A District Health Board

A Medical Centre

General Practitioner, Dr C

General Practitioner, Dr D

A Report by the

Health and Disability Commissioner

(Case 01HDC08153)

Parties Involved

Ms A	Consumer
Ms B	Consumer's mother
Dr C	Provider / General Practitioner, the Medical Centre
Dr D	Provider / General Practitioner, the Medical Centre
Dr E	Provider / Medical Officer, the Public Hospital
Ms F	Provider / Emergency Department Nurse, the Public Hospital
Dr G	Complaints Coordinator, the Medical Centre

Introduction

Ms A was a 38-year-old woman who was evidently much loved and admired by her friends and whanau. She had a daughter, Miss A. This report is about the medical treatment Ms A received in the fortnight before her tragic death. At the outset, I wish to extend my sympathy to Ms A's whanau for their loss.

Ms A's situation is one that many doctors must fear – a patient who presents with common, but severe, symptoms but who is actually suffering from a life-threatening condition. In Ms A's case, it was later found out that, at the time she was seeking medical assistance, she had suffered a subarachnoid haemorrhage, where a brain artery bleeds into the space beneath the arachnoid membrane covering the brain.

Subarachnoid haemorrhages are always life threatening. In Ms A's case, while she appeared to make some improvement after being transferred to another Public Hospital, on 6 June 2001 she sadly died from complications arising from the original haemorrhage.

The purpose of this report is not to determine whether Ms A's life *could* have been prolonged or saved by any particular intervention earlier. The issue is whether the doctors exercised reasonable skill and care in diagnosing and responding to Ms A's symptoms.

Complaint

The complaint from Ms A's whanau (forwarded by a Health and Disability Advocate and received by the Commissioner's Office on 23 July 2001) was summarised as follows:

Emergency Department, the Public Hospital
The staff at the Emergency Department failed to provide services of an appropriate standard to Ms A. In particular:

- *A doctor failed to diagnose a brain haemorrhage or stroke when Ms A attended the Emergency Department on 23 May 2001;*

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- *When Ms A's mother called the Emergency Department on 30 May 2001, the nurse who spoke to her failed to recognise the seriousness of Ms A's condition and failed to respond appropriately.*

The Medical Centre

- *On 1 June 2001 the Medical Centre failed to provide services of an appropriate standard to Ms A and, in particular, when Ms A's mother telephoned the clinic on a number of occasions, staff at the clinic failed to recognise that Ms A required urgent medical assistance and failed to respond appropriately to the calls.*

Dr C

Dr C failed to provide services of an appropriate standard to Ms A. In particular, Dr C failed to follow up on blood tests taken on 25 May 2001 in order to further investigate the cause of Ms A's symptoms.

Dr D

On 30 May 2001 Dr D failed to provide services of an appropriate standard to Ms A and, in particular, when Ms A's mother called her in the evening, Dr D:

- *failed to appreciate the seriousness of Ms A's condition*
- *failed to herself further investigate the causes of Ms A's symptoms or whether she requested urgent medical assistance*
- *failed to refer Ms A to another practitioner for further immediate investigation of her symptoms.*

Information Reviewed

- Complaint referred from Advocacy Network Services Trust, dated 17 July 2001
- Letter from Ms A's whanau, dated 3 July 2001 to the District Health, enclosing a detailed chronology of the circumstances leading up to Ms A's death
- Response to the complaint from Dr D, the Medical Centre, dated 20 November 2001
- Response to the complaint from Dr C, the Medical Centre, dated 28 November 2001
- Response to the complaint from Dr G, the Medical Centre, dated 28 November 2001
- Medical records from the Medical Centre
- Response to the complaint from the Quality Coordinator, District Health Board, dated 25 March 2002
- Medical records from the Public Hospital
- Medical records from a second Public Hospital

Independent expert emergency medicine advice was obtained from Dr Geoff Hughes, emergency medicine specialist.

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Independent expert general practitioner advice was obtained from Dr Jim Vause, general practitioner.

Information gathered during investigation

On 23 May 2001, over a two-hour period, Ms A experienced stomach pains, diarrhoea and vomiting. In addition, she experienced dizzy spells and headaches, and her family informed me that she told nursing staff she had a patch of numbness under her left eye.

