

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, 23rd and 24th days of February 2002 and the 28th day of March 2002, before Wayne Cromwell Chivell, a Coroner for the said State, concerning the death of Assunta Petroccia.

I, the said Coroner, find that, Assunta Petroccia aged 26 years, late of 15 Moorlands Road, Hectorville, South Australia died at the Royal Adelaide Hospital, Adelaide, South Australia on the 19th day of December 1999 as a result of cardiorespiratory arrest due to massive gastric dilatation with gastric rupture.

1. Introduction

1.1. Assunta Petroccia was admitted to the Royal Adelaide Hospital ('RAH') on 18 December 1999 complaining of severe abdominal pain. Certain investigations were carried out, but no firm diagnosis was made.

1.2. Ms Petroccia continued to complain of pain while in hospital. In the early hours of 19 December 1999, she suffered a cardiorespiratory arrest and, despite extensive attempts at resuscitation, she could not be revived and death was pronounced at 2:41am.

1.3. Cause of death

A post-mortem examination of the body of the deceased was performed by Drs N Manton and A Ruszkiewicz on 21 December 1999. Their findings were that the cause of Ms Petroccia's death was:

'Cardiorespiratory arrest due to massive gastric dilatation with gastric rupture.'

(Exhibit C2a, p1)

1.4. The pathologists commented:

1. Autopsy revealed a massive acute dilatation of the stomach with rupture (perforation) of the gastric wall and spillage of the gastric contents into the peritoneal cavity.
 2. Microscopic examination of the tissue samples taken from the abdominal cavity showed features consistent with an early, developing inflammatory response to the spilled gastric contents which was indicative of the perforation occurring shortly before death (no more than a few hours).
 3. The volume of the stomach contents and amount of partially digested food material present in the peritoneal cavity was consistent with consumption of large quantities of food.
 4. No signs of organic disease causing obstruction of the gastric outlet and its subsequent dilatation was found at autopsy.
 5. Microscopic examination of the samples of liver showed features consistent with those observed in early and/or developing sepsis.
 6. It is recognised that radiological recognition of acute dilatation of stomach may pose diagnostic difficulties particularly in extreme examples of this uncommon condition.
 7. Acute massive dilatation of the stomach seen in the absence of obstructive causes may result from rare motility disorders or from consumption of large quantities of food. In this case, there was no clinical indication of motility disorder and the amount of gastric contents was consistent with consumption of large quantities of food.
 8. Acute dilatation of stomach is known to cause severe acute respiratory impairment and cardiac arrhythmia which may lead to cardiorespiratory arrest and subsequent death.
 9. No pathological signs indicative of effects of lactose intolerance were identified at autopsy.
 10. Toxicological analysis of the antemortem blood specimen was negative for alcohol and other common drugs. No morphine was detected in the post mortem blood specimen (for details please see toxicology report ...)
 11. No injury was found at autopsy.
- ...?

(Exhibit C2a, p1-2)

- 1.5. Professor Glyn Jamieson is the Dorothy Mortlock Professor of Surgery at the University of Adelaide. In relation to points 1. and 2. above, he agreed with the pathologists that the rupture had occurred not more than two hours prior to death. He thought that the rupture was likely to have been a sudden event leading to a circulatory collapse. The release of toxins into the bloodstream may have induced a

cardiac-arrhythmia. (T264). He thought it was unlikely that Ms Petroccia had peritonitis when Dr Ward, the Night Registrar, saw her at 2:00am, so the rupture would seem to have occurred within the period of 40 minutes before she arrested.

- 1.6. Professor David Shearman was, for many years, the Mortlock Professor of Medicine at the University of Adelaide. He gave evidence that he found it difficult to imagine that the perforation occurred within 40 minutes of death. He pointed out that the development of necrosis of the wall of the stomach is not a sudden process but a gradual one which may have been going on for a few hours but which probably became worse in the last few minutes before death (T198-199).
- 1.7. I do not think that it is necessary to resolve this disagreement. I accept that Ms Petroccia was not displaying symptoms of peritonitis when Dr Ward saw her at 2:00am.

