



# OFFICE OF THE STATE CORONER

## FINDINGS OF INQUEST

**CITATION:** Inquest into the death of Shannon Sheng Wen TANG

**TITLE OF COURT:** Coroner's Court

**JURISDICTION:** Brisbane

**FILE NO(s):** COR/03 0894

**DELIVERED ON:** 10 August 2007

**DELIVERED AT:** Brisbane

**HEARING DATE(s):** 9 August, 27, 28 & 29 November 2006

**FINDINGS OF:** Ms Christine Clements, Deputy State Coroner

**CATCHWORDS:** CORONERS: Inquest – medical procedure, gastric bypass, informed consent regarding mortality, complications

### REPRESENTATION:

Ms Jennifer Rosengren of Counsel – appearing to assist the Coroner

Mr James McDougall of Counsel – representing Dr George Fielding, Dr Gwen Bentley, Dr Michael Willis, Dr Paul Georghiou, Dr Charles Elliott and Dr Vella Vankatesch; instructed by Flower & Hart Lawyers

Mr John Allen of Counsel – representing Wesley Hospital, Dr Jonathon Samaan, Dr Greg Ellison and Dr Mark Dilda, instructed by Minter Ellison Lawyers

## **CORONERS FINDINGS AND DECISION**

### **Coroners Act 1958 applies**

1. The inquest was conducted pursuant to section 26 of the *Coroners Act 1958* (“the Act”) because Mr Tang’s death occurred before 1 December 2003, the date on which the *Coroners Act 2003* was proclaimed. It is therefore a “pre-commencement death” within the terms of section 100 of the latter Act, and the provisions of the *Coroners Act 1958* are preserved and continue to apply in relation to the inquest. I must deliver my findings pursuant to the provisions of that Act. I do so, reserving the right to revise these reasons should the need or the necessity arise.
2. The purpose of this inquest, as of any inquest under the Act, is to establish, as far as practicable –
  - the fact that a person has died;
  - the identity of the deceased person;
  - whether any person should be charged with any of those offences referred to in section 24 of the Act;
  - where, when and in what circumstances the deceased came by their death.
3. A coroner’s inquest is an investigation by inquisition in which no one has a right to be heard. It is not inclusive of adversary litigation. Nevertheless, the rules of natural justice and procedural fairness are applicable. Application of these rules will depend on the particular circumstances of the case in question.
4. In making my findings I am not permitted, under the Act, to express any opinion on any matter which is outside the scope of this inquest, except in the form of a rider or recommendation.
5. The findings I make here are not to be framed in any way which may determine or influence any question or issue of liability in any other place or which might suggest that any person should be found guilty or otherwise in any other proceedings.

### **Review of evidence**

6. Shannon Tang was a twenty one year old Singaporean man who was seeking assistance to address a lifelong debilitating problem of obesity. He lived in Singapore and information from his family indicates he was working full time in the human resources industry. He planned to pursue university studies.
7. He had researched various treatments and become aware of Dr George Fielding’s practice and expertise in the field of obesity surgery. His family informed the coroner’s office that he first became aware of Dr Fielding

from a surgeon who had trained under Dr Fielding. In about March 2003 he began communicating with Dr Fielding's practice in Brisbane via email.

8. The evidence before the court was that Shannon weighed 177 kilograms<sup>1</sup> and his body mass index was 52. Surgical intervention is accepted to be the advisable treatment where a person's body mass index exceeds 40.

9. He suffered significant other co-morbidities and medical conditions including:

Sleep apnoea;  
Hypertension;  
Fatty liver infiltration;  
High blood cholesterol;  
Proteinuria (excess protein in the urine, associated with kidney damage);  
Psoriasis; and  
Depression.

10. Dr Fielding is no longer practising in Australia. He now lives and works in the United States of America. He qualified as a general surgeon and has been specialising in treating patients with obesity related problems since 1996. He specialised in laparoscopic bypass surgery as well as lap band surgery and had performed about 3,000 procedures by 2003. Between three hundred and four hundred of these procedures were gastric bypass procedures which was the procedure performed on Shannon.

11. An exchange of information with Dr Fielding's practice commenced with the following email addressed to Dr Fielding's practice manager, Rhonda:

*"Hi Rhonda,  
This is Shannon Tang. I spoke to you earlier this afternoon about the available slots for Dr Fielding's time as I would like to schedule a gastric bypass surgery to be performed by him. Could you please let me have the dates that he is free so that I can make the necessary arrangements and confirm the booking with you? Thank you and regards, Shannon Tang."*

12. I remark it seems quite extraordinary that a prospective patient chooses a particular major and complex surgical procedure and sets in motion the process via email, apparently without referral by another doctor to the surgeon.

13. The response on 25 March 2003 from the practice manager, not the surgeon, is no less extraordinary in my view.

*"Hi Shannon,*

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<sup>1</sup> Page 27, line 15, referring to Dr Samaan's note

*I didn't get to discuss this with Dr Fielding until late last evening. The earliest he would be prepared to do your bypass surgery is Wednesday 28.5.03 - you would need to arrive in Australia on Monday 26.5.03. He has many overseas commitments prior to that and as I mentioned on the phone, he likes to be in Australia for approximately 3 weeks following surgery with his patient.*

*You would see our nurse on the Monday morning and we would arrange for you to see the dietician and psychologist either on the Monday afternoon or Tuesday. You would see Dr Fielding on the Wednesday morning, go directly into hospital and have surgery that same afternoon. All going well you would be in hospital five days and Dr Fielding would like you to stay in Australia for three weeks after discharge.*

*I need to know a few things-*

*Your weight, height, date of birth, postal address, general health status and a brief outline of your employment and lifestyle, health coverage- if you have any."*

14. I note therefore that it was always proposed that the procedure was to be bypass surgery and was to occur on the day of Dr Fielding's first consultation with Shannon.
15. Shannon replied by email on 26 March 2003 confirming he would proceed with the surgery on 28 May. He planned to arrive in Australia by 24 May and to remain in Australia for "at least a month....to be on the safe side."<sup>2</sup> He advised his weight was 173 kilograms, although I note other evidence that his weight was recorded as 177 kilograms. He indicated moderate high blood pressure, raised insulin, a fatty liver and severe sleep apnoea. He used a C-pap mask, (positive airways pressure).
16. There were further emails between Rhonda and Shannon concerning costs. Shannon requested the best anaesthetist Dr Fielding was happy to work with and a private room. He planned now to arrive on 21 May to make sure he did not have any flu like illness that could be picked up during the flight.
17. On 15 April it was Shannon who requested by email from Rhonda that he receive a letter signed by Dr Fielding confirming the type of procedure to be performed on 28 May and the expected period of recuperation. This was requested so that he could submit it to the university to postpone his entrance to university. He also asked whether the sleep apnoea or psoriasis would present problems for the surgery. He wanted to know whether there was any advance preparation that he should undertake in Singapore. Rhonda replied that neither condition would be a problem. No advance preparation was required. She reminded him to complete and return the admission paperwork sent by post.

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<sup>2</sup> Exhibit B17, page4

18. On 15 April Shannon had received via the post some patient information and he emailed back to Rhonda the following:

*“Having read the patient information sheet you sent me, there are some questions I’d just like to clarify-whether Dr Fielding can answer these please?*

*This information sheet states there is “risk of leak in the bowel join ups”, is this common and is there any way to prevent this, or detect it early/correct?*

*Also, that there is risk of clots in the leg-what is this caused by, and for what period is the patient at risk of this (is it immediately after surgery or is this long term problem?) Is there anyway of preventing this?”*

19. Shannon next emailed Rhonda on 16 April 2003 asking for Dr Fielding’s opinion whether the Bilio pancreatic bypass surgery was the best option rather than the lap band or Roux En Y procedure. Shannon stated an important consideration for him was whether the bowel complications were generally manageable/preventible. Did Dr Fielding offer the Roux En Y procedure if Shannon chose this option?

20. A long email dated 28 April was then sent by Shannon requesting specific information. Shannon was questioning whether there were pre-admission procedures (as he had discovered via his research that these occurred elsewhere). Shannon asked whether it would be of benefit for one of his doctors in Singapore to consolidate information for ease of review by Dr Fielding. He asked whether there would be any ultrasounds, blood tests, x rays that should be performed in Singapore prior to arrival. He asked whether he should be performing light exercise (to reduce risk of clots) or deep breathing exercises (to reduce risk of pneumonia) or should he be prescribed heparin anticoagulation medication to reduce risk of blood clots.

21. All of these questions were initiated by Shannon’s own research rather than from information emanating from Dr Fielding’s standard information letter which was dated 28 November 2001. Shannon’s tone in all of his communications was polite in the extreme and apologetic in requesting time from Dr Fielding. He requested a telephone appointment of ten minutes to dispel concerns he had over the surgery.

