CORONERS ACT, 1975 AS AMENDED

SOUTH  *AUSTRALIA*

FINDING OF INQUEST

An Inquest taken on behalf of our Sovereign Lady the Queen at Adelaide in the State of South Australia, on the 22nd of June, 2001 and the 7th of September, 2001, before Wayne Cromwell Chivell, a Coroner for the said State, concerning the death of Celia Laurel Ivy Sands.

I, the said Coroner, find that, Celia Laurel Ivy Sands aged 82 years, late of 4 First Street, Gawler, South Australia, died at Blakeview on the 15th of May, 1999 as a result of peritonitis due to a perforated viscus. I find that the circumstances of the death were as follows:

1. Introduction

1.1. The accident

At about 2:15pm on Thursday, 13 May 1999 a collision occurred between a blue Holden Commodore sedan driven by Mrs Sands, and a Ford utility driven by Ian Walter Mason.

1.2. Mason had been driving south on Main North Road at Blakeview when Mrs Sands drove her car through the intersection of Smith and Main North Roads intending to return home to Gawler. Whilst she was crossing the two southbound lanes, the two cars collided at right-angles.

1.3. Clearly, Mrs Sands failed to give way to Mr Mason's vehicle. Mr Mason said he was only 20 metres from the intersection, travelling at about 100kph (which is the speed limit), when he saw Mrs Sands' car. He applied the brakes and attempted to swerve left, but was unable to avoid the collision. His version was corroborated by

independent witnesses. No action was taken against him by the Police as a result of the collision.

1.4. Initial treatment

Mrs Sands was conveyed to the Lyell McEwin Hospital ('LMH') where she was seen by Dr Chong, in the Emergency Department, who admitted her. She was later seen by Dr Boris Eskandari-Marandi, the Surgical Registrar. He said that she complained of neck and abdominal pain. He noted bruising on the right side of her neck, and bruising and tenderness on the right side of her abdomen. X-rays and blood tests were normal (exhibit C4a, p1).

1.5. Mrs Sands continued to complain of pain over the ensuing day. She was seen by the Senior Assisting Surgeon at LMH, Mr Timothy Jansen, in the late afternoon of 13 May, and he concluded that there was no clinical evidence that Mrs Sands had suffered a bowel injury. Indeed, he thought she looked 'remarkably well' (T11). He pointed out that there was no evidence on x-ray, blood tests or clinical presentation of intra peritoneal injury and has noted signs were stable (T14). She was treated conservatively. Mr Jansen said:

> 'In a situation like this there's always a high degree of suspicion of an intra-abdominal injury and therefore we gave instructions for very careful observation, which was directed to her level of consciousness, her cardiovascular state, her breathing, and the measurement of the abdominal girth, with examination of the abdomen at regular intervals.' (T14)

Mr Richard Sarre, a Consultant Colo-Rectal Surgeon and Senior Visiting Surgeon at Flinders Medical Centre, who reviewed this case at my request, basically accepted that this approach was appropriate, with the exception of the CT scan which I will discuss later. He said:

> 'She does look as if she was assessed clinically fairly competently. She obviously was in pain, as would be expected but her observations – her pulse, temperature, blood pressure and things – appeared to be satisfactory. It's my reading that she didn't require a large amount of analgesia initially although she did require continuing analgesia over the next 24, 48 hours. I think it was reported that bowel sounds were present, so the abdomen was examined, and I think in fact there was a reference to the possibility of internal abdominal injury early on, so it was certainly thought of, as indeed you would in that circumstance.' (T46)

1.6. Dr McCleave, the Surgical Registrar who saw Mrs Sands during the early hours of 14 May, some time around 4:00-5:00am (he did not note the time), noted that Mrs Sands

needed analgesia but was refusing morphine. Her abdominal symptoms remained the same, in that he noted '+++ generalised tenderness with rebound'. He also noted a decreased urine output, despite intravenous fluids having been given. He queried whether she was suffering an intraperitoneal bleed, although he noted that she was haemo dynamically stable at the time. He directed that her fluid resuscitation be increased, that she undergo an unspecified blood test, and commented:

> 'Will need CT this am'
> (Exhibit C7a)

However, Mr Jansen said that he did not consider that a CT scan was necessary at that time.

1.7. In compliance with Dr McCleave's direction, Mrs Sands received Haemacel and other fluids and intramuscular pethidine 'with desired effect'.

1.8. Mr Jansen saw Mrs Sands during the day of 14 May. He said that she appeared comfortable and that her condition was stable. He said that he did not agree with Dr McCleave that she was suffering an intra-abdominal bleed, having regard to her unchanged vital signs (T17). For this reason, he did not consider it appropriate to order a CT scan (T21). Mr Sarre accepted that Mrs Sands' symptoms had not changed drastically since her admission, and that there was no indication to change the approach at that time (T52).

