



OFFICE OF THE STATE CORONER

NON-INQUEST FINDINGS OF THE INVESTIGATION INTO THE DEATH OF LYNDA MARGARET GEORGE

CITATION: Investigation into the death of Lynda
Margaret George

TITLE OF COURT: Coroner's Court

JURISDICTION: Southeastern

FINDINGS OF: Mr James McDougall Coroner

CATCHWORDS: CORONERS: Death in hospital, surgery,
deteriorating patient, post-operative care

Counsel Assisting: Ms Rhiannon Helsen, Office of the State
Coroner

Introduction

Ms Lynda Margaret George was 60 years of age at the time of her death. She had a history of high blood pressure, heavy cigarette smoking and alcohol use. At the time of her death, Ms George was receiving treatment for hypertension. She was also suffering from undiagnosed Chronic Obstructive Airways disease.

On 19 January 2009, Ms George was referred to the Surgical Outpatients at the Logan Community Hospital (LCH) by Dr H from the Chatswood Road Medical Centre. The reason for the referral was that Ms George had undergone a diagnostic colonoscopy on 13 January 2009, which revealed a large obstructing carcinoma in the hepatic flexure. A large 3 cm polyp was also found at the sigmoid colon, which was clinically thought to be malignant. It was recommended that Ms George be surgically reviewed and a CT scan conducted.

On 15 January 2009, a CT scan of Ms George's chest, abdomen and pelvis confirmed the presence of a tumour in the proximal transverse colon.

On 22 January 2009, Ms George was seen as a Surgical Outpatient at the LCH by Dr R. Dr R noted that Ms George had a confirmed synchronous bowel cancer in the proximal transverse colon and sigmoid colon. She was hypertensive and smoked 25 cigarettes per day. It was recommended that Ms George undergo surgery at the LCH to remove the tumours as soon as possible. According to Dr R, he advised Ms George that there were two ways to perform the surgery she required. The first choice was a right hemicolectomy and sigmoidectomy, which involves taking out two separate pieces of bowel and would involve two joins, or anastomosis, in the remaining bowel. The alternative was to remove one large section of bowel containing both tumours (a subtotal colectomy and ilio-rectal anastomosis), which would only require one join or anastomosis.

Ms George was subsequently booked to undergo a right hemicolectomy and sigmoidectomy.

After Ms George's assessment, Dr R discussed her case with Dr M, a senior surgeon at the LCH. According to Dr R, Dr M agreed that given Ms George had two synchronous malignancies, the better operation would be to remove one section of bowel containing both tumours, and therefore to perform a subtotal colectomy and ilio-rectal anastomosis.

On 2 February 2009, Ms George was admitted to the LCH to undergo a subtotal colectomy. Prior to the operation, Dr R spoke to Ms George and told her that the plan was to take out one piece of bowel rather than two separate pieces.

Ms George was anaesthetised at 1:30pm by Dr K. She experienced an episode of bronchospasm post-induction of anaesthesia, however, was stable intra-operatively. During the bronchospasm, Dr K requested the assistance of Dr Mc, the Director of Anaesthetics. The bronchospasm settled with treatment. There were no significant periods of hypertension or hypoxia.

Dr R subsequently conducted the surgery with the assistance of Registrars, Dr W and Dr P. Dr K discussed with Dr R whether the operation should proceed given the bronchospasm. It was decided that in view of the urgency of the surgery, it was

appropriate to continue. Ms George was to be provided with post operative chest physiotherapy and referred to the medical team if she became wheezy.

During the surgery, the entire colon was mobilised. All the vascular pedicles were ligated accordingly. The anastomosis was carried out between the distal 15cm of the ileum and the upper part of the rectum in a side manner using a GIA stapler. Haemostasis was checked at the end of the operation and the anastomosis was thought to be perfusing nicely at the time. No intraoperative complication was noted. Ms George was then taken to the surgical ward for post operative care.

On 3 February 2009 at 5:30am, nursing notes from the LCH indicate that Ms George had a temperature of 38.4 degrees. As a result, the ward call doctor was notified but did not see Ms George. The surgical team was to review Ms George that morning. At 8:40am, surgical ward rounds were conducted and it was noted that Ms George felt well. Her observations were stable and she was afebrile. At 2:45pm, Ms George's oxygen saturation fell to 80%. Her chest was noted to be clear. Intravenous fluid rate was increased from 200ml per hour to 500ml. At 6:30pm, the medical notes reveal that Dr Mc, a Medical Registrar, was asked to see Ms George in relation to hypertension and low blood oxygen. Her oxygen saturation was 95% on four litres of oxygen. Her heart rate was 100 to 120 beats per minute. It was thought that Ms George may have hypovolaemia causing hypertension and decreased oxygen saturation due to chronic lung disease.

Dr Mc recalls that during her examination of Ms George on 3 February 2009, she palpated Ms George's abdomen, which was said to be soft. Whilst not recorded in her medical notes, Dr Mc claims that Ms George was not suffering from any abdominal pain which would have alerted her to a leak in the bowel. Dr Mc did not believe that a leak or haemorrhage was the source of Ms George's hypotension, based upon her examination.

On 4 February 2009, it was noted that Ms George had bibasal palpitations on her lungs and was expiratory wheezing. Fruesmide and Ventolin were prescribed. At 2:35pm, during physiotherapy, it was noted that Ms George had complained of pain in her abdomen and had difficulty breathing. At 3:15pm, nursing notes indicate that Ms George was short of breath and tachycardiac. During surgical ward rounds that evening, it was noted that her blood pressure was stable at 90/60 with a pulse rate of 90 beats per minute.

Dr R did not review Ms George on 3 and 4 February 2009 as he was working at the Redlands Hospital. He does not recall receiving any telephone calls from his Registrars (Dr P and Dr W) about Ms George's condition on these two days.

On 5 February 2009, notes from the surgical ward rounds performed by Dr R, Dr P, Dr W and Dr Ka indicate that Ms George was still tachycardiac and had diffuse tenderness in her abdomen upon examination. At 10:40am, the medical notes state that Ms George was tachypnoeic and tachycardiac. Fruesmide was administered intravenously. Dr W noted that Ms George's condition was to be discussed with the intensive care unit (ICU).

Dr W recalls that after examining Ms George at 10:40am, he spoke to the Principal House Officer of ICU, Dr B. Dr W indicated that his impression of Ms George was that she had had a cardiac event and that she may need to go to ICU for further care. Dr B was busy with a sick patient at the time, however, promised to review Ms George once she had finished with that patient. Dr W then went to the Emergency Department as he was required to review another patient.