22. What he received was a standard pro-forma information letter dated 28 November 2001 with a brief covering letter from Dr Fielding dated 29 April which read:

*“In reply to your email - All the risks for the various operations are as outlined and they certainly do occur. Any surgery can get the complications that are listed, particularly with bowel operations whether it by Roux En Y Bypass or Bilio Pancreatic Diversion. There is a significant risk of bowel complications.*

*You are quite right about the social effects of Pancreatic Bypass Surgery. They can be difficult and they are less prevalent with Roux En Y procedure.*

*Kind regards,*

*Yours sincerely, Dr George Fielding.”*

23. Information was provided on Bilio Pancreatic Bypass Surgery. Dr Fielding indicated that laparoscopic gastric banding was his preferred option. The risks of bilio-pancreatic diversion were explained.

*“This is major surgery involving the bowel with three divisions of the bowel and join ups. The major risk with the procedure is that one of these join ups leak and if this happens patients can develop peritonitis and they can die. The leak rate is between 2 and 3 per cent in most large series including my own and the risk of death in first up procedures is anywhere between 0 and 2%.*

*The other big risk is the development of clots in the legs causing a pulmonary embolus or clot that can also kill patients.*

*I cannot stress enough the importance of understanding this is major abdominal surgery and that there is a risk of leaks in the bowel join ups and secondly, that this procedure requires long term follow up to monitor vitamins. ”*

24. According to his family Shannon arrived in Australia on 22 May 2003 for the specific purpose of undergoing surgery scheduled on 28 May 2003.

25. Dr Fielding explained it had been planned that Shannon was to have the gastric bypass surgery. He said most of his patients have a strong idea about the type of procedure they would prefer and have usually researched it as Shannon did, quite extensively. He said he usually presents to them what the options are and his preference was a lap band but it really wasn't what Shannon was interested in. Dr Fielding explained there was a difference in risk of the procedures and if they accepted this, he was quite happy to proceed as requested. Dr Fielding discussed the options in his rooms on 28 May 2003 but this was in addition to the information exchange via email that had already occurred. Some ten percent of Dr Fielding's patients were from overseas travelling for the purpose of the surgery. He said these patients become aware of the availability of the surgery via the internet and media.

26. Shannon was seen by the nurse on 23 May 2003. She noted he had gained 35 kilograms in the last eighteen months and suffered sleep apnoea, asthma, back pain and hypertension. She also recorded “wants Roux Y, talk about band”. He completed the Patient Information Profile

and his weight was recorded as 177.4 kilograms, blood pressure was 150 /100 and body mass index of 52.2.

27. He was then seen by the dietician. A standard request for treatment form was signed by Shannon and Dr Fielding which indicated broadly that there were risks of complication in undertaking the procedure. Shannon also saw the psychologist.
28. On 28 May 2003, Shannon saw Dr Fielding for the first time on the day surgery was initially planned to proceed. The appointment was for about twenty minutes. Shannon's mother was present with him. Dr Fielding told the inquest they first discussed Shannon's desire to have surgery as he was very unhappy with his quality of life and had tried all other options of losing weight.
29. When asked by counsel assisting whether Dr Fielding was aware that Shannon had indicated willingness to undergo any initial preoperative procedure, Dr Fielding affirmed this was the case and said:

*"We did do that. We sent him up for a full medical assessment in intensive care."*<sup>3</sup>

30. Dr Fielding acknowledged that he did not physically examine or assess Shannon in his twenty minute appointment with him. He explained that this was his normal process. He said the physical examination is very trying for these patients and he was going to have a full assessment by the doctor in intensive care pre-operatively. He didn't see any point in putting him through this twice. Dr Fielding said the intensive care doctors are highly experienced in assessing medical illness and fitness for anaesthesia.
31. Dr Fielding said that he did not send every patient to intensive care prior to surgery, only the bigger, sicker people were assessed pre-operatively by intensive care. He said that the contact with intensive care would have been by phone from his practice indicating the procedure Shannon was to undergo, his weight and his co-morbidities.
32. I remark that despite Dr Fielding's evidence, I accept Dr Samaan's evidence. Dr Samaan worked in intensive care and stated he was not informed that the patient was essentially being assessed for surgical suitability by him when Shannon was admitted to that ward prior to surgery. The intensive care unit was not given a copy of the patient's information profile. Such an important task, particularly where it applied to the sicker, bigger patients should have been documented with a request by Dr Fielding for the purpose. I also pre-empt my later view that in fact Dr Samaan's assessment of Shannon was very thorough, despite my finding that Dr Fielding did not specifically instruct or request a pre-operative assessment.

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<sup>3</sup> page 118, line 38-40

33. Dr Fielding maintained it was not unusual to see the patient for the first time on the day of the proposed surgery and only for twenty minutes.
34. The clinical record document shows an entry by the nurse on 23 May 2003 then an entry by the practice manager on 28 May.<sup>4</sup> Dr Fielding translated this as *"Bypass booked for 28 May to come in at 9.30am same day."*
35. He said he referred to the information completed in the patient document.
36. He considered that Shannon's overall presentation was typical of many of his patients who were similarly obese.
37. Dr Fielding said he discussed the options with Shannon. Dr Fielding stated his preferable mode of surgery was the lap band which was considered a safer procedure. Shannon had researched the options and believed the lap band was not as effective and so preferred the bypass. Dr Fielding said he explained that the lap band did not involve cutting the bowel but only wrapping a band around the top of the stomach. Dr Fielding could recall Shannon referring to research his sister in the United States had undertaken about the options. The perception in the USA at the time was that the band was less effective than bypass surgery.
38. Dr Fielding said he "absolutely" discussed the risk of mortality which he said was about one in a hundred death risk. He said he told Shannon the risk of the gastric bypass is about one in a hundred death risk and that's usually from leaking from the join ups done in the anastomosis.<sup>5</sup>
39. Dr Fielding acknowledged that this was a significant risk particularly as this was an elective procedure. Dr Fielding says he was specific in providing the risk of mortality of the procedure as one per cent and that Mrs Tang was present. The risk of death for the band procedure was one in two thousand.
40. Dr Fielding remained firm that he had discussed mortality rates with Shannon at the 28 May consultation for both bypass and band procedures. He put this in the context of him telling Shannon and his mother that he himself had undergone a lap band procedure and chose this option as it was much safer. Likewise, he was adamant that he said to Shannon, as he did to every patient, that you might be the one to die, i.e. the one in one hundred risk of mortality in the procedure. He went on to say he told Shannon about oversewing as a measure to prevent leaks when questioned by Shannon about this risk.
41. He said it was Shannon talking, not his mother, and that Shannon was making the decisions about his life.

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<sup>4</sup> Exhibit B1.3

<sup>5</sup> page 125, line 12-

42. Mrs Tang does not recall that death was discussed as a possible risk at all in the consultation. There is clear conflict between the two versions. Dr Fielding's only note of this consultation was as follows:

*"For Roux-En-Y, discussed operation. Risks-bleeding, perforation, leak, sepsis, death, stricture, need for vitamins and follow up. His mother was in the interview and happy. For operation this afternoon."*<sup>6</sup>

43. I note that Shannon was scheduled to have the surgery on 28 May but it was delayed until the next day as Dr Fielding and his team were very tired due to other procedures going longer than planned. Dr Fielding informed Shannon of this late in the evening of 28 May when Shannon was in intensive care awaiting surgery.

44. I will discuss the conflict in the evidence later after referring to Mrs Tang's evidence.

45. The procedure to be undertaken was a gastric bypass. In the normal digestion, food passes through the stomach and enters the small intestine where most of the nutrients and calories are absorbed. The duodenum is situated in the small intestine which is connected to the stomach, then the jejunum, the middle portion, and the ileum which connects to the large intestine. Food then passes into the large intestine.

46. When a gastric bypass procedure is performed the stomach is made smaller by creating a very small pouch at the top of the stomach. The small pouch gives a patient a feeling of fullness after eating far less food. This small pouch is connected to the middle portion of the small intestine, the jejunum and bypasses the rest of the stomach and upper part of the small intestine, the duodenum. The pouch and jejunum are connected by an anastomosis which is a surgical connection of the two organs to form one continuous channel. In Shannon's case, the bypass was performed laparoscopically, via a small incision in the abdomen where a camera is inserted to guide the surgery.

47. There is conflicting information about the date on which Shannon attended an appointment with Dr Fielding's nurse to complete a questionnaire about his medical history and current status. Dr Fielding conceded that the family information may in fact be correct.

48. Shannon was admitted to the Wesley Hospital intensive care ward at about 2.00pm on 28 May 2003. His medical record from Singapore was handed into the hospital by his parents who were present with him at admission. Dr Fielding's evidence to the court was that this was always intended and had been arranged in advance via his practice. There was no documentation of this but he said it would have occurred by phone.

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<sup>6</sup> B17

Shannon had arrived in Australia without his positive airways pressure machine to assist breathing during sleep. This machine was used due to the sleep apnoea problem. It appears that the absence of this machine may well have influenced the decision to admit him to the intensive care ward to enable overnight monitoring due to his sleep apnoea condition in the absence of his machine.

