# NSW STATE CORONER'S COURT

**Inquest:** **Inquest into the death of Harry Coxell**

**File Number:** **312/08**

**Hearing Dates:** **19th – 23rd April 2010**

**Date of Finding:** **2nd September 2010**

**Place of Findings:** **State Coroner's Court, Glebe**

**Coroner:** **Deputy State Coroner W. Brydon**

**Findings:**

I find that Harry Coxell, born 31st May 1945, died on 1st November 2006 at Blacktown Hospital, Blacktown New South Wales as a result of a cardiac tamponade caused by an aortic dissection due to hypertension after undertaking an exercise stress test.

**Recommendations:**

**To the Executive Officer,**
**Sydney West Area Health Service**

1. The Sydney West Area Health Service ("SWAHS") Acute Chest Pain Protocol should be reviewed and amended as appropriate to emphasise the necessity to consider and exclude life-threatening conditions other than cardiac ischaemia, specifically aortic dissection, coronary artery occlusion and pulmonary embolism, in all presentations of acute chest pain.

2. The SWAHS Acute Chest Pain Protocol should be reviewed and amended as appropriate to incorporate diagnostic guidelines for aortic dissection, coronary artery occlusion and pulmonary embolism. The diagnostic guidelines should be based on current evidence-based criteria and include relevant clinical history, findings and signs as well as appropriate diagnostic investigations.

3. Where life threatening conditions other than cardiac ischaemia are excluded, the reasons for such exclusion should be noted.

4. The SWAHS Acute Chest Pain Protocol should be reviewed and amended as appropriate to emphasise that all sections of the Chest Pain Evaluation ED Management Form (Exhibit 2, page 93) are to be completed and that the basis of any "Action" taken (i.e. to admit under a cardiologist or to discharge with follow up) be clearly indicated. Specifically, the person filling in the form must note the likelihood of ischaemic heart disease, the risk stratification, the preliminary diagnosis and the action to be taken.

5. Any electronic version of the Chest Pain Evaluation ED Management Form referred to above should be designed in such a way that completion of every section is required before the final section on "Action" taken can be filled.

6. The SWAHS Chest Pain Emergency Management Guideline (Exhibit 2 page 92) should be amended:

   a. To clarify the meaning of the term "recurrent pain" to include any chest pain (typical or atypical) that has resolved and then recurred or never fully resolved.

   b. To replace the words "differential diagnosis" with "preliminary diagnosis".

   c. To provide that an exercise stress test is not to be carried out in any case where the patient is experiencing any form of chest pain at the time of the proposed test.

7. Where a patient is managed in accordance with the SWAHS Acute Chest Pain Protocol the patient's clinical progress notes should make this clear and the relevant sections of the protocol should be easily identifiable and accessible for reference by all health care professionals managing the patient.

8. Cardiac technicians and doctors who may be supervising an exercise stress test should be specifically directed to ensure that no test be administered if the patient has any degree of chest pain at the time of the proposed test or has had any chest pain between the time the test was ordered and the time of the proposed test.

9. The document headed "Blacktown-Mt Druitt Hospital Division of Medicine – Improving after hours assessment and hand-over by resident medical staff" (Exhibit 7) be reviewed and amended as appropriate to:

   a. Clarify the meaning of "recurrent chest pain" in paragraph 1 consistent with recommendation 6(a) above – "recurrent pain" to include any chest pain (typical or atypical) that has resolved and then recurred or never fully resolved.

b. Clarify the meaning of the word "resolve" in paragraph 3.

c. Incorporate the need for early escalation to senior medical staff in the case of a change in the patient's condition including any clinical sign or symptom not previously noted.

d. Clarify the meaning of "instability" in paragraph 6.

e. Include hand-over by night interns as well as night registrars in paragraph 7.

10. Following the amendments to the document referred to in recommendation 9 above, consideration should be given to elevating this to the status of a SWAHS protocol.

11. The SWAHS should develop an induction program presented by a senior cardiologist to ensure that all residents and interns caring for cardiac patients are familiar with relevant protocols. Emphasis should be placed on circumstances where consultants or other senior doctors need to be contacted and to any contra-indications to testing procedures such as exercise stress testing.

12. A copy of these Recommendations and Findings should be forwarded to the Director, Health Services Performance Improvement Branch, NSW Department of Health, for consideration in the review of a standardised Chest Pain Protocol.

**Representations:**

**Mr D Hirsch (Counsel Assisting), instructed by N Malhotra (Crown Solicitor's Office)**

**Mr A E Maroya instructed by M Tavener (Maurice Blackburn Lawyers) on behalf of the Coxell family**

**Mr G Gregg instructed by Ms J Brooke-Cowden (MDA National) for Dr H Wong**

**Mr C Magee instructed by Ms K O'Mullane (Avant Law) for Professor A Denniss**

**Mr M Fordham instructed by Ms L Hazelton (GILD Insurance Litigation) on behalf of the Sydney West Area Health Service; Dr M Hession; Dr L Chang, Mr Ordakji and Mr Hendricks**

## Introduction

Harry Coxell died at Blacktown Hospital on the afternoon of 1st November 2006. He arrived by ambulance to the hospital the previous day suffering chest pain.

After admission he was transferred to the cardiac care unit for investigation.

On 1st November 2006 he underwent an exercise stress test ("EST").

The EST was stopped after about 7 minutes because of Mr Coxell's fatigue. Whilst in the process of recovery he collapsed and an emergency response team treated him.

Unfortunately, attempts to save Harry Coxell's life were unsuccessful.

At autopsy the cause of death was established as cardiac tamponade, due to an aortic dissection ("AD"), caused by hypertension.

Mr Coxell's death was an unexpected outcome of his admission to hospital.

Following Mr Coxell's death the family asked a number of questions concerning his care and treatment during the course of his hospital admission.

One of the purposes of an inquest is to determine the circumstances of a person's unexpected or unnatural death. To do so requires an analysis of the facts upon which the health care services were provided.

The role of the Coroner is to make formal findings concerning the identity of the person who has died, when and where the death has taken place and the cause and manner of that death.

In this inquest there is no issue as to the identity of the deceased, being Harry Coxell; when and where he died, or what the cause of his death was.

It is the manner of his death, which the inquest focused on. The phrase "manner of death" relates to the circumstances in which the process of death took place. The Coroner must ask, "How did this death come about?"

