# General Practitioner, Dr A

# Medical Centre

## A Report by the

## Health and Disability Commissioner

## (Case 05HDC03782)

Health and Disability Commissioner
*Te Toihau Hauora, Hauātanga*

## Parties involved

| | |
|---|---|
| Dr A | Provider/General practitioner |
| Mr B | Consumer |
| Mrs B | Complainant/Consumer's wife |
| Dr C | General practitioner |
| Dr D | General practitioner |
| First Medical Centre | Provider/General practice |
| Second Medical Centre | General practice |
| Public Hospital | Public hospital |

## Complaint

On 14 March 2005, the Commissioner received a complaint from Mr and Mrs B about the care provided by general practitioner Dr A at the first medical centre. The following issues were identified for investigation:

**Dr A**

- *The appropriateness and adequacy of the care and treatment provided by Dr A to Mr B on 26 February 2005.*

**The First Medical Centre**

- *The appropriateness and adequacy of the care and treatment provided by the first medical centre to Mr B on 26 February 2005.*

An investigation was commenced on 28 June 2005.

## Information reviewed

- Information from Mr and Mrs B
- General practice records and management strategies from the first medical centre
- Information from Dr A
- Information from Dr C
- Medical records from the public hospital.

Independent expert advice was obtained from Dr Steve Searle, general practitioner.

## Information gathered during investigation

*Overview*
Prior to this incident Mr B, aged 31 years, had no identified history of cardiac problems, or of heart disease within his immediate family, and was a non-smoker.

On 22 February 2005, Mr B attended the first medical centre (the centre) in a small provincial town, and consulted general practitioner Dr C concerning an injury to his left leg and his feeling unwell. Dr C confirmed with X-ray that there was no fracture to the leg.

Mr B presented again at the centre on 26 February and consulted general practitioner Dr A. Mr B reported chest pain and feeling unwell. Dr A completed a physical examination, found no indication of cardiac dysfunction, and diagnosed a viral infection exacerbated by recent alcohol consumption.

On 28 February, Mr B developed crushing chest pain and shortness of breath. He consulted general practitioner Dr D at a second medical centre. Dr D performed blood tests and an electrocardiogram (ECG) and, based on those results, referred Mr B to the public hospital for further evaluation. The final assessment concluded that Mr B had suffered from multiple myocardial infarctions over the course of a few days. This has resulted in permanent damage to Mr B's heart and significant residual impairment of left ventricular function, with cardiac enlargement.

*Consultation on 22 February 2005*
On 22 February, Mr B consulted Dr C at the centre in relation to a wound injury to his right shin. In her original letter of complaint, Mrs B stated that Mr B told Dr C that he had been feeling unwell "for quite some time" and Dr C told Mr B this was probably due to a viral infection.

Dr C examined the open wound. He sent Mr B to the local hospital for an X-ray of his leg to see if it was broken. When Mr B returned to the centre after the X-ray, Dr C informed him that the X-ray results were unremarkable and he dressed the wound. Dr C also told Mr B that if his leg was broken he would be feeling sick. Mr B recalls that at this stage he told Dr C that he had been feeling unwell with chest pain and aching down his arms. Dr C told him he was probably coming down with the flu.

Dr C does not recall Mr B including chest pain among his symptoms, and says that if chest pain had been mentioned he would have conducted a more thorough investigation. Dr C is unable to substantiate his recollection by a contemporaneous record, because his original notes for the consultation were not saved onto the practice computer. Dr C explained what happened:

> "Unknown to myself at the time, and unfortunately other users, failure to close down the individual patient files completely would cause system overload and loss of the documents still open. I was not aware that the consultation had been lost

> until I subsequently looked back at my management of [Mr B], once the complaint had been received [around 9 March 2005]. Therefore the original document was lost at the time of the consultation. Obviously, we are now aware of the problem and take measures to avoid it happening, and also the programe has recently been upgraded."

Dr C re-documented the consultation as follows:

> "presented with open wound on left distal shin, not infected or bleeding. Able to weight bear unaided.
>
> X-ray performed showing no fractures or FB [foreign bodies] wound dressed and advised if signs of infection to return.
>
> - Ix: Radiology — Ad-hoc Radiology, left distal shin?#."

*Consultation on 26 February 2005*

On Saturday, 26 February, Mr B telephoned his wife and explained that he was unwell with chest pain, pain in his arms and vomiting. Mr B returned to the centre accompanied by Mrs B. On that day, it was a 'walk in' clinic. Appointments were not required and patients were seen in order of arrival. There were no signs in the waiting area and according to Mrs B the receptionist did not make any attempt to ascertain Mr B's priority. Mr and Mrs B have been to the centre "on several occasions" since the 26 February consultation, and have seen two new notices in the waiting area advising patients with chest pain or difficulty breathing to inform staff.

The centre advised that in February 2005 an A4-sized sign was displayed, which read: "If you are acutely unwell please see reception." There are now larger written signs in the clinic telling patients to alert the receptionist if they have chest pain or shortness of breath. If the receptionist is informed that a patient has chest pain or shortness of breath or the receptionist perceives the problem is urgent, the patient is seen as a priority.

Neither Mr nor Mrs B informed the staff that Mr B had chest pain. Mrs B recalls that Mr B was clearly in a lot of pain and discomfort, yet the receptionist did not approach them. Mr B was unable to sit comfortably in the waiting area and went outside. Mrs B remained in the waiting area. Reception staff at the centre did not alert Dr A to Mr B's condition and Mr B waited 45 minutes to see the doctor.

Dr A was the sole health professional in the surgery that day. There were no triage facilities in place at the centre. Dr A recalls "this was a Saturday surgery without appointments. I was not made aware that a patient with chest pain was waiting."

When Mrs B informed Dr A that her husband was waiting outside, Dr A said "Oh, outside sunning himself." Dr A explains that "no offence was meant" — he assumed Mr B was waiting outside as it was a sunny day.

Dr A did not know about the earlier consultation on 22 February, as the documentation had not been stored on the practice records because of the computer malfunction.

Dr A documented his assessment of Mr B as follows:

> "Feeling a bit tired and headachy all week. Drank 12 pints last night, this morning feels unwell, pains across chest and under right arm, strange feeling when taking a deep breath, vomited once, slightly loose stool. O/E [on examination]: Flushed, a bit anxious. P80 reg [pulse 80 beats per minute and regular rhythm]. Normal heart sounds. Chest clear, no dyspnoea. No DVT [deep vein thrombosis]. Tender chest wall throughout. Abdo [abdomen] soft and non tender. Likely viral illness combined with physical and psychological effects of alcohol. Paracetamol not Nurofen for pains, rest."

Dr A provided further details in response to my investigation:

> "First of all he had tenderness across his chest wall. I have previously found this to be a reliable sign to aid in the exclusion of cardio-respiratory pathology. I have learned this from senior hospital colleagues during previous hospital jobs (A & E and Medicine) and from correspondence from them.
>
> In [Mrs B's] original letter, she stated that [Mr B] told me that he had 'pains in his chest that were going down his arms' (although she was not present during the consultation). In the history that I elicited, [Mr B] described that he had, in addition to chest pain, pain under his right arm. I recollect that he was tender over the right pectoral region (and elsewhere on the chest wall). I am aware that pain in the chest radiating into an upper limb must be evaluated to exclude cardiac ischaemia, but the presence of tenderness in the same region (right pectoral region) further led me to conclude that this pain was not cardiac in nature.
>
> I would normally expect someone who was suffering from a myocardial infarction to be tachycardic [have an abnormally rapid heart rate, usually taken to be over 100 beats per minute] or sometimes bradycardic [have a slow heart rate, less than 60 beats per minute] and often dyspnoeic [have laboured or difficult breathing]. Mr B was not tachycardic (pulse 80 beats per minute) and not dyspnoeic. He also had normal heart sounds (to exclude an ineffective endocarditis [inflammatory alterations of the lining of the heart and its connective tissues] or rheumatic fever).
>
> He had other symptoms to suggest a viral illness including: lethargy and headache for the previous several days and slightly loose stool. My records also state that he informed me that he had vomited once (although [Mrs B] states that he had 'been vomiting all morning').

> He had consumed a large amount of alcohol (12 pints) on the previous night. This further explained to me why he appeared flushed and anxious, feeling unwell, and had vomited.
>
> His age (31 years) meant that he was at very low risk from ischaemic heart disease, although I appreciate it is not entirely unknown for myocardial infarction to occur in a 31 year old male.
>
> My clinical diagnosis based on the history and examination was that he had been suffering from a viral illness, and I considered that the symptoms of the viral illness had been exacerbated by the effects of alcohol. I concluded that the combination of a viral illness and the effects of alcohol had caused some muscular chest wall pain/tenderness and costochondritis [rib and cartilage tenderness]."

Dr A prescribed paracetamol for pain consistent with a viral infection.