According to Dr B, there was no sense of urgency in the initial request made to ICU to review Ms George and as a result a review was not conducted until a further request was made by telephone at midday. According to Dr B, she initially received a telephone call from one of the junior surgical team members at around 11:00am. The doctor spoke to Dr B at length about Ms George, whom she wanted to be reviewed by ICU. Dr B notes that she had a *great deal of difficulty in understanding what it was about the patient's condition that had prompted a request for an ICU review*. The doctor did not alert Dr B to anything which indicated Ms George was critically ill. As a result, Dr B requested that the Medical Registrar conduct a review of Ms George. Approximately half an hour later, Dr W came into the ICU and spoke to Dr B at length about Ms George. He indicated that he thought Ms George had mildly fluid overloaded. However, he did not alert Dr B to any other facts which may indicate she was critically ill. Dr B recalls that she asked Dr W whether he wished for her to come and review Ms George immediately. Dr W stated that an immediate review was not necessary. Dr B explained that she would be at least another half an hour, which Dr W indicated was acceptable.

At 11:15am, Dr Mc was requested to assess Ms George by Surgical Registrar, Dr Ka. Dr Mc noted that Ms George was afebrile, tachycardiac and hypotensive. Metabolic acidosis was also noted. At midday, possible intra-abdominal sepsis was noted and a CT scan was arranged. Dr Mc noted that the surgical team were to exclude potential intra-abdominal sepsis. She requested that one on one nursing be provided to Ms George as she appeared very unwell and could deteriorate further.

At around midday, Dr Sa, the Cardiology Registrar at the LCH, received a call from Dr C Mc, a Medical Registrar. Dr C Mc requested a transfer of Ms George from the surgical ward to the coronary care unit for cardioversion on the presumption that Ms George was thought to be having atrial fibrillation rhythm. Upon being advised of Ms George's symptoms, Dr Sa was of the view that she was likely suffering from a severe infection of unknown origin. He was of the view that Ms George should be transferred to the ICU rather than the coronary care unit. Dr Sa recommended that Dr C Mc immediately contact the ICU registrar, as he was of the view that Ms George would benefit from admission to the ICU as she seemed to have septicaemia and haemodynamic instability.

Shortly after midday, a request was made by Dr C Mc by telephone for ICU to review Ms George. ICU Consultant, Dr Wh attended the ward to see Ms George and found her to be in extremis. She was *pale, diaphoretic and hypotensive*. Dr R was present when Ms George was being reviewed by Dr Wh. Dr Wh was of the view that Ms George was in septic shock, which was later confirmed by a blood culture where an E.Coli and bacteroides were grown in her blood. Ms George was immediately transferred to ICU and resuscitation was initiated. An urgent laparotomy was scheduled to be conducted.

Shortly after admission to the ICU, Ms George experienced a Ventricular Fibrillation arrest and cardiopulmonary resuscitation was initiated. She was cardio verted four times during this period with no response. CPR continued for 27 minutes with no return of spontaneous output. Further resuscitation was deemed futile and CPR was ceased. Ms George was pronounced deceased at 1:51pm.

Post-mortem examination

An external and full internal post-mortem examination was performed by Dr RM Williams with Dr G Tan on 6 March 2009. A number of histology, microbiology and toxicology tests were also undertaken.

The external examination revealed signs of recent medical therapy consistent with Ms George's past medical history.

The internal post-mortem examination revealed severe peritonitis (inflammation of the lining of the abdominal cavity). This was found to have been caused by a hole at the site of the ileorectal anastomosis.

Histological examination confirmed peritonitis, which was said to be in keeping with the clinical diagnosis of intra-abdominal sepsis.

Microbiological tests were performed on a number of post-mortem samples. Mixed bacteria were identified in all samples. This was found to be consistent with organisms originating from the bowel.

It is noted that hypotension, tachycardia, fever and diffuse tenderness of the abdomen are signs that can be seen in intra-abdominal sepsis. Intra-abdominal sepsis is a well-described complication of bowel surgery, which can occur due to leakage of bowel contents from surgical joins in the bowel.

Dr Williams and Dr Tan found that Ms George's cause of death was peritonitis due to adenocarcinoma of the colon (surgically treated).

Whilst it was noted by Dr Williams that it is not within the scope of the post-mortem examination to comment on the treatment provided to Ms George, should an opinion as to her treatment be required, it was recommended that the case be reviewed by an independent colorectal surgeon.

Clinical Forensic Medical Unit Review

On 21 April 2010, Forensic Medical Officer, Dr Anne-Louise Swain was requested to conduct a review of the care and treatment provided to Ms George and provide a report. Specially, Dr Swain was asked to comment on whether there were sufficient clinical signs prior to Ms George's death for a diagnosis of a leak in the bowel anastomosis to have been made and whether such a diagnosis would have altered her outcome.

Dr Swain described Ms George as a 60 year old woman who had a history of hypertension and smoked 25 cigarettes per day. Hospital notes indicate that she suffered from undiagnosed chronic obstructive airways disease as a result of her smoking but had not previously mentioned her symptoms to her general medical practitioner or the anaesthetist who administered the anaesthetic during her bowel operation. Ms George had been diagnosed with two simultaneous cancers of the bowel.

The sequence of events leading to Ms George's death, and Dr Swain's view of the care and treatment provided, are outlined as follows:

- Ms George was admitted to the Logan Hospital on 2 February 2009 for a subtotal colectomy and ileorectal anastomosis to remove two cancerous tumours of her bowel.
- The surgery was complicated by severe bronchospasm which appears to have been treated appropriately and adequately. Otherwise the surgery appeared to have been carried out with due care and attention.

- Following the surgery, it was established that Ms George most likely had Chronic Obstructive Airways Disease.
- Medical notes reveal that Ms George failed to recover as expected in the few days after her surgery; however, this seems to have been attributed, quite reasonably, to her lung disease. She was reviewed on a frequent basis by a number of doctors from a number of specialities.
- During the ward rounds on the morning of the 5 February 2009, Ms George was noted to be 'feeling better' and had opened her bowels, which is a sign that her gut had begun to return to normal function. Later that day she deteriorated rapidly and it was thought that she may have had intra-abdominal sepsis. Ms George was booked to have an urgent laparotomy but unfortunately died before this operation could be performed and the diagnosis confirmed.