2. **Background**

- 2.1. Ms Petroccia's mother gave the following statement describing her daughter's condition before she was taken to the RAH:

'Assunta worked from Monday the 13th of December to Friday the 17th of December. At no time during this period of time did Assunta complain of not feeling well. Her behaviour was normal and she gave no indication of being unwell.

At about 4:15pm on Friday the 17th of December, 1999 I was home when Assunta arrived from work. My husband and son who work together arrived home at about 6:30pm. I had prepared tea for the family which was ready when they arrived. I had cooked pasta with a tomato sauce. Assunta had complained to her father of having a stomach ache. She did not want to eat tea. My husband found a piece of partly eaten chicken and an empty carton of chocolate milk in the study by the computer. The chicken was in a foil pack and the chocolate milk was a one litre carton. Assunta had told me that she had eaten some chicken and drunk the milk after coming home from the shops. When we later checked her car we found two empty pastie wrappers, a vanilla slice wrapper, an empty bag of chocolate coated almonds and an opened packet of Weston double choc cookies (3/4's full). Assunta may have eaten these things after finishing the shopping on Friday while she was on her way home but I can not say for sure.'

(Exhibit C5a, p2)

- 2.2. A locum was called and came at about 10:30pm that night, and gave Ms Petroccia an injection, after which she lay on her bed.

- 2.3. Ms Petroccia woke at about 4am on Saturday, 18 December still complaining of stomach pain. She took two Panamax tablets with no effect. The family doctor, Dr Borrillo, was contacted, and he came at about 7:20am. Dr Borrillo noted her swollen abdomen, and said that she needed to go to hospital.
- 2.4. Mrs Petroccia took Assunta to the RAH, arriving at about 8:00am. She was seen by Dr Ong at about 9:00am. He made a list of provisional diagnoses including bowel obstruction, constipation and appendicitis. He arranged for abdominal X-rays. Mrs Petroccia said that Dr Ong told them that Assunta needed an operation (Exhibit C5a, p4). He admitted Assunta to hospital.
- 2.5. Ms Petroccia was then seen by Dr Michael France, a Surgical Registrar, while she was still in the Emergency Department, at between 12:00 and 1:00pm. He diagnosed faecal overloading and a urinary tract infection (because of her high white cell count). His plan was that her constipation could be treated with the oral laxative 'Go-Litely' and, if these measures were successful, she could be discharged later in the day (Exhibit C8). She was given Morphine for the pain, and received six doses in all. Mrs Petroccia said that Dr France told her that Assunta did not need an operation (Exhibit C5a, p4).
- 2.6. Ms Petroccia was admitted to Ward R6B at the RAH at about 1:00pm. Go-Litely was administered but was vomited out. Two enemas were given, the first at 4:20pm with moderate result, the second and 6:00pm with no result.
- 2.7. Ms Petroccia continued to complain of nausea, and she was vomiting although 'she could not bring anything up' (Exhibit C5a, p4).
- 2.8. Dr France saw Ms Petroccia again at some time between 6:30pm and 8:00pm. He noted that her stomach was still distended. He performed a rigid sigmoidoscopy, and this confirmed that the rectum was empty, demonstrating that his initial diagnosis of constipation was incorrect. A 'paralytic ileus' (obstruction of the bowel due to paralysis of the bowel wall) was questioned.
- 2.9. Dr France ordered that Ms Petroccia receive intravenous fluids, that she take nothing by mouth, and that she be observed. He inserted a naso-gastric tube, but little aspirate was obtained. He discussed the case on the telephone with Mr Watson, the Consultant on duty, and it was agreed that they would continue to observe her, and

consider a special enema in the morning to check whether she had a large bowel obstruction (T16).

