develop appendicitis at such a young age usually do have signs of perforation when they are operated on".

I find that this supports just how difficult it must be to diagnose this condition.

75. In relation to the difficulties associated with diagnosis, Dr JC noted the following "problems":

75.1 "Appendicitis at a young age is a rare situation and other mimicking illness such as gastroenteritis are far more common". With young children Dr JC noted that "the signs need to be significant and

localising enough to exclude it from more common pathologies when considering surgery. If the child is clearly unwell but the clinical signs are difficult to interpret then sometimes the use of ultrasound and blood examination can help to confirm or alleviate suspicions". I note that here those things were done and that there was no significant or localised pain as time progressed for Damon in the hospital.

75.2 "It is often difficult for children at this age to localise pain which is something in classical appendicitis we use to make the diagnosis". Dr JC noted that "it is often only when they develop more significant signs of irritation in the abdomen that you can truly be confident that there is something going on in the abdomen more significant than general abdominal pain and discomfort from something such as gastroenteritis. Unfortunately by this time they may well have a perforated appendix". Here I note that Damon's condition changed throughout his time at the hospital, sometimes guarding his abdomen, sometimes not.

75.3 "The appendix does not always sit in the classical position" making the diagnosis even more difficult. I note here however that this does not appear to have been the case for young Damon.

75.4 "The time frame in which the disease can progress". Dr JC agreed that the "usual" time frame is two to three days but that this can be more complicated with the very young and the elderly. Dr JC noted that with the very young the disease can progress "more rapidly" and that this may have been the case with Damon. Dr JC went on to state that "If you do have this situation of an appendix progressing quickly and developing an early perforation without localisation then it would be exceedingly difficult to make the diagnosis prior to developing peritonitis".

76. Concerning the assessment and treatment of Damon by the relevant medical staff at RDH, Dr JC stated that he considered that it appeared that "every attempt was made to get some feedback" whilst carrying out the relevant examinations. Dr JC also noted that the fact that Damon's abdomen was soft to palpation when considered by Mr Scott and that his mother had also thought he appeared to be more comfortable were both signs to suggest that Damon was improving rather than deteriorating. He also noted that after weighing up all the information that was to hand to the medical staff at the time:

> "There does not seem to be any strong indication supporting appendicitis especially with the abdominal findings as they were described".

77. Dr JC stated clearly in his evidence that diagnosing appendicitis in young children was very difficult and that:

> "ultimately there still needs to be reasonable evidence available to us both on examination and on investigation to warrant progression onto surgical intervention".

He noted that where there is doubt then:

> "it is very well established in surgical teaching that the appropriate management is to resuscitate the patient with fluids and maintain close and regular observation of the patient to see if there is a progression in signs".

I note that this appears to be precisely what medical staff did in relation to Damon and I agree with the opinion held by Dr JC that the action taken by the staff was entirely appropriate.

Decision

78. It is clear to me that diagnosis of appendicitis is a very difficult diagnosis to make indeed (despite the fact that it is a well-known illness) and that this is not assisted by the fact that there are no particular tests or the like that can conclusively identify that a patient is suffering from appendicitis.

79. I note that during the course of the evidence there was suggestion made before me as to whether an ultrasound should have been conducted given the level of uncertainty associated with the possibility of appendicitis. I do however accept the evidence given before me by Dr RC that she did in fact consider an ultrasound but because she considered:

> "the pain looked to be of a surgical nature"

she then:

> "wanted to get a surgeon involved in the first instance".

80. I also note Dr RC's evidence that ultrasound is:

> "a tool that's very good in the right hands but it's not always accurate and so the results that you get from an ultrasound it can sometimes be falsely reassuring and on that night it was now after hours when I saw Damon and organising an ultrasound would have meant a delay of a couple of hours probably while the ultrasonographer came in. He - he was a little child. He had autism. He was going to be difficult to do the assessment. It could potentially make more of a delay. I didn't want to leave him lying there, in pain, unassessed by the team that I thought would be the ones would were able to provide the definitive treatment, which was the surgeons. I didn't want that four or five hour delay so I thought the best thing to do would be to get the surgeons involved first and then really defer to their expertise in this area with this condition - that is a condition that they treat, not myself - as to whether further testing would be required. So I thought about it but I wanted the surgeons to see him first to make the decision themselves".