## Issues for this Inquest

The principal questions for the inquest to consider are, why was there a failure to diagnose "AD" and why was the exercise stress test undertaken which lead to Mr. Coxell's collapse and death?

Apart from evaluating the evidence and making findings a further important function that the Coroner must consider is the making of any recommendations. [1]

The Coroner has discretion to make recommendations relating to the death as he or she considers necessary or desirable. In this inquest I believe it is appropriate to

[1] Section 82. Coroners Act 2009

make a number of recommendations. They are outlined above and discussed further in these findings.

## Harry Coxell

It is clear from this inquest that Harry Coxell was a much-loved man and is sorely missed by his family. Mrs Coxell gave us an insight to him as father, grandfather and partner.

Mr Coxell was 61 years old at the time of his death.

He was a retired police officer and had been married to his wife, Lynette Kay, for 40 years. [2]

He had three children, Stuart Coxell, Emma Smith and Morgan Coxell. Mrs Coxell and Ms Smith gave evidence in the inquest.

Mr Coxell was generally of good health and appeared never to have had any cardiac related problems before this event. Being a police officer for some 33 years he had been subject to regular medical reviews.

In his later years he had been suffering from hypertension for which he was taking medication. He was also a cigarette smoker, having smoked approximately 5 a day.

## What happened prior to his admission to Blacktown hospital on 31st October 2006?

During the course of the day on 31st October 2006 Harry Coxell had mowed the small lawn at his Quakers Hill address. Mrs Coxell prepared his lunch before she left for work.

Mr Coxell sat down in front of the TV to relax. He had a mouthful of drink and then felt extreme pain in his right chest, an intense headache with pins and needles in his right arm and hand. [3]

Mr Coxell contacted his doctor and was told to come to the medical centre immediately. He drove himself the short distance to Dr Asar's surgery.

Upon attending the surgery, he was given a Nitrolingual spray, which is standard procedure for suspected heart attack. An ambulance was called at 3:10pm. Ambulance officers saw Mr Coxell at 3:30pm and he arrived at hospital at 4:03pm.

## Treatment in Emergency Department

On arrival at the Emergency Department of Blacktown Hospital Mr Coxell was assessed by medical staff. The medical records (pg 97-98) suggest a history of sudden onset of centrally located chest pain whilst at rest. The pain shifted to the right upper chest. It was described as severe pain, which was continuous from its

[2] Statement of Lynette Kay Coxell, tab 14 Exhibit 2
[3] Statement of Emma Smith, tab 15, Exhibit 2

onset. This pain[4] had been only partially relieved by medication (Anginine). On his initial examination his pain was noted as being 4/10 in intensity.

A series of tests were undertaken which produced normal electrocardiograms with no evidence of abnormal cardiac enzymes. A chest x-ray and pulse check, were normal. No heart murmur was detected.

The reporting and management of pain was a significant factor in the assessment and treatment plan of Mr Coxell.

The chronology of his pain was as follow;

1615 (4:14pm)initial assessment 4/10 [5]
1700 (5:00) 6/10 Anginine medication given
1705 (5:05) 5/10
1730 (5:30) No chest pain reading noted, but 5 mg Morphine was given
1830 (6:30) 5/10
1905 (7:05) 5/10 then Panadol administered (as well as Somax for reflux)

Dr Hession, who was the Emergency Department Specialist, reviewed the results and formed the view that Mr Coxell had an intermediate likelihood of suffering from Ischaemic Heart Disease ("IHD").

This view was based on the nature of the chest pain and Mr Coxell having two risk factors, being hypertension and smoking. He was then categorised in the Moderate Risk group, in accordance with the Western Sydney Area Health Service (as it then was) protocol ("the Protocol") relating to the management of acute chest pain. [6]

Dr Hession made various "ticks" and "circles" on a chest pain emergency management guideline form. [7] In addressing the form he failed to complete the risk stratification section, which identified the risk features for each classification from 'High' to 'Intermediate' to 'Low' risk.

Ultimately Mr Coxell's treatment was directed under the procedural pathway as having an intermediate risk of "IHD". Part of the pathway on the flow chart is the notation for intermediate risk patients to be admitted and, if no recurrent pain, then an "EST" was to be undertaken. Dr Hession rang Professor Denniss, the on-call cardiologist, and discussed his findings from the Emergency Department. As a result it was confirmed that Mr Coxell would be admitted into the Cardiac Care Unit. Mr Coxell arrived at that unit at 2030 (hours).[8] He was thereafter to be managed in accordance with the Protocol.

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[4] Exhibit 2, page 98
[5] Exhibit 2, page 98,
[6] Exhibit 2, page 80,
[7] Exhibit 2, Page 92-93
[8] Exhibit 2, Page 105

## Did the Pain Continue and what medication was given

On arrival at the Cardiac Care Unit Mr Coxell still had chest pain.

According to the medical notes his pain history was as follows:

0030 (12:30am) his pain was 3/10 [9] and ½ tablet of Anginine was given [10]
0045 (12:45) a further ½ tablet of Anginine was given.

0050 (12:50) he was described as pain free. [11]
0200 (2:00am) there was a record of complaint of chest pain and being unable to sleep.
0630 (6:30am) he complained of chest pain 4/10 radiating to his right arm, which was described as crushing in nature, [12] he was given 3 Anginine tablets.
0640 (6:40am) a notation appears on ECG print out CP-8-9/10.[13]
0650 (6:50am) Mr Coxell was given Morphine 5mg IV and a further 1 tablet of Anginine for severe pain.
0715 (7:15am) a further Anginine tablet was given.
0730 (7:30am) Mr Coxell was described as pain free.

It is clear from this chronology that Mr Coxell remained in pain for some hours after his admission. The pain relief was generally not responsive to the medications given. This continued pain, over some hours, is important for a number of reasons. Firstly, it went to the question of whether the pain was typical or atypical pain for IHD. Secondly, it went to the management of his pain via the Chest Pain Evaluation ED Management document[14], which was directed by Dr Hession. Lastly, it went to the question of whether the pain was recurrent. If it was, then the EST should not have gone ahead.

The decision to proceed with the EST was made by two junior doctors, Dr Chang and Dr Wong. Their involvement will be discussed in detail below.

## Aortic Dissection

Aortic dissection is a tear in the wall of the aorta (the largest artery in the body) that causes blood to flow between the layers of the wall of the aorta and forces the layers apart.