The Public Hospital Emergency Chart notes that Ms A arrived at the Emergency Department on 24 May 2001 at 0010 hours. The triage notes made by a staff nurse state:

> "Tonite 2100 hrs Mild Abdo pain central Diarrohea x3 Vomiting x6 Now bile, Headache 9 All over headache Beef chow mein for tea."

Routine observations were taken. Ms A's blood pressure was noted to be slightly elevated. It was monitored and settled over the next hour. Her pupils were noted to be equal and reactive.

Ms A was seen by Dr E in the Emergency Department at 12:20 on 24 May 2001. Dr E recorded Ms A's presenting complaint as:

> "Well until 9pm when had mild crampy abdo pain – then had D x3, V x6. No blood in vomit / diarrhoea. Ate chow mein for dinner. No one else unwell. Everyone ate same food. No further abdo pain."

A clinical examination revealed that Ms A had a heart rate of 70, her blood pressure was 180/90, temperature 36.9, and her abdomen was soft and non-tender. There was "no meningism".

A diagnosis of gastroenteritis was made on the basis of the history of vomiting and diarrhoea. It was thought the takeaway meal that evening could have been responsible. Although not noted in the medical records, the District Health Board informed me that Ms A's headache was attributed to mild dehydration, as confirmed by the fact that an IV saline drip was inserted.

At 12:40am Ms A was started on one litre of intravenous fluid. Ms A was also given codeine for pain relief and Maxolon to stop her vomiting.

At 1:00am the nursing notes record that Ms A was not vomiting and her headache was mild. She was given paracetamol and Tilcotil (a non-steroidal anti-inflammatory). At 1:30am the notes record that Ms A was "settled" and was happy to go home.

At 1:45am Ms A vomited again although 15 minutes later at 2:00am the notes record her as wanting to go home. A urine test was performed, and on the basis of the results it was thought Ms A might also have a urinary tract infection. Accordingly, she was given antibiotics.

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Dr E agreed that Ms A could go home. At 2:30am Ms A called, advising that she had vomited at home. The Emergency Department telephone records note that Ms A was advised to come back to hospital if she did not settle at home, and that Ms A was happy with this advice. The telephone record notes that Ms A's headache was only mild, and that she wanted to sleep.

There is no mention in the clinical notes of the facial numbness that Ms A was apparently experiencing when she presented to the Emergency Department.

In the letter of complaint, Ms A's family informed me that during the day of Thursday 24 May, Ms A had mild headaches, and used wheat bags and painkillers to ease the pain.

Visits to general practitioners
On Friday 25 May, the headaches persisted and Ms A saw Dr C at the Medical Centre.

Dr C informed me that when he saw Ms A on 25 May, he was unsure of the cause of her symptoms. Dr C recalled some discussion about what could be achieved by readmission to hospital, and he offered her that course of action. Dr C considered gastroenteritis to be the most likely possibility but, as there was still some uncertainty, he ordered blood tests in an attempt to provide some diagnostic pointers.

Dr C documented his examination of Ms A in his clinical records:

> "Bp ?190/120 ?190/100 3rd reading 150/80
> Temp 37
>
> Sore head and vomiting
> All over head
> Feeling hot and sweaty with it
> No visual disturbance
> Has twitchy R eye with it
>
> No other pains with it
> Started with abdominal pains Wed[nesday], attended A&E apparently dehydrated
> Also has diarrhoea with it, started Wednesday
>
> No urinary symptoms, apparently tested urine at hospital
>
> Has some tablets, didn't take them not sure what they were for
>
> No record of casualty attendance
>
> Diarrhoea settled
> Still vomiting
> Can't keep panadol down
>
> O/e fundi normal
> Cranials normal
> Chest clear

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Heart sounds normal
Soft abdomen ?? suprapubic fullness
Ent ok
Check urine
Bloods

Plan im [intramuscular] stemitil

Paramax after 6 hours, could have pamol meanwhile

Review if no better over weekend. Offered admission but chances are it's a gastric flu bug with dehydration. Nonetheless, we could reconsider the admission option if not improving tomorrow

RX paramax tabs
MedLab"

The following day, Saturday 26 May, Ms A continued to have slight headaches on and off. Her family informed me that she ate and drank very little although she was mobile. The same applied for Sunday 27 May, and again on Monday 28 May. On that Monday Ms A called the Medical Centre to receive the results of the blood tests taken the previous Friday. She was told that the test results were not yet available. Ms A called again on the Tuesday and was told that the results were normal other than a slightly abnormal liver function reading.