49. The issue to be resolved concerning why he was admitted to the intensive care unit is whether it was solely precautionary due to the sleep apnoea situation or whether it was always planned and was for the purpose of the staff in that unit undertaking a medical assessment prior to the major surgery.
50. Dr Fielding's evidence was that he had an arrangement in place to use the expertise of the intensivist to undertake the pre-operative assessment for him. It is curious then that Dr Samaan, the resident medical officer in intensive care rostered on duty was not aware that he was to undertake such an assessment for the purpose of ensuring suitability to undergo the surgery. Rather, Dr Samaan gave evidence that Shannon was admitted to intensive care either because a bed was not available in the ward or due to the sleep apnoea issue. Dr Samaan indicated that it was good practice in the sense that it gave the intensivist the opportunity to see Shannon before the procedure as he was to be a patient in the intensive care unit post surgery.
51. On Dr Samaan's evidence which I accept, there is no doubt that in fact Dr Samaan provided a very careful, considered and thorough examination of Shannon. He wanted to be fully informed about Shannon's situation given the absence of the usual positive air pressure machine. He knew he was to be an intensive care patient after surgery and so was alert to the need to familiarise himself with the patient prior to the surgery. He also considered he was at risk of a breathing problem even prior to surgery because of the sleep apnoea problem. He ordered pre-operative blood tests, a chest x-ray and an ECG. He wanted to check the pre-operative lung function. It is interesting to note that in the course of Dr Samaan's evidence he responded in a matter of fact way to confirm that shifts in the intensive care unit in private hospitals are for twenty five hours at a time.<sup>7</sup> Although there is nothing in the evidence to suggest that tiredness in any medical staff contributed to any want of care or diminished decision making, I remain concerned that this is considered to be standard practice expected of our medical profession, entrusted with the responsibility of caring for our most ill.
52. Dr Samaan was under the supervision of a consultant in intensive care who was also present for extended periods, from between about 7 am and 6.00pm or so. Overnight, the intensive care consultant may only be physically present in the unit if requested by the resident medical officer. There were fifteen intensive care beds at the time, usually with occupancy

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<sup>7</sup> Page 22, line 18 on

of around two thirds to three quarter capacity. The nursing staff ratio is one to one for ventilated patients and otherwise, one nurse to two patients.

53. Dr Samaan cared for Shannon on four separate shifts each commencing at 7.30 am on 28 May, 31 May, 2 June and 5 June. The supervising intensivists during this period were doctors Vankatesh, Pascoe and Bentley. The other resident medical officers were Drs Ellison and Dilda.
54. There is nothing to suggest that Shannon was other than physically well, given his known co-morbidities, when he was admitted to the Wesley Hospital. The surgery was re-scheduled for the following day. Shannon was given overnight leave and requested to return to hospital by 10.00am the following day. The surgery commenced on 29 May at about 3.30pm and proceeded for approximately four hours. Dr Fielding performed the surgery assisted by Dr C. Elliott. The anaesthetist was Dr M. Willis.
55. Dr Fielding gave evidence that the procedure was technically difficult and demanding as he had anticipated, given Shannon's size. The procedure was undertaken laparoscopically. The liver was found to be very large (4680grams) which made surgery more difficult.
56. I accept Dr Fielding's evidence that the procedure did not present any untoward difficulties and was completed successfully and without adverse event. I draw that conclusion from the evidence of the surgeon, supporting anaesthetist and assistants that the bypass was established. The anastomoses were tested with air and blue dye and found to be sealed. In accordance with Dr Fielding's usual practice he said the staple joins were oversewn with sutures to reinforce the joins.
57. Prophylactic antibiotic was ordered at the commencement of the anaesthetic to guard against wound infection.
58. Dr Fielding said the greatest risk was of leakage from one of the joins made in the course of surgery. The second greatest risk was of bowel obstruction and then of abscess.
59. I note that in the course of this initial surgery (and in the two subsequent laparoscopic investigations to investigate the possibility of leakage of the anastomoses or other signs of sepsis) Dr Fielding did not discover the existence of a subhepatic abscess. This was discovered at autopsy by the Pathologist, Dr Lampe. He described the position as high up and towards the back, beneath the liver. The pathologist was not at all surprised, given the location of the abscess and the size of Shannon's liver, that it remained hidden from view and undiscovered. Dr Lampe's evidence was that it was larger than a golf ball and still intact at the time of autopsy.
60. He expressed the view that the abscess originated about the time of the first surgery.

61. In reliance upon Dr Lampe's evidence of its size and location, I do not believe that there should be any criticism of Dr Fielding in not discovering its presence. Dr Kiroff also indicated that he was not surprised that an abscess of this size and in this location, behind the liver, remained undiscovered. In particular, I note it was intact and not associated with any local sign of associated infection or peritonitis. As to the significance of the abscess, I will comment later.
62. After surgery Shannon was taken to the intensive care ward and handed over by Dr Willis at about 8.00pm. He was intubated and ventilated. This was due to the long operation, Shannon's size and the existence of the sleep apnoea problem and the absence of his usual positive pressure airway machine. A chest x-ray confirmed the proper position of the endotracheal tube after insertion. Shannon was extubated the next morning and remained in intensive care for several days before being sent to the ward.
63. Although Dr Fielding did not make any note in the charts, his evidence was that he attended on Shannon in intensive care the morning after surgery on 30 May. He recalled Shannon was unhappy and sore, really miserable. Dr Fielding said he told Shannon how important it was to just get out of bed and move. Dr Nathason was covering for Dr Fielding at this time. Dr Fielding said he visited again the next day but again there is nothing in the record. He said it was his practice to drop in and check how his patient was progressing, check the abdomen, the wounds, the observation chart and his temperature. Dr Nathason has confirmed that it was a frequent practice of Dr Fielding to drop in on his patients but not necessarily to enter a note in the record.
64. On 30 May, Dr Fielding reviewed the patient when there was suspicion of either a temporary paralysis of the bowel or of an obstruction. Subsequently, a second x-ray was taken and as a result Shannon was taken to theatre.
65. At this laparoscopic procedure, Dr Fielding recorded an adhesive band and because he was unable to see via laparoscope, the procedure was converted to an open incision procedure. The bowel was very swollen with gas. He discovered that an adhesion had led to the bowel flipping over and being obstructed. When the adhesion was freed and the bowel flipped back into position, the obstruction immediately resolved. Dr Fielding said there was no indication of obstruction of blood flow to the bowel. There was no ischaemia. The anastomoses were checked and there were no leaks. He did not see the abscess. With hindsight, he thought it must have been tucked in under the liver which was large. He, like Dr Georgiou, considered afterward that the abscess was very small.
66. Dr Fielding did not think a nasogastric tube was necessary at the time. He considered he had addressed the problem which was the adhesion causing obstruction. He preferred not to use a nasogastric tube because

in his view, it encouraged reflux up and down the tube, in fact increasing the risk of aspiration.

67. The alternative opinion came from Dr Kruger who considered it may have prevented the pooling of fluid in the intestine. Dr Fielding agreed that this was a potential problem but maintained that the surgery had discovered and released the adhesion which was causing the bowel obstruction.
68. Dr Fielding agreed that although Shannon was initially stable after this procedure his condition then declined with increasing fever. There were concerns that it was sepsis or that it might be SARS, a dangerous respiratory infection. The cause of the decline could not be identified. Pneumonia was considered as a possible explanation according to Dr Fielding because the second surgery had freed up the bowel and not discovered any other sign of infection. Dr Georghiou discounted that the infection was SARS.
69. Dr Fielding expressed the dismay he experienced when Shannon continued to have very high fevers. He had not experienced a patient who had ever shown such a high continuing temperature without being able to identify the source of the problem or reduce the fever. There seemed no option but to re-open Shannon's abdomen to check for any site of leak or infection. Dr Fielding stated his inclination was always towards a return to surgery if there was a possibility of a complication caused by the surgery. He acknowledged that surgery itself was risky when Shannon was so ill but there was little option. The intensive care consultant, Dr Bentley also attended theatre as he too was concerned and at a loss to explain the continuing high fever.
70. On 31 May, Shannon was complaining of pain. Dr Samaan, the resident medical officer who had assessed him on admission to intensive care, examined him at about 9.30am. Dr Samaan considered that given the recent history of complex surgery he thought the patient's condition to be not unexpected. He noted that Shannon was experiencing more rather than less pain. He considered the possibility of pancreatitis or of infection post surgery. He excluded pancreatitis by appropriate testing. He also noted the trend in the white blood cell was decreasing suggesting a return to normal. There were signs on chest x-rays taken on 30 and 31 May that the base of Shannon's lungs had collapsed. It was noted that the first x-ray was conducted while the patient was in bed and may not provide a proper view. Dr Samaan considered this to be explicable in all the circumstances and directed encouragement of mobilisation, physiotherapy and active coughing to keep the lungs working. Shannon was advised to sit up and to follow the measures to avoid the onset of pneumonia. There were notes indicating Shannon had coughed up some sputum indicating chest congestion and risk of possible infection developing. Antibiotics were ordered to reduce the risk of development of infection.
71. Shannon's temperature had been slightly elevated overnight and Dr Samaan considered a low grade infection to be present. When reviewed

by Dr Vankatesh, the senior intensive care consultant, the diagnosis and treatment were confirmed.