Mr B says that Dr A is mistaken about the amount of beer he had consumed; it was in fact 12 cans (330ml each) of beer, not 12 pints. This equates to 3.96 litres, rather than the 6.82 litres in 12 pints.

*Subsequent events*
On 28 February, because he was still suffering chest pain, Mr B attended the second medical centre and was initially seen by a triage nurse. The nurse recorded:

> "crushing chest pain for nine or ten hours last night on exertion, when supine and difficulty breathing …"

Dr D, general practitioner, reviewed Mr B and recorded that Mr B presented with "3–4/7 history of crushing central chest pain radiating down the left arm/nausea and vomiting/had 1 episode of diarrhoea". Dr D recommended an ECG and blood tests. The results suggested cardiac abnormalities and Dr D arranged urgent transfer to the public hospital for further assessment and treatment.

The records from the public hospital show that Mr B had suffered extensive anterior and anterolateral myocardial infarct, which has resulted in significant damage to his heart.

*Complaint*
On 7 March, Mr and Mrs B complained in writing to the centre. Dr A replied to the complaint by letter dated 16 March. He explained that the examination of 26 February did not lead him to believe Mr B's pain was of a cardiac nature as it did not provide evidence of a cardiac problem. In Dr A's opinion, Mr B's symptoms were consistent with a viral infection and excessive alcohol consumption. Dr A also noted that it was unusual for a man of 31 years of age with no specific family or personal history and no risk factors usually associated with cardiac disease to have significant cardiac disease.

Dr A stated that he was sorry his assessment had proved to be wrong and said that he or another doctor at the centre could be contacted to answer any further questions.

## Independent advice to Commissioner

The following expert advice was obtained from Dr Steve Searle, general practitioner and emergency care specialist:

**"Summary of findings/conclusions:**
There was no significant breach in the standard of care provided by [Dr A]. His standard of care was well within acceptable standards and possibly of above average standard.

There was and is no need to have a 'triage' or patient sorting system formally in place at [the centre].

There was a problem with loss of notes (patient records) from the consultation on 22 February 2005 when [Dr C] saw [Mr B]. I believe that adequate measures have been taken to address this matter and I make some comments in my conclusion about how to consider further measures to avoid notes being lost.

Based on current medical knowledge it is hard to see how patients with unusual types of chest pain at a young age with no obvious risk factors, such as [Mr B], can be diagnosed early. Attempts to diagnose heart disease in such settings could expose a lot of patients with similar presentations to unnecessary tests that could have secondary complications and cause more harm than good. I comment further on these both in the conclusion of the report and in the main document.

**Notes about Dr Searle as an advisor:**
This report has been prepared by Dr S J Searle, under the usual conditions applying to expert reports prepared for the Health and Disability Commissioner. In particular Dr Searle has read the guidelines for Independent Advisors to the Commissioner (Ref. 1) and has agreed to follow them. He has been asked to provide an opinion to the Commissioner on case number 05/03782.

He has the following qualifications: MB.ChB (basic medical degree Otago University), DipComEmMed (a post graduate diploma in community emergency medicine — University of Auckland), FRNZCGP (Fellow of the Royal New Zealand College of General Practitioners — specialist qualification in General Practice which in part allows him to practice as a vocationally registered practitioner). As well as the qualifications listed Dr Searle has a certificate in family planning and a post graduate diploma in sports medicine. He has completed and renewed a course in Advanced Trauma — ATLS (Advanced Trauma Life

Support). He has a certificate (Nov 2003) in Resuscitation to Level 7 of the NZ Resuscitation Council. More recently he has completed a PRIME course (May 2004). He has worked in several rural hospitals in New Zealand as well as in General Practice and accident and medical clinics and currently works in his own practice as well as in the Emergency Department in Dunedin Hospital. Dr Searle has worked at rest homes with residents who have a variety of physical and intellectual disabilities and has patients who reside in residential facilities who have a variety of disabilities. He is also actively involved in local search and rescue missions and training.

Dr Searle is not aware of any conflict of interest in this case — in particular he does not know the health provider(s) either in a personal or financial way. Dr Searle has not had a professional connection with the provider(s) to the best of his knowledge.

**Basic Information:**
Patient concerned: [Mr B]
Nature of complaint: Possible incorrect diagnosis of chest pain
Complaint about: [Dr A], a locum general practitioner.
Also seen by: [Dr C], [Dr D] (who did diagnose his chest pain as being from his heart and did refer him to hospital), and the staff at [the public hospital].

**Introduction:**
I will attempt to summarise the time course of the illness here to help clarify things for readers of this report. Of note there was considerable information that was reviewed for this report and a simple summary will always be problematic but I have provided one to help make the report easier to read and use.

**Summary of events:**
[Mr B] was a 31 year old male at the time he was seen. On 22 February 2005 Mr B with a wound of his leg was seen by [Dr C]. [Mr B] has said that he informed [Dr C] that he was feeling unwell and had chest pain. [Dr C] has responded that he does not recall [Mr B] stating he was suffering from chest pain. [Mr B] at that time was probably feeling unwell but it is not clear if he had already developed chest pain at that time or not (see comments in section on possible missing information).

[Mr B] returned to the same [medical centre] on 26 February 2005 and complained that he was feeling unwell, with nausea, vomiting and chest pain. [Mr B] was seen by [Dr A], a locum general practitioner. [Dr A] concluded that [Mr B] was suffering from a viral illness exacerbated by alcohol.

[Mr B] remained unwell and on Monday 28 February he attended a surgery in a larger nearby town/city and was assessed by [Dr D]. [Mr B] reported 'crushing chest pain' and [Dr D] performed an ECG (an electrocardiogram — a tracing of the electrical activity of the heart taken by placing wires on the patient's limbs and

chest and having a machine that constructs a tracing from the electrical signal it detects). The ECG revealed a heart attack and [Dr D] immediately referred [Mr B] to the local hospital.

[Mr B] was subsequently diagnosed with extensive anterior and anterolateral myocardial infarcts (death of part of the heart muscle or a heart attack).

**Documents and records reviewed:**
An overview of the information supplied and advice requested was supplied by the Commissioners office (a 3 page document) with subheadings of purpose, background, complaint, supporting information, and expert advice required. The additional supporting information supplied is as follows:

**Supporting Information**

- Complaint letter from [Mrs B] dated 7 March 2005, marked 'A'. ( Pages 1–3)
- Notification of investigation to [Dr A] dated 28 June 2005 marked 'B'. (Pages 4–6)
- Notification of investigation to [the first medical centre] dated 28 June 2005 marked 'C'. (Pages 7–9)
- Responses from [Dr A], marked 'D' (Pages 10–13)
- Responses from [the first medical centre] marked 'E' (Pages 14–19)
- Responses from [Dr C], marked 'F' (Pages 20–23)
- Response from [Mrs B] to [the first medical centre] dated 4 April 2005, marked 'G' (Page 24)
- Responses from [Mr and Mrs B], marked 'H' (Pages 25–28)
- Clinical records from [the second medical centre], marked 'I' (Pages 29–38)
- Clinical records from [the public hospital], marked 'J' (Pages 39–56)

**Possible missing information**
Some aspects of the history of events such as the exact duration of [Mr B's] chest pain may never be able to be accurately determined. I do not think this uncertainty will alter my decisions but I think that comment is required because it has been suggested that [Dr C] was told about symptoms other than the leg injury.

The doctor who saw [Mr B] on the 22 February 2005, [Dr C], has no recall of complaints of chest pain or unwellness and only recalls the leg injury. Unfortunately as the original notes were lost, and notes were only subsequently made days later we don't have the benefit of contemporaneous notes to verify what if anything [Mr B] told [Dr C] about other than his leg injury. I note in the letter from [Mr B's] wife (dated 7/3/05) that [Mr B] had apparently mentioned he had been feeling unwell for quite some time — but that there was no mention of him complaining of chest pain. However [Mr B] has stated that he mentioned chest

pain to [Dr C] during a telephone conversation with an HDC investigator (see p 20 of the supporting information). On the other hand the history recorded on 26 February 2005 (the consultation notes from 26/2/05 — see supporting information page 16) states [Mr B] reported feeling tired and headachy all week but only on the morning of being seen did he have other symptoms such as chest pain etc. The letter from [Dr D], (pages 36 and 37 of the supporting information) dated 28 Feb 2005, and that was written at the time of [Mr B] being seen, clearly states he had a 3 to 4 day history of chest pain (i.e. the pain was from the 24th or 25th of February onwards). The hospital notes have slightly varying versions of his pain duration — on page 39 of the supporting information it states 'S/B GP 1/52 ago with cardiac type chest pain' (meaning seen by GP 1 week ago with chest pain) — ie pain from 21/2/05 and seen by GP 21/2/05 when in fact seen on 22/2/05 and 26/2/05 so slightly inconsistent. On page 40 it states 'chest pain from last Wednesday' (i.e. pain from 23 February onwards). On page 46 of supporting information it states a '6 day history of chest pain' (i.e. pain from 22/2/05 till 28/2/05). On page 54 of the supporting information, the cardiologist's letter, it states 'Six days ago he began to have chest pains' (i.e. pain from 22/2/05 till 28/2/05). Overall it seems clear that [Mr B] may not have in fact had chest pain on 22/2/05 when [Dr C] saw him, but he clearly had been unwell for some time prior to that and that unwellness may have been reported to [Dr C]. I think it is likely that we will now not be able to determine exactly what else other than the leg injury was discussed or assessed on 22 February 2005.