In relation to this issue, Dr C informed me that the blood test results did not provide further information to contribute to a possible diagnosis.

During the evening of Wednesday 30 May, Ms A's headaches became very bad again. Ms A's mother, Ms B, called the Medical Centre. As it was closed, she then called the Emergency Department at the Public Hospital. Ms B informed the person to whom she spoke that her daughter was suffering a bad headache, and was told to contact either her daughter's own general practitioner or the emergency doctor. The following record of the phone call was recorded in the Emergency Department attendance book:

> "Calling about another lady who has 'a bad headache'. HX [history] of this before. Requesting to speak to […, ED nurse]. Advised to call GP."

The District Health Board said that the advice given to Ms B to call Ms A's general practitioner was in accordance with the Emergency Department triage protocols.

Ms B then rang the Medical Centre doctor on call for that evening, Dr D. Dr D informed me that she did not make a written record of that telephone consultation, as it is not the policy of the Medical Centre to record calls taken from home.

Dr D obtained a comprehensive history of Ms A's illness, what investigations had been done and what treatment had been given. Dr D informed me that Ms B described a "fluctuating course of headache, vomiting, diarrhoea, and had been told at A&E that it was likely due to a urine infection". Dr D recalled being told that the headaches had not been

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as bad over the previous two days but were now returning to previous levels. Dr D also recalled being told that blood tests were normal, but that Ms A was still vomiting occasionally despite having been treated for a suspected urinary tract infection.

Dr D informed me that she offered to see Ms A but, as she was unable to do any further investigations given the time of night, she did not consider she would likely to be able to shed any new light on the issue. Dr D told Ms A that she should continue to drink sips and take analgesics regularly, and that she must see her general practitioner in the morning to "get the whole thing sorted out". Dr D informed me that she concluded the phone call by saying that Ms B should call back if Ms A's condition deteriorated.

Dr D's recollection of the phone call is essentially similar to the account given by Ms A's family in the letter of complaint, and I accept that it is an accurate picture of what was discussed.

Following the phone call, Ms B informed me that she called the Emergency Department again, desperate to get some help. The District Health Board has no record of this call. Ms B, however, states that Ms A's file was found, and the person she spoke to also indicated there was little further that could be done, but that Ms A should continue taking painkillers and try boiling some water with some glucose in it to sip. Ms B informed me that she was told to ring back in four hours if the pain persisted.

Ms B informed me that following the phone call to the Emergency Department, Ms A appeared to be more settled.

The next day, Thursday 31 May, Ms A continued to have headaches on and off and was still having very little food or drink. The headaches again worsened on Friday 1 June to the extent that Ms A was "rolling on the ground clutching her head and screaming".

At about 11:00am, Ms B called the Medical Centre, and was told that she could have an appointment for 2:00pm. Ms B then called back and stressed that the situation was urgent. She was told to bring Ms A in and that she could see an emergency doctor. Ms B then tried to get Ms A to move, but she was in excruciating pain and moving her was impossible. Ms B again called the Medical Centre, and explained that she was unable to move Ms A. Ms B informed me that the receptionist then said that she would find a nurse for her to speak to. After waiting a short period with no response, Ms B disconnected and called an ambulance.

The complaints coordinator of the Medical Centre, Dr G, informed me that no staff member recalls taking these calls from Ms B. He stated that had Ms B described the intensity of symptoms as in the letter of complaint, he "can not imagine that one of our receptionists would not have acted urgently". He also explained that if Ms B advised that Ms A was unable to move owing to the pain, he would have expected the receptionist to seek further advice from a nurse or doctor. It appeared that this was what was happening when Ms B disconnected and called an ambulance.

I accept that Ms B made three calls to the Medical Centre. I also consider it most likely that the calls conveyed an increasing level of distress and urgency, and that at the time that

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Ms B disconnected, the receptionist was seeking further advice in response to the information that Ms A was unable to move.

Ms A was taken by ambulance to the Emergency Department and a CAT scan was performed. The scan subsequently revealed that Ms A had suffered a subarachnoid haemorrhage and she was transferred to another Public Hospital.

Sadly, after being transferred, Ms A died on 6 June 2001 as a result of complications arising from the original haemorrhage.