Dr Swain notes that a leak in the anastomosis of the bowel following surgery was identified at autopsy, which is a known complication of this type of surgery and is usually fatal without treatment.

Dr Swain recommended that the opinion of a Colorectal Surgeon be sought regarding the management of Ms George. Specifically the surgeon should be asked, 'could or should the leak of the bowel anastomosis been diagnosed earlier and if so would this have altered the outcome?'

Expert Report by Colorectal Surgeon, Dr Michael J Mar Fan

On 20 January 2012, an expert report was requested from Dr Michael J Mar Fan, a registered Medical Practitioner in Queensland and a registered Specialist in General Surgery. At present, Dr Mar Fan is a Visiting Medical Officer to the Sunnybank Private Hospital, Greenslopes Private Hospital and the QEII Jubilee Hospital. He is a Consultant Colorectal Surgeon.

Dr Mar Fan was asked to address whether ***there were sufficient clinical signs prior to Ms George's death for a diagnosis of a leak in the bowel anastomosis to have been made and would this have altered the outcome?***

In response, Dr Mar Fan noted the following:

- Whilst it has always been standard teaching that an anastomotic leak from a bowel anastomosis usually does not take place until at least five to seven days post operatively, in Dr Mar Fan's experience the range is usually more likely from day one to day fourteen.
- Ms George suffered from an early anastomotic leak, which in Dr Mar Fan's view was caused by technical error as opposed to patient related factors. Most well trained General Surgeons should be able to perform an abdominal colectomy with anastomosis quite competently with an acceptable anastomotic leak rate (less than 5%).
- Upon reviewing Ms George's medical notes, it appears that the two cancers within her colon and her anatomy did not present as a difficult or complicated operation, although her pre-existing medical condition probably had been downplayed in her pre-operative assessment. If the co-morbidities

had been recognised earlier, involvement of the High Dependency Unit (HDU) or the ICU following the operation may well have been instigated, which may have affected Ms George's outcome.

- Dr Mar Fan agreed with the choice of operation that Dr R suggested for Ms George, however, he would have constructed the anastomosis differently to that outlined in Dr R's statement. Dr Mar Fan indicates that an end-to-end anastomosis either stapled or hand sewn may have been a better option than a functional end-to-end (i.e. side to side) anastomosis. The reason being that there are less staple lines with a conventional end to end anastomosis and also there is less potential Ischaemic area between the staple line in a conventional end-to-end staple anastomosis as opposed to a functional end-to-end (side-to-side) anastomosis with at least three separate staple lines. Dr Mar Fan states that a majority of his peers would do the operation as he had suggested. This method is the preferred method in the ASCR's textbook of Colon and Rectal Surgery.
- Dr Mar Fan also could not detect whether a simple air test of the anastomotic bowel underwater was carried out to see whether there was any technical problem with the anastomosis. Whilst this is not a failsafe manoeuvre, Dr Mar Fan believes that if there is an obvious technical error, then this would have been spotted quite quickly and a redo of the anastomosis or other operation could have been done, which would have made a difference to Ms George's outcome.
- Dr Mar Fan believes that Ms George's post operative care should have been provided in the ICU or HDU rather than a ward based setting. He is of the view that the bed to nurse/patient ratio afforded by the care provided in the intensive care unit or high dependency unit would have made a difference in the management of the following problems which were noted during the time of the operation:
 - Pain relief
 - Low oxygen saturation
 - Urine output

In Dr Mar Fan's experience, such problems can be spotted much earlier in an intensive care unit or high dependency unit setting and if they cannot be readily corrected, it will usually mean a return to the operating theatre especially for an abdominal operation.

- Dr Mar Fan is also of the view that the post operative care and review provided to Ms George, although on a frequent, daily and punctual basis, lacked the experience of an experienced surgeon looking after someone with an abdominal colectomy with an anastomosis. Ms George exhibited signs of un-wellness the first day following the operation. Dr Mar Fan is of the opinion that the junior staff caring for Ms George including the Registrars lacked the foresight, intuition and urgency in managing this particular patient. Dr Mar Fan notes that it was difficult to know from the clinical notes whether these events were liaised directly with the treating surgeon or other surgeons within the hospital.
- Dr Mar Fan is of the view that the earlier the signs of un-wellness are exhibited in the post operative period, the more urgent any investigations should be to rule out anastomotic leak, as well as engaging the involvement

of the ICU. These problems may have been picked up earlier if the day ward round was consultant led, especially by the treating surgeon. Dr Mar Fan is of the belief that the expertise of a surgeon is enormous in the management of the sick, unwell patient in the relatively early part of the post operative period.

- Dr Mar Fan is of the view that the anastomotic leak was caused by technical error.
- The post operative recognition of the deterioration could have been speedier and appropriate early imaging could have been done to alert the fact that there was an anastomotic leak. In Dr Mar Far's opinion, there were sufficient clinical signs for an early diagnosis of a leak in the deceased to be made and if that was the case, the outcome certainly would have been different.

Response to issues raised in Dr Mar Fan's report

Statement of Dr R (primary surgeon)

On 7 June 2013, Dr R provided a further statement after having been provided with Dr Mar Fan's expert report.

In response to the specific criticisms raised by Dr Mar Fan, Dr R made the following relevant comments:

The manner in which the surgery was conducted

- In response to Dr Mar Fan's criticism of the surgical technique used by Dr R, he states that the decision to conduct either a side-to-side or an end-to-end anastomosis is taken at the time of the surgery depending on access to the rectum. Dr R received instruction on the technique used, namely side-to-side anastomosis, from one of his supervisors, Dr HVR, at the Hervey Bay Hospital during his training. Up until Ms George's case, Dr R claims he has always had good results with this technique and was confident in using it. He confirms he had employed both the side-to-side and end-to-end technique with equally good results.
- The decision on whether to use either the end-to-end or side-to-side anastomosis is technical. It is based upon how the rectal stump (after removing the rest of the bowel) is placed and the ease of access to the distal most point of the side-to-side anastomosis. Another consideration is how far the proximal bowel can drop into the pelvis without causing any tension on the anastomosis. These issues are considered and a decision is made at the time of the surgery. Dr R cannot recall the specific reason he chose to perform a side-to-side anastomosis in Ms George's case, however, he claims he would have made that decision after assessing the issues as cited previously. He states that up until he became aware of the post-mortem report findings, he did not have any concerns about using the side-by-side technique. Dr R has now ceased using the side-to-side rectal anastomosis technique. He has also changed his surgical technique and post-surgical practice. Given the circumstances of Ms George's case, an early leak is now a part of Dr R's differential diagnosis for patients who show any deterioration during the early post-operative period.