72. By the next day, Sunday 1 June 2003, Mrs Tang recalled her son to be feeling a little better; he was able to walk to the bathroom. When examined by Dr Dilda, the white cell count was back to normal. His heart rate was still elevated and there was decreased entry into his lungs. When reviewed by the consultant, Dr Vankatesh agreed Shannon could go to the ward subject to the surgical team agreeing. Dr Nathason was covering for Dr Fielding over the weekend and he agreed.
73. However, after arrival on the ward, Shannon started complaining of abdominal pain. His mother spoke with Nurse Louwrens seeking a medical review for her son. Mrs Tang was unhappy about the delay before review by a doctor. Shannon expressed feeling hot and having difficulty breathing although there was no evidence of respiratory distress. Dr Dilda examined him and had a long conversation with Shannon who definitely wanted to return to the intensive care unit. Shannon was returned to intensive care. On the morning of 2 June, he was seen by Dr Pascoe in intensive care. He remained tachycardic and short of breath and was having difficulty with mobilising himself in accordance with advice.
74. On 2 June, he swallowed a contrast dye solution to enable a scan which revealed dilated loops of bowel. This was carried out in the radiology department. There were no signs of leaks from any anastomoses. He was returned to the ward but late that evening was reviewed by Dr Slater when nurses requested a review. His abdomen was soft and he was not in pain at the time.
75. By the morning of 3 June, he was more uncomfortable with abdominal pain and nausea and he felt hot. He was anxious and was passing fresh blood. His oxygen saturations had declined and he was reviewed by Dr Fielding. A small bowel obstruction was suspected and it was decided to return him to theatre as this was the most likely scenario for a patient in Shannon's position.
76. Again, as for the original operation, the notes made by Dr Fielding are quite limited. Dr Fielding examined the anastomoses and found them intact. There were some adhesions and dilation of the bowel but nothing to indicate peritonitis. No reason could be discovered to account for Shannon's continuing high temperature. He was intubated and ventilated and returned to the intensive care unit into the care of Dr Gwynn Bentley.
77. Dr Samaan was working overnight on 3-4 June in intensive care. Tests and a further chest x-ray were ordered as well as the addition of vancomycin, another antibiotic. Despite the maximal level of investigation and support, Shannon developed multi organ failure and remained in this high fever condition until his death on the evening of 5 June 2003.
78. On 4 June, there were discussions about the necessity and efficacy of changing the endotracheal tube which did not have an effective seal.

Consideration was given to replacing it but initially discounted. Eventually a decision was made to replace the tube.

79. Sepsis was considered to be the problem but the source of the infection could not be identified and despite broad application of antibiotic therapy and maximal supports, Shannon's condition continued to decline. By the evening of 4 June, there was further collapse of the lungs. Dr Bentley considered that intraabdominal sepsis arising after surgery to be the most likely cause of the sepsis but after a negative investigation via laparotomy and the developing lung pathology, he also considered that pulmonary sepsis was also likely.
80. During this period other possible diagnoses were considered. SARS was considered and discounted by an infectious disease expert, Dr Georghiou. He reviewed Shannon and found he was in a perilous condition. As the most likely source of infection was still as a result of the abdominal surgery, Dr Fielding again performed a laparotomy while Shannon remained intubated and ventilated. This commenced at 6.30pm on 5 June. Again, all anastomoses were checked and found to be intact. There was still no sign of peritonitis. Lavage of the abdominal cavity with ice cold water did not bring Shannon's temperature down and that same night, 5 June, he suffered a cardiac arrest from which he could not be resuscitated. He died on the evening of 5 June 2003 at about 9.40pm.
81. Dr Dilda was another of the resident medical officers working in the intensive care unit during the period of Shannon's admission. He had held the position for six years. He was working the day shift on 1 June. He noted the white blood cell count had dropped back to 9 which was within normal range indicating that any infection was responding positively to antibiotics. Dr Dilda did not have any concerns for Shannon at this time that he might have an intraabdominal infection. Dr Dilda's only concern at the time was the fact that Shannon was a very big man and was remaining immobile which created risks of developing a respiratory infection. Dr Dilda had also noted the diminished air entry into the base of the lungs, (as had Dr Samaan) which was to be expected given his post operative status and large size. Dr Dilda thought it was appropriate that Shannon was discharged to the ward on 1 June. In his experience, this was likely to be a positive move which would increase Shannon's mobility and overall recovery. Dr Vankatesh, the consultant, agreed with the move to the ward.
82. It was Dr Dilda who was called to the ward by nurses later that day when Shannon was uncomfortable. Shannon's parents were present. Shannon still had pain and he was short of breath. His heart rate was still a little elevated. Shannon was having difficulty coping with being in the ward as he was still experiencing pain and the nurses took longer to respond than in intensive care. Dr Dilda explained that in these circumstances, although there was no clear clinical indicator requiring readmission to the intensive care ward, it was considered appropriate to try to accommodate the patient's concerns. Shannon's parents' recollection was that Shannon

simply wanted to be seen by a doctor, not necessarily be moved back to intensive care. Dr Dilda indicated that Shannon was fairly reserved in his communication and he recalls more of the conversation with the parents than the son.

83. Later that night, after Shannon's return to intensive care he was visited by Dr Fielding. Dr Dilda remarked that this was frequently the pattern that Dr Fielding would check in on his patients, even late at night or when he was being covered by another doctor. Dr Dilda said there was not necessarily a note in the chart on each occasion in his experience.
84. On the morning of 2 June, routine blood tests were taken again in intensive care and showed continuing improvement in liver function and overall blood tests. The chest x-ray performed on 2 June also was reported by the radiologist as showing clearing in the left lung and the right lung was almost clear which was an important improvement given the restricted level of mobilisation.
85. The consultant Dr Pascoe reviewed Shannon on the morning of 2 June and he was returned to the ward.
86. Dr Dilda recalls that Shannon was returned to intensive care at about 7.30 pm on 3 June and admitted by the consultant Dr Bentley. This was after the laparotomy had been performed by Dr Fielding when there had been concerns over the possibility of an "intraabdominal collection." Dr Dilda understood that nothing of any significance was discovered at the laparotomy. Dr Dilda worked through to 8.30am on the morning of 4 June. He noted from the record that during that night Shannon's temperature increased and two blood samples were taken for testing to try to identify if there was any infection. The results did not show any particular bacterial infection. At about 3.00am, Dr Dilda added another antibiotic (vancomycin) which would cover for the possibility of MRSA (golden staph). There was concern that Shannon's temperature was quite high.
87. Prior to finishing his shift on the morning of 4 June, Dr Dilda ordered further pathology tests. The results showed a change in kidney function, urea and creatinase levels. This indicated a significant decrease in his kidney function, most likely due to infection. Likewise, the white cell count had increased from 10.4 in the normal range to 18.1 above the normal range. Together with the high temperature this indicated the likelihood of infection.
88. By the morning of 4 June when Dr Dilda last saw Shannon, he considered there was an infective process but not likely a respiratory one because the lungs had not shown consolidation and sputum was relatively clear compared to a few days earlier.
89. Dr G Ellison was also working as a resident medical officer in intensive care and had been doing so for about nine years. It was Dr Ellison who inserted the central line at about 3.00pm on 4 June during his shift which

commenced from 7.30am on 4 June until 8.30am on 5 June. He recalled that Shannon had a high temperature and that the cause of this deterioration was uncertain.

90. On the morning of 4 June, Dr Ellison recalls it was very busy in intensive care. He recalls it was not until late morning or early afternoon that he and Dr Bentley reviewed Shannon although he stated<sup>8</sup> that at commencement of the shift a quick scan of all the patients is undertaken before a formal review of each patient is made. His condition had deteriorated over the last few days from information in the chart and Dr Ellison agreed with the proposition that Shannon had developed sepsis, a potentially fatal infection of unknown source. Further tests were ordered and another antibiotic, Flagyl was added. Dr Bentley added the Flagyl which is a drug frequently used in the case of intraabdominal and lung infection as well as for liver abscess.
91. This antibiotic had been added to the existing antibiotics of Timentin and a one off dose of vancomycin. The aim was to broaden the antibiotic cover. Tests of urine, sputum, blood culture and a review of chest x-ray were ordered. Discussion of feasibility and risk of obtaining a CT scan were also considered. It was thought that Shannon was physically too large to fit within the CT machine and he was also too sick at this time to be physically transported whilst on a ventilator to the CT machine. I note that although it was possible that a CT scan may have revealed the subhepatic abscess, the decision not to pursue this investigation seems to have been considered and well founded.
92. Consideration was being given firstly to the risk of abdominal sepsis and secondly of respiratory sepsis or pneumonia. Sputum cultures and the x-ray were the mechanisms of investigating whether pneumonia was present but attention was still focused on the abdomen as the likely source of the problem. The antibiotics already being used were appropriate for respiratory infection.
93. In the course of the laparotomy performed on 3 June, an endotracheal tube had been inserted. On 4 June, it was considered that it was not in the ideal position being too high up and not providing a sufficient seal to be most effective. A nursing note had been made at 6.00am on 4 June and it was not until after midday that Dr Bentley and Dr Ellison reviewed Shannon and decided to try to advance the tube physically by 2 centimetres. Subsequently, on the evening of 4 June, Dr Ellison changed the endotracheal tube because it was still not effectively sealed. The delay was due to the decision to try to address the issue in a conservative way at the outset rather than the more risky process of removing the tube and trying to re-introduce another. The oxygen saturations were satisfactory so that it was considered acceptable not to immediately replace the tube, although a continuing cuff leak meant there was a continuing risk of aspiration of gastric contents into the lungs which can