The post mortem report of Dr Ella Sugo[15] indicates a traverse intimal tear in the aortic arch, immediately proximal to the origin of the brachiocephalic trunk and left common carotid arteries.

Professor Denniss identified on a diagram of the heart [16] the location of the tear.

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[9] Exhibit 2, page 106
[10] Exhibit 2, page 193
[11] Exhibit 2, page 106
[12] Exhibit 2, page 108
[13] Exhibit 2, page 139
[14] Exhibit 2, page 93
[15] Exhibit 2, Tab 2
[16] Exhibit 10

In short, the tear is located at the beginning of the aortic arch. Associate Professor Jelinek described this as a type 'A' aortic dissection.

**Was the Aortic Dissection diagnosable and treatable?**

The evidence of Associate Professor Jelinek [17] with whom Professor Denniss agreed was that the AD could probably have been detected by an echocardiogram performed on 1st November 2006.

Professor Denniss expressed the view that there was probably a lesser chance of detection using a transthoracic echo (TTE) as suggested by both Doctors Chang and Wong than with the use of a transesophageal echo (TEE), although the latter procedure is far more invasive.

If either Dr Wong or Dr Chang had consulted Professor Denniss he would have directed that an echocardiogram be performed. Blacktown Hospital at that time was suffering from a lack of echo services generally. They were restricted to what Professor Denniss believed were one and a half days a week. However on this particular day echo facilities and a technician were available in the afternoon to perform such tests. In fact an echocardiogram was performed upon Mr Coxell after he collapsed.

Had the AD been diagnosed then urgent surgical intervention was required to repair the dissection. There was a 74% chance of a successful surgical outcome for a type A dissection.[18] However if left unattended, the mortality rate of AD is generally high in the first 48 hours. It progresses at the mortality rate of about 1% per hour from the commencement of the dissection, which was at approximately 3.00pm on 31st October 2006. Prior to the commencement of the EST there was still sufficient time to have considered a surgical option.

Mr Coxell's death could have been avoided if he had undertaken a diagnostic test such as an echocardiogram or CT aortogram. It was probable or likely that the AD would have been identified. As Associate Professor Jelinek indicates this would have led to immediate surgical intervention, which was "usually successful". [19]

The death was also likely to have been avoided by not doing the EST. Associate Professor Jelinek thought the EST was the "precipitating factor that altered a contained aortic dissection into a lethal cardiac tamponade." [20] The EST pushed the tear beyond the point from which it was able to recover.

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[17] Exhibit 2, page 65
[18] Attachment to Exhibit 3 – Journal of American Medical Association
[19] Exhibit 2, page 58
[20] Exhibit 2, page 58

**What was the evidence for and against AD in the Emergency Department following Mr Coxell's presentation at Blacktown Hospital?**

Both Professor Denniss and Dr Mitchell[21] agree that Mr Coxell's AD commenced on the afternoon of 31st October 2006. This is consistent with the onset of severe central pain in Mr Coxell's right chest area whilst he was seated resting in his home.

Professor Denniss accepted Dr Mitchell's view that AD is diagnosed by:

(a) The presence of severe chest pain.
(b) The pain being intense from the onset and described as sharp in nature.
(c) Clinical examination such as pulse deficit.
(d) The presence of a murmur of aortic regurgitation, being an early diastolic murmur.
(e) Chest x-rays may be normal.
(f) TTE or TEE may be used.
(g) CT scans of the chest.
(h) Angiograms, if the state of the coronary arteries is needed, and
(i) Finally, MRI in difficult diagnostic cases.

A series of articles were exhibited in the inquest, they were:

a) The Journal of the American Medical Association: "New Insights into an Old Disease; [22]
b) Patient Information – Chest Pain; [23] and
c) A Wikipedia Article on Aortic Dissection. [24]

Collectively, these publications identified what could be described as the "classic" indications of presentation for AD. Mr Coxell met a number of these indicators:

- He was a male in his seventh decade (age 61);
- He had a history of hypertension;
- There was an abrupt / sudden onset of chest pain;
- The pain was described as sharp in nature;
- There was migrating pain;
- The pain was only partially relieved by Anginine;
- The pain was worse at the beginning than later in the Emergency Department.

Inconsistent signs from the "classic" AD cases were:

- That there was no aortic regurgitation or murmur;
- There was no pulse deficit;
- No abnormal signs shown on x-rays.

Dr Hession also included, the absence of reported pain in the back; no ripping or tearing description of pain; no abdominal pain; and no change in neurological symptoms or mental state; as indicators against a conclusion of AD.

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[21] Exhibit 2, page 51
[22] Exhibit 3
[23] Exhibit 8
[24] Exhibit 9

With the exclusion of normal x-rays the remaining indicators identified by Dr Hession were observed in less than 50% of AD patient reports [25]. On the other hand abrupt onset of pain, hypertension and sharp pain (which Mr Coxell had) were all recorded in 62% or more of those patients in cases of Type A AD.

I accept Dr Hession certainly turned his mind to the possibility of AD as part of a differential diagnosis of the presenting symptoms for Mr Coxell. However, he excluded a diagnosis of AD on the basis that on some occasions one also sees similar symptoms in cases of typical IHD. Those similar symptoms can be, abrupt onset of pain, sharp in nature, of a radiating / migratory type, coupled with hypertension.

He placed strong emphasis on those matters mentioned above to exclude AD. This resulted in Dr Hession forming the view that the pain was therefore more likely to be associated with IHD. He relied upon the fact that Mr Coxell had two risk factors for IHD, being hypertension and smoking.

There were a number of "classic" symptoms and history of IHD that Mr. Coxell did not have. They included:

- No ECG changes;
- No rise in cardiac enzymes;
- Inadequate response to Anginine;
- There was no gradual onset of pain or subsiding at rest;
- No diabetes;
- No family or past history of heart disease;
- No sweating;
- No nausea; and
- No shortness of breath.

In making the assessment of IHD over something like AD, it was clear that Dr Hession significantly relied upon the higher statistical probability that the chest pain was likely to be from IHD then AD.

Figures presented by Dr Hession, Professor Denniss and Associate Professor Jelinek all suggest that in chest pain presentations to hospitals it is approximately 1000 times more likely to be due to myocardial ischaemia than to AD.[26]

Dr Hession said he made a provisional diagnosis of intermediate risk of IHD. He recommended that Mr. Coxell's management follow that outlined by the Moderate Risk Group in the Protocol, which he caused to be printed from the Emergency Department's website [27]

There was significant examination of Dr Hession during the inquest as to the typicality of the pain as it related to IHD. Despite his statement suggesting that the pain was more in keeping with a diagnosis of IHD, Dr Hession ultimately conceded in his examination that the pain was atypical for IHD (that is it was not the kind of pain

[25] Attachment to Exhibit 3, pages 5 and 14
[26] Exhibit 2, page 19
[27] Exhibit 2, page 25

seen in ischaemic cardiac disease).