The notes from the student nurse working at [the second medical centre] are partly obscured by '[the second medical centre]' logo. See supporting information p 31. I don't think the exact details of this will change my report but I would note once again there appears to be slightly different time frames stated for various different symptoms — supporting my above comments about the exact history of events often being somewhat imprecise. I note from experience that the story given by patients, which is also influenced by the way doctors and nurses ask questions, can vary quite markedly. I have personally witnessed patients either tell myself, or other doctors a completely different story to another doctor within the space of an hour. I do not believe they are being dishonest or deliberately trying to mislead doctors but rather that once you have to recall events your interpretation of events changes and the next time you tell the story a different emphasis is placed on different parts of the story. I also know from personal experience as a patient that recalling exactly when some symptom started is not always easy. Once you tell several doctors and nurses the same story over several days it can become difficult to recall exactly what was told to which doctor or nurse and thus it is possible that [Mr B] genuinely believes he told [Dr C] he has chest pain when in fact he may have only told him about unwellness — the notes above mostly suggest his chest pain was in fact not present at the time he saw [Dr C].

Clearly the medical centre involved and [Dr C] have taken appropriate steps to ensure notes are not lost. Some computer systems can at the end of the day detect

if a patient was seen (eg. from the appointment book, or the accounting system) but no notes were recorded. I would suggest that [Dr C] and [the centre] look into this possibility as it is fairly easy for this to become a routine end of the day or start of the next day routine task to pick up on lost notes so they can be reconstructed later on the same day or the next day rather than several days or weeks later.

It is not clear to me exactly what the alcohol consumption of [Mr B] was prior to the 25th/26th of February 2005 but a note was made that he drank 12 pints (of presumably beer) the night before he was seen on 26/2/05. As knowing this information will not alter my decision I will not seek further information about this before making a decision on this case but I note that [Mr and Mrs B] stress in their letter of 4 April 2005 that he had not had any alcohol back at the time he saw [Dr C] on 22/2/05 and he already had symptoms then — this is a valid point however unfortunately due to the notes not being recorded [Dr A] did not have access to information on the consultation of the 22/2/05 and may not even have been aware that [Mr B] was seen on 22/2/05. The history recorded at the time (the consultation notes from 26/2/05 — see supporting information page 16) states [Mr B] reported feeling tired and headachy all week but only on the morning of being seen did he have other symptoms such as chest pain etc. Thus the assessment of a viral illness combined with alcohol from the night before was a very reasonable assessment that was supported by the time course of alcohol consumption of probably just one off consumption on the night before [Dr A] saw [Mr B]. I further note that [Mr and Mrs B] in their letter, 4 April 2005, state that it wasn't until the Friday night (25/2/05) that he drank any alcohol (I think this means that from the 22nd of February till the 24th of February he had no alcohol but that before this we have no definite information and after the 26th of February we have no information).

The other possible missing information is that of [Mr B's] past history, medication history, drug allergy/intolerance history and family history. If [Mr B's] usual doctor was [the centre] then this information would probably have been kept elsewhere in his notes and not necessarily copied to me for the purposes of this case. Even if it was not recorded at worst this would be a very minor breach in the standard of care as most doctors would not consider this information especially important in the context of the presentation — for example colleagues who I asked about this case mostly did not ask for this information (Ref. 4).

**Quality of provider's records or lack of them**

I have already discussed the issue of the absence of notes from the consultation on 22 February 2005 and discuss it further in my conclusions.

The notes of [Dr A] were generally of a good standard and show he clearly considered a range of possibilities for [Mr B's] chest pain.

There is not much documentation about specific follow up advice. Generally I think it is good practice to specifically state that if a patient is not 100% back to

normal after so many days (e.g. 10 days – exact time depending on the natural history of likely diagnosis) that they see their doctor to be reviewed, and that if they are not improving within a few days to be seen by their doctor and to see a doctor sooner if they are worse or have new symptoms. This advice is beyond the usual standard of care and I note my colleagues (Ref. 4) did not suggest more specific follow up advice as part of their management.

**Describe the care as documented and describe the standard of care that should apply in the circumstances.**

**Taking a full history**
This should include current symptoms (e.g. fever, any pain, or loss of function), past history of similar illness, past medical history including medications and allergies.

As stated above in the section on missing information some of this information may have been recorded elsewhere. What is important is that there was a good history of the current symptoms — this is a good standard of care.

**Do an appropriate full examination**
This was done and clearly chest including the heart sounds were examined, and of note causes of chest pain outside the chest including the abdomen and legs were checked for — this is an above average good standard of care.

**Order appropriate investigation at an appropriate time**.
It is often forgotten that investigations have harms such as finding minor abnormalities that need explanation that require further more invasive tests. It is not unheard of for patients to die from direct or indirect results of investigations for something that in hindsight might never have caused a significant problem. For example with this sort of presentation the risk of heart disease is low and if ECGs and other tests were done routinely on patients with a low risk then a small number would have false positive results (ECGs can give findings that mimic heart disease but are not from heart disease) and further more risky tests such as exercise ECG tests and/or coronary angiograms could be performed — these tests have small but significant risks of serious complications including death (major complications, though rare in experienced hands, include death (risk ratio 1 in 1400), stroke (1 in 1000), coronary artery dissection (1 in 1000) — (Ref. 10)). Treatment such as a clot busting drug could be given to someone not having a heart attack based on false ECG test and there are risks from this such as strokes and death.

The other more common problem with ECGs is that of false reassurance — in other words the ECG is normal but the patient actually does have heart disease. It has been reported that acute myocardial infarction (heart attack) can in some settings be diagnosed in 10 percent of patients with normal electrocardiogram findings (Ref. 7) — in other words if you are having a heart attack there is a one in 10 chance that the ECG might not pick it up.

In this case there is the significant possibility that an ECG taken on or before 26/2/05 might have been normal — this could have falsely reassured Mr B and caused even more delay in his re-presentation. It is impossible to say if in this case an ECG would have been normal or not on 26/2/05 but in similar situations it is fairly common for the ECG to be normal — final diagnosis being either other non-heart causes of chest pain or occasionally heart pain despite the normal ECG.

**Decide on appropriate management**

Appropriate management should either be undertaken and implemented by the health provider or the provider should seek advice from other providers and/or refer on for such management. I believe that an appropriate diagnosis was made by [Dr A].

The issue of alcohol is relevant in that there is some medical knowledge that suggests that in some people larger amounts of alcohol can induce coronary artery spasm (the blood vessel blocks off from a spasm of the muscles in the wall of the blood vessel). This can occur on top of pre-existing blockages of the coronary arteries (i.e. converting a partial obstruction to a full obstruction (Ref. 2) or it can occur in apparently normal arteries (Ref. 3). This medical knowledge is not widely known and I don't think that the doctors involved can be deemed to have breached a reasonable standard of care for not taking this into account. In fact the other effects of alcohol such as acute oesphagitis (inflammation of the gullet), gastritis (inflammation of the stomach lining), and peripheral vasodilation (e.g. being flushed) are much more likely to have explained [Mr B's] symptoms and are more widely known and understood by doctors (Ref. 2). Thus I think [Dr A's] diagnosis was within a good standard of care as it was the most likely diagnosis.

In considering the possibility of other diagnoses I asked a group of colleagues to review the case (Ref. 4) where they were not told the final diagnosis — this is important as 'hindsight' bias can adversely affect doctors' judgement when cases are reviewed (Ref. 5). None of the doctors would have performed an ECG or done any other tests to consider the possibility of heart disease. Most of the doctors agreed with the management in this case and only one or two would have asked different questions, and only one would have asked for a specific test (a chest X-ray which would almost certainly have not detected a heart attack — Patients with angina and no prior history of cardiac disease usually have a normal chest X-ray film (Ref. 10)).