- 2.10. Mrs Petroccia said that her daughter deteriorated during the evening of 18 December. She said that after the doctors, including Dr France, saw Assunta at about 8:00pm, she noted that Assunta's legs, abdomen and back had turned a blue/purple colour, as had her lips. She was told that they would perform more tests in the morning (Exhibit C5a, p5).
- 2.11. The RAH casenotes (Exhibit C8) record that Ms Petroccia's pulse at 10:00pm was 120 to 130, which is abnormal, but no action was taken. The nurses seem to have attributed the tachycardia to her being 'very anxious +++' (Exhibit C8). A 'spotty rash' and numbness was attributed to an allergy to Morphine.
- 2.12. Ms Petroccia was seen by Dr Ward at about 2:00am on 19 December 1999. He noted her history, and that she appeared to have been 'sleeping comfortably since 2300' (Exhibit C8). She had not required analgesia since 8:00pm on 18 December 1999. He offered to review her again if her pain increased or if she began vomiting. He took no active measures at that stage.
- 2.13. The casenotes record that Ms Petroccia was seen by the nursing staff at midnight to be asleep with 'visible breaths'. At 1:30am she was observed to roll onto her left-side by the Enrolled Nurse. At 2:00am her pulse was taken and it was 80 beats per minute. She was breathing at 16 breaths per minute with 'warm and regular breaths'. At 2:25am, it was noted that she was unresponsive to arousal, she had stopped breathing and had a very faint carotid pulse. Cardio-pulmonary resuscitation ('CPR') was commenced and an emergency was called.
- 2.14. The arrest team arrived at 2:40am. At that time her 'distended rigid abdomen +++' was noted. CPR was continued. This was noted to be very difficult due to the distended abdomen. Ms Petroccia was ventilated, and extensive efforts at resuscitation were made, but the doctors were unable to restore cardiac activity, and resuscitation was ceased at 3:10am and death was pronounced (Exhibit C8).

3. Treatment administered

- 3.1. As I have already mentioned, Ms Petroccia was seen on two occasions on 18 December 1999 by Dr France, the Surgical Registrar. There was no Senior Registrar on duty and Dr France was the most senior medical officer available. Mr Watson was the Consultant on duty and was available to be contacted by telephone if Dr France thought it was necessary (T61).
- 3.2. Despite the fact that the referring General Practitioner, Dr Borrillo, thought that Ms Petroccia's abdominal distension was gross ('+++'), and the Medical Officer in the Emergency Department, Dr Ong, made the same notation in the casenotes, Dr France did not consider that her abdominal distension was gross (T75). In relation to this, he accepts now that he may have underrated this aspect of her presentation (T78).
- 3.3. The main outcome of Dr France's examination at this time was that there was no sign of peritonitis (T9). As I said, his diagnosis was severe constipation, possibly accompanied by a urinary tract infection.
- 3.4. When Dr France saw Ms Petroccia again at some time between 6:30pm and 8:00pm he examined her with a sigmoidoscope, and the rectum was noted to be empty. He was aware that the oral laxative 'Go-Litely' had been vomited up, and there had been a moderate result from the first enema and no result from the second.
- 3.5. In those circumstances, Dr France acknowledged that the diagnosis had become clouded and so he stopped the treatment for constipation. He ordered Ms Petroccia take nothing by mouth, that she receive intravenous fluids, and he inserted a nasogastric tube hoping to decompress the stomach. He aspirated gastric contents in order to check that the tube was in-situ in the stomach (T18).
- 3.6. Having telephoned Dr Watson, Dr France took a conservative approach, admitting that he was 'a bit perplexed' by her condition (T16). It was decided that Ms Petroccia should be reviewed in the morning when Dr Watson would perform a ward round and a 'Gastrograffin enema' would be considered then.
- 3.7. Dr France pointed out that in most cases of patients presenting with abdominal pain, about 50% resolve spontaneously without treatment, and in the other 50% of cases the

symptoms become clearer as the patient's condition becomes more serious, and then a diagnosis can be made more easily (T20).