One can conclude from his evidence that Dr Hession over emphasised the statistical likelihood that the chest pain was ischaemic in nature and in doing so underestimated those clinical signs, which leant towards a diagnosis of AD. This appears particularly so when some symptoms can be a common feature between the two diagnoses such as hypertension. It was open on the evidence in the inquest for Dr Hession to have found a more positive case for the diagnosis of AD.

In the article from the Journal of the American Medical Association[28] the following conclusions on AD were noted. They are highly relevant here. "Acute aortic dissection is uncommon but complications develop rapidly and the outcome is often fatal. The typical presentation is characterized by acute onset of severe pain (as in Mr. Coxell's case). However clinical manifestations are diverse and what were previously considered classic symptoms and signs are often absent. Therefore, high clinical index of suspicion is necessary".

On the evidence before me, Dr Hession presented as a skilled Emergency Department Specialist who was well regarded by Professor Denniss, the consultant cardiologist at Blacktown Hospital. He did turn his professional mind to the existence of an AD in Mr. Coxell's case, but I feel he excluded it in circumstances where a positive case for the diagnosis of AD was clearly available..

Prior to Mr Coxell being admitted into the Coronary Care Unit, Dr Hession contacted Professor Denniss to discuss the clinical profile of Mr. Coxell. Whilst Dr Hession could not specifically recall discussing AD, Professor Dennis had a clear memory of such a conversation.

Professor Denniss concurred with the views expressed by Dr Hession as to the clinical assessment and "on balance" they both considered that the pain should be treated as cardiac until proven otherwise.[29]

I accept that Dr Hession exercised his clinical judgment in this case. In so doing it enabled Mr Coxell to be admitted into hospital care under the supervision of Professor Denniss. Once admitted, Dr Hession believed that Mr Coxell would be subject to further investigation, albeit at that stage, only to determine the existence of IHD.

Mr Coxell was admitted into the Cardiac Care Unit where he was managed by Dr Chang and Dr Wong, supposedly in accordance with the Protocol.

**Risk Stratification of Mr. Coxell**

As indicated above, Dr Hession assessed Mr Coxell as having an intermediate likelihood of IHD.[30]in accordance with the Chest Pain Evaluation ED Management form. That assessment is based on the category of "Chest Pain probably not angina in people with two risk factors other than diabetes". The two risk factors were

[28] Attachment to Exhibit 3, page 9
[29] Exhibit 2, page 21
[30] Exhibit 2, page 93

smoking and hypertension.

From this reference the only inference that can be drawn is that Dr Hession accepted at that time that the pain being "probably not angina" was pain atypical of IHD.

The risk stratification section of the form[31] was not completed. If one considers the form itself, the nature of pain on this page makes no distinction between typical or atypical pain, (cardiac pain and non-cardiac pain). One has to go to the Protocol (commencing page 77) to note that the High-Risk Group refers to "Ongoing prolonged and typical pain (> 30 min)", whilst the Moderate Risk Group refers the case of "Atypical pain, > 65" (years old).

During the course of the inquest both Dr Hession and Professor Denniss were taken to the Form – "Chest Pain Evaluation ED Management"[32] that formed part of the Protocol. Both doctors accepted, that as one reads the form, Mr Coxell should have been noted as High risk according to the words of that form. But the Form was deficient. Apparently unbeknown to the doctors the chest pain being referred to in the Risk Stratification section related to only "typical" chest pain, not all chest pain as can be seen from page 79 of Exhibit 2. As we will see later there are a number of documents or words that require clarification as to their meaning to prevent confusion or misinterpretation.

Ultimately, if the "Chest Pain Evaluation ED Management " form is read in conjunction with the Protocol I accept that no box under the heading 'Intermediate risk features' could have been nominated. Dr Hession then proceeded to tick the box in the "Action" section of the form, "Admit under Cardiologist".

No preliminary diagnosis was noted on the "Chest Pain Evaluation ED management" form[33]. This is consistent with Dr Hession not being sure of the actual diagnosis, as he said, and further consistent with why he wanted Mr Coxell admitted for observation and testing.

The only significant testing contemplated by the Protocol was the proposed EST (in addition to the ECGs). That direction to test came from item (b)(vi) of the 'Moderate Risk Groups' of the Protocol [34]. The test was being undertaken only to confirm or rule out IHD. This test would not have looked at any other cause of the atypical pain. In any event it was a clear contra-indication to the condition of AD.

From the documents available it is apparent that the designed pathway in the Protocol related only to those thought to be suffering from IHD. There is very little provision for further testing where the pain is atypical for IHD.

The problem with the Protocol is that it fails to adequately take the patient with atypical chest pain back to a point where further reviews should to be undertaken to explain or treat the atypical chest pain. The suspected exclusion of IHD still calls for a timely diversion to a point of further investigation and review. In those

[31] Exhibit 2, page 93
[32] Exhibit 2, page 93
[33] Exhibit 2, page 93
[34] Exhibit 2, page 81

circumstances an EST should not be undertaken until it can be established that it is no longer a contra-indication.

**What was the consequence of classifying Mr. Coxell as an intermediate risk of IHD?**

Mr Coxell was admitted into the cardiology ward for observation and his management was to be either:

(a) If there was recurrent pain or an increase in troponins (the cardiac enzymes) then Professor Denniss should have been contacted to review Mr Coxell's case.

(b) If there was to be no recurrent pain or increase in troponins then an EST was to be undertaken.

**Was there evidence of recurrent pain in the Cardiac Ward?**

On the morning of 1st November 2006 there were a series of observations noted by nursing and medical staff:

At 0030 (12:30am), Mr Coxell was suggesting pain of 3/10 intensity and was give 1/2 tablet of Anginine for relief.
At 0050 (12:50am) nursing staff noted that he was pain free.
At 0200 (2:00am) he complained of chest pain.
At 0630 (6:30am) he was again examined and reported chest pain of 4/10, which was said to be radiating to his right arm being crushing in nature.
At 0650 (6:50am) Mr Coxell was again seen. It would appear from the records that the pain had significantly increased.