- Dr R has no specific recollection of whether he performed an air test of the anastomotic bowel under water in Ms George's case. However, as it is his usual practice to do so he believes he did in this instance. Unfortunately, there is no documentation of this taking place.
- Dr R states that Ms George's case is the first in his experience where a leak has occurred so early in the post-operative period. Although he accepts that the anastomosis leaked, he does not believe that this happened intra-operatively for the following reasons:
 - A chest x-ray performed on 3 February 2009 did not reveal any gas under the diaphragm, which it should have done had a leak occurred during the surgery.
 - There was only 200 mls of yellow/brown fluid found at autopsy. If Ms George had a leak for three days, Dr R would have expected to see a higher volume of contaminated fluid in the abdominal cavity.
 - He also notes that there were no faecal peritonitis present and Ms George was tolerating oral intake post-operatively.

Post-operative treatment provided

- There was no HDU at the LCH in 2009, which currently remains the case. There are also only a limited number of beds in the ICU. As such, not all patients who undergo major surgery are automatically admitted to the ICU for observation. The decision is taken and based on clinical needs at the time. Dr R disagrees with Dr Mar Fan's view that Ms George's co-morbidities warranted ICU care.
- At the time of the completion of Ms George's surgery, Dr R was of the view that she was stable enough to be sent to the ward for post-operative monitoring. He notes that the anaesthetist who reviewed Ms George in the recovery room was also satisfied for her to be discharged to the ward.
- Ms George suffered a bronchospasm after induction of anaesthesia and prior to the commencement of surgery. In Dr R's view, this may have confused the clinical picture post-operatively, which was attributed to her lungs. Ms George subsequently settled down with observations and maintained a good urine output with no temperature on day two. This was thought to be reassuring and inconsistent with the progress of a patient with a leak without intervention. In Dr R experience, patients with immediate post-operative abdominal complications generally do not settle down with initial intervention.
- Dr R recalls that on the morning of 5 February 2009, Ms George informed him that her abdominal pain was improving and she had opened her bowels. He notes that this is not something you expect to see from a patient with an anastomotic leak, especially one of three days standing. When Ms George became hypertensive after returning from the bathroom later that day, a rapid escalation of her condition was then undertaken.
- At the time of these events, Dr R held surgical positions at the Redland Hospital and the LCH. He operated at the LCH on Mondays and Thursdays

and at Redlands Hospital on Tuesday and Wednesday. He relied upon his Registrars at both Hospitals to keep him informed of any concerns they had with his patients on the days he was not physically present at the Hospital. Following Ms George's death, Dr R now ensures that he contacts his Registrars each day to discuss the condition of the patients on whom he has performed surgery, if he has not heard from them. This system is usual at the LCH and Redland Hospitals. The limitations on resources are such that the Consultants are not always present, but available by phone for the Registrars to contact for advice or with a request to come in if they have any concerns.

Morbidity and Mortality Meeting

- Ms George's death was discussed at the Surgical Mortality and Morbidity ('M&M') Meetings on 13 March 2009 and later at a surgical audit meeting on 9 October 2009. Dr Mar Fan was present for the meeting conducted on 13 March 2009. The post-mortem report was not available at the initial meeting, however, the case was discussed and although the consensus view was that the underlying sepsis was the cause of death, it was also the view of the surgical staff present that the source of the sepsis was most likely Ms George's chest. No-one suggested an anastomosis leak until the post-mortem findings were released. However, by the time of the meeting of October 2009, when the results of the post-mortem had become available it was thought that although, in retrospect, there were clinical signs that could be interpreted as indicating a possible anastomotic leakage, these could have been explained by other causes.

Statement of Dr P (assisted during surgery)

On 20 June 2013, Dr P provided a further statement after having been provided with Dr Mar Fan's expert report.

Since providing a statement in November 2009, Dr P has now completed the necessary requirements to be registered as a general surgeon in Australia. In May 2012, he obtained the qualification Fellow of Royal Australian College of Surgeons.

In response to Dr Mar Fan's report, Dr P made the following relevant comments:

The manner in which the surgery was conducted:

- Dr P assisted Dr R during the surgery performed on Ms George on 2 February 2009. He performed tasks as requested by Dr R. He recalls that Dr R thoroughly looked after the procedure and inspected the bowel to check for leaks. Dr P notes that Ms George had a subtotal colectomy and it is not possible to inspect the anastomosis all around due to the position of the pelvis. He does not recall whether an air test was performed.
- At the time of induction of anaesthesia, Ms George developed a reduction in oxygen saturation and the Consultant Anaesthetist initially wanted to postpone the surgery. However, after a review of the matter by the Director of Anaesthetics, Dr Mu, it was decided to proceed to surgery. The Consultant Anaesthetist requested review by the medical team regarding any drop in oxygen saturation, which was done by the surgical team when in the next two days Ms George developed reduced oxygen saturation, wheezing and low blood pressure from time to time.

The post-operative treatment provided

- Dr P was not involved in any pre-operative consultations with Ms George. The first time he had contact with her was on the day of surgery. Dr P states that the decision as to whether Ms George should have been discharged to the ICU after surgery would have been made during the initial review. An ICU admission after an anaesthetic event is usually determined by the Consultant Anaesthetist or Consultant Surgeon.
- As of February 2009, Dr P was employed as a Principal House Officer (PHO). When working under the Consultant Surgeons, he was required to always discuss the management of patients with them and the RACS trainee Registrar (which in this case was Dr W) as he was unable to make decisions about the patient on his own.
- Dr P asserts that he discussed Ms George's condition with Dr R everyday, even though it is not documented in the ward file. Further, even though it was not documented, Dr P believes that Ms George's condition was also discussed with the Consultant and the Trainee Registrar. A number of Ms George's blood results were also verified by Dr R, some of which were deranged. Dr P notes that it is well known that resection of the large bowel is major surgery, which carries a 5% leak rate and 1% death rate. Ms George's surgery was high-risk and as such the surgeon is informed on a daily basis about the patient's status.
- In Dr P's opinion, Ms George's presentation was not typical of an anastomotic leak and she had a complicated presentation. At the time, Dr P recalls forming the view that Ms George's hypertension and respiratory issues were related to her lungs. On the first pre-operative day, the clinical staff documented that she did not have significant abdominal pain. She tolerated a reasonable amount of oral intake and on subsequent post-operative days opened her bowels. She had low oxygen saturations and hypotension believed to be due to pulmonary pathology. Her signs and symptoms were discussed every day at least once with the medical and anaesthetic teams as well as Dr R. According to Dr P, no-one had any concerns about Ms George's abdomen.
- Dr P notes that even with minimal interference with the bowel, the bowel will stop working for some time and this manifests as vomiting, abdominal distension and constipation with other signs of sepsis. During the Consultant led ward rounds on 5 February 2009, there were no concerns about a leak. Post-surgery, Ms George had some abdominal pain but was improving every day. She was tolerating oral intake, and had even opened her bowels on 4 and 5 February 2009, which is a sign that her bowel was working and an unlikely behaviour with peritonitis. On 4 February 2009, Dr P saw Ms George during the afternoon ward rounds. She was then seen by Dr R on 5 February 2009 around 8:15 am and he did not suspect any abdominal pathology or sepsis.
- In addition, on 3 February 2009, a chest x-ray was conducted at 8:19 pm, which was found to be normal. According to Dr P, the usual appearance of a chest x-ray in the presence of an anastomotic leak would be to see free air and gas. Even up until the 5 February 2009, Ms George's white cell count was normal. Ms George was seen a number of times by different teams, namely the medical team, the surgical team and the acute pain