Independent advice to Commissioner

Emergency medicine advice
The following expert advice was obtained from an independent emergency medicine specialist, Dr Geoff Hughes, in relation to the services provided by the Emergency Department at the Public Hospital:

> "I, Dr Geoffrey Hughes, am employed as a Consultant and Clinical Director to the Emergency Department at Wellington Hospital, Capital & Coast District Health Board. I have been asked by the Health & Disability Commissioner to provide a report on a clinical matter regarding a patient [Ms A], who attended the emergency department at [the Public Hospital] in May 2001.
>
> In particular the Commissioner asks me to answer the following questions:
>
> 1. **Were the services provided to [Ms A] by the staff at the emergency department on 24 May 2001 appropriate? In particular:**
>
>   - **In view of [Ms A's] symptoms, including the documentation of headache in the nursing notes, the signs elicited on clinical examination and the tests performed, was the diagnosis of gastroenteritis appropriate?**
>   - **Was the urinalysis reasonable evidence of a urinary tract infection?**
>   - **Should the Emergency Department doctor have initiated further investigations in light of the presenting symptoms?**
>   - **Was it appropriate to discharge [Ms A] home following the administration of medication and intraveneous fluids in the Emergency Department?**
>
> 2. **If alternative courses of action should have been considered or adopted, please clearly outline the times at which these interventions should have been considered or adopted.**
>
> 3. **Was the advice provided by the Emergency Department staff nurse on 30 May 2001 to [Ms B] appropriate? In particular, should the staff nurse have advised**

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that [Ms A] be brought into the Emergency Department for further clinical assessment?

4. **Do I have any comment in relation to the attached triage policies and procedures from the […] emergency department?**

For the purpose of this report and to answer these questions I have been given various papers. These include a copy of the relevant clinical records and various statements from involved individuals.

I will not go through all the specific details of the clinical scenario or the processes involved as these are clearly documented in all of the above papers and I do not see the need to repeat them. I will however refer to them in answering the questions and make general comments.

ANSWERS TO THE SPECIFIC QUESTIONS OF THE HDC

1. **Were the services provided to [Ms A] by the staff at the Emergency Department on 24 May 2001 appropriate? In particular:**

   - **In view of [Ms A's] symptoms, including the documentation of headache in the nursing notes, the signs elicited on clinical examination and the tests performed, was the diagnosis of gastroenteritis appropriate?**

The core basic (standard) requirements to make an accurate clinical diagnosis (or a differential diagnosis) are those of traditional teaching. They include the need to take a history from the patient or a relative, and then examination of the patient, with particular focus on areas or systems suggested by the history. This is followed by the use of special investigations, as indicated by the history and examination.

Initial questions about the presenting complaint or complaints are followed up by more detailed questioning as deemed appropriate. This secondary questioning may be very detailed and focused.

The history is frequently the most useful part of clinical assessment. With an appropriately detailed history often a provisional diagnosis forms in one's mind and the examination confirms the provisional diagnosis. On occasions the history does not lead to an obvious provisional diagnosis and the examination and special investigations become more important and indicative.

With respect to the attendance at [the Public Hospital] on the 24th of May the clinical notes (recording the history taken and examination performed by the doctor) are brief. There is a specific mention of three episodes of diarrhoea and six episodes of vomiting which appear to be related to the eating of a Chinese dinner. This initial medical (doctor's) record does not record information about a headache although it is mentioned in the separate nursing note. The character and description of a headache is crucial to diagnosing it (see below).

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The brief examination notes show that the abdomen, the cardiovascular system, and the chest were examined. There is a brief comment saying 'no meninigism' which indicates that at least some examination of the central nervous system was performed. This written comment suggests that the doctor was aware of the presence of a headache even though she did not document it in the written history (see below).

Generally, patients with acute gastroenteritis have a history of nausea, vomiting, watery diarrhoea and intermittent crampy abdominal pain. Often but not always the vomiting precedes the diarrhoea by up to 24 hours. Localising signs in the abdominal examination are usually absent. Often but not always there is a history of other ill contacts or people around the patient.

Certainly, on the information provided in the notes, the clinical presentation is compatible with a diagnosis of gastroenteritis.

The treatment given (intravenous fluids, analgesics and an antiemetic) is appropriate and reasonable for a diagnosis of gastroenteritis.

I now wish to briefly comment on the nature of headache.

Headache or headpain is an extremely common presenting symptom in emergency departments. I do not have the figures for New Zealand but it accounts for nearly one million emergency department visits each year in the United States. Fortunately the vast majority of headaches presenting to an emergency department are not representative of serious underlying disease. The goal in managing a patient who has a headache in the emergency department is to distinguish the small group of patients with a serious illness who need immediate diagnosis and further hospital treatment from the vast majority in whom the clinical focus is directed towards headache specific short term pain management.