A notation on the ECG print-out at 0639 (6:39am), suggested chest pain of 8-9/10 [35]. He was prescribed a further tablet of Anginine, with Morphine 5mg IV and Maxalon. His blood pressure significantly reduced.

At 0730 (7:30am) the night intern noted he was pain free.[36]

Both Dr Chang and Dr Wong noted that there was a history of pain experienced by Mr. Coxell but it is unclear whether they knew the full extent of that history.

In their evidence, both accepted that this history constituted "recurrent pain". However, neither turned their mind to the effect recurrent pain would have on undertaking the EST.

Dr Chang conducted an examination of Mr Coxell sometime between 8 – 9.30am. She devised a diagnostic plan, which required approval of a more senior doctor.

That plan appears at page 109 of Exhibit 2. It was intended to include both a transthoracic echocardiogram (TTE) and an EST.

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[35] Exhibit 2, page 139
[36] Exhibit 2, page 108

Dr Chang's normal practise on assessing a patient was to review the medical notes and any chest pain protocol. However, she had no specific recollection of viewing the Protocol documents that were supposed to dictate the management of Mr Coxell.

During the course of her examination she took a history[37] from Mr Coxell, which referred to his presentation with "sharp stabbing central CP radiating to head" and right side only. She recorded that only partial relief had been obtained with Anginine medication.

Dr Chang noted a further episode of chest pain in Mr Coxell whilst going to the toilet in the morning. The hospital notes, which she acknowledged she would most likely have looked at, showed pain at 6.30am of 4/10.

Of significance in her examination, she identified the presence of a heart murmur that had not been recorded before. She describes that murmur as early diastolic in nature. This appeared to be a new symptom.

Dr Chang and Dr Wong met with Mr Coxell at approximately 11.50am. Also present at the bed with Mr Coxell was his wife, Lynette Coxell, his daughter, Emma Smith and his young grandchildren.

Mrs Coxell described him as rosy cheeked and playful with the grand daughters. He was looking forward to lunch.

Dr Wong was aware on reviewing Mr Coxell's file that there had been an episode of pain at 6.30am when Mr Coxell had gone to the toilet.

Dr Wong was generally aware of the existence of the chest pain protocols. However he did not look or seek one for Mr Coxell. As such, references made by Dr Hession the previous evening in the chest pain management guidelines (pages 92-93) were not seen or acknowledged by Dr Wong.

The Protocol as marked by Dr Hession suggested at point VI:[38] "If the chest pain does not recur and the serial cardiac serum markers are negative, exercises stress ECG testing should then be arranged for the patient." Unfortunately when observing Mr Coxell, Dr Wong did not have the Acute Chest Pain Protocols at the forefront of his mind.

Based on his own observations and exercising his clinical judgment Dr Wong believed that the appropriate treatment plan should include an EST and TTE.

In his evidence Dr Wong accepted that, with the benefit of hindsight, the fact that there was "recurrent pain" and the existence of a new symptom, being the heart murmur, should have led him to consult with Professor Denniss. If he had followed the Protocol, noting that there was recurrent pain, Professor Denniss would have been consulted, further investigation for an alternative diagnosis would have been done and, in any event there would have been no EST.

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[37] Exhibit 2, page 108
[38] Exhibit 2, page 81

## The Issue of "Stability"

In the course of Professor Denniss' evidence the issue arose as to whether Mr Coxell could have been described as clinically "stable". This was significant on the question as to whether an EST should have been undertaken.

Dr Stewart Mitchell in his expert report[39] said "the stress test was inappropriate as the patient was not clinically stable and aortic dissection had not been ruled out".

Professor Denniss agreed with that view.

Professor Denniss in consultation with Dr Hession formed the view on the admission into the cardiac unit that Mr Coxell was only to have an EST provided "he was stable". Professor Denniss described at page 21 of Exhibit 2 that "stable", meant no recurrent chest pain, no rise in troponin levels and no ECG changes. Any new clinical findings would also have warranted a reassessment of the diagnosis.

In his evidence Dr Wong associated "instability" with worsening chest pain and unresolved pain. He accepted that there was an episode of 'recurrent' chest pain at 6.30am but it appeared to have resolved, and as such was not "worsening".

Professor Denniss acknowledged that the use of words "stable" and "instability" can have various separate meanings and do not have time frame significance to them. It is the recurrence or worsening or new symptoms associated with the pain that makes the patient clinically unstable.

Associate Professor Michael Jelinek at page 66 of Exhibit 2 noted the recurrence of the pain at 6.50am on 1st November 2006 for which significant pain relief medications were provided. He formed the view that the patient was "not stable" because of the recurrence of pain. This is despite the notation some hours later at 11.50am by Drs Wong and Chang that "PT (patient) stable".

## Should Dr Wong have contacted Professor Denniss?

Dr Wong did not think to call Professor Denniss following his examination of Mr Coxell. He made a clinical decision to proceed with a plan of tests of which the EST was one. He did not need approval for carrying out the procedure and was aware of his access to the on call consultant, if needed. The circumstances as to when he should be contacting the consultant had not been made clear to him in his training. He said his decision whether to call the consultant was based on his own assessment of the patient's stability. In hindsight he accepts that he should have contacted the consultant particularly because of the changed clinical position. The failure to contact Professor Denniss is something that improved communication and training should seek to resolve.

Dr Wong rightly accepted that the identification of the murmur was a new clinical finding that should have been recorded and discussed with the on-call cardiologist.

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[39] Exhibit 2, page 51

It bears repeating that, quite apart from the exercise of his clinical judgement, had Dr Wong been aware of and properly considered the Protocol, Professor Denniss would have been contacted in which case further investigations would have been undertaken and no EST would have been done.

**The Consultation at 11.50am**

At approximately 11.50am Drs Wong and Chang spoke with Mr Coxell. His family surrounded him. According to his wife his demeanour was upbeat. He was enjoying the company of his grand daughters and waiting for lunch.

Whilst speaking to the doctors his wife and daughter were nearby. It is not suggested by either that they heard all the conversation. However the evidence of Drs Wong and Chang was at odds with either Mrs Coxell or Ms Smith, or both. I found each witness attempted to give an honest and reliable account of this exchange between Mr Coxell and the doctors.