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<sup>8</sup> page 89

lead to aspiration pneumonia and sepsis. There was no evidence from any witness or any note to suggest that aspiration had occurred and it is to be remembered that Shannon was in the continual care and observation of an intensive care nurse because he was ventilated. It remains a possibility that there was some aspiration given the lack of effective endotracheal seal and the absence of a nasogastric tube (which would alleviate risk of aspiration). Although there was an indication in the notes that the original intubation in theatre had been “easy” it does not necessarily follow that an attempt to reintubate at a later time must necessarily also be expected to be easy.

94. Dr Ellison could not recall Dr Fielding being present throughout the day nor any consideration of a nasogastric tube.
95. Dr Bentley is a consultant specialising in intensive care and anaesthesia. He had significant experience in working in intensive care with patients who had undergone bariatric surgery. He was involved with Shannon’s treatment for only the last few days of his life from the night of 3 June until 5 June 2003. Shannon returned to intensive care after the first laparotomy about 6pm on 3 June. Dr Bentley was there until around 9.00pm that evening. He was back in the unit from about 8.00am on the morning of 4 June until sometime between 6.00 and 7.00pm.
96. On 5 June, he was present from around 8.00am until Shannon died that evening.
97. On the evening of 3 June when Shannon was returned to intensive care after the first laparotomy, Dr Bentley thought it wise that he had been ventilated although they were not expecting any particular problems. He expected to extubate Shannon the next day and have him mobilised. Dr Bentley considered it wise to have ventilated Shannon because he had undergone a second surgical procedure and his body would be more compromised. Due to his size, he was at greater risk of obesity related difficulties, particularly related to respiration. The first laparotomy was to investigate the distended abdomen. The entrapment of the omentum was discovered and released. The anastomoses were seen to be intact and there was no sign of peritonitis. By the 4 June, he appeared to have developed sepsis. As Dr Bentley expressed it, *“our alarm bells went off, things weren’t going as planned. We had an evolving temperature, evolving white cell count, circulation and urine output were beginning to be marginal and this was beginning to look like an evolving sepsis syndrome.....We shifted from elective ventilation to supportive ventilation mode. We increased our level of monitoring and we changed the antibiotic cover and we sent off multiple cultures to try and determine whether there was sepsis ...as the basis for this deterioration.”*<sup>9</sup>
98. Flagyl was added to the continuing antibiotic Timentin. Dr Bentley had already added Keflex when he returned to intensive care after the surgery

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<sup>9</sup> page 232

as a prophylactic to circulate in the blood stream. The Flagyl was considered to add extra cover for anaerobic bacteria. This was aimed at counteracting any problems from the abdominal nature of the surgery.

99. Dr Bentley was uncertain about the likely cause of the sepsis on 4 June. It was either intraabdominal or respiratory. He felt the most likely cause was from the abdomen but the laparotomy on 3 June did not reveal this to be the situation. There was some basal collapse in the lungs which also was not unusual in the situation. It did not appear to be sufficient to account for the evolving sepsis. He considered a CT scan but felt it was too hazardous to attempt to move a very ill patient attached to multiple apparatus for this purpose with no guarantee that an answer would be provided.
100. Dr Bentley differed from Dr Ellison in his recollection when Shannon was seen on 4 June. He said at the beginning of shift at 8.00am, all the patients are seen at "hand over" and then, if it was busy they split the ward and then resumed together to visit each patient after this. Although he thought it most unlikely that the ward round conducted with Dr Ellison would have occurred after midday, on reflection the final visit at the bedside together documenting the notes and the plan may have been at 12.15pm. He recalled that Dr Ellison did the first examination of Shannon earlier and then they saw Shannon together. Dr Bentley considered the endotracheal tube situation was an intermittent problem which happens typically with larger patients. He indicated this is usually resolved by minor adjustment.<sup>10</sup>
101. Dr Bentley informed the court his recollection was that Dr Ellison told him there was a tube leak and that he was planning to correct it. This did not happen until about midday. Dr Bentley said he would have some concerns had he known the leak continued for six hours as there would be some potential for aspiration of gastric contents and ventilation might be imperfect. However, Dr Bentley observed that Shannon was on 45 per cent oxygen that morning and it would not really have been a problem.
102. Dr Bentley stated he did not recall being present when the tube was advanced two centimetres. Dr Bentley considered it far preferable to address the problem if possible, by advancing the tube rather than replacing it which ultimately occurred at 7.00pm. This was due to the greater risk in not being able to reinsert a tube.
103. Dr Bentley was asked to comment on Dr Kiroff's hypothesis that in advancing the tube it occluded the right bronchus. Dr Bentley did not agree that the tube would enter the right bronchus due to the angle but concurred that it might be possible to occlude the entry to the right bronchus which would result in collapse of the right upper lobe, particularly in a ventilated patient because the right upper lobe is filled with a high

concentration of oxygen which is rapidly reabsorbed. Once the tube is reinflated there is rapid re-inflation.

104. Dr Bentley agreed that the x-ray performed on the night of 4 June showed right upper lobe collapse. The next x-ray showed resolution of the collapse. Dr Bentley agreed that the circumstances and the x-rays demonstrated a classic picture of a temporary occlusion of the right upper lobe bronchus. He said it was not an uncommon event in intensive care or anaesthesia situation. He said this was why on return of a ventilated patient to intensive care an x-ray is performed to check the position of the tube.
105. Dr Bentley agreed that an alternative explanation could be the sudden brief loss of ventilation on change of the tube. Dr Bentley thought it more consistent with Dr Kiroff's opinion that a temporary occlusion of right bronchus by the endotracheal tube had occurred.
106. Dr Bentley did not consider there was any critical impact from this event because occurs frequently when patients move and this does not usually have adverse consequences. The changes were immediately reversed and so Dr Bentley disagrees they could be causative of bronchopneumonia. He said pneumonia was a consolidation of small air sacks in the lungs which does not reverse in 24 – in 12 hours.”<sup>11</sup>
107. Dr Bentley acknowledges the divergence of view about whether or not a nasogastric tube is advisable or not in such a patient. He discussed the issue at page 246 in detail. He did not consider there were any clinical indications to require a nasogastric tube (if, for example a nurse on suctioning observed material suggesting it was from the gastro intestinal tract or increased abdominal distension).
108. He acknowledged the restricted view obtained via a supine chest x-ray. He expected as a matter of course that patients after this surgery are likely to have deflated bases of the lung. Measures are routinely taken to guard against the development of sputum retention and possible infection. Positive airway ventilation, mobilisation and physiotherapy are all employed to advance the patient's respiration to the maximal potential.
109. By 5 June, Dr Bentley was increasingly worried. Despite all measures, the situation continued to decline and sepsis was out of control. In particular, Dr Bentley was alarmed at the very high temperature now at 41 degrees. He considered it may mean the possibility of neuroleptic malignant syndrome but this did not change the treatment regime. Alternatively, he considered the possibility of SARS (severe acute respiratory syndrome). An antifungal agent was added and Dr Georghiou, an infectious disease expert was called in.