1.9. At 8:25pm that night, a nursing note indicated that Mrs Sands was 'slightly febrile', with a temperature of 37.8ºC.

1.10. However, by 3:00am on 15 May, the medical officer on night call noted that Mrs Sands had vomited blood on several occasions, although there was no change in her abdominal pain, and there were 'nil other complaints.' His assessment was that she was still 'stable' at that time, and that the treatment should continue until she was reviewed by the 'home team' in the morning.

1.11. Mr Jansen disagreed, saying that the fluid balance charts at that time indicated that Mrs Sands' urine output had dropped, indicating serious impairment of renal function, since about midnight that night (T28). He said that he should have been advised of that development (T31).

1.12. Later that morning, sometime before 7:15am, the same night-duty doctor was called because the nurses had become concerned that Mrs Sands' oxygen saturation had dropped to 71-83%. He noted 'no new complaints'. At that time, her blood pressure had dropped, although not to abnormal limits, the pulse had increased to 120, and her arterial blood/gas readings indicated that she was acidotic (7.245 where the lower limit is 7.4). This was a sign that severe infection, perhaps peritonitis, had set in (T41).

1.13. Mr Jansen said that these readings indicated that Mrs Sands was not 'stable' and that he should have been notified of these findings, since her condition suggested that surgery was warranted (T33). Mr Sarre agreed (T59).

1.14. Dr Eskandari-Marandi telephoned Mr Jansen to advise him of these signs at about 7:30am, and Mr Jansen quickly concluded that she may have suffered a gastro-intestinal injury, and that an urgent laparotomy was required. Mr Jansen proceeded to make his way to the hospital.

1.15. In the meantime, Dr Eskandari-Marandi arranged for an endoscopy to be performed to see if the source of the bleeding could be located. This was done, and severe gastritis was noted. The endoscopist, Dr Pollard, noted:

> 'I would expect her to stabilise with I.V. replacement. ? scope again Tues.'
> (Exhibit C7a)

1.16. Mrs Sands was taken to the Recovery ward after the endoscopy where further fluid resuscitation was given.

1.17. Unfortunately, at about 10:50am, Mrs Sands suffered a cardiac arrest. Dr Millard, the anaesthetist in attendance, notes that he made extensive efforts as resuscitation including defibrillation, adrenaline and other drugs, intubation and ventilation, but they were to no avail and a heartbeat could not be restored and her death was certified at 11:10am that morning (exhibit C4a, p2).

2. Cause of death

2.1. A post-mortem examination of the body of the deceased was performed by Dr John D Gilbert, Forensic Pathologist, on 17 May 1999. Dr Gilbert concluded that the cause of death was 'peritonitis due to a perforated viscus resulting from a motor vehicle accident' (exhibit C2a, p1).

2.2. Dr Gilbert commented:

> '1. Death was due to peritonitis associated with serosal contusions and perforation of the proximal jejunum. Peritonitis would account for the deceased's sudden deterioration and the accelerated putrefactive changes noted at autopsy despite refrigeration of the body in the two day post-mortem interval.
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> 2. Analysis of a specimen of blood obtained on admission to LMHS reportedly showed a blood alcohol concentration of nil.
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> 3. No natural disease that could have caused or substantially contributed to the death was identified at autopsy.'
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> (Exhibit C2a, p5)

3. Issues arising at the inquest

3.1 Should a CT scan have been taken?

Dr Christopher Baggoley, then the Director of Emergency Services at Ashford Hospital and a Senior Instructor in the Early Management and Severe Trauma (EMST) Course conducted by the Royal Australian College of Surgeons, provided an opinion at my request. In his report, exhibit C5a, Dr Baggoley was somewhat critical of the failure of the doctors at LMH to take a CT scan of Mrs Sands' abdomen during her admission. He said:

> 'Conclusions
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> It is the teaching of the EMST Course regarded as the standard for trauma assessment and early management in Australasia on abdominal trauma that intra-abdominal visceral (i.e. intestinal) damage must strongly be suspected following blunt trauma to the abdomen. Diagnosis of such injuries is often difficult and an aggressive approach is mandatory. Multiple injuries are common and signs and symptoms guide the diagnosis. If these signs and symptoms are absent or obscured by other injuries, special techniques must be applied.
>
> The special techniques include CT scan of the abdomen, giving oral contrast medium beforehand. Another option is a technique referred to as a diagnostic peritoneal lavage (DPL), where saline is introduced into the abdominal cavity, mixed with whatever fluid is free in the cavity (normally there is none), the combined fluid is then evacuated and analysed – usually for the presence of blood or pus. Neither CT nor DPL was undertaken with Ms Sands.'
>
> (Exhibit C5a, p4)

3.2 Mr Sarre agreed, saying:

> 'I agree with Dr Baggoley's conclusions that a CT scan would have been useful in diagnosing her condition. Indeed more frequent observation of her abdominal findings may have led to earlier diagnosis. I do not have a great deal of faith in the technique of

diagnostic peritoneal lavage as an indicator for the requirement of laparotomy although I recognise that it is an accepted procedure.