An example of the conflict relates to the important question of the state of Mr Coxell's pain at the time of the examination. Mrs Coxell's daughter suggests Mr Coxell, said it was 5/10. Mrs Coxell said 8/10. Dr Wong suggests Mr Coxell told him he was pain free. Dr Chang said she was 80% sure Mr Coxell said he was pain free. I suspect that if Mr Coxell did speak of his present pain, it was understated in light of the fact his wife and daughter were present. Mr Coxell would not have wished to upset them. He was also said to be a fairly pain tolerant person, and at that stage he was probably not in much pain.

I have no doubt that Mr Coxell was asked about pain and consistent with the figures suggested it may well have been the case that Mr Coxell represented these figures of 5/10 and 8/10 in a historical context. Surprisingly, neither doctor recorded a notation as to the current status of pain as at 11.50.

I accept that there is evidence that a history was taken by Dr Wong in which reflux was mentioned. Also a physical examination was commenced including a check for a heart murmur. That is consistent with the recording of the differing opinion of a systolic murmur[40], from that of Dr Chang's earlier view of a diastolic murmur.

Following a physical assessment I accept Mr Coxell was then told of the proposal to undertake an EST. During this discussion he was advised that possible blockages of the arteries were to be explored as well as how the test was to be conducted.

I accept that Mr Coxell indicated that he felt able to undertake the EST. As indicated by his wife he was the type of person who would say that he was able to do it.

**Transthoracic Echocardiogram (TTE)**

As part of the diagnostic plan Dr Wong indicated that Mr Coxell undertake a TTE. This arose from the finding of a murmur initially by Dr Chang.

[40] Exhibit 2, page 31 paragraph 10

Dr Chang was prepared to acknowledge the experience of Dr Wong in accepting it was a systolic murmur. Despite the type of murmur both agreed that a TTE should be undertaken.

No consideration was given by either doctor as to the order in which the TTE or EST should be carried out. This is explained in part because Dr Wong failed to consider that the murmur could be a symptom of AD.

Dr Wong also did not understand that the carrying out of the EST was a contra-indication for suspected AD. Both Dr Wong and Dr Chang had had little, if any, exposure to AD other than through teaching at medical school. As such Dr Wong did not appreciate the further consequences of undertaking an EST on the tear in the aortic arch.

Associate Professor Jelinek was clear in saying that an echocardiogram of the type suggested should have preceded any EST. If such a test had been performed on 1st November 2006, Associate Professor Jelinek believed that "probably" the AD would have been detected. This would have almost inevitably lead to a surgical intervention to attempt to correct the tear.

The decision of Dr Wong to proceed with a TTE appeared motivated by a desire to investigate the murmur because of its newness and not where it fitted into the priority of treatment.

Dr Wong initially considered it appropriate to deal with the TTE on an outpatient basis however before the EST was undertaken the word "outpatient" had been crossed out of the medical records. It would appear Dr Wong proposed to have the TTE carried out before Mr Coxell was sent home so there could be some understanding obtained about the new murmur.

I would hope that the evidence given by both junior doctors will encourage the SWAHS to ensure appropriate instruction is given to those doctors who come into the cardiology rotation program of the importance of the major diseases or conditions with high mortality rates to ensure investigative procedures are not undertaken that would be a contra-indication to these conditions.

Dr Wong was a 2nd year resident medical officer and had embarked on his second three month term in cardiology. He was still quite inexperienced. Dr Chang as an intern had even less experience. The responsibilities that they carried demanded that an induction process be undertaken in cardiology overseen by a cardiologist. This should ensure and monitor that there is an adequate understanding and knowledge of clinical conditions and the associated protocols.

If such a process had been undertaken I have no doubt that the recurrent pain and the murmur may have lead them to at least, consider AD as a differential diagnosis and the EST as a contra-indication to it or, in the alternative, the importance of contacting the on-call cardiologist.

## Request for an EST

At the completion of the initial examination by Dr Chang of Mr Coxell she devised a plan, which included an EST. That plan needed to be approved by Dr Wong.

It is not clear when the form for the request of the EST[41] was completed but it is clear that Dr Chang wrote it. The form asked about the nature of the chest pain. Consistent with the view of Dr Chang and Dr Wong that the pain was atypical of angina, the box, "non-specific", was ticked.

The form asked, "is there any recent change in symptoms" to which the response was "Y". However, the form fails to ask what was the change. I would have thought this was important from the cardiac technicians' point of view when conducting the test. The failure to ask that question in this form and subsequent editions[42] appears to be a deficiency in the process that should be considered by the hospital administration.

In Mr Coxell's case it appears the recurrent pain at 6.30am and the new murmur were the recent changes in the symptoms.

By coincidence Dr Wong happened to be the doctor who supervised Mr Coxell's EST. The deficiencies in the form in not identifying changes in symptoms may have led a non treating doctor to have asked whether those changes had any impact on whether the EST should proceed. By not noting the changed symptoms the opportunity is lost for the supervising doctor or technician to have considered the impact of that change on the safety of the patient undergoing the EST.

The request for the EST was sent to the cardiologist technician who came and took Mr Coxell to the Cardiac Step Down Ward.

## The Exercise Stress Test

Both cardiac technicians, Michael Ordakji and Roger Hendricks, gave evidence during the inquest. Both carried out separate roles during the testing process.

Mr Ordakji brought Mr Coxell to the unit and, as was his usual practise, spoke with him about his clinical history. Whilst it was not his responsibility to make clinical judgments, he obtained information that may affect the EST. Mr Ordakji was told that Mr Coxell was in some pain, which he described as 1-2 /10.

Mr Coxell had told Mr Ordakji he was admitted due to severe chest pain and that he had only very minor pain during the day.[43]

Mr Coxell was handed a consent form, he appeared to read it and then signed the form. The test was explained to him.

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[41] Exhibit 2,page 90
[42] Exhibit 2, page 264
[43] Exhibit 2, page 33

Mr Hendricks did not speak with Mr Coxell in any detail except to request that Mr Coxell report any pain during the test. It appears his role was dealing with the input of material into the computer prior to and during the test. He monitored the blood pressure as the test progressed.

Both technicians confirmed that Dr Wong came into the room and agreed to be the medical supervisor during the course of the procedure. They have no recollection of there being any discussion about the level of pain with Dr Wong, although it was for the supervising doctor to consider whether any pain would affect a commencement and continuation of the test.

Dr Wong said that if Mr Coxell had told him of any pain prior to the commencement of the EST he would have considered not allowing the test to proceed.