serve. No-one considered an intra-abdominal leak at that time and specifically on post-operative days one and two.

- Since becoming aware of the results of Ms George's post-mortem examination, it is now Dr P's practice to suspect leaks much earlier in the post-operative stage than he had done so previously.

Statement of Dr W (assisted during surgery)

On 20 May 2013, Dr W provided a further statement after having been provided with Dr Mar Fan's expert report.

In response to the specific criticisms raised by Dr Mar Fan, Dr W made the following relevant comments:

The manner in which the surgery was conducted

- Dr W assisted Dr R during the subtotal colectomy and constructed anastomosis. He performed tasks as requested by Dr R during the surgery. Dr W's role, as an advanced surgical trainee, was to learn by observing and performing tasks as directed by Dr R.
- Prior to Ms George's case, Dr W does not recall seeing an anastomotic leak in an elective surgery patient at so early a stage post-surgery. Further, it had been his experience that in an elective setting a perforation could take weeks to declare itself.
- Dr W states that he is not in a position to comment on the surgery performed by Dr R. To the best of his recollection, there were no complications during the surgery. He has not comment on the construction of the anastomosis.
- Dr W has no recollection as to whether an air test was conducted. He notes that in his experience, it is not unusual for surgeons to check for leaks by taking a thorough look at the bowel and applying gentle pressure to area around the suture line to make sure the anastomosis is patent. The "air test", as described by Dr Mar Fan, is not the only technique used to check for a leak.

The post-operative treatment provided

- Dr W was not involved in the pre-operative assessment of Ms George.
- In relation to Dr W's post-surgical involvement with Ms George, he was required to conduct reviews on the first post-operative day, 3 February and again on the morning of 5 February. When Dr W examined Ms George on 5 February at 10:40 am, he made findings of tachypnoea and tachycardia and decided to discuss her care with the ICU.
- Dr W disagrees that Ms George would have qualified to be discharged from theatre to either the HDU or ICU. He notes that Ms George did not require any significant support from drugs, such as noradrenaline or other inotropic or vasopressor support. She did not require any additional support in the first 24 hours of her post-operative care.
- In Dr W's recent experience in an adult intensive care unit, once a patient is stabilised and there are no significant complications identified, that patient is

discharged to the ward under the care of the parent unit. Dr W would have expected this to have happened for Ms George within 24 to 48 hours after her surgery, even if she had been admitted to the ICU at the LCH.

- Dr W notes that Ms George was a smoker with high blood pressure. Her bronchospasm on induction was noted by the surgical team and treated by the anaesthetic team. He acknowledges that this event could possibly have confused the clinical picture of her post-surgery course.
- In Ms George's case, an anastomotic leak was not expected so early in the post-surgical course. Given the clinical picture that was presented, Dr W was more suspicious of cardiovascular or respiratory disease, and other morbidities associated with smoking as being much more likely. He also suspected she may have a silent myocardial infarction.
- On Ms George's first post-operative day 3 February 2009, she appeared to be following a normal post-operative course. She had major surgery and it was expected that she would experience some discomfort after the removal of a large amount of the bowel. Based on Dr W's experience, Ms George's course in the next 24 to 48 hours also did not fall significantly outside normal boundaries for a post-surgical patient. Even up until Dr W sought assistance from the ICU on the morning of 5 February 2009, he was still of the view that the most likely cause of her problem was a possible myocardial infarction or secondary cardio-respiratory illness, such as cardiac failure. Ms George was over 50 years of age, was a smoker and had hypertension, which are three significant risk factors for heart disease. Until Dr W became aware of the results of the post-mortem report, he believed that a silent myocardial infarction was a very likely cause of Ms George's clinical presentation and her death.

Statement of Dr M (Senior Surgeon at the LCH)

On 19 June 2013, Dr M provided a statement after having considered Dr Mar Fan's expert report.

Dr M notes that in 2009, the LCH did not have access to the services of a specialist colorectal surgeon. All bowel surgery was performed by general surgeons. He states that this was appropriate and the surgery performed on Ms George in February 2009 was within the scope of that able to be performed by a general surgeon. In February 2013, funding was obtained which allowed the LCH to appoint a colorectal surgeon, who now works at the hospital three days a week.

In response to the specific criticisms raised by Dr Mar Fan, Dr M made the following relevant comments:

Performance of surgery

- In relation to the issues raised by Dr Mar Fan as to the surgical technique used by Dr R, Dr M states that it is his understanding that a stapled side-to-side anastomosis is very common. He notes that his personal preference is to perform an end-to-end anastomosis as he finds a side-to-side anastomosis to be more technically challenging.
- Dr M notes that the staples used in the performance of an anastomosis can cause ischaemia of the bowel, which in turn leads to leakage. If that is what occurred in this case, it is entirely possible, in Dr M's opinion, that there was

no leak at the conclusion of the surgery, but that ischaemia of the bowel subsequently developed that led to the leakage, which then led to the development of sepsis. In that regard, he notes that only a small amount of fluid was located in the abdomen during the post-mortem examination. Dr M states that he would have expected to see more fluid if the cause had been established peritonitis from the time of surgery. He would have also expected to see a significant amount of gas in the abdominal cavity in a patient who has an anastomotic defect from the time of surgery. Gas was not noted as being present in the chest x-ray performed on 3 February 2009. For these reasons, Dr M is of the view that it is more probable that the anastomosis was intact when Ms George left the operating theatre, but that perforation evolved after the surgery.