In conclusion I would say that earlier diagnosis of perforated intestine and laparotomy would have led to a very different outcome in this case however the signs and symptoms of peritonitis were not very obvious and were interpreted too late to save the situation. Perhaps the most important indicators that were misinterpreted were her increasing requirements for fluids and the fact that her pain was not easing after twenty-four hours or more of observation. Earlier recognition of these factors may have improved the outcome as would investigation by CT scan on the 14 May when it was first suggested by Dr McCleave in the case notes.

Overall, the circumstances are quite unfortunate but apart from the comments I have made, I do not see that there has been any act or omission amounting to less than adequate care.'

(Exhibit C8, p2)

Mr Sarre acknowledged that a CT scan may not have demonstrated a bowel perforation at that time. He said:

'Quite possibly not. There may have been some subtle changes which could have been interpreted as intestinal injury such as haematoma, bruising in the mesentery, the attachments of small intestine. You'd anticipate seeing some fluid within the abdominal cavity outside the intestine, but there may not have been a lot of contamination immediately so there may not have been a lot of have seen on a scan done very early in the admission.' (T48)

3.3 Mr Jansen did not agree that there were grounds to order a CT scan, except perhaps if he had been told about Mrs Sands' decreased urine output during the early morning of 14 May, when she was seen by Dr McCleave. He said that by the time he saw Mrs Sands that day, the output had improved, so he felt no need for alarm. (T39)

3.4 Having discussed the issue raised by Dr Baggoley, Mr Sarre acknowledged that the situation was finely balanced. He said:

'Q. Do I interpret your evidence correctly saying that the CT scan, although on balance you probably would have arranged one but it's fairly finely balanced. It's not really a compelling case demonstrated for one that morning.

A. No, I wouldn't – if I'd reassessed her, if I'd seen her on the afternoon of the 13th and then again on the morning of the 14th and felt that she was much the same and that her blood tests hadn't altered significantly, I would have thought twice about it but I think on balance if you'd had an elderly person who on the whole tend to be fairly stoic about things and don't complain a lot and the fact that she had fairly good evidence of severe abdomen or external trauma, I think it would have been useful.' (T52)

3.5 Should Mr Jansen have been called earlier on 15 May?

Secondly, I have already mentioned that Mr Jansen suggested that Mrs Sands condition in the early morning of 15 May called for urgent intervention, and he should have been called earlier than he was. (T33)

3.6 By the time Dr Eskandari-Marandi came into the picture, the situation was obvious and he acted promptly and appropriately.

3.7 Mr Sarre said that it was not really possible to predict the likely outcome, even if Mr Jansen had been called in at 3:00am and operated then. He said:

> 'It's not really possible to say. I mean even at that stage she had established peritonitis and was presumably bacteraemic if not septicaemic, bacteraemia meaning bacteria circulating in the blood stream, septicaemia meaning actually reproducing and causing a release of toxins which is a fairly nasty situation. The chances of surviving that at her age are not all that good. The aim of treatment obviously would be to step in at the very first sign before there was established infection. Once infection was established, which I would say would have been within – or shortly after 24 hours from the time of the initial injury, the outlook would be fairly grave.' (T60)

3.8 Mr Sarre also supported Mr Jansen in his assertion that there was no good sign of peritonitis until early in the morning of 15 May 1999 (T65).

4. Conclusion

4.1 Having regard to the totality of the evidence, I find that there is no evidence that Mrs Sands received less than adequate care at LMH until the early morning of 15 May 1999.

4.2 Although ideally an abdominal CT scan could have been performed which may have diagnosed the bowel perforation earlier, there is no certainty about that. Mrs Sands was in the care of an experienced consultant surgeon, and this was a question of clinical judgement for him at the time, and there is no evidence that the decision not to order one was incorrect.

4.3 Mrs Sands' condition deteriorated significantly during the night of 14-15 May 1999, and Mr Jansen should have been called to the hospital to perform emergency surgery at just after 3:00am. The fact that he was not called in decreased Mrs Sands' chances of survival, although her prognosis was grave in any event.

5. Recommendations

5.1 I do not offer specific criticism of the night medical officer on duty on 14-15 May 1999, since I did not hear evidence from him. I do not know his level of training or experience, nor do I know why he did not call the consultant.

5.2 In those circumstances, I am unable to make a recommendation which will prevent a recurrence of a similar event within the meaning of Section 25(2) of the Coroners Act, except perhaps to recommend that the Chief Executive Officer of LMH reviews the hospital's arrangements for night cover to ensure that there are no barriers to such communication with consultants.

Key Words: Hospital Treatment; Peritonitis; Abdominal Injury

In witness whereof the said Coroner has hereunto set and subscribed his hand and Seal the th day of September, 2001.

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Coroner

Inq.No. 18/01 (1192/1999)