81. I also note the evidence of Dr JC on the issue of the use of ultrasound or the obtaining of a surgical opinion where he stated:

> "…I would feel strongly that it if you think a child or anyone really has appendicitis the most appropriate step is to get a surgical review first before any investigation. I think the danger of going straight to an ultrasound is that if the ultrasound comes back saying it's negative, then that doesn't truly or absolutely exclude appendicitis. So I think it could lead to clinicians falsely reassuring patients and that in itself having dangerous consequences. I think - you know, as I said I think it's appropriate for a surgical review, because that may

> obviate the need for the ultrasound, because it may be clear cut the child needs an operation, but then I think it's appropriate then if it's not clear cut for the next step then to be an ultrasound and I think it's up to the clinician examining to make a decision of when the right time would be. But even interpreting that has to be in conjunction with the signs and symptoms you've got".

82. I find that Damon's treatment and care at RDH during the course of his admission on 2 and 3 December 2009 was appropriate and reasonable despite the sad outcome. I find that the numerous doctors involved in Damon's care were careful and considerate of his communication difficulties and possible autism. I find that all the medical practitioners were clearly cognisant of this condition at all times and carried out their examinations and assessments accordingly.

83. Appendicitis was one of the diagnoses considered right from the moment that Damon was admitted. It appears on all accounts that it was in fact the "primary" diagnosis of all involved. It is clear that it was always being considered by the doctors involved as was his possible autism and any impact that condition may have been having on their abilities to diagnose Damon effectively.

84. I do not accept that had Ms Smith or Mr Cabiddu been more assertive or louder, or that had they been Caucasian, or if Damon's General Practitioner/ Psychiatric Registrar been Caucasian, that this would have made any difference whatsoever to the treatment and assistance provided to Damon and his family. It is extremely disappointing that such a suggestion was made by Dr AF in her statement to the police in what were already tragic circumstances.

85. There is no doubt in my mind that the medical practitioners involved in Damon's care at the RDH were doing everything for Damon, no matter his race or background. It is clear that all such persons were shocked and upset by Damon's death and have all closely analysed the actions that they each

took in the hope of being able to avoid such an outcome in future. Dr RC's own evidence was very moving in this regard when she stated:

> "…this case has been something that has made me question everything that I am as a doctor because I did everything I thought was appropriate at the time and, as I say, I still - I still think that that - the management was what I would do in the future and I found that very difficult. I only hope that in the future the family can have some peace that - that I really did do the best I could possibly do as a doctor for their child".

86. I also note that Mr SS even took the time to attend the autopsy for Damon with his own team to try and ascertain what occurred and to consider whether he could have or should have done things differently. I note from the evidence of Dr TS that this is not usually done.

87. I also note that the RDH has also undertaken an Incident Review in relation to Damon's death. A copy of this review was admitted into evidence as part of exhibit 6. I am once again very pleased to see that the RDH has taken this action independently of my own inquiry. It is important that hospitals such as the RDH carry out these sorts of reviews so that lessons can be learnt quickly and any changes required are implemented fast. It was also clear from the evidence of Dr PB that he, as Director of Paediatrics at RDH, took particular care and attention to carefully analyse and consider all that occurred with Damon at the RDH and to assist the family with coming to terms with their loss, including several meetings with the family that he consented to them recording and which were tendered in evidence before me as exhibit 3.

88. I find on the basis of all the evidence before me that the RDH has appropriately addressed those matters that it found could be improved as a result of its own review and I do not intend to say anything further about their findings.

89. I note that Counsel Assisting advised me during the course of her final submissions that the family were requesting that I consider making recommendations for the RDH to use ultrasounds in relation to assessing children in the zero to six year age group suspected of suffering from appendicitis. I have considered this request from the family very carefully and for some time since this hearing ended. As a result of the evidence I have heard, particularly from Drs RC and JC concerning the risk of false negatives and like, I decline to make this recommendation, indeed, I have no recommendations to make at all.

Dated this 1st day of June 2011

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GREG CAVANAGH
TERRITORY CORONER