In considering reasons for [Dr A] thinking that the pain was not cardiac (or heart) related I agree with his reasoning (supporting information D, pages 10, 11). In particular I can easily reference some of this information (I will not reference it all as it is beyond the scope of this report but I do want to show that I have considered not only current general medical knowledge but studies looking at the particular issue)

- Chest wall tenderness does suggest a non-cardiac cause of chest pain (but does not 100% rule it out (Ref. 6, 7, 8)

- A combination of atypical symptoms improves identification of low-risk patients (Ref. 7)
- The history of a strange feeling when taking a deep breath could be interpreted as pleuritic pain although it is not clear cut in this particular case. Pleuritic pain suggests that the pain is not cardiac in origin (Ref. 8)
- Chest pain at a young age being cardiac in origin is unlikely (common clinical knowledge) and supported by many studies (e.g. Ref. 10)
- Routinely performing an ECG for chest pain (especially chest pain that has clinical features suggestive of non-cardiac causes) has not been adequately researched — guidelines (e.g. Ref. 7) list the level of evidence for doing so as 'consensus opinion' (of those doctors consulted when developing the guideline) — surprisingly there does not seem to have ever been a study of doing vs not doing an ECG — such a study would have to be constructed carefully to avoid doctor bias and ensure patient safety and may never actually be done now that ECG machines have become part of common hospital based clinical practice — this however does not necessarily mean such studies should not be done. Also of note the guidelines are usually considering patients who have either been referred to emergency departments by general practitioners or self referred themselves rather than considering patients presenting directly to general practitioners so these sorts of 'consensus opinions' are not necessarily relevant to this case.

**Give the patient appropriate advice**

This should include advice on follow up, and any complications to watch out for that might need earlier follow up. I have already commented on this in the section on possible missing information.

**Have appropriate systems in place to reduce errors**

This is where there is great potential to improve the management for all patients. Doctors are human and errors can occur — however they can be minimised and/or the effects of these errors reduced or mitigated by having systems in place to check for errors and if possible to take action to prevent harm or to prevent sub-optimal outcomes for patients. Systems relevant to this case could have included:

1. Systems for detecting the absence of clinical notes for patients who have been seen (see comments in the conclusion of this report).
2. To have specific review policies in place for patients who represent for the same illness — for example faxing the note to the usual GP asking for them to review the patient's need for further follow up, or having another doctor at the clinic review notes on patients who represent. This is complicated in this case as the visit on 26/2/05 was another presentation for the same illness but the first visit was mainly about another condition and the notes had been lost so it was not easy for [Dr A] to pick up that this was a second presentation.

3. For doctors to have a method of thinking about their decision making that helps pick up errors (Ref. 12). I am not sure that in this case it would have helped but possibly the 'alarm bell' so to speak was the 12 pints the night before. I have discussed at length elsewhere the possibility that this can be associated with acute coronary (heart) events, and it may also make various diagnoses more difficult for complicated reasons including that symptoms of alcohol use can overlap those of various diseases (Ref. 2). There may also have been the possibility that a doctor aware of the more recent evidence that in some cases clinical features of chest pain can be misleading might have considered an ECG. This would be difficult as in this case the clinical features did not suggest cardiac pain and as stated elsewhere even if an ECG had been considered there are risks to doing an ECG in patients at low risk of cardiac cause for their symptoms.

Having such systems in place to reduce errors is not yet common place. Such systems are gradually being developed at present. The absence of such systems cannot be seen to be a breach in a reasonable standard of care at the time of [Mr B's] presentation, but I include this information to give options for improving the standard of care, and for reducing future errors for those who might read this report.

**Describe in what way if any the provider's management deviated from appropriate standards and to what degree.**
The care provided by [Dr A] did not deviate from appropriate standards of care. The reasons for this are well documented elsewhere in this report.

…

**Answering Questions put to me by the Commissioner's office.**
My professional opinion concerning the services provided to [Mr B] by general practitioner [Dr A] and [the centre] is that they were of an appropriate standard. In particular:

1) Were the triage facilities in place on 26 February adequate?
This is possibly a leading question in that assumes 'triage' facilities should be in place. In short there is the significant possibility of harm from 'triage' and there is no good evidence that 'triage' should routinely occur. I enclose with this report a whole separate document on this complex issue.

2) Was the consultation and examination on 26 February 2005 appropriate?
Yes the consultation and examination was appropriate — I have explained this in some detail elsewhere.

3) What standards apply in this case?

This has already been discussed in the section titled 'Describe the care as documented and describe the standard of care that should apply in the circumstances'. Of note no breach in the standard of care has been found.

4) Was the record keeping adequate?
This has been discussed previously in this report and is further discussed in the conclusion. There was a minor breach in the standard of care in that having a lost record for the consultation of 22 February 2005 is not good — however I am satisfied that subsequent actions upon finding this error were appropriate.

Are there any aspects of the care provided by [Dr A] and [the second medical centre] that you consider warrant additional comment?
I have provided extensive comment on this case both in this report and in the attached report on 'triage'.

**Conclusion:**
In this case the assessment provided by [Dr A] was of a good standard of care. Unfortunately this did not detect [Mr B's] problem. This failure to detect a problem does not necessarily mean the standard of care was a problem (Ref. 1).

No assessment protocol or constellation of tests is totally accurate in diagnosing acute coronary syndrome (new onset heart problems from ischaemic heart disease). Studies have shown from 1 to 4 percent of patients ultimately proven to have acute coronary syndrome are sent home from the emergency department (Ref. 7). This remains a difficult problem for doctors both in the community and hospital settings. However research is coming to light that is helping doctors to make better decisions and hopefully research in community settings will follow the extensive body of research that has been done in hospital settings. Until this happens there is always likely to be a small number of cases where chest pain is difficult to diagnose and problems arise from this difficulty.

…

*References.*

1) Guidelines for Independent Advisors — Office of the Health and Disability Commissioner — Appendix H of the Enquiries and Complaints Manual — effective date: 1 September 2003.

2) Management of Alcohol and Drug Problems, Gary Hulse, Jason White, Gavin Cape; Oxford University Press; Published 2002; ISBN 0 19 551331 2.

3) Heart 1998;79:191–194 (February); Case studies; Myocardial infarction in young people with normal coronary arteries; M J A Williams, N J Restieaux, C J S Low; Department of Medicine, University of Otago, 201 Great King Street, Dunedin, New Zealand.

4) Dr Searle, the author of this report, seeking the opinion of several (six) general practitioners of the general situation of:

A 31 year old male with the history of feeling a bit tired and headachy all week. Drinking 12 pints last night, and this morning feeling unwell, with pains across chest and under right arm, and a strange feeling when taking a deep breath. Also vomited once and slightly loose stool. With examination findings of flushed, a bit anxious, pulse 80 and regular, normal heart sounds, chest clear, no dyspnoea. No DVT. Tender chest wall throughout. Abdomen soft and non-tender. I also stated a presumptive diagnosis of likely viral illness combined with physical and psychological effects of alcohol. And a suggested management plan of paracetamol not Nurofen for pains.

All of these doctors realised that a complaint had been made about the case (but not the nature of the complaint) and none were told the final diagnosis (this is important to avoid biasing their view of the case). They were in particular asked about any comments they would make about the management (history, examination, diagnosis and plan), and more specifically if they would do anything else and if so would it change the management? Most of the general practitioners would not have done anything else. Two wanted to know his blood pressure and temperature, another two wondered about a fall or injury while he was 'drunk', one wanted a chest x-ray. One wanted his family and work history. One wanted to know how much he usually drank (alcohol) and why. One wanted to know if he had vomited any blood. Most of the GPs thought that although they would consider the above points that the answers would probably not change the management. 'Guessing' what went wrong the doctors came up with hidden trauma and gastro-intestinal bleeding as possible adverse outcomes — but this is with the benefit of hindsight knowing an error/complaint/or adverse outcome might have occurred. Even with this benefit of hindsight none of the GPs would have thought of a heart problem and none would have asked for an ECG or other tests at the time of the consultation on 26/2/05 — one GP would have asked for a chest x-ray but this would have been unlikely to show up [Mr B's] heart problem.

5) Complaints, hindsight bias, and the short-circuit of grief into grievance; Hamish Wilson, New Zealand Family Physician (NZFP) Volume 32 Number 5, October 2005.

6) Acad Emerg Med. 2002 Mar;9(3):203–8. How useful are clinical features in the diagnosis of acute, undifferentiated chest pain? Goodacre S, Locker T, Morris F, Campbell S.

7) American Family Physician; Vol. 72/No. 1 (July 1, 2005); Diagnosis of Acute Coronary Syndrome; Suraj A et al.

8) American Journal of Medicine; 1;117(5);334–43, Bedside diagnosis of coronary artery disease: a systematic review. Chun AA, McGee SR.

…

10) BMJ. 2003.326:7397:1027–1030 Ever D Grech; Pathophysiology and investigation of coronary; ABC of interventional cardiology:

[…]

12) Cognitive Forcing Strategies in Clinical Decision Making, Pat Croskerry, Annals of Emergency Medicine 41:1, Jan 2003, p110–120

## Code of Health and Disability Services Consumers' Rights

The following Right in the Code of Health and Disability Services Consumers' Rights is applicable to this complaint:

*RIGHT 4*
*Right to Services of an Appropriate Standard*

*1) Every consumer has the right to have services provided with reasonable care and skill.*

## Other relevant standards

Medical Council of New Zealand "Good Medical Practice — A Guide for Doctor's" (2004) section 3 states:

> "Keep clear, accurate, and contemporaneous patient records which report the relevant clinical findings, the decisions made, the information given to patients and any drugs or other treatment prescribed."