3.8. X-ray interpretation

As I have already mentioned, Dr France interpreted the abdominal X-rays, which had been ordered by Dr Ong, as demonstrating 'faecal loading', leading to a diagnosis of constipation.

3.9. In fact, the Radiology Registrar, Dr Suzanna Saloniklis prepared a written report which she said was immediately forwarded to the Emergency Department. The report reads as follows:

'There is faecal loading within the rectum and distal colon. Paucity of bowel gas on the left side of the abdomen is noted. Gas however is seen within both the small and large bowel loops which are normal in calibre. No obvious free gas. The soft tissue outlines are not well visualised. There is a veiling opacity throughout the abdomen suggesting free inter-peritoneal fluid.'

(Exhibit C9b)

(It was agreed that 'inter' should have read 'intra' on the report (T291), but nothing turns on that.)

3.10. As I said, the written report in hard copy was sent back to the Emergency Department, if not with the radiograph films, then a short time later. Dr Saloniklis told me that, as a matter of general practice, the films and the report go together, although it is possible that the X-rays could have been collected separately and taken to Emergency, followed by the report. She was reasonably sure that this did not happen in relation to Ms Petroccia's X-rays (T131).

3.11. More significantly, however, as soon as the typed report was verified by Dr Saloniklis, she posted it on the hospital computer system. This meant that it could have been accessed from anywhere in the hospital where there is a terminal. In this case, Dr Saloniklis told me that it was posted on the system at 12:06pm on 18 December 1999 (T130).

3.12. Dr France had been training at the RAH for a period of five months prior to 18 December 1999 (T49). He told me, however, that he was not aware that these reports were available on the hospital computer system. He said that he had never been

aware of the existence of such a system in Australia, although he was aware that such a system was available at the Mayo Clinic in the United States of America (T49).

- 3.13. Certainly, there is now a copy of Dr Saloniklis' report with the X-rays (Exhibit C9c). Dr France insists that he did not see that report, at any relevant stage. Indeed, he said that the first time he saw that report was during his interview with Detective Brown on 28 June 2001. Why he did not see it initially is a mystery.
- 3.14. This is clearly a significant matter. Dr Saloniklis did not diagnose the massive gastric dilatation on the X-ray, nor did Dr France. However, Dr Saloniklis did refer to the 'veiling opacity', and Dr France admitted that if he had been aware of that comment, he would have discussed it further with Dr Saloniklis. This would probably have led to further investigations, probably in the form of an ultrasound or a CAT scan (T107). It is quite likely that, if those investigations had been carried out, the correct nature of Ms Petroccia's problem would have been identified, and treatment instituted.
- 3.15. Another incident which might have put Dr France on notice that he had not come to grips with Ms Petroccia's condition was a conversation he had with Dr Saloniklis in the Resident's Lounge at the RAH on 18 December 1999.
- 3.16. Dr Saloniklis told me that the conversation occurred at about 4:00 or 5:00pm, and that she overheard Dr France speaking to his intern about constipation. She said she joined the conversation and volunteered that she had 'seen faeces on the X-ray but the appearance was not of gross constipation' (T151).
- 3.17. Dr France agreed that he spoke 'briefly' to Dr Saloniklis. He could not recall the discussion, but said that whatever it was, it did not change his diagnosis (T30).
- 3.18. Having regard to the fact that Dr France said he abandoned the diagnosis of constipation when he saw Ms Petroccia a few hours later in any event, it could be argued that the conversation has no significance. Perhaps it might have caused Dr France to reconsider his diagnosis a little earlier, but in view of subsequent events, it is unlikely that the outcome would have been different.
- 3.19. Having regard to commentaries on this case which I will presently discuss, I find that Dr France should not be criticised for his failure to diagnose a gastric dilatation in Ms Petroccia on the basis of her initial presentation. However, in my view he can be

criticised for failing to familiarise himself with the facilities available at the hospital, particularly in such an important diagnostic area as radiology. Similarly, the hospital should also be criticised for failing to properly familiarise him, as part of his training, with the facilities available.