Post-operative care

- In relation to Dr Mar Fan's view that Ms George should have been admitted to the ICU or HDU following surgery, Dr M concedes this is a reasonable point. However, at the time there was no HDU at the LCH. Whilst there is an ICU, the beds are not readily available. ICU beds are usually available if either the anaesthetist or the surgeon has concerns following surgery. In this case, Dr M notes that there was an adverse reaction shortly after intubation, however, post-surgery the anaesthetist believed that it was in order for Ms George to be discharged to a ward. In relation to the pre-operative assessment, upon reviewing the notes, Dr M is of the view that there is nothing of any major significance other than Ms George's smoking history. Dr M disagrees that Ms George's presentation pre-operatively mandated that she should be discharged to the ICU on the conclusion of her surgery. In an ideal situation, with no resource limitations, post-operative care in an HDU/ICU setting would be preferred over routine ward care for all but the most routine of cases.
- On her first post-operative day, Ms George had a spike in temperature. Dr M notes that this is quite common for a surgical patient. Ms George's blood pressure was mildly low, but otherwise she appeared to be following a clinically normal pathway for someone who had undergone colorectal surgery.
- Dr M also notes that it was very early to be seeing the signs of a possible anastomosis leak. Standard teaching is that the most common time to see an anastomotic leak is between three to five days after surgery. It can be seen earlier than day three and later than day five, but when that happens it is out of the ordinary.
- Irrespective of Ms George's observations, decisions are based upon a doctor's clinical impression of the patient at the time. In these circumstances, even if Ms George had been managed in the ICU overnight after her surgery, it is highly likely she would have been discharged to the ward the following day given the demand of ICU beds. The problems Ms George was noted as suffering, namely pain relief, low oxygen saturation and urine output, are issues that are regularly managed in a ward environment.
- Overall, Dr M notes that Ms George presented a confusing clinical picture as a result of a combination of matters, in particular, her reaction shortly after induction of anaesthesia. In Dr M's opinion, Ms George was an

atypical presentation of a patient with an anastomotic leak so early after surgery.

Post operative care not Consultant led

- Dr M notes that whilst Dr Mar Fan's point regarding Consultant led care is relevant, due to resourcing issues that exist, most surgical care is not Consultant led within Queensland Health Hospitals. The typical post-operative model of care is that a patient is looked after by junior staff and if they have any concerns, a Consultant is called in. This remains the model at the LCH now. In this particular case, the member of junior staff leading the ward round was in fact an experienced overseas surgeon of Consultant status in his country of origin. He is now a Consultant surgeon recognised as a Specialist by the RACS.
- Whilst Dr M acknowledges that the current literature recommends that post-operative care to be Consultant led for emergency patients, Ms George was an elective patient rather than an acute patient.

Consideration by the Surgical Mortality and Morbidity Meeting at the LCH

- Ms George's death was considered by the Surgical M & M Meetings conducted on 13 March 2009 and again on 9 October 2009.
- Dr M's recollection of these meetings was that the clinical problem was not apparent in the post-operative period. It was noted that there was virtually no gas visible on the chest x-ray taken on 3 February 2009 and there was little fluid in the abdomen on the post-mortem report. That indicated to the M&M participants that if the leak had started on the night of the surgery, there should have been more fluid and more gas in the abdomen.

Discussions had with Dr R in relation to Ms George's surgery

- Dr M recalls discussing the matter with Dr R at the time of the events and during the Surgical M&M meeting in March 2009. Given the lapse of time, he does not recall the specifics of those conversations. He also recalls that the matter was discussed in more detail at the Surgical M&M meeting conducted on 9 October 2009.
- Dr M states that he has every confidence in Dr R's abilities as a surgeon. In his view, although the anastomotic leak was found during the post-mortem examination, the leak did not commence until after surgery, hence only a small amount of fluid being present at autopsy. Unfortunately, the reaction shortly after induction of anaesthetic coupled with the history of smoking provided a confusing clinical picture. Since these events, the LCH has introduced procedures to assist in the earlier recognition of a deteriorating patient, as recommended by the RCA.

Investigations by the Logan Hospital

The circumstances leading to Ms George's death were subsequently discussed at the ICU M&M Meeting in March 2009 and the Surgical Audit Meeting in March and October 2009. A Root Cause Analysis (RCA) was also conducted.

ICU Mortality and Morbidity Meeting – 24 March 2009

A Morbidity and Mortality Meeting of the Intensive Care Unit (ICU M&M meeting) was carried out on 24 March 2009. The practice during an ICU M&M Meeting is for a Consultant not involved in the care of the patient to review the file and present the case for discussion at the meeting. In this instance, Consultant Dr Sunil Sane reviewed the records and presented the case.

The systemic problem identified at the ICU M&M meeting was delayed recognition of intra-abdominal sepsis and delayed intensive care unit involvement. Communication issues between the ICU Registrar, Surgical Registrar and Medical team were also identified. Specifically, it was noted that the Surgical Registrar who requested the ICU review of Ms George in the morning on 5 February 2009 did not express any sense of urgency for this review to take place.

It appears that Ms George's case may have been referred to the Surgical Mortality and Morbidity Meeting for consideration.

Summary provided of Combined Surgical Audit Meeting – Logan/QEII/Redland Hospitals

A summary of the discussion in relation to Ms George's death during the Surgical Audit Meeting has been provided. According to the summary, it was noted that Ms George had developed an anastomotic leakage relatively early in the clinical scenario, and this was not clinically apparent at the time, particularly when the patient's respiratory signs dominated the clinical picture. Although in retrospect there were some clinical signs which would be interpreted as indicating possible anastomotic leakage, these could also have been explained by other causes. Even on the morning of the clinical deterioration the patient had been seen by the clinical team and it was not apparent that there were any major problems until after the morning ward round, when there was then a sudden clinical collapse and the rate of deterioration from this point on was rapid. It was noted that an RCA was still ongoing at this time.