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<sup>11</sup> page 245

110. He reviewed the x-ray of the chest and still considered that the sepsis was out of all proportion to any change evident on the x-ray. Therefore attention was refocused on the possibility that an anastomosis had now leaked causing infection.
111. After the event Dr Bentley now thinks that Shannon died from severe sepsis syndrome emanating both from intraabdominal (subhepatic ulcer) and pulmonary sources.
112. In answer to Mr Allen's question, Dr Bentley explained that endotracheal tubes can never be considered to remain in a particular measured position because of patient movement and other factors. Therefore it was possible that the tube had occluded the right bronchus, not necessarily at the time or due to the manipulation by Dr Ellison. Dr Bentley said in intensive care it is common practice to keep on checking the position of the tube via x-ray. Dr Bentley remained firm in his opinion.
113. *"I feel the x-ray with the right upper lobe collapse is a classic for temporary occlusion. It is a common event, it's transient, it's usually harmless, but I acknowledge the other could have occurred."*<sup>12</sup>
114. An infectious disease specialist, Dr P Georghiou was requested to see Shannon on 5 June by Dr G Bentley, the intensive care consultant. He saw Shannon in the late morning. Dr Fielding was not present. Shannon was unconscious and ventilated. Dr Georghiou examined him and reviewed the information. He considered him to be desperately ill with maximal cardio vascular support sustaining his blood pressure. He had both broad spectrum antibiotic and antifungal medication to control yeast organisms (Fluconazole).
115. Dr Georghiou considered Shannon had a lower respiratory infection (pneumonia) and possibly an intraabdominal infection. The opinion was based on the history of increasing difficulty with respiration originating from the time of first surgery. He referred to the chest x-ray taken on 4 June which showed opacification of the right upper zone which was not present on the previous film. A second chest x-ray taken on the 4 June showed small ovoid opacity in the left lung base which also indicated possible infection in the left lung. He considered these two films showed deterioration and were consistent with a diagnosis of pneumonia. Dr Georghiou appeared to agree with the view that early on Shannon had developed a collapse of the lower portion of lung post surgery and that this might well be expected in all the circumstances. As with the opinion of Dr Samaan, this predisposed Shannon to develop pneumonia which the treating team had been aware of. The two x-rays on 4 June confirmed that Shannon had developed pneumonia by the time of the second film. Dr Georghiou considered that the pneumonia was sufficient to be the substantive cause of his death. Shannon needed a considerable volume of oxygen to sustain respiration.

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<sup>12</sup> page 255 line 38-42

116. Dr Georghiou considered the existing antibiotic treatment of Timetin to be appropriate and adequate. This antibiotic is a broad spectrum antibiotic which also covers some resistant gram negative organisms as well as anaerobic organisms. The dose of vancomycin addressed possible resistant staphylococcal infection. He did not see the need or efficacy of adding Flagyl, although it did no harm.
117. He also considered the nature of the original surgery indicated that intraabdominal infection could still be a reality even given the negative finding of the laparotomy performed on 3 June.
118. The only change instituted by Dr Georghiou was to change the Timentin to Meropenem which has less risk of adverse impact on renal function. Shannon's renal function was becoming adversely affected and so this antibiotic was altered. Dr Georghiou did not think it likely that Shannon would survive.
119. The absence of organisms in various tests throughout Shannon's hospitalisation and at autopsy was not surprising to Dr Georghiou. This does not mean that there was no sepsis. He explained that where there is an abscess, it needs to be drained to be treated effectively. The thick rind makes an abscess impervious to some extent to antibiotic therapy generally. Dr Georghiou's opinion was that the small abscess was unlikely to be the source of the profound sepsis which affected Shannon.
120. Dr Georghiou agreed with other reviewers (Drs Kiroff, Lampe and Kruger) that Shannon died due to multi organ failure due to septicaemia.
121. Having regard to all information including the autopsy, Dr Georghiou considered the most likely source of the infection was bronchopneumonia and possibly contributed to by the subhepatic abscess. He did not think the autopsy showed clear evidence of infection in the abdomen and the size of the subhepatic ulcer was underwhelming.
122. The pathologist however thought the extent of the pneumonia was not great. Dr Georghiou did not think there was any evidence at autopsy to indicate aspiration pneumonia.
123. It was suggested to Dr Georghiou that the possible source of sepsis in Shannon's case was:
- subhepatic abscess;
  - bronchopneumonia;
  - aspiration pneumonia;
  - five litres of fluid in Shannon's intestine.
124. Dr Georghiou did not agree with Dr Kruger's hypothesis that the presence of the five or so litres of fluid within the intestine could have triggered "translocation" where germs move from inside the bowel through the bowel wall and into the circulation to create septicaemia. He did not

really explain why he disagreed with this opinion except to suggest there was no evidence at the laparotomy or subsequently of significant obstruction, only minor adhesion. There was no evidence of sepsis in the abdominal cavity.

125. Counsel assisting, Ms Rosengren, did bring to his attention however, a notation in Dr Ellison's record of acute distal small bowel obstruction on 4 June which was noted at the ward round that day.
126. Dr Georghiou considered the management of the patient to be appropriate noting that one always had to be on guard for the development of intraabdominal infection given the nature of the surgery.
127. A chest x-ray was performed on the evening of 4 June (after replacement of endotracheal tube) which still showed collapse at the base of the left lung and also opacification in the right upper lobe. Dr Georghiou considered the report to indicate consolidation of the lung rather than collapse as referred to by Dr Ellison. The significance was that he agreed that the x-ray was not cause for great alarm. The appropriate testing of sputum was underway and antibiotic cover ordered.
128. Although the contents of the abscess could be the source of sepsis, Dr Georghiou thought the size of the abscess was too insignificant to account for the severity of sepsis.
129. I note that at autopsy the lung culture did not reveal any organism whereas the abscess did. The lung abnormality was progressing though whereas there was no evidence of the abscess expanding.
130. Dr Georghiou did not dismiss Dr Lampe's opinion that the likely source of the sepsis was subhepatic ulcer, he just did not agree with the opinion.
131. The pathologist who performed the autopsy was Dr Guy Lampe. He prepared his autopsy report<sup>13</sup> dated 10 September 2003 on the basis of all the information available from the hospital record and his physical examination of the deceased.
132. There were some incidental findings, including a small thyroid cancer and seventy percent stenosis in the left anterior descending artery. This was a very severe level of disease for such a young man and was likely to have progressed and could have caused his sudden death in the future.
133. Dr Lampe confirmed that all surgical anastomoses were intact. He identified a small subhepatic abscess<sup>14</sup> between the chordate and the right lobes of the liver. Post mortem cultures grew a number of organisms including enterococci. He found that there was no generalised evidence of peritonitis. He also stated that intraabdominal abscess formation is not an

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<sup>13</sup> Exhibit C3

<sup>14</sup> localised collection of pus., larger in size than a golf ball of

uncommon post operative complication. The cause is unclear but could be due to some spillage in the operation or from an anastomotic breakdown which has subsequently healed itself.

134. Dr Lampe's opinion was that it was not surprising that the surgeon, Dr Fielding had not discovered the abscess at either of the re-opening laparotomies. The abscess was small and it was hidden beneath the enlarged liver. He found the other possible source of sepsis was in the right lung in the upper lobe.

135. He concluded that the cause of death was:-

*"multi-organ failure due to septicaemia of unknown source from either the subhepatic ulcer or bronchopneumonia"*

136. In his evidence however, he conceded that the cause of death is a complex consideration and many interacting conditions and circumstances can influence the final outcome. On my understanding of his evidence, he elevated the abscess to prominence ahead of the bronchopneumonia as the precipitating condition giving rise to sepsis. The prominence of this factor was partly due to the fact that it had been an unknown condition during Shannon's treatment. His opinion was that it had arisen about the time of the first surgery. He stated it was intact and there was no associated area of peritonitis according to his findings. His explanation of how it could affect Shannon's medical condition was a little vague (the proximity of blood vessels near the abscess being "showered or seeded with bacteremia from the abscess.")<sup>15</sup> He considered that the antibiotics would be able to control the development of pneumonia but were less likely to be effective against the undrained abscess which has a resistant skin making penetration by antibiotics less efficacious. It was bigger than a golf ball in size and filled with pus.

137. Dr Lampe felt that the abscess had at the least played a contributing role to Shannon's illness, probably an initiating role in Dr Lampe's opinion. He bases this on the fact that very early in the post surgery stage Shannon was developing temperatures and becoming unwell.

138. On the issue of aspiration, Dr Lampe had been given Dr Kruger's report which had regard to the period of time when the endotracheal tube was leaking from between 6.00am and 7.00pm on 4 June. On review of the slides, Dr Lampe considered there was a lot of haemorrhage in the right lung which could fit with a degree of aspiration. There was however, no aspiration contents discovered at autopsy. Dr Lampe said aspiration pneumonia could still be a possibility<sup>16</sup> His evidence did not appear to go so far as to suggest this led to septicaemia. This was possible although it

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<sup>15</sup> page 214

<sup>16</sup> page 217 line40-50

seems here that a degree of aspiration may have led to the “heavy lungs” and appearance of haemorrhage.<sup>17</sup>

139. He said, *“If there is a tube leak, normally there’s a tube that goes down the airway that protects the airway- if there’s a little bit of leakage there, then any fluid that pools in the stomach can come back up and then go down into the lungs.”*<sup>18</sup>
140. Dr Kruger also raised the litres of fluid in the bowel - not a theory that Dr Lampe considered was very relevant here but “interesting”.
141. Dr Lampe said there was no evidence of translocation of germs from inside to outside the bowel. He favoured the sepsis initiating due to an intraabdominal source rather than in the lungs but acknowledged that it was a complex situation and all of the pathologies played a part in causing and contributing to Shannon’s death.
142. Dr Lampe did not think his observations could be determinative of whether either malignant hypothermia or neuroleptic syndrome had played a role in Shannon’s death.
143. He also did not think that the issue of the leaking endotracheal tube and the management of that situation were critical events that could be isolated from the overall progression of events that culminated in Shannon’s death. He could not say more than aspiration pneumonia, perhaps caused by the leaking endotracheal tube, may have been one of those contributing factors.<sup>19</sup>
144. Evidence was provided by two independent specialists who had access to the medical records after Shannon’s death. Dr Kiroff is a specialist who practices obesity surgery in Geelong. He attended court while Dr Fielding gave his evidence.
145. Dr Kiroff was called as an independent expert to provide his opinion to the court. He had been a surgeon since 1985 and specialised in upper gastrointestinal surgery. He used laparoscopic techniques of bypass surgery and gastric banding as his main area of practice since 2000. He had performed far fewer bypass operations than Dr Fielding, perhaps 25 of 250 gastric operations.
146. Dr Kiroff’s practice differed from Dr Fielding’s with regard to contact with the patient prior to surgery. He pointed out the procedure was potentially life threatening but also of immense possible benefit to a patient. Dr Kiroff thought it appropriate that a patient have time to consider the decision and to develop a relationship with the surgeon. I can only agree that Dr Kiroff’s approach seems far more considered than Dr Fielding’s more entrepreneurial approach. The evidence was that with

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<sup>17</sup> see also page 222, line

<sup>18</sup> page 218 lines 20-30

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respect to Dr Fielding's overseas patients, the patient seemed to select the procedure. This was prior to the first occasion on which the patient met the surgeon. Surgery might proceed on that same day of first meeting between patient and surgeon.