## Opinion: No Breach — Dr A

*Examination on 26 February 2005*
Mr and Mrs B complained that Dr A did not conduct a thorough and adequate examination of Mr B during the consultation on 26 February 2005. In particular, Mr and Mrs B are concerned that Dr A did not undertake tests to rule out the possibility that Mr B was suffering from a heart attack, including taking an ECG. In my view, Dr A conducted a thorough and appropriate examination of Mr B, and did not breach Right 4(1) of the Code. The reasons for my decision are set out below.

Mr B was reviewed by Dr A on 26 February with a history of tiredness and headaches all week, and with pain developing across his chest and under his right arm that morning. Dr A noted that Mr B had consumed 12 pints of beer the previous evening, had vomited once that morning, and had slightly loose stools. Dr A conducted a thorough examination of Mr B, including recording his pulse (normal and regular), heart sounds (normal), chest examination (clear with no dyspnoea, although it was noted that Mr B had a tender chest wall throughout). Dr A also examined Mr B's abdomen (soft and non-tender), and noted that there was no deep vein thrombosis. Dr A considered the possibility of a cardiac cause for Mr B's symptoms, but ruled it out because of Mr B's normal pulse and heart rhythm and sounds, and his normal breathing rate. Dr A concluded that it was likely Mr B was suffering from a viral illness, combined with the physical and psychological effects of alcohol.

Mr B advised that he had in fact consumed only 12 cans of beer. This would equate to 7 pints, which Mr B points out is significantly less. Mr and Mrs B suggest that if Dr A had correctly identified the amount of alcohol this may have altered his diagnosis. I have confirmed with Dr Searle that the amount actually consumed was more than average and likely to cause alcohol-related symptoms. The presenting symptoms, whether alcohol-related or not, were appropriately considered by Dr A and quite reasonably led him to a different diagnosis. Dr A should have asked Mr B to return if his symptoms persisted; Mr B did in fact seek further advice when his symptoms increased in severity, and presented to Dr D two days later.

Dr A's notes were of a good standard, and show that he clearly considered a range of possibilities for Mr B's condition. His examination of Mr B was full and appropriate, including heart, chest, abdomen, and legs. I agree with my advisor that Dr A's examination was "an above average good standard of care". The issue, therefore, is whether Dr A's diagnosis of a viral illness with alcohol effects was a reasonable diagnosis to make on the basis of his examination, or whether Dr A should have taken further steps to rule out the possibility of a cardiac cause for Mr B's symptoms.

I accept my advisor's comments that Dr A's diagnosis of a viral illness with alcohol effects was a reasonable diagnosis based on the information obtained by examination. I acknowledge Mr and Mrs B's concern that Dr A did not order an ECG to rule out the possibility of a cardiac cause for Mr B's symptoms. However, the comments made by

my expert advisor concerning the use of testing and ECGs with patients with an apparent low risk are important when considering Dr A's decision not to undertake further cardiac tests on Mr B. On the information available, none of my advisor's six GP colleagues consulted for their views on this case-scenario would have performed an ECG or other tests to further assess heart disease. This is relevant because I need to assess Dr A's actions against the standard of his peers.

*Consultation on 28 February 2005*
On presenting to Dr D on 28 February, Mr B reported to the triage nurse "crushing chest pain and difficulty breathing". Dr Searle's advice clearly highlights the different clinical scenario Mr B presented to Dr D, including the change in nature and severity of Mr B's chest pain. In particular, the language used to describe Mr B's symptoms at the consultation with Dr D on 28 February is very different, and indicates that Mr B's symptoms changed 10 hours previously. Dr D appropriately conducted an ECG and blood tests on the basis of Mr B's presentation at that time, and transferred Mr B to the public hospital for further assessment and treatment of his chest pain.

*Conclusion*
In conclusion, Dr A's assessment of Mr B was reasonable and appropriate in the circumstances. In hindsight, Dr A's diagnosis was incorrect but that does not mean that the conclusions he reached at the time of his examination were inadequate. As noted by my advisor, no assessment protocol or constellation of tests is totally accurate in diagnosing acute coronary syndrome, and Dr A's failure to detect a cardiac cause for Mr B's condition on 26 February 2005 does not necessarily mean that his care fell below a reasonable standard. Often patients present with a range of issues to discuss with the doctor and it is the elimination of 'red herring' symptoms which allows the correct diagnosis to be made. Sometimes, as in Mr B's case, symptoms are attributed to a more obvious source that masks the real issue. Later, the major symptoms may alter and become more obvious in their presentation, as they were when Mr B presented to Dr D two days after his appointment with Dr A.

Dr A's examination was extensive and his diagnosis reasonable in the circumstances. Accordingly, in my opinion he did not breach Right 4(1) of the Code.

## Opinion: No Breach — The First Medical Centre

*Triage*
Mr and Mrs B complained that the length of waiting time at the Saturday open clinic was excessive in circumstances of chest pain. This posed the question whether triage facilities should have been in place. Dr Searle has provided extensive evidence concerning whether triage facilities within a practice such as the first medical centre are appropriate and realistic to operate (see appendix 2). I accept his advice that it is not necessary for a health centre such as the first medical centre to have a formal triage or

patient assessment system in place. However, once a patient arrives at a health centre, staff have a clear responsibility to ensure that patients are seen in a timely manner. As noted by my advisor, an emergency case can present at most health facilities, and therefore there should be some system for responding. Patients cannot be expected to assess their own medical priority without some guidance. There also exists the possibility of a patient's symptoms suddenly exacerbating while waiting. In my view it would be helpful to have clearly visible signs informing patients to tell staff if they have difficulty with breathing, chest pain or uncontrolled blood loss. The attending health professional can then decide whether a patient is a priority.

Mr and Mrs B attended a routine Saturday surgery where patients were seen in their order of arrival. Dr A was the sole medical member of staff on duty and was not made aware that Mr B had chest pain. Although Mr B's symptoms were assessed by Dr A to have been non-life-threatening, the scenario could have been different if Mr B had been presenting with the increased symptoms he developed over the next 24 hours.

In my opinion the centre did not breach the Code by not having formal triage facilities in place. I note that the centre now has signs asking patients to alert staff if they have chest pain and/or shortness of breath.

*Vicarious liability*
Since in my opinion Dr A did not breach the Code, no issue of vicarious liability arises in relation to the centre. However, I draw the centre's attention to the comments made by my advisor about the need to use this case to improve its systems for reducing errors. In particular, my advisor commented that the centre could, in addition to a change in the hard drive, consider a system for detecting the absence of clinical notes for patients who have been seen, and could also evaluate its policies for reviewing patients representing for the same illness.

## Other Comment — The First Medical Centre

*Record-keeping*
In accordance with Right 4(5) of the Code, every patient has the right to co-operation among providers to ensure quality and continuity of services. Accurate and contemporaneous documentation is an essential tool for providers to communicate clearly about services provided, to ensure quality of services and continuity of care for patients. This is clearly reflected in many medical professional guidelines, including the Medical Council's publication "Good Medical Practice — A Guide for Doctors" (2004). When previous consultations are accurately recorded in a patient's records, then past history and interventions can be considered in evaluating the patient's current condition.

In this case, Dr C's consultation notes from 22 February were unavailable to Dr A when assessing Mr B on 26 February. The notes had been lost due to a computer malfunction. While it is difficult to conclude whether the care Dr A provided would have been different if the notes from the 22 February consultation had been available to him, the loss of a contemporaneous record has been unhelpful in reviewing Mr B's presenting condition on 26 February. Medical centres should instigate appropriate systems to mitigate the risk of technological failure. This may include, for example, having back-up systems in place so that computer-generated material is not lost at times of computer malfunction, and adequate systems to ensure that any malfunction is detected immediately. In this case, the loss of Dr C's records were noted only when the complaint was received. A delay of two weeks should not have occurred before the loss was detected.

The centre has recognised and responded to the problem by changing the hardware configuration on its computer system. I am satisfied that the centre has appropriately addressed the issue of documentation and risk management.

## Actions taken

*Dr A*
Dr A has acknowledged his incorrect diagnosis and apologised in writing to Mr and Mrs B. He has reviewed his practice with his peers and with expert consultants in the field of cardiology and also undertaken further study on the assessment of chest pain in a general practice setting.

*The First Medical Centre*
The centre has identified and rectified the error in its computer system. Clearly visible signs asking patients to inform staff of any symptoms of chest pain or shortness of breath are now displayed in the waiting area of the centre.

## Follow-up actions

- A copy of this report will be sent to the Medical Council of New Zealand and the General Medical Council in the United Kingdom.