Root Cause Analysis

An RCA was completed by the LCH on 15 September 2009. Two contributing factors in Ms George's death were noted during these investigations:

- Firstly, that the staff did not anticipate abdominal complications this early in the post operative course and attributed hypotension and ongoing fevers to a chest complication. The deteriorating patient was not recognised resulting in the unexpected death of a surgical patient due to septic shock.
- Secondly, there was no standardised process in place at the LCH to escalate a deteriorating patient. The patient had input from a number of different specialities. Abnormal physiological parameters were not appreciated and the deteriorating patient was not recognised. This accumulated in the unexpected death of the surgical patient.

It was recommended in order to address these factors, that the following measures be implemented:

- i. The development of an educational package for both medical and nursing staff utilising current research and processes/guidelines regarding the identification, management and escalation of the deteriorating patient to more comprehensive management.
- ii. The development of a standardised process to escalate a patient identified by an Early Warning System, which emphasises abnormal physiological parameters, to more intensive management.

These recommendations were subsequently endorsed by Dr Michael Cleary as the Executive Director of Medical Services at the Logan Beaudesert Hospitals.

In June 2011, the LCH implemented the Q-Adult Deterioration Detection System (Q-ADDs) chart for tertiary and secondary facilities. This chart was developed through the Patient Safety Unit with representatives from the LCH practicing as part of this development. This system was designed to assist staff to quickly recognise and appropriately manage deteriorating patients. The charts facilitate an adult deterioration detection system score to be given to a patient after considering all of the patient's observations together, rather than in isolation. In addition, the communication tool SBAR (Situation, Background, Assessment and Recommendation) was also introduced and aimed to assist staff to provide relevant clinical information in a uniform and structured way. These changes were designed to provide a better communicative framework to ensure deteriorating patients were identified as early as possible and appropriately escalated. In addition, the LCH has implemented the Children's Early Warning Tool (CEWT), participated in the pilot program of the Emergency Department CEWT and is assisting with the development of a state wide Maternity Early Warning System.

To accompany the implementation of the Q-ADDs, a hospital wide education program was undertaken for medical, nursing and allied health staff in relation to recognising the deteriorating patient. This program is designed to enhance staffs understanding of patients deteriorating and the significance of altered observations. It also sought to improve communication between health care professionals and enhance the timely management of patients. Since the introduction of the charts, this education program has continued with the inclusion of nursing specific education in nursing orientation and recognition and management of the deteriorating patient simulation sessions, and intern orientation for medical officers.

In addition to the introduction of these charts, the LCH also implemented a Medical Emergency Team (MET) to review patients who are deteriorating and to provide expert clinical support to ward staff. A MET calling criterion was established to ensure that appropriate patients are escalated promptly.

The MET team and use of the ADDs chart is audited by the LCH Clinical Nurse Consultant for Auditing and Evaluation every three months, with the results of this auditing process provided to the clinical areas and hospital executive.

These processes have ensured that the recommendations identified through the RCA have been implemented and completed. In addition, subsequent to this investigation, the LCH has also undertaken a review of several other clinical forms, including the management of fluid balance, and implemented the state-wide PCA and Epidural monitoring form to be used in conjunction with the Q-ADDs.

The LCH is also in the process of developing two additional systems for the recognition and management of deteriorating patients, including a monitoring protocol for patients requiring nursing specials for clinical needs (including observation and documentation requirements) and a form for the decision making process around a MET review and interventions. The LCH has also undertaken to improve the pre-procedure screening of adult patients in surgical pre-admissions. This form has been developed and implemented locally, however, it has now been adopted throughout Queensland Health facilities. This ensures that all relevant patient assessment and medications have been identified prior to surgery.

Submissions by the LCH in relation to referral to AHPRA

In response to the criticisms raised by Dr Mar Fan in his expert report, the LCH provided submissions to me as to why this matter is not one that warrants referral to the Australian Health Practitioner Regulation Agency ('AHPRA')/the Medical Board of Australia.

The reasons cited by the LCH in support of their submission, are as follows:

- (a) Although Dr Mar Fan raises an issue regarding the choice of anastomosis performed by Dr R, he has not stated that the side-to-side technique used was contraindicated or inappropriate. Rather, Dr Mar Fan expresses a preference for the end-to-end technique, which he states 'may' have been a better option. In this regard, it was noted that the text referred to be Dr Mar Fan states that the authors 'prefer' a circular stapled end-to-end anastomotic technique. However, the authors do not recommend against the side-to-side technique or suggest it is contraindicated in a subtotal colectomy. Furthermore, Dr M has stated that a stapled side-to-side anastomosis technique is commonly used, even though his personal preference is to perform the end-to-end technique. It is submitted that it is likely that Dr R performed the air test to which Dr Mar Fan makes reference. It was his usual practice to do and there is nothing to suggest that he departed from that usual practice in this case. The likely reason the air test did not detect the leak intra-operatively is because it was not then present. That is, it developed subsequently for the reasons identified by Dr M in his statement. The fact that the leak developed following the surgery is consistent with the fact that the chest x-ray performed on 3 February 2009 did not reveal any gas under the diaphragm and there was only a relatively small amount of fluid (200 mls) found in the abdominal cavity on post-mortem, both of which are not consistent with a leak of three days duration.
- (b) There is no suggestion that the surgical technique adopted by Dr R, which he was taught by another General Surgeon as part of his training in Australia, was somehow unorthodox or inappropriate in the circumstances of this case. Notwithstanding that, since the post-mortem report became available, Dr R has altered his surgical practice. That is, he has self-corrected given the circumstances of this case, which is the appropriate conduct of a prudent surgeon.
- (c) With respect to Ms George's post-operative management, it is apparent from the material that she was seen and assessed by a number of medical practitioners from various teams, none of whom identified what is now known to have been the cause of her condition, namely the anastomotic leak. Ms George presented with an unusual and confusing clinical picture.

Dr Mar Fan notes in his report that it has always been 'standard teaching' that an anastomotic leak from a bowel anastomosis usually does not take place until at least five to seven days post-operatively. Ms George's clinical presentation did not therefore fit within the standard teaching parameters. The focus of the numerous clinicians involved in Ms George's care seems to have been on a possible respiratory issue. It is submitted that this was understandable given the adverse reaction she had experienced during the initiation of her anaesthetic.