147. Obviously there were difficulties with Shannon being resident in Singapore. Dr Fielding sought to address those difficulties by modern means of communication via the internet. Dr Kiroff acknowledged Dr Fielding's extensive level of experience in the procedure and that he was offering a service where there might not otherwise be access to the technical expertise he could offer. The difficulty of access and limited time for contact with the patient was a factor that Dr Kiroff thought compromised the preferred development of a good relationship with one's patient. In 2001, Dr Kiroff's recollection was that laparoscopic banding was comparable, maybe slightly inferior to laparoscopic gastric bypass which was considered the gold standard in obesity treatment. He went on to say that laparoscopic banding was considered to be safer than bypass. In this, he agreed with Dr Fielding's view as expressed to the inquest. The absence of the need for anastomoses is the reason why the procedure is far less dangerous. Dr Kiroff would inform his patients that risk of death for bypass was between half and one per cent, whereas less than one in a thousand for gastric banding. Dr Kiroff had been involved in a review of the two alternate procedures which was published and used by the Royal Australian College of Surgeons.
148. Dr Kiroff did not think there was any reason contra indicating bypass for Shannon. He agreed with the proposition that Shannon and his mother should have been advised of relative mortality rates.
149. Dr Kiroff thought it appropriate (but different to his practice) to delegate to an appropriately skilled person the task of pre operative investigations which included chest x-ray, ECG and radiological examination.
150. Dr Kiroff repeated his view that because it was a high risk procedure, he considered a patient needed time to properly consider information and make a decision about surgery. Thus, a single twenty minute appointment scheduled on the day proposed for surgery could not provide such opportunity.
151. He thought the length of operation (four hours) reflected the technical difficulty encountered in an operation on a person with such a large liver.
152. Dr Kiroff did not make any criticism of the decision made by Dr Fielding in the period leading up to the second operative procedure.
153. His practice varied from Dr Fielding with respect to nasogastric tubes. He considered they assisted in preventing the risk of aspiration as the gut often dilates with an ileus post operatively. The nasogastric tube can be a positive measure also to take pressure off the anastomoses. His view was, it was a variable practice among surgeons.

154. Dr Kiroff was not surprised that the abscess was not found by Dr Fielding at either laparotomy as it was situated very deep and behind the large liver.
155. After the essentially negative laparotomy, the high temperature remained unexplained. Dr Kiroff noted that Shannon had a high respiratory rate and fever from the first operation. He noted that because Shannon was in intensive care, the radiology of his chest would not have been performed in the upright position. Had the x-rays been taken in the radiology department there might have been more information than was available in x-rays taken in the supine position. He explained the position of the patient essentially obliterates the lower half of the lung. As well, there were no lateral views taken which is the best way of viewing the lower lung. Dr Kiroff noted the difficulty given that Shannon was in intensive care. The only other option was to take a CT scan of the lungs, again a difficult proposition. The one opportunity which was missed was when Shannon was returned to the ward and still had a high respiratory rate. A chest x-ray was clinically indicated at that time according to Dr Kiroff but was not taken. Even the x-ray reports that were done showed a continuum of basal atelectases, that is, basal collapse in the visible portion of the lung.
156. Dr Kiroff considered the most significant information available was the indication of developing pneumonia.
157. On 1 June, Shannon was mobile but with indications of evolving pneumonia and should have been sent for complete chest x-ray in the upright position. By 2 June, there was some improvement but still a concern about the right lung.
158. Dr Kiroff accepted that Dr Ellison's decision not to immediately replace the endotracheal tube which was not sealing properly was reasonable because he was otherwise maintaining satisfactory oxygen saturations and there was a risk in changing the tube.
159. Subsequently at 7.00pm a decision was made to change the tube. It was then reviewed and the position considered to be better was three centimetres above the carina.
160. Dr Kiroff says when the tube was manipulated a further 2 centimetres, no x-ray was taken so it could not be said with certainty what position the tip was in before or after the manipulation. The x-rays that were taken showed right upper lobe collapse. Dr Kiroff says there is only one explanation in the context of a ventilated patient. Also, he went on to say that the right lung cleared up a bit on x-ray of 5 June which he says is not consistent with pneumonia but rather with collapse after lack of aeration.
161. Dr Kiroff said, *"I remain convinced that for a period of time the right upper lobe bronchus was occluded for whatever cause, and.....after the*

*tube was initially moved we can't be certain where the tip of the tube was.*<sup>20</sup>

162. Dr Kiroff provided an independent expert review of Shannon's medical care and surgery. On overall consideration he was more inclined to the bronchopneumonia as the source of the sepsis rather than the subhepatic ulcer. He also raised the possibility of neuroleptic malignant syndrome or malignant hypothermia but these were less likely.
163. Dr P Kruger is an intensive care senior staff specialist in intensive care and anaesthetics at the Princess Alexandra Hospital.
164. He agreed with the pathologist's view that the immediate cause of death was multi organ failure caused by septicaemia.
165. He said it was very difficult to be sure of the cause. There were very high fevers. The two laparoscopic surgical procedures after the initial surgery essentially excluded intraabdominal sepsis. However, the presence of the intact subhepatic abscess complicated the interpretation.
166. It was clear there was an element of bronchopneumonia. He did not think the distinction between aspiration pneumonia and bronchopneumonia was paramount. If a patient aspirates there is an initial irritation to the substance in the lungs but this will develop into overall pneumonia with secondary infection of the material.
167. Dr Kruger considered there was the possibility of an element of aspiration pneumonia commencing the process of deterioration from shortly after the initial procedure.
168. The leaking endotracheal tube also contributed to the risk of aspiration according to Dr Kruger's review. He acknowledged that it is a difficult decision to make whether to leave the tube or change it. He agreed it was normal practice to try advancing the tube first before considering changing the tube.
169. The pattern of change in the lung x-rays suggested to him either lung collapse or aspiration rather than evolving infection because the time frame was too short for infection to have evolved.
170. Dr Kruger agreed with Drs Bentley and Kiroff that the changes in the x-rays in the upper right lobe were as a result of collapse and then re-inflation of that section of lung. He gave an example of mucus or aspirate blocking a section temporarily. The weight of evidence seems to be with this view of collapse of the lung and then re-inflation.
171. On reflection, he thought the repeating difficult management decision for this patient was the degree of pain relief sedation. This had to be

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<sup>20</sup> page 208 line 5-10

balanced against maintaining respiration and knowing if a patient was at risk of aspiration and whether a nasogastric tube might be positioned. The risk of the tube is that damage might be done to the anastomoses.