- 3.20. Dr Saloniklis said that the system had been available at the RAH since at least 1997 (T159).
- 3.21. Professor Glyn Jamieson, a surgeon of vast experience and great eminence, was not aware of this facility either (T289). Having regard to the hierarchical system in teaching hospitals, perhaps this is not as surprising as it might appear at first glance. It is to be expected that young, computer-literate trainees would be directly involved in collecting this type of information and presenting it to the Consultant, rather than the Consultant seeking it out for himself.
- 3.22. Dr Ward, also a surgical trainee but slightly more junior to Dr France, was well aware of the system (T173).

4. Assessment of medical care

- 4.1. I heard evidence from Professor David Shearman who, since leaving Adelaide University in 1997, has continued to practice general medicine and gastroenterology in a private capacity as a Consultant.
- 4.2. Professor Shearman said that the diagnosis of acute gastric dilatation was there to be seen on the X-ray. He said:

‘The radiograph is inadequate for the evaluation of an acute abdomen. The upper part of the abdomen is not seen and there is no chest radiograph. Thus the diaphragms cannot be identified. Presumably these are higher than normal because of the distension of the abdomen. However, because the diaphragms are not seen, it is not possible to determine whether there is any free gas under the diaphragms. It is standard teaching that a chest radiograph should be performed in suspected acute abdomen because occasionally the cause of abdominal pain is lies in the chest and because it is essential to see the position of the diaphragms in order to be able to look for free gas beneath them.

The following abnormalities are present on the plain radiograph. On the supine film, the grossly distended stomach fills almost the entire abdomen. The wall of the stomach is seen crossing the lowest two ribs on the right hand side and then progresses down the right side of the abdomen to the region of the sacral promontory and on the left hand side of the abdomen it probably progresses along a vertical colonic shadow. The grossly distended stomach has pushed gas-filled small intestine and right colon to the extreme

right of the abdomen and the transverse colon is pushed towards the pelvis. It is abnormal to see this degree of colonic and small intestinal gas on the right side of the abdomen. There are faeces within the rectum and distal colon but the amount would not be unusual for a young female. The entire abdomen gives a partially opaque appearance which is that of generalised fluid which is within the stomach. On the erect film, there may be a gastric air shadow on the right upper part of the radiograph but because the diaphragms can not be seen, the shadow cannot be diagnosed with certainty.

...

In conclusion the radiography was inadequate for the full evaluation of a patient with presumed acute abdomen. A diagnosis of acute dilatation would be expected to be made by a qualified radiologist or a consultant surgeon. A less qualified doctor would be likely to miss this diagnosis but the combination of other abnormalities on the radiograph should have been expected to lead to further immediate investigation. In particular the appearance of fluid in the abdomen even if it was not recognised as in the stomach, would be very abnormal and would certainly require further investigation. Unfortunately the presence of faeces in the distal colon and rectum was seized upon and the diagnosis of constipation was placed on the patient.’ (Exhibit C10, p1-2)

Professor Shearman confirmed his opinion in oral evidence, pointing out that although the condition can be described as “very unusual and rare”, the abnormalities on the X-ray, and in particular the appearance of fluid, should have called for further investigation. (T185)

4.3. As I have already mentioned, Dr France acknowledged that, had he been aware of Dr Saloniklis’ report that there was the fluid present, he would have investigated further.