- A copy of this report, with details identifying the parties removed, will be sent to the Royal New Zealand College of General Practitioners and to the Accident and Medical Practitioners Association of New Zealand, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.



*Names have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.*

## Appendix 1 — Additional information from Dr Searle

**Note for Commissioner**
In this case I have gone to some length to seek other doctors' opinions and to consider the available evidence. I hope this will be of help to the Commissioner, to patients, and to various health professionals who have to try and help patients with chest pain, and help patients with heart problems who may or may not have chest pain.

**For Doctors seeing patients with chest pain that does not initially appear to be of cardiac (heart) origin.**
Further research into current evidence about one-off large amounts of alcohol consumption and the risk of sudden heart problems may guide doctors into considering investigations in persons with a history of alcohol consumption, that in the absence of alcohol consumption they would not normally perform. The following information might influence doctors' decisions on considering cardiac origin for chest pain in young persons (Ref. 3):[1]

> Epidemiological studies have shown higher rates of alcohol abuse in men younger than 40 with a first myocardial infarction and higher rates of sudden death in heavy alcohol consumers. In addition, alcohol and cigarette smoking have been shown to have additive effects on increasing the risk of coronary death, which suggests both are important factors in the pathogenesis of abrupt coronary occlusion in patients with normal coronary arteries.

It is not yet clear if the research into people presenting with chest pain that has mostly been done in emergency departments and hospitals is applicable to the general practice setting. Also there are some risks of harm from investigating patients so it is not easy to give strong recommendations about what to do or not to do when seeing patients with chest pain outside of a hospital setting. One reasonably practical approach that may prove helpful (but cannot yet be seen to be a compulsory standard of care) is as follows:

> The accuracy of bedside predictors depends on the clinical setting. In the evaluation of stable, intermittent chest pain, a patient's description of pain was found to be the most important predictor of underlying coronary disease. In the evaluation of acute chest pain, the electrocardiogram (ECG) was the most useful bedside predictor for a diagnosis of myocardial infarction. Aside from the extremes in cholesterol values, the analysis of traditional risk factors changed the probability of coronary disease or myocardial infarction very little or not at all. (Ref. 8).

There is a lot of research into chest pain protocols in emergency departments — further research needs to be done in general practice settings as the type of patients

[1] References from Dr Searle's original report appear, variously on pages 15, 26 and 32 of this report.

presenting to general practice are somewhat different to those presenting to emergency departments although there is a large overlap.

In the meantime doctors need to be aware of the problem of uncertainty in the significance of certain symptoms — for example in one study (Ref. 9) there was considerable location/symptom overlap between patients who had cardiac chest pain and those who had non cardiac chest pain.

In addition to previously recognised predictors of cardiac pain, it appears that indigestion or burning type pain is suggestive of cardiac pain rather than not suggestive of it in patients attending the emergency department with acute, undifferentiated chest pain. (Ref. 11)

**For [Dr A].**
I think his letter, 27 July 2005, shows a good standard of care in that he has carefully looked at the case and considered if anything should have been done differently. I would agree with most of his comments but despite this case I would not be entirely sure that routinely doing anything more is a good idea. I do consider that the question asked by the HDC "Advice on changes that have been made to relevant aspects of your practice since this incident" is slightly leading in that it could be read as stating that something does need changing — I am not convinced that [Dr A's] practice does need changing in this case. Doing ECGs, and/or blood tests, and/or referring patients to hospital when they have a low risk of their chest pain being cardiac ischaemia is not a good idea because they can be exposed to harm as I have explained elsewhere in this report. I would caution him to not overly change his practice based on this one case. I would note however that most doctors who become aware of an adverse outcome wonder what if anything they could have done differently regardless of their standard of care — this is an entirely understandable human nature type of reaction. However more research is needed on unusual presentations of chest pain and how best to deal with them without exposing patients to unnecessary risk of harm from further tests and keeping up with the outcome of such research is probably better than altering practice based on one case of missed myocardial infarction. Possibly in the event of chest pain with a history of acute alcohol consumption where the history might be unreliable (although not necessarily in this case) and where there is some evidence of risk of coronary artery spasm with alcohol consumption then ECGs and further tests might need consideration but further evidence and guidelines on this are needed. If ECGs are taken more often in patients with a low risk presentation then care needs to be taken with any subsequent management of 'positive' ECGs as they may be falsely positive.

**For Patients and doctors and nurses in general.**
It is always difficult when persons present with more than two problems at once. This is particularly so if they seem unrelated, and particularly if what turns out to be the more serious problem was not the first, or the obvious problem they presented with. Both patients and doctors and nurses need to be aware of this problem, and ensure that either all problems are dealt with on the day and/or appropriate follow up advice is

given on when to get other problems checked. In this case it seems clear that unwellness and/or chest pain was present at the time the patient presented with a leg injury and it is possible that a more detailed assessment of the patient other than for the leg injury was desirable.

Patients in particular need to be aware that doctors and nurses can be put off the scent or distracted by assessing several things at once, and whilst they need to know about all things at once, as they are sometimes related, it is also important that if only one of several problems is sorted out that the patient obtains specific advice about follow up of the other health problems — doctors and nurses also need to be prepared to assess multiple things at once and/or advise the patient on when to get further advice or assessment on each problem. This may of course be complicated by time and funding issues (both various types of government funding and the patient's ability to pay for extended or multiple consultations in one day) — consideration may have to be given to referring such patients to a service they can afford.

**For doctors, nurses and all medical facilities re possible loss of computerized notes.**

Clearly the medical centre involved and [Dr C] have taken appropriate steps to ensure notes are not lost. Some computer systems can at the end of the day detect if a patient was seen (e.g. from the appointment book, or the accounting system) but no notes were recorded — I would suggest that [Dr C] and [the centre] look into this possibility as it is fairly easy for this to become a routine end of the day, or start of the next day, routine task to pick up on lost notes so they can be reconstructed later on the same day or the next day rather than several days or weeks later.

The reconstruction of the notes for the consultation on 22 (or 23rd) of 2/05 was entirely proper — once the absence of notes is found an attempt to make notes is correct — computer systems now record when such notes are made, and in this case it was a good practice to write "Notes written in retrospect as initial consult lost" as it clarifies the issue of the timing at which notes were written. This is a good standard of care that both [Dr C] and [the centre] have provided (given the initial note was lost).

**For [Mr & Mrs B].**

It is understandably frustrating that his heart problem was not diagnosed early. It is possible if an ECG and/or other tests had been done sooner that his heart problem might have been diagnosed earlier (although it may not have been — early on ECGs can be normal). However the final outcome of an episode of care (e.g. delayed diagnosis) being undesirable does not necessarily mean he received a poor standard of care (Ref. 1). I think it is good that a complaint was made — this allows helping the health providers involved and other health providers review what if anything should have been done differently in a similar situation. This is a positive aspect of 'complaints'.

I have made some recommendations for him and his doctors to consider that I have kept separate to this report as I think this case has significant learning opportunities for everyone involved and I do not want specific health issues for [Mr B] that I have come across in the process of making this report to distract from my findings.

In reply to some particular issues raised by Mr & Mrs B;

<u>You simply can not assure someone they are not having a heart attack by examining them with a stethoscope and not having done any kind of tests whether it be blood tests, ECG's etc!</u>

Whilst there is some truth in this, the problem is that even with these tests there are patients who have a heart attack with normal ECGs and other tests. Also doctors have the dilemma of trying not to expose patients to tests where the results can be false but trigger more risky investigations and treatments — sometimes patients have died from tests and treatments and were found to not even have a serious underlying problem such as a heart attack. Hopefully my explanations elsewhere in this report clarify this.

<u>Is it not better to send someone on a wild goose chase and have a negative result than do what [Dr A] did and play with someone else's life?</u>

The problem is that the wild goose chase can have substantial risks such as strokes and even death. Who wants to go on a wild goose chase, get injured and not even catch the goose, and possibly still not know if there was a goose or not in the first place? In fact with similar patient presentations doing lots of tests can be playing with someone else's life more so than not doing the tests. Doctors have the difficult task of deciding if patients' symptoms are sufficiently concerning enough to risk doing tests. They have to allow for the direct risk of the tests (which may be very small or nil) such as taking an ECG, but also have to allow for the indirect risk of the test (the risk of further investigations and/or treatment which can be very serious such as strokes or even death). Additionally doctors have to consider the risks of the test being falsely normal and falsely reassuring both the patient and themselves. Unfortunately 'negative' results are not always accurate and 'positive' results are not always correct either.