172. Drs Kruger and Kiroff's usual practice would be to insert a nasogastric tube but they acknowledged it is a vexed issue.
173. Dr Kruger thought the five litres of fluid was likely to have been present on 5 June at the second procedure. He said it would be hard to detect this fluid when spread over the length of intestine. After the first two procedures, there may be a reaction of the bowel to stop the normal movement of fluid via peristalsis and an ileus forms when fluid pools.
174. The risk with the fluid was that it aggravated the risk of aspiration, rather than it being a source of direct sepsis.
175. Dr Kruger considered it was the combination of broncho pneumonia and aspirate pneumonia that caused the sepsis. He could not say what role the subhepatic ulcer played but it may well have contributed.
176. Dr Kruger considered the proposal of a CT scan in all of the circumstances was unreasonable given the risks in undertaking such a physical task for a patient as ill as Shannon was at that time.
177. Like other doctors he considered there needed to be sufficient time for the surgeon to discuss with the patient and family the decision to be undertaken. The importance of a good relationship and communication was immense.
178. Even though the bowel was taken out in the second laparotomy, he said it was not necessarily the case that the five litres of fluid would be apparent spread over many metres in length. The fluid in the bowel though was still an unlikely source of direct sepsis.
179. He acknowledged that aspiration was merely speculation, there was no clear evidence, just some potential aspirations noted.
180. Dr Kruger's emphasis about nasogastric tubes was to consider whether it should be inserted in the event of problems after surgery. Dr Kruger accepted that Dr Ellison's evidence of replacing the tube (while backed up with 100 per cent oxygen) coincided with the collapse of the right upper lobe. He acknowledged there was subsequent recovery from this problem.
181. Dr Kruger considered the most likely source of infection was the bronchopneumonia rather than the subhepatic ulcer or other explanation advanced by Dr Kiroff. He considered the lungs as crucial in the source of

infection. Aspiration pneumonia could have caused the infection or the large collection of fluid that was noted in Shannon's abdomen<sup>21</sup>

182. Mrs Eileen Tang gave evidence to the inquest. Her husband was also present during the inquest. They present as loving and intelligent parents who supported their son throughout his life. They were actively involved in his plans for treatment although it was Shannon, who as an independent young adult, made the decisions for his treatment. His mother accompanied him to Australia for treatment and his father joined them before surgery. They were devastated by Shannon's unexpected death and have persisted with their endeavours to understand the circumstances of his untimely death. They are motivated to identify any improvements that might prevent a death occurring in similar circumstances in the future.

183. Mrs Tang made three pages of contemporaneous notes of events relating to Shannon's treatment. She referred to him in the Chinese name of "Sheng" in her notes which were produced to the court.<sup>22</sup> I see no reason why they should not be accepted at face value as her record of events. I consider this record as I do other records including the notes made in the one page document headed "Clinical Record George A Fielding" to be found as part of exhibit B17.

184. Mrs Tang records leaving Singapore on 21 May and arriving the next day. There are notes referring to matters other than Shannon's health which add weight to the record's authenticity.

185. The initial visit with the nurse, dietician and psychologist are recorded before the reference to seeing Dr Fielding on 28 May. No particular detail from the original meeting with Dr Fielding is recorded but a note is then made that although Shannon was prepped for 1pm in intensive care, he was seen by Dr Fielding at 6.00pm, apologising that they were running late and surgery was delayed until the next day.

186. In Mrs Tang's detailed letter addressed to the coroner and dated 9 November 2006<sup>23</sup> she refers to the first meeting with Dr Fielding. She stated that Dr Fielding informed them the operation would be performed laparoscopically and that he would stitch rather than staple to form a pouch. This was explained as preferable to avoid staples "bursting". Clearly this was a reference to a possible complication of the surgery.

187. She also recalled Dr Fielding saying he would remove the gall bladder if he could access this easily to avoid complications in the future.

188. Dr Fielding's notes of the meeting are as follows,  
*"For Roux-En-Y, discussed operation. Risks-bleeding, perforation, leak, sepsis, death, stricture, need for vitamins and follow up. His mother was in*

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<sup>21</sup> five litres

<sup>22</sup> B19

<sup>23</sup> Exhibit B 14

*the interview and happy. For operation this afternoon.*<sup>24</sup>

189. Dr Fielding presented in court as a verbally articulate, confident and persuasive man. I have no doubt that the conversation readily convinced the Tang's of the appropriateness of the decision to proceed with the operation. Indeed, it was originally scheduled for that very day. In such circumstances, I find it most likely that the impact of Dr Fielding's communication was to present the way in which matters were to proceed without any real consideration that the decision was still to be made.
190. I have considered Mrs Tang's evidence as well as Dr Fielding's evidence together with the record of email communication, the nature of Dr Fielding's letter to Shannon and the notes made on 28 May. Although Dr Fielding might have indicated that he had personally undergone a lap band procedure, I am unconvinced that he provided the precise numerical risk of death in the proposed gastric bypass procedure at this appointment. The appointment was focused on what was about to occur, it was clearly too late to be having any meaningful discussion of the risks of the procedure when surgery was scheduled for that very day. I do not accept that the detailed numerical risk of death was presented at this meeting.
191. Whether or not this information on that day would have made any difference of course is irrelevant, although it would seem that Shannon was intent upon pursuing the gastric bypass operation.
192. However, I accept the evidence that in fact Shannon had received the email dated 29 April 2003 which detailed the critical information about risk of death prior to his arrival in Australia. He was an adult and entitled to make his own decisions. The extent of his inquiries revealed him as a careful and considered young man who made an informed choice.
193. I do not accept that the discussion on 28 May in the presence of Mrs Tang ever considered that the procedure might not occur; subject to the review by the intensive care team. The discussion about staples and the possibility of "bursting" clearly continued on from earlier email exchanges about possible complications. Shannon's parents might not have been privy to these communications but I find that Shannon was aware of the risk of the procedure.

## **Summary**

194. Shannon Tang underwent a gastric bypass procedure which is known to have significant risks of mortality. The most obvious risks are associated with direct complications of surgery including infection arising from leakage from the anastomoses formed in the procedure. Pulmonary embolism and pneumonia are also identified risks particularly relevant for

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<sup>24</sup> B17

patients of this procedure who are morbidly obese and therefore likely to be suffering from other co-morbidities.

195. In considering what had caused Shannon's death, Dr Fielding did not expect that the pneumonia developing in the right upper lobe (x-ray performed on 4 June) was extensive enough to precipitate death. In hindsight, Dr Fielding considered the information from the autopsy report indicated that the combination of all the factors contributed to Shannon's death. Individually, he did not think the pneumonia or the abscess could be responsible for death. There was no aspiration pneumonia. He could only say that the abscess was a surprise and must have been tucked away under the liver.
196. Two laparotomies by the surgeon and the subsequent autopsy did not reveal any leak from the anastomoses or any sign of generalised peritonitis. I accept that there was no significant leakage from any of the anastomoses.
197. Shannon was being cared for in the intensive care ward and was under intense monitoring and subject to numerous pathology tests and x-rays. The radiological procedures were limited in their view because they were taken while Shannon was propped up in bed while attached to ventilation and other devices. Consideration was given to transporting him to the radiology department but it was decided this was too risky. This was not a decision that was criticised by independent experts who have reviewed Shannon's care in all the circumstances.
198. There was also a period of time (up to 6 hours) when there was leakage from the ventilator cuff. Although this situation is not desirable as it increases the risk of aspiration, there was no evidence that aspiration had occurred. Shannon's ventilation was adequately maintained during this period. Independent comment of this situation acknowledged that the conservative approach of attempting to manipulate the tube into a better position was the preferable first response given the risk of removing the tube and losing access if re-insertion of a tube proved impossible. There was credible evidence that the tube occluded a portion of the lung while it was incorrectly positioned. Fortunately, the decompensation of the lung was remedied and the lung re-inflated without adverse impact on Shannon's overall position. The consensus of independent opinion was that this sequence of events had not been critical in Shannon's decline.
199. The preponderance of medical opinion given with the benefit of hindsight favours a respiratory source of the sepsis.<sup>25</sup> There was also clear evidence that the pneumonia did not appear to be sufficient to be the cause of death in itself.<sup>26</sup>

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<sup>25</sup> Dr Kiroff, Dr Fielding, Dr Georghiou

<sup>26</sup> Drs Bentley and Dr Lampe

200. **I conclude that the combination of both the respiratory condition and the subhepatic ulcer contributed to the overall condition of sepsis which led to multi organ failure and death.**

### **Findings**

6. I make the following findings:–

- (a) The identity of the deceased was Shannon Sheng Wen Tang.
- (b) His date of birth was 9 December 1981.
- (c) His last known address was at the Wesley Hospital. He usually resided in Singapore.
- (d) At the time of death his occupation was human resource officer and prospective student.
- (e) The date of death was 5 June 2003.
- (f) The place of death was Wesley Hospital Auchenflower, Brisbane, Queensland.
- (g) The formal cause of death was multi organ failure due to septicaemia which developed in the post operative period after gastric bypass surgery.

201. This Court has jurisdiction in appropriate cases to commit for trial any person/s which the evidence shows may be charged with the offences mentioned in section 24 of the *Coroners Act 1958*. The evidence here is not sufficient to put any person or persons upon any trial.

### **Recommendations**

202. By way of rider to the formal findings and pursuant to section 43 of the *Coroners Act 1958*, I note:

- That relevant specialist colleges and/or hospitals consider and review a requirement for face to face consultation between patient and surgeon and the appropriate minimum period prior to the proposed surgery for such consultation.
- That relevant hospitals and/or specialist colleges consider and review the level of specific information about risk of mortality in forms of consent to be signed by a patient prior to treatment.

- If a surgeon is relying on an assessment being made by intensive care staff preoperatively of a patient's suitability for surgery, that the surgeon provide specific written communication of such request accompanied by the patient's relevant medical history to the intensive care staff.

203. Finally I thank counsel assisting and all counsel as well as Shannon's family in their input to this inquest. The Tang family have suffered the loss of their son when so much had been hoped for his future health and happiness. I extend the formal condolences of this court to the family in their sorrow.

The inquest is now closed.

Chris Clements  
10 August 2007