4.4. As Professor Shearman pointed out:

‘Young ladies do not have a large amount of fluid in the abdomen. Fluid in the abdomen would occur in elderly people who develop a serious disease, so the alarm bells should ring.’ (T187)

4.5. In contending that Ms Petroccia was bulimic, Professor Shearman referred to the post-mortem report which found that her stomach contained about 1500mls of partly digested food, compared with 400mls to 500mls which could be expected to be present at the conclusion of a large meal. He said that if such a meal is consumed at a comfortable pace, the food is processed and passes through to the intestine leaving that amount in the stomach. But in this case, where the food is consumed at a pace that is grossly abnormal, the stomach loses its ability to progress the food into the intestine because it is paralysed by being suddenly over-distended. (T201) He said:

‘A. ... The situation with a gastric dilatation in bulimia, and this young lady had the condition of bulimia, is very, very different. What happens in bulimia is very hard to

comprehend but the young lady can ingest a vast amount of food in a very short time, probably five minutes and it can amount to, if we look at the volume, up to 2 litres and so the stomach is suddenly grossly distended with food. The stomach responds to this by starting to secrete acid and secretions to digest it. The stomach then becomes so distended that it fills the entire abdomen and it closes off its entrance and its exit due to pressure. You are left with a distended tense sac full of food, where no food can be brought up and no food can be passed on. It's a closed system. When the patient is grossly uncomfortable and in pain with this they're attempting to vomit all the time, but they don't bring anything up and there is no evidence that this young lady brought anything up although she was retching for some 24 hours. The treatment of this condition, if this is so tense, if this stomach is so tense and you can't get into it, is inadequate in terms of a naso-gastric tube. The tube is passed and lies at the junction of the oesophagus and stomach failing to get into the stomach, and in any case it would be too narrow to aspirate solid food that has been taken into the stomach so it's an ineffective treatment. This great distended sac continues to increase its tension due to the secretion of acid and fluid into the stomach, and the blood supply in the wall is gradually cut off by this pressure and so the wall starts to die. It undergoes necrosis and then it perforates. That is the normal sequence of events. If a diagnosis is made of this condition, other measures have to be instituted to stop this catastrophe.

Q. What measures are they?

A. I am not a surgeon. I can only document for you what I find on a search of the literature. This condition is reasonably well defined. I have seen one other case in my lifetime, so it is rare, but the literature indicates this sequence of events and if you cannot get down a wide bore tube, a very wide tube through this obstruction into the stomach to empty it, then you will find reading the literature that patients are operated on to relieve this before perforation of the stomach occurs.' (T190-191)

Indeed, Professor Shearman produced further medical literature in which such cases have been documented to support his contentions (Exhibit C10c).

4.6. Professor Shearman also pointed to the fact that the fluid balance charts, part of the RAH casenotes (Exhibit C8), disclose that the naso-gastric tube drained only 'scant amounts'. He said that this suggests that the tube was not actually in the stomach at the time (T194), or that if it was in the stomach, the food was of such a viscosity that it would not come up the tube (T195). He said:

'(It is) normal practice when nothing is being aspirated is to check where the tube is on an X-ray to see if it has gone into the stomach.' (T195)

4.7. In terms of treatment, Professor Shearman acknowledged that he is not a surgeon. However, he pointed out that in a case such as this, he would expect decisions as to

emergency management of the patient to be collective decisions in consultation between physician and surgeon. (T249)

- 4.8. I also heard evidence from Professor Glyn Jamieson. He made a statement (Exhibit C11a), which disagreed with the opinions expressed by Professor Shearman.
- 4.9. However, by the time he gave evidence, Professor Jamieson had taken a further opportunity to consider Professor Shearman's evidence, and acknowledged that he had not been familiar with the type of gastric dilatation suffered by Ms Petroccia. Indeed, he said that the type of condition she suffered, associated as it was with bulimia, had never come to his attention in all his years of surgery (T255).
- 4.10. Professor Jamieson made the following points in evidence:
 - He did not identify gastric dilatation from the X-ray film (in fairness, he had no information about the patient's clinical condition at the time he saw the films) (T257);
 - However, when reading the X-ray, he thought that it was a 'very abnormal film'. He thought that the material displayed on the X-ray was faeces in the colon, rather than food in the stomach. (T280). If it had been pointed out to Professor Jamieson, as Dr Saloniklis said she did to Dr France, that in her opinion the amount of constipation was not gross, this would have led him to reconsider the interpretation of the X-rays (T281);
 - He thought that the 'veiling opacity' referred to by Dr Saloniklis looked more consistent with solid matter rather than intra-peritoneal fluid as she suggested (T291);
 - If Dr France had read Dr Saloniklis' report, and her mention of intra-peritoneal fluid, he should have gone to her and said:
 - 'This patient does not have any signs of peritonitis so what are you calling intra-peritoneal fluid?' (T293);
 - Whatever his reading or misreading of the X-ray, the fact that Dr France did not read the written report and notice Dr Saloniklis' comments about the 'veiling opacity' was a matter of considerable significance (T287);