I trust that the detailed explanations I have provided helps both [Mr and Mrs B] to understand the issues in more detail and help doctors consider how better to work out which patients need further tests and which don't. Until more research is done, the exact best course of action depending on which symptoms and examination findings are present in particular patients will not be precisely known. We are getting better at detecting heart problems but even with the most reliable tests (e.g. angiograms) it is possible for patients to have normal results and still get heart attacks (e.g. from spasm in a normal artery). Doctors try to take due care in deciding when to test and not to test and how to interpret results but it is just simply not possible to get it 'right' 100% of the time. The good news is that fewer and fewer people are dying from heart problems and those that have heart problems are getting better and better treatment. I believe we are also getting better and better ways of combining tests to improve our

ability to detect heart problems in someone with possible symptoms of heart problems. But we are not going to be able to be 100% accurate in the foreseeable future. However by conducting more and more research in different clinical settings we can continue to improve and approach 100% accuracy.

**References (not included in reference list on page 16)**

9) American Journal of Medicine 2004; 1;117(5):334–43. Bedside diagnosis of coronary artery disease: a systematic view. Chun AA, McGee SR.

11) Q J Med 2003; 96: 893–898. Clinical predictors of acute coronary syndromes in patients with undifferentiated chest pain; Goodacre SW, Angelini K, Arnold J, Revill S, and Morris F.

## Appendix 2 — Comments from Dr Searle re Triage

**Sorting out what to do — when & where and the concept of triage.**
Sorting out if a person should been seen, and how quickly a person should be seen, for a particular problem and by whom (e.g. ambulance officer, doctors of various types, nurse of various types), and at what location (e.g. GP surgery, accident and medical clinic, or a hospital emergency department, or some other option), is not as straight forward an issue as it might at first seem. The first decision for any given illness/injury or health problem is usually made by the patient themselves or their friend(s) or relatives. The next step may be to go to a health provider at some point in time convenient to the patient within the perceived necessary time period (in other words a decision has already been made about how urgent the problem is and how soon they should seek attention). At this stage they may even have decided to call an ambulance. If there is doubt they may choose to phone a doctor or nurse or a service such as 'Healthline' (Ref. 6) in order to help with their decision. At the time of this case Healthline may not have been available and I am not suggesting that the service should necessarily have been used but I am trying to illustrate the range of options that either were available then or are available now, and the various contributions to delay in assessment that can occur.

In fact simply rushing to the doctor early in the course of an illness may in fact be unhelpful — it is well recognised that earlier symptoms of some illnesses (for example meningitis) can be like many other illnesses such as viral flu-like illnesses. Seeing the doctor earlier will result in symptomatic treatment and advice on what to watch for in case a more serious illness does develop — it may be that patients already have this knowledge and may prefer to wait and see doctors at a later point in time. There are various risks of course such as waiting too long and certainly if there is doubt patients should see a doctor sooner rather than later. However sometimes if they are told at a particular point in time when they are seen that there does not appear to be a serious complication they may be falsely reassured. Despite advice being given to return should things get worse or change for various reasons they may not want to return or they may delay going back to the same or another doctor for another consultation. This is not necessarily what happened in this particular case but needs to be discussed in the context of the complicated issue and process of patients being seen once or several times in the course of an illness. Preferably they are seen at the right time and in the right place by the right health professional. Sometimes there is an overlap between different health professions and facilities. This overlap is probably a good thing so that patients don't fall into the gaps. Many illnesses are seen either at an Emergency Department or a GP surgery or in accident and medical or after hour's clinics and there is much discussion on trying to get patients to go to the 'right' place. Until the patients are seen and fully assessed by a doctor it may not be possible to reliably decide on what needs to be done and where and by whom (and even after they are seen it may not always be clear cut). It is well recognised that assessment/triage to prioritise a patients care within a facility is different to that needed to send them away to another facility (Ref. 8) and to do so safely requires a lot more time effort and resources.

Even Healthline (Ref. 6) will not always recommend patients go to the correct facility when compared to their final diagnosis — but this is because it appropriately has a cautious approach to try and avoid patient harm. In many situations around New Zealand there may only be the choice of one or two health providers — local doctor/nurse and/or ambulance service being a common situation.

From my experience most members of the public get the initial decision of who to see right most but not all of the time.

Another consideration when thinking about triage both before arrival at a health care facility and triage after arrival is the concept of 'barriers' to health care. Barriers to care include cost of service, physical access to services (e.g. transport availability and cost), waiting times (both to get an appointment, and the wait to be seen once at the health facility), knowledge of when to be seen or not for a particular illness and knowledge about self care, and perceived reactions of health professionals to the presentation — for example some patients are concerned that doctors will be upset if they come in too early or too late for any given illness — and paradoxically the longer they wait the less likely they are to want to come in, or sometimes they are worried the doctor will think they are a 'hypochondriac' — these are all complex issues and can include the influence of past experience(s) with doctors. My own personal experience with a couple of significant illnesses tells me that even with a lot of medical knowledge it is fairly easy to seek medical attention both too early and too late both initially and with subsequent visits for the same health problem. The other point here is that I am not trying to say it is the patients or relatives at 'fault' — but rather that complex issues occur — for example if every time you seek medical attention you have to go to a clinic or emergency department and wait for hours it is likely that you will think twice about going back the next time — it may be that the health system has to come up with better alternatives than the currently available forms of health care (this would need careful research and piloting to avoid making things worse) and ultimately we may have to find ways of getting around the current problem of a shortage of both doctors and nurses. One danger is that we divert doctors and/or nurses into providing triage services when it is probably more efficient just to get on and see the patients in a timely manner — triage may in most situations have a slight chance of improving the outcome of one or two patients but may cause overall harm through inefficiency of use of scarce health professional resources.

Having discussed briefly the complexities of the decision about when and where to get seen it should be apparent that many delays can occur before the patient arrives at the clinic — these may often outweigh the delay that occurs once they arrive at the health facility. However once the patient arrives at a health facility there is clearly some responsibility for the health facility and its staff to treat patients in a timely manner. Decisions about this usually refer to the concept of 'triage'. It may be that the types of patients that present at a health facility mean that triage is usually not necessary but at just about any health facility an emergency case can arise and there should be some method of dealing with this. If there is regularly the possibility of a wait beyond a

reasonably safe period of time for the type of conditions that present to a health care facility then formal triage may well be required — but deciding as to if this is the case is not clear cut. Which system of triage is best in which facility and at which times is not a simple thing to decide upon. These issues will be discussed in the next section.

**Triage Issues**

'Triage' has various definitions but a reasonable one is "the sorting of patients based on the need for treatment and the available resources to provide that treatment" (Ref. 7). As a result of triage, patients may be seen straight away or wait for some time depending on what the triage, process suggested was their level of urgency and depending on what resources (nurses and doctors) are available. Whilst it may seem like a good idea that triage should always occur, it may not be a good idea or it may have to be applied in a different manner for a number of reasons including:

- If there is no waiting time to see a doctor it is not really needed and/or it may cause further delays.
- If all the patients are likely to not be emergencies it is probably best to get on and see them rather than diverting resources to 'triage' when they could be used to instead to see people more thoroughly and finish the job. For example in an accident and medical clinic it is likely that more urgent cases have either called ambulances and been taken to the local hospital emergency department or that they have gone there directly themselves.
- It may increase the overall resource needed to see patients and not actually improve overall patient care — you may need extra staff and or rooms and equipment to do the triage. This can have adverse consequences including cost of the service to the patient, increased waiting time for some patients and subsequent reluctance of patients to re-attend for the same or a different problem in future.
- Nurses and doctors are trained to see people in a thorough manner (for example taking histories and examining patients in some detail and ordering tests when necessary to come up with a likely final diagnosis and treatment plan) and asking them to change and assess patients in a rapid manner for a different purpose is problematic and requires different special training.
- Triage may have to be different in different situations — for example if there are multiple casualties (where the number of patients and the severity of their conditions do not exceed the ability of the facility to render care, there is a different approach to triage than when there are 'Mass Casualties,' where the patients and the severity of their conditions do exceed the capability of the facility and staff.
- It may well be a reasonable assumption that patients who present to New Zealand accident and medical clinics and general practice facilities are patients who have decided not to go to an emergency department and not to call an ambulance and that triage may not usually be needed. It may be that simple questions at reception or posters on the wall advising patients that if they have an urgent health problem they should bring it to the staff's attention rather than simply waiting in turn to be seen — we need more research and evidence to make decisions about this. It may also be that the way 'triage' is done after the patient arrives in each facility depends

on local issues such as availability of other services and historical patterns of patient behaviour — some clinics may need formal triage and others may not.

It is problematic to decide what is the best way to see patients and what type of triage if any should occur. Most of the evidence on triage is based on studying patients in emergency departments attached to or within public hospitals rather than in accident and medical or after hours clinics that are separate to hospitals — however some of the evidence is likely to be applicable to such clinics. For example patients who walk into emergency departments are more likely to be similar to accident and medical or after hours clinic type patients than those who are taken to emergency departments by ambulance.