The International Headache Society classifies headache or headpain into thirteen different categories with additional 129 diagnostic sub categories.

Ten Headaches to Worry About

(from The Clinical Practice of Emergency Medicine Edited by Harwod-Nuss 3rd Edition)

1. Single acute headache, characterised as 'first or worse' of the patient's life

2. Single acute or subacute headache with fever unexplained by other systemic illness

3. Single acute or subacute headache with vomiting unexplained by other systemic illness

4. Any headache associated with focal findings, unless focally known to be chronic and unchanged from baseline

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5. Any headache associated with abnormal mental status, unless cognitive changes are known to be chronic and unaltered from baseline

6. Any headache associated with papilledema (specific, not sensitive for increased ICP)

7. Single acute headache with pain on neck flexion, but absent on rotation

8. Subacute headache, unremitting or progressively worsening

9. Acute or subacute headache in the elderly

10. Any headache in the immunocompromised host, especially if HIV-positive or with risk factors for HIV

With respect to the headache associated with sub arachnoid haemorrhage (SAH):

'Although the presentation of SAH is often dramatic, some patients present atypically, and the signs and symptoms may be absent or subtle. A sudden headache occurring days to weeks before the onset of SAH occurs in 30% to 50% of patients. This "sentinel headache" has characteristics similar to those already discussed and may be accompanied by neurologic symptoms, vomiting, nuchal pain, dizziness, or drowsiness; it generally resolves in 2 to 3 days. The headache may be relatively mild and unimpressive, and its severity may be minimised by the patient. Such warning symptoms represent a premonitory "warning leak" that may reflect a minor initial haemorrhage (sentinel headache), enlargement or thrombosis of the aneurysm, isolated haemorrhage into the aneurysm wall, pressure exerted by an unruptured aneurysm, or local ischaemia.'

In this case in […], the details of the exact nature of the headache are not recorded. The inference is that the description is of a non-specific headache similar to that seen in some systemic illnesses, such as gastroenteritis.

On balance, I am not convinced that the headache is a sentinel one. I will come back to this below, in answering the question about further investigations.

- **Was the urinalysis reasonable evidence of a urinary tract infection?**

According to the nursing notes the urine was analysed with a 'dipstick' test by the nurse while the patient received treatment with intravenous fluids. This was probably done as a 'routine' rather than because there was a specific indication from the history and examination to suggest that a urinary tract infection was present. Performing a 'routine' dipstick test is common in clinical practice, especially in patients with abdominal or non-specific symptoms, as with [Ms A].

Dipstick testing can detect a variety of biological products in the urine. The test on [Ms A] detected a 'large' amount of nitrites in the urine.

The detection of nitrates and nitrites is mentioned below:

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(from The Clinical Practice of Emergency Medicine Edited by Harwod-Nuss 3rd Edition)

'Dipstick Chemical Tests / Urine Microscopy

The nitrite test depends on bacterial reduction of nitrate to nitrite. The test is more likely to be positive with gram-negative bacteria. It may be falsely negative in the presence of low-count UTIs, dilution, antimicrobial therapy, and infections caused by non-nitrate-reducing bacteria such as *S. saprophyticus, Acinetobacter*, and enterococcus. While the negative predictive value of nitrite test ranges from 0.27 to 0.70, the positive predictive value is 0.96. Thus, a positive nitrite test strongly suggests the presence of bacteriuria, while a negative test does not exclude it. The leukocyte esterase test detects the presence of neutrophil granules and connotes pyuria greater than or equal to 8 to 10 white blood cells per high-power field. The sensitivity for the leukocyte esterase test ranges from 0.75 to 0.90, while the specificity is more precisely defined as being 0.95. False-positive results have been reported with *Trichomonas*, and false-negative results have been seen in UAs with dipsticks positive for glucose and ketones.