- He agreed with Professor Shearman that a chest X-ray should have been ordered which may have helped make the diagnosis. (T294) He described this as ‘standard teaching still for the investigation for the acute abdomen.’ (T311).

4.11. Having regard to the fact that Professor Jamieson had no experience of this condition at that time:

- Even if a diagnosis of gastric dilatation had been made, whether by ultrasound or CAT scan or other method, he would have instituted the same treatment regime as Dr France did, namely the insertion of a naso-gastric tube, the institution of intravenous therapy, the patient to take nil by mouth, and to be observed by taking vital signs every two hours (T258);
- He would have persisted with such measures so long as the patient’s pulse remained normal, she did not develop a fever, and the pain levels remained the same, as he would have expected the dilatation to slowly resolve (T259). Professor Jamieson said he would have done the same thing as Dr Ward did at 2:00am on 19 December 1999, since Ms Petroccia did not display these symptoms then (T271);
- In the event that the patient developed signs of infection or perforation, he would have performed a laparotomy, evacuated all of the food matter in the stomach, and then repaired the stomach according to the amount of damage that had occurred (T261);
- Because he would have expected the stomach to empty itself, he would have actively discouraged aggressive treatment in the form of passing a large tube into the stomach to evacuate the food material, as suggested by Professor Shearman, because doing so created a risk of oesophageal rupture (T265).

4.12. In light of his more recent knowledge, Professor Jamieson agreed that he might consider more aggressive treatment in the form of passing a large diameter tube to evacuate the stomach. He said:

‘Yes, I would want to be convinced that, ... if my patient was well, ... (and) didn't have an elevated pulse, tender abdomen and all those sorts of things, I'd still like to give a bit of time to let the stomach empty because I'm sure there must be many cases where that's actually taken place. It's only in the very grossest examples I think, and we're obviously

dealing with one here, where it really seals off and won't empty itself and then I think if you could convince yourself you had that sort of situation then I think you've obviously got to be much more active. But I don't think that's something which is out there if you like in terms of knowledge.' (T266)

- 4.13. Professor Jamieson justified his conservative approach, saying that it is not possible, nor indeed appropriate, to operate on every patient who presents with abdominal pain. He said:

'If we did we would have many patients being operated on who don't require operations and some of those patients because things go wrong might die. So it would be an untenable situation to operate on every patient who presented with an acute problem of their abdomen. So clearly we have to try and institute ways of telling when somebody has a condition which requires operation. What we do in that regard is to look at things like the signs of peritonitis. Anybody who has peritonitis will get an operation. Anybody who has a condition which is an acute abdominal condition where there condition is not getting better, even if we haven't got a diagnosis but we can clearly see the patient is getting worse will have an operation. But apart from that all patients with abdominal pain or abdominal problems who come into the hospital are treated expectantly with observation. I think the number of patients who are treated in that way who will wind up with a result like here is very small indeed, fortunately.' (T276)

5. **Conclusion**

- 5.1. In light of all of this evidence, I find as follows:

- On or about Friday 17 December, Assunta Petroccia underwent an episode of bulimia in which she compulsively ate a huge quantity of food in a very short time;
- As a result, her stomach became grossly distended and she suffered great pain;
- Dr Borrillo attended in the morning of 18 December 1999 and correctly apprehended that Ms Petroccia needed to go to hospital;
- Ms Petroccia was admitted to the RAH. The Emergency Department Medical Officer, Dr Ong, made a list of appropriate provisional diagnoses including bowel obstruction and constipation;
- Dr Ong correctly ordered a number of investigations, including abdominal X-rays. He should have ordered chest X-rays as well;
- When Ms Petroccia was seen by the Surgical Registrar, Dr France at between 12:00 and 1:00pm, he incorrectly diagnosed constipation;
- In fact, Ms Petroccia was suffering from acute gastric dilatation, a condition in which the food she consumed, in the manner described, had so distended her stomach that it sealed both the inlet and outlet. As a result, the wall of her stomach was weakened by the

distension, to the extent that its blood supply was at risk of compromise leading to the risk of rupture which places the patient's life at risk;

- The acute gastric dilatation was there to be seen on the abdominal X-ray by an experienced clinician or radiologist. It was not diagnosed by Dr Saloniklis, the Radiology Registrar who read the X-ray. She should not be criticised for this since acute gastric dilatation is a rare condition. Dr Saloniklis correctly noticed the presence of a 'veiling opacity' on the film, which she attributed to intra-peritoneal fluid;
- Dr France should not be criticised for his failure to diagnose acute gastric dilatation on the X-ray. However, there were abnormalities on the X-ray which should have led him to investigate her condition further;
- Dr France should be criticised for failing to read Dr Saloniklis' X-ray report, in its written form, and/or for his failure to be aware of the fact that it was available to be read on the RAH computer system. Had he done so, he would have become aware of the 'veiling opacity', and investigated further, with either a CAT scan or ultrasound;
- The correct treatment for Ms Petroccia's condition was active intervention to attempt to evacuate the contents of her stomach by means of a large diameter tube;
- Having regard to the state of medical knowledge in the RAH Department of Surgery at the time, even if acute gastric dilatation had been diagnosed, it is unlikely that active treatment would have been instituted until such time as a rupture had become apparent. For this reason, Dr France should not be criticised for his failure to actively intervene;
- Dr Ward's assessment of Ms Petroccia's condition at 2:00am on 19 December 1999, namely that she was sleeping comfortably, and his decision not to take any positive action at that point, were appropriate in the circumstances;
- Ms Petroccia's stomach ruptured at some time in the early hours of 19 December 1999, and this led to her cardiac arrest;
- Aggressive measures were undertaken to resuscitate Ms Petroccia after she arrested and these were appropriate.

6. Recommendations

- 6.1. Section 25(2) of the Coroner's Act empowers me to make recommendations following an inquest if, in my opinion, to do so may 'prevent, or reduce the likelihood of, a recurrence of an event similar to the event that was the subject of the inquest'.
- 6.2. The facts of this case demonstrate that the regrettably common eating disorder known as bulimia can, in rare cases, lead to death, if the condition known as acute gastric dilatation develops.

- 6.3. The medical profession, the general public, and particularly people suffering from bulimia, should be more aware of these facts.
- 6.4. I therefore recommend that a public warning should be issued which brings this information to public notice.
- 6.5. I also recommend that the medical profession be alerted to the technical aspects of this case so that effective treatment can be instituted if they are confronted with such a case again.
- 6.6. As to the facts of this case, I recommend that the administration of the RAH, and indeed the administration of all teaching hospitals, ascertain the extent to which medical staff are not aware of facilities available at the hospital to assist diagnosis and treatment, and consider ways in which any such shortcomings may be addressed.
- 6.7. I recommend that the RAH consider Professor Shearman's comments that the input of an experienced radiologist or surgeon might have led to a better interpretation of Ms Petroccia's X-ray, and consider whether such consultant input might be more readily available.

Key Words: Hospital Treatment; Bulimia; Acute Gastric Dilatation

In witness whereof the said Coroner has hereunto set and subscribed his hand and

Seal the 28th day of March, 2002.

Coroner