- (d) When Ms George's death was considered at the Surgical M & M Meeting in March 2009, before the results of the post-mortem were available, a meeting that Dr Mar Fan attended, the issue of a possible anastomosis leak was not then identified. With the benefit of hindsight and the availability of the post-mortem report, Dr Mar Fan has been able to identify issues in Ms George's care. However, in the overall circumstances of the case when the prospect of an anastomotic leak was missed by a number of different teams, surgical as well as medical, it ought to be acknowledged, with respect, that the case was not as straightforward as Dr Mar Fan may otherwise have considered by retrospective analysis.
- (e) It is submitted that there is no one overarching attendance, no one particular error of judgment and no one person identified as the pivotal cause of Ms George's death.
- (f) The LCH has investigated the matter by way of an RCA and the recommendations made put into place with new policies and procedures on the recognition of the deteriorating patient being introduced. In addition, since these events the LCH has obtained the services of a specialist Colorectal Surgeon for three days a week.
- (g) Ms George's death is very much regretted. The members of staff responsible for her care have used these sad events to undertake some self-reflection and adjustment of their clinical practice in an effect to ensure that these events are not repeated. Dr R has adjusted his surgical and post-surgical practice. Dr P has adjusted his practice in a similar way, i.e. to suspect leaks much earlier in the post-operative stage than he did at the relevant time.
- (h) Dr W only had contact with Ms George on the first and third post-operative days. Since these events, Dr W has left the area of surgery and is now training in both emergency and intensive care medicine.
- (i) Considering one of AHPRA's objectives is consumer protection, it is submitted that the object in this case has been achieved. The circumstances of this matter have been investigated by way of an RCA and the recommendations made implemented. Regarding the three specific clinicians identified (Dr R, Dr W and Dr P) the evidence does not indicate that they represent a risk to the public. They have demonstrated appropriate insightful self-reflection regarding the events in question and made adjustments and improvements to their clinical practices. It is likely that they would approach any similar cases in the future differently. In those circumstances, it is submitted that no good purpose would be served by referring the conduct of Dr R, Dr P or Dr W for further consideration by AHPRA/the Medical Board of Australia.

Conclusion

Ms George was 60 years of age when she died as a result of peritonitis due to a leak in the anastomosis following elective bowel surgery to remove two cancerous lesions.

There are clearly two interrelated issues in this matter. Firstly, the manner in which the surgery was performed by Dr R. Secondly, the adequacy of the post-operative care provided to Ms George in the surgical ward, and whether there was sufficient clinical signs for a diagnosis of a leak in the bowel anastomosis to have been made earlier.

Dr Mar Fan is critical of the manner in which Dr R decided to conduct Ms George's surgery as well as the post-operative care provided in the surgical ward. He finds that the anastomotic leak, which ultimately caused Ms George's death, was as a result of technical error during the surgery rather than any patient related issues. Whilst he agreed with the choice of operation conducted by Dr R, he expressed the view that the anastomosis should have been constructed differently that is end-to-end rather than side-to-side.

Whilst, in hindsight, Ms George may have presented with some signs indicating the presence of an anastomotic leak shortly after surgery, her clinical presentation was clearly quite confusing and complicated by other factors, particularly her reaction shortly after the induction of anaesthesia prior to surgery. Given Ms George's other co-morbidities, it is understandable that the focus of the numerous clinicians involved in her care was on possible respiratory issues. I agree with Dr M's view that Ms George was an atypical presentation for a patient with an anastomotic leak so early after surgery. She deteriorated rapidly on 5 February 2009, and unfortunately died before an urgent laparotomy, which had been scheduled for that day, could be performed.

It is not clear whether an air test was performed following surgery, although this was Dr R's normal practice. Unfortunately, there is nothing in the medical records to confirm whether this test was in fact carried out. Based upon the material obtained during the course of the coronial investigation, it seems more probable that the anastomosis was intact when Ms George left the operating theatre, with the perforation evolving after surgery. Support for this can be derived from the minimal amount of fluid found in the abdomen at autopsy and the lack of gas noted on the chest x-ray performed on 3 February 2009.

I am satisfied that the concerns expressed by Dr Mar Fan in his report have been appropriately acknowledged by all doctors involved in Ms George's care, namely Dr R, Dr W and Dr P. Since receiving the post-mortem findings, Dr R has ceased using the side-to-side rectal anastomosis technique. He has also changed his post surgical practice and now includes an early leak as part of his differential diagnosis for patients who show any deterioration during the early post-operative period. Dr R has also changed his practice in relation to communicating with his Registrars whilst he is practicing elsewhere. Since Ms George's death, Dr P has also employed a new practice, which is now to suspect leaks much earlier in the post-operative stage. I am satisfied that the actions of the doctors in response to Ms George's death adequately acknowledge and address the issues cited by Dr Mar Fan, and are sufficient to prevent a similar incident from taking place in the future. Clearly, none of the doctors involved in this matter represent a risk to the public. As such, I accept the submissions made on behalf of the LCH that there is no basis on which a referral to AHPRA/the Medical Board of Australia could or should be made in this case.

Whilst Dr Mar Fan recognises that the post-operative care provided to Ms George was frequent and punctual, he is of the view that the medical officers responsible for reviewing Ms George lacked the appropriate experience to deal with a patient with an abdominal colectomy with an anastomosis. Dr Mar Fan also suggests that had Ms George's other co-morbidities been recognised earlier, involvement of the ICU following the operation may have been engaged from the beginning, which may have affected Ms George's outcome.

Whilst Dr Mar Fan's view regarding the admittance of patients to the ICU following surgery is understandable, given the finite resources available at public hospitals, it is not always possible. I certainly agree that, in an ideal situation with no resource limitations, post-operative care in a HDU or ICU setting would be preferred. However, this is simply not practicable.

In my opinion, the concerns arising in the post-operative care provided to Ms George have been thoroughly investigated and scrutinized by the LCH. Ultimately, it was acknowledged that a number of issues had arisen, which needed to be addressed in order to prevent similar deaths from happening in the future, including the implementation of procedures to assist in the earlier recognition of a deteriorating patient and the creation of the MET team. All of the RCA recommendations have since been actioned and I am satisfied that the actions taken were appropriate.

Given the extensive investigation conducted by the LCH and the implementation of the widespread recommendations made, as well as the subsequent actions of the doctors involved in Ms George's case, I am of the view that an inquest into Ms George's death would not be in the public interest. The concerns expressed by Dr Mar Fan as to the clinical care provided to Ms George, have been extensively investigated and considered by the LCH and the doctors involved. I am satisfied that the subsequent recommendations made and actions taken by all parties were appropriate. Given all of the recommendations have now been actioned, I am satisfied that the clinical treatment and care concerns arising in relation to Ms George, have been satisfactorily addressed.

Mr James McDougall
Coroner
Southport
31 January 2014