In emergency departments the way triage works for patients who walk in is under extensive review. For example instead of having all patients who walk into emergency departments being seen at the triage area first if they are directed to reception first more timely patient flow occurs and there is less confusion and it is also safe provided delays at reception are not more than 15 minutes (Ref. 1). There are other advantages to being seen at reception first, such as the paperwork and administration generally being sorted out (flow on benefits for patients and also more efficient use of health staff such as doctors and nurses who subsequently see the patients — it can be a waste of nursing resource for them to do the initial clerking of the patient at triage for example). Also patients have reported to me that they prefer being seen at reception first from their experience as this gives them more 'psychological relief' (patients' words not mine) than having to wait in a triage queue (queues do occur at triage when the triage system is overloaded). It may be that the best system is that when a 'queue' exists at triage that the receptionist sees and clerks patients before they join the triage 'queue' (this would apply for walk in patients rather than patients brought in by ambulance).

Another approach is to try and see patients first at the time they would have been at triage (i.e. see them straight away rather than 'triaging' them). This is instead of using the same staff used later on after patients have been triaged (Ref. 2). This approach found that by using a senior clinical team (an experienced senior doctor and an experienced senior nurse) for initial patient consultation, the numbers of patients waiting fell dramatically throughout the ED. This suggests that taking staff away from work seeing patients after they have been triaged and instead getting them to see patients as they are triaged (or instead of triaging them) may be a more effective use of staff resources and benefit all patients in terms of waiting time. A New Zealand study along similar lines that controlled for overall staffing levels showed that the rapid management of patients with problems which do not require prolonged assessment or decision making is beneficial not only to those patients, but also to other patients sharing the same, limited resources (Ref. 5).

Even if Triage does take place there is then a further problem of trying to get the triage 'correct'. Triage is problematic in that patients can be prioritised as too urgent or not

urgent enough compared what more full medical assessment finally shows. This problem of under or over 'triaging' can lead to direct consequence for the individual patient if under triaged (being made to wait too long) or indirect consequences to other patients who might be made to wait longer because the patient was 'over' triaged. These consequences in the case of being made to wait can be serious including death (Ref. 10, 11).

With telephone triage attempts to have standardised computer aided systems of triage do not necessarily overcome this problem — a comparison of different systems showed there were large differences in outcome between nurses using different software systems to triage patients (Ref. 3). Some of these problems just end up being accepted (it is generally accepted that it is safer to send a few patients unnecessarily to urgent medical care than to miss an urgent patient and tell them to wait for less urgent care). Studies have been done to show that the current NZ Healthline type phone advice system is safe (Ref. 4). Healthline is useful for patients where they cannot get in touch with their own GP in a timely manner (for example after hours). What we don't know is if they should use Healthline when they can get hold of their own GP. It is possible that their own GP who has the advantage of knowing the patient and/or access to their medical record could 'triage' phone calls better than Healthline but we cannot be sure about this at present. What is now needed are a number of good research studies to show what, if any, triage systems should be used outside of hospital emergency departments, and outside of phone call advice considering both when usual health care providers are available and not available. Similar research also needs to be done for triage occurring at health care facilities that are not emergency departments as well as those that are emergency departments.

When patients turn up at GP surgeries or after hours surgeries or accident and medical clinics with apparently urgent problems there may need to be systems to deal with the problems. If such problems are rare then common sense may be enough — for example if a serious injury occurs just outside the facility then the duty of care over-rides the care of booked-in or routine patients and the facility will direct doctors and nurses to the patient(s) providing care until it is clear that either the facility can deal with the patient or they can be sent elsewhere or an ambulance arrives etc. It is not clear if receptionists can recognise patients ultimately triaged to emergency categories (or diagnosed as an emergency) but it seems likely for walk in patients that harm is unlikely to occur from having them see patients first (Ref. 1).

It may be that the best approach is to only triage walk in patients who state their problem is urgent — but we need good research on this topic. At present this approach is reasonably common in accident and medical clinics and after hours clinics around NZ. It occurs every day in general practice when patients either phone general practice surgeries or walk in and ask for appointments. Thus it is established practice and to change this needs great care. The health system would become overloaded if every appointment was required to be triaged by nurses for example. For patients who do not state their problem is urgent it is reasonable for them to wait in the manner that

is usual for the health care facility concerned. Some approaches taken for bringing it to patients' attention that they need to tell staff if they have an urgent problem such as chest pain or they are very unwell include having large signs up at reception and in the waiting area advising them of this fact. It is not reasonable or appropriate in many of the health care facilities to triage everyone — there are many reasons including:

- Staff could be better used doing tasks other than triage.
- Lack of physical space for triage to occur and risks of breach of privacy — some patients may not want to tell another person (nurse at triage) about their condition (e.g. sexually transmitted infection) and just want to see a doctor, some facilities may not be able to have a confidential area for triage without using up a room that is already used at busy times for seeing patients.
- Staff trained in triage may not be available.
- Staff trained in triage may have been trained for triage that is appropriate in one setting (e.g. emergency departments) that is not necessarily appropriate in another setting (in accident and medical or after hours clinics).
- As already discussed it may worsen overall care for all patients at the time (more overall delay for all patients) and put patients off coming back due to the extra waiting overall.
- It may worsen patients' individual care if the triage is incorrect.
- We may not improve patient outcomes beyond the decision they have already made — in other words for the few times that patients have come to the wrong place at the wrong time adding in triage may not actually improve overall care.

**Other Approaches.**
Waiting times can be addressed by a variety of measures that include better matching of staff to patient workload. It is well recognised that patients attend more between the hours of 10am and 2pm than earlier in the morning for example — staffing rosters can be made to reflect this and help reduce waiting times (Ref. 9). It is beyond the scope of this report to consider the matching of staff to patient workload but the clinic may want to consider this in their review of this case — for example it is probably unreasonable/impossible to employ an extra doctor but it may be possible to employ a nurse/extra nurse for a few hours in the evenings or weekends to correspond to busy times.

At present after hours care is being reviewed nationwide and it is possible that if different 'rules' or 'policy' is applied to emergency departments in terms of access to care for patients with apparently less urgent conditions that problems could occur and the nature and type of patients presenting at other clinics could change. Also the funding of care may change which may either increase or decrease the workload of clinics or it might change the type of workload. This may well mean that current or future policies of clinics with respect to staffing arrangements, physical facilities and equipment and triage might have to change.

Second visits for the same problem may need more urgent priority than first visits. I am not aware of any research on this approach. It seems like a good idea but care is required. Other possibilities could include reducing the fee the patient pays for second visits but this is problematic as they often take longer than first visits and take more staff and resources (Ref. 9) and hence cost more. Each clinic would need to review this based on re-attendance rates and types of patient problems involved but it may be this provides a good safety net for doctors giving advice for patients to self monitor their conditions over time — if patients are reluctant to come back because of cost this could over ride the safety net value of such follow up advice.

**References.**

1) Emerg Med J 2001; 18:441– 443; Should ambulant patients be directed to reception or triage first? S Goodacre, F Morris, B Tesfayohannes and G Sutton

2) Emerg Med J 2004; 21:537–541 Making an IMPACT on emergency department flow: improving patient processing assisted by consultant at triage; J Terris, P Leman, N O'Connor and R Wood

3) Emerg Med J 2003; 20:289–292; NHS Direct: consistency of triage outcomes; A O'Cathain, E Webber, J Nicholl, J Munro and E Knowles

4) NZMJ Journal of the New Zealand Medical Association, 11 July 2003, Vol 116 No 1177; Giving emergency advice over the telephone: it can be done safely and consistently; Geoffrey Hughes

5) NZMJ Journal of the New Zealand Medical Association, 02 July 2002, Vol 115 No 1157; Effect of a rapid assessment clinic on the waiting time to be seen by a doctor and the time spent in the department, for patients presenting to an urban emergency department: a controlled prospective trial; MW Ardagh, J Elisabeth Wells, Katherine Cooper, Rosa Lyons, Rosemary Patterson, Paul O'Donovan

6) Healthline 0800 611 116; http://www.moh.govt.nz/healthline Healthline provides:

- an assessment of medical problems with advice on the most appropriate level of treatment and a recommended timeframe for doing so
- advice on self-care and symptom management
- advice on the prevention of illness
- health information, for example information about diseases
- information about availability and location of services
- referral connection to other emergency services

7) Advance Trauma Life Support for Doctors, American College of Surgeons Committee on Trauma, Student Course Manual, 1997, ISBN 1-880696-10-X

8) Triage; http://www.emedicine.com/emerg/topic670.htm#top; Robert Derlet, MD,

9) Personal experience with local after hours clinic and discussion with management.

10) Personal knowledge of a few cases in a local emergency department where patients have been 'triaged' to non-urgent and left the department before being seen and subsequently died out of hospital or re-presented at too late a time in the illness for death to be prevented.

11) Part of case summary — "that night she presents to ED, is triaged as non-urgent, and leaves before being assessed. At home, she tragically collapses and dies"; Complaints, hindsight bias, and the short-circuit of grief into grievance; Hamish Wilson, New Zealand Family Physician (NZFP) Volume 32 Number 5, October 2005