The test proceeded. After 2 minutes into stage 1, Mr Coxell indicated a pain rating of 4/10. This was significant.

On two previous occasions Mr Coxell had complained of pain at that level. The first occasion was in the Emergency Department [44] and the second occasion took place in the cardiac ward [45]. On both times he had been given Anginine and morphine to assist with pain management. As the test continued the pain escalated to 5-6 /10.[46]

At 7 minutes Mr Coxell was becoming fatigued and asked for the test to stop. The treadmill pace decreased substantially however the pain level remained constant at 5 /10. Mr Coxell was seated and given an Anginine tablet for pain relief. Within a short time, he lost consciousness and collapsed onto the floor. An emergency procedure was put in place and he was transferred to the coronary care unit.

An emergency echocardiogram suggested the possibility of a pericardial tamponade but Mr Coxell failed to respond to resuscitation methods and subsequently died.

There is no doubt that the test should have been terminated earlier than 7.47 minutes when the decision was made at Mr Coxell's request rather than medical staff.

There was evidence of a rapid onset of pain during the test if one accepts Dr Wong's belief he was pain free at the beginning. Even if one accepts that there was some pain at commencement, being 1/2 out of 10, as suggested by Mr Ordakji, then the fact that pain began to radiate into the right arm at 4.28 minutes[47] was consistent with the serious experience of Mr Coxell at 6.30am.[48]

Sadly, it must be said that even if the test had been stopped after 2 minutes when the pain level had increased to 4/10 it is ultimately unlikely that Mr Coxell's death could then have been avoided. The tear to the aortic wall was worsening and according to Associate Professor Jelinek the likely effect of the EST was that it

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[44] Exhibit 2, page 98
[45] Exhibit 2, page 98
[46] Exhibit 2, page 140
[47] Exhibit 2, Page 140
[48] Exhibit 2, Page 108

"caused a rupture of the dissection in to the pericardium of the heart which in turn caused a cardiac tamponade" or blockage.

**Have any positive changes been made at Blacktown Hospital?**

It is certainly the case that the death of Mr Coxell had a devastating effect on his family. Equally hospital staff were shocked at what had happened.
It is important then to determine whether any positive changes have been implemented since the time of Mr Coxell's death that may assist with the future management of patients.

In October 2009 Professor Denniss implemented a series of proposals for improving after hours assessments and handovers by resident medical staff. These proposals are contained within the document Exhibit 7.They set out certain requirements for increased compulsory simulation training for staff and attendance at mortality and morbidity meetings. The proposal encourages the early consultation with senior medical officers and the consultants if a patient's condition does not resolve within 30 minutes or if a doctor has to attend upon a patient twice in the same shift.

Another important feature of the proposals suggests the flagging or highlighting of provisional and differential diagnosis in the Emergency Department notes when a patient is transferred to the wards. Formal handovers are to take place to identify the progress or deterioration of a patient's health.

A morning medical handover is to be chaired by a consultant and is to involve both the night and day medical teams.

I understand that these proposals have been adopted and are presently in operation. If these proposals had been available in 2006, I have no doubt that Mr Coxell would not have died at that time. I have no doubt that Professor Denniss would have noted the recurring pain and would have conducted other investigative tests. The EST would not have gone ahead.

Subject to some amendments as suggested below I propose to recommend that these proposals be elevated to the status of a protocol.

The implementation of the simulation training for medical staff is critical. The decisions made by doctors can have catastrophic effects, if incorrect. It is obvious in the present case that both Drs Wong and Chang were relatively inexperienced in the specialised area of cardiology. There was a clear deficiency in their knowledge of AD apart from a general medical school reference. They were not aware of the fact that an EST was a contra-indication for AD. Ensuring these basic principles are highlighted and reinforced in an induction program at the commencement of their specialty assignment or during simulation training whilst in the specialty stream, is important in elimination of errors that can occur.

Since Mr Coxell's death there has been an increase in funding to enable more sophisticated echo monitoring equipment to be purchased. Training for technical staff is presently underway. Whilst some echo facilities were coincidentally available to Mr

Coxell on the day of his death the then general availability of the facilities to patients at the hospital was minimal. Hopefully that circumstance will improve.

## Recommendations

During the course of the evidence a number of areas have been identified where change has been called for. A draft set of recommendations was prepared and forwarded to the parties for comment. By the 27th June, 2010 a number of helpful responses were received.

The SWAHS has suggested that a number of the proposed recommendations should await the completion of a Chest Pain Pathway review by a working party established by the NSW Department of Health. I consider it would be more helpful if the working party could take the inquest recommendations into account in their formulation of a practical working document for operation in the hospitals of this State.

In making the recommendations it is important that they highlight what the doctors and expert evidence accepted as the three major life-threatening conditions associated with chest pain other than cardiac ischaemia. In coronial cases where the focus is on avoiding death (and not just morbidity from lesser serious causes) it is necessary as a starting point to identity these major alternative diagnoses as part of the general differential diagnosis.

The recognition and exclusion of these alternatives does not undermine the general rationale of thereafter treating chest pain presentations as cardiac pain until proven otherwise. However, as I have indicated above, there still should be a need for review where the atypical pain suggests something other than cardiac ischaemia.

There is also a need for the basis of the exclusion to be noted when excluding major alternative diagnoses. This will allow a proper focus on why such an exclusion was made by the treating doctor. It should allow a proper review if different symptoms, such as a murmur develops which may show a progression of a serious non-ischaemic condition.

It was noted during the evidence that Dr Hession did not complete the risk stratification or the preliminary diagnosis section on the Chest Pain Emergency Department Management Form (p93), which is part of the Acute Chest Pain Protocol. I have referred to the importance of the completion of each of these sections. Particularly in light of Dr. Hession's view from his evidence that had the risk stratification been completed in accordance with that form alone, then that would have led to Mr Coxell being identified (perhaps wrongly according to a strict reading of the protocol for 'High Risk') as a high risk patient on whom further investigations were warranted.

Another area that calls for a recommendation to be made relates to the usage of words and the need to reduce confusion as to their meaning. The words "recurrent", "stability" or "stable", "chest pain" and the context in which they were used was not consistent in understanding particularly amongst the younger doctors. There is a

constant need to ensure all medical staff have a precise understanding of these terms as they are used in the various forms or as written by the practitioners. I have recommended that some documents be amended to clarify some of these issues. The drafters of these proposed documents should be cognizant of the need for consistency in the terms used.

In accordance with the above recommendation, I have requested that a number of amendments be made to the proposal document introduced by Professor Denniss (Exhibit 7)

Dr Wong pointed out the difficulty in not being able to properly identify the protocol documents and patient management forms. This is crucial. Doctors and nursing staff should be able to identify this material efficiently. Perhaps if these documents were prominent in the patient file then Dr Wong may have noted that an EST was not to be undertaken if there was recurrent pain.

A further recommendation is made arising from the evidence of Professor Denniss concerning the importance of ensuring that no EST is undertaken if the patient is suffering any pain or pain has occurred after the test was ordered. This will also allow the technician not to proceed with the test if he or she has knowledge of the patient's pain. Hopefully this will ensure that the EST is not performed where it is a contra-indication for a serious condition such as Mr Coxell's.

Training and communication between senior and junior doctors is a matter of vital importance for the maintenance of high professional standards and service delivery. Steps have already been taken in this area and the recommendation proposes the elevation of these initiatives into a working protocol.

## Conclusions

On 31st October 2006, whilst relaxing in his home Mr Harry Coxell suffered the life threatening condition of AD. Due to its seriousness there was a need for early detection and surgical intervention. It is likely that Mr Coxell would have survived that surgery.

Sadly, however, the surgery did not take place due to a number of circumstances. Firstly, the medical condition had to have been detected in the Emergency Department. Dr Hession certainly turned his mind to the prospect of an AD but despite some important signs in favour of its detection, his informed view was it was more likely to be IHD. A management pathway was chosen to treat Mr Coxell's condition as IHD unless proven otherwise.

Secondly, Dr Wong needed to have read the management records from the Emergency Department that suggested that if there was recurring pain then an EST was not to have been performed.

Thirdly, Dr Wong should have contacted Professor Denniss to discuss the changed circumstances from the time when the management plan was prepared.

Finally, further training should have been provided to the doctors, which may have led them to understand that an EST was a contra-indication for AD.

Mr Coxell's death was avoidable. He, more likely than not, would not have died if either Professor Denniss had been notified of the recurrent pain and presence of the heart murmur, and also had the EST not been undertaken.

## Findings

I find that Harry Coxell, born 31st May 1945, died on 1st November 2006, at Blacktown Hospital, Blacktown, New South Wales, as a result of a cardiac tamponade, caused by an aortic dissection due to hypertension after undertaking an exercise stress test.

## Recommendations

**To the Executive Officer,**
**Sydney West Area Health Service**

1. The Sydney West Area Health Service ("SWAHS") Acute Chest Pain Protocol should be reviewed and amended as appropriate to emphasise the necessity to consider and exclude life-threatening conditions other than cardiac ischaemia, specifically aortic dissection, coronary artery occlusion and pulmonary embolism, in all presentations of acute chest pain.

2. The SWAHS Acute Chest Pain Protocol should be reviewed and amended as appropriate to incorporate diagnostic guidelines for aortic dissection, coronary artery occlusion and pulmonary embolism. The diagnostic guidelines should be based on current evidence-based criteria and include relevant clinical history, findings and signs as well as appropriate diagnostic investigations.

3. Where life threatening conditions other than cardiac ischaemia are excluded, the reasons for such exclusion should be noted.

4. The SWAHS Acute Chest Pain Protocol should be reviewed and amended as appropriate to emphasise that all sections of the Chest Pain Evaluation ED Management Form (Exhibit 2, page 93) are to be completed and that the basis of any "Action" taken (i.e. to admit under a cardiologist or to discharge with follow up) be clearly indicated. Specifically, the person filling in the form must note the likelihood of ischaemic heart disease, the risk stratification the preliminary diagnosis and the action to be taken.

5. Any electronic version of the Chest Pain Evaluation ED Management Form referred to above should be designed in such a way that completion of every section is required before the final section on "action" taken can be filled.

6. The SWAHS Chest Pain Emergency Management Guideline (Exhibit 2, page 92) should be amended:

    a. To clarify the meaning of the term "recurrent pain" to include any chest pain (typical or atypical) that has resolved and then recurred or never fully resolved.

b. To replace the words "differential diagnosis" with "preliminary diagnosis".

c. To provide that an exercise stress test is not to be carried out in any case where the patient is experiencing any form of chest pain at the time of the proposed test.

7. Where a patient is managed in accordance with the SWAHS Acute Chest Pain Protocol the patient's clinical progress notes should make this clear and the relevant sections of the protocol should be easily identifiable and accessible for reference by all health care professionals managing the patient.

8. Cardiac technicians and doctors who may be supervising an exercise stress test should be specifically directed to ensure that no test be administered if the patient has any degree of chest pain at the time of the proposed test or has had any chest pain between the time the test was ordered and the time of the proposed test.

9. The document headed "Blacktown-Mt Druitt Hospital Division of Medicine – Improving after hours assessment and hand-over by resident medical staff" (Exhibit 7)] be reviewed and amended as appropriate to:

   a. Clarify the meaning of "recurrent chest pain" in paragraph 1 consistent with recommendation 6(a) above – "recurrent pain" to include any chest pain (typical or atypical) that has resolved and then recurred or never fully resolved.

   b. Clarify the meaning of the word "resolve" in paragraph 3.

   c. Incorporate the need for early escalation to senior medical staff in the case of a change in the patient's condition including any clinical sign or symptom not previously noted.

   d. Clarify the meaning of "instability" in paragraph 6.

   e. Include hand-over by night interns as well as night registrars in paragraph 7.

10. Following the amendments to the document referred to in recommendation 9 above, consideration should be given to elevating this to the status of a SWAHS protocol.

11. The SWAHS should develop an induction program presented by a senior cardiologist to ensure that all residents and interns caring for cardiac patients are familiar with relevant protocols. Emphasis should be placed on circumstances where consultants or other senior doctors need to be contacted and to any contra-indications to testing procedures such as exercise stress testing.

12. A copy of these Recommendations and Findings should be forwarded to the Director, Health Services Performance Improvement Branch, NSW

Department of Health, for consideration in the review of a standardised Chest Pain Protocol.

To the family of Mr Harry Coxell, I offer my sincere sympathy and hope that this inquest has assisted them to understand the circumstances of Mr Coxell's death.

I wish to acknowledge my appreciation for the assistance given to me during this inquest by Mr D. Hirsch, Counsel Assisting and his instructing solicitor, Ms N Malhotra.