The ease of use and availability of these tests can assist the emergency physician in identifying UTIs. Generally, a completely negative dipstick analysis corresponds to a negative microscopy evaluation, although 5% of UAs with negative dipstick results are found to have abnormal urine microscopy. Urinary microscopy has been shown to change patient management in only 5% of patients, and, therefore, consideration must be paid to both the turn-around time and the cost of each test. A urine dipstick costs approximately 30 cents and takes a few minutes to perform, whereas a microscopic UA costs approximately $12 and takes nearly an hour to complete. For cases in which the diagnosis is clear, a dipstick should suffice. Full microscopic evaluation may be of assistance in the more complicated cases and in cases in which false-negative or false-positive results are expected. Understanding the limitations of the nitrite and leukocyte esterase tests better enables the clinician to decide when to employ microscopic analysis.

Gram Stain

Few institutions employ urine Gram stain, but in places where it is available, it can be very helpful. A Gram stain of unspun urine that reveals 1 to 2 bacteria per high-power field or a Gram stain of spun urine that reveals 20 bacteria per high-power field corresponds to greater than 10^5 colony-forming unites (CFU) per milliliter of urine.

Urine Culture

Isolation and quantification of uropathogens in culture may help differentiate the various UTIs. Asymptomatic bacteriuria requires 10^5 CFU per milliliter of uropathogen cultured from an asymptomatic patient. Counts of 10^5 CFU per milliliter have historically been used in diagnosing acute cystitis and acute pyelonephritis. However, it was found that 30% to 50% of patients with UTIs had less than 10^5 CFU per milliliter of uropathogen on culture. Early or subsiding

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infections, partially treated infections, diuretic use, recent voiding, and obstruction can explain low colony counts ('low-count UTIs'). New standards have been set at 10^3 and 10^4 CFU per milliliter for cystitis and pyelonephritis, respectively. Any symptomatic catheterized patient with greater than 10^2 CFU per milliliter despite pyuria and typical cystitis symptoms.

The vast majority of young, otherwise healthy women with probable UTI do not need cultures or sensitivity tests. Urine cultures should be obtained in any woman with potential for a complicated UTI, acute bacterial pyelonephritis; fever without focus; relapsing UTI; recently treated, documented UTI; fever and neutropenia; indwelling bladder catherization; or sepsis.

Other Laboratory Studies

Patients with urosepsis, acute bacterial pyelonephritis, or complicated UTI should have creatinine assessed, as renal dysfunction may occur with upper tract infections. Old literature speaks of the necessity of blood cultures in the setting of acute pyelonephritis. New literature suggests that blood cultures are unnecessary because they rarely assist with clinical decision making. Blood cultures are positive in 18% to 29% of patients with pyelonephritis, but several studies have shown that the results of the blood cultures never or rarely (less than 2%) affected a change in antimicrobial therapy. Similarly, several studies have shown little or no discrepancy between the organism cultured from urine and that cultured from the blood. Because blood cultures are costly and often do not add to the clinical evaluation, careful thought should be given as to whether they are necessary. In the adult patient with a UTI, blood cultures are recommended when the diagnosis is unclear, when urine culture cannot be obtained (catherization impossible), or when bacteremic seeding of the kidneys is possible (endocarditis). They need not be performed for routine pyelonephritis. Vaginal cultures can be helpful when vaginitis and urethritis are likely, though their results are not available for initial management decisions. A pregnancy test is indicated if pregnancy is possible.

Imaging Studies

Radiologic imaging of the woman with uncomplicated UTI is seldom indicated. Routine imaging of women with pyelonephritis is also not recommended, as 75% of adults with pyelonephritis have normal anatomy. Indictations for emergent or urgent imaging are not clearly defined, but in general, patients who are severely ill, patients who fail to respond to appropriate antimicrobial therapy, and patients with recurrence within 3 days of finishing treatment may deserve radiographic evaluation in the form of either ultrasonography or computed tomography.'

This long and elaborate quote from the aforementioned textbook is included to show the range of tests available to investigate the urinary tract if infection is suspected. In the majority of patients' simple dipstick testing suffices.

In summary the dipstick analysis can be considered a reasonable indication that a urinary tract infection was present.

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- **Should the Emergency Department doctor have initiated further investigations in light of the presenting symptoms?**

Please see my comments above about the nature of headache, particularly sentinel headache in sub arachnoid headache.

On balance, I am not convinced that there was enough evidence to suggest that further investigations were needed.

- **Was it appropriate to discharge [Ms A] home following the administration of medication and intravenous fluids in the Emergency Department?**

When making a decision to discharge somebody home from an emergency department, staff must be convinced that the patient does not have a critical or life threatening illness. Also if the patient has presented with an acute problem, staff need to be happy that the acute problem is resolving or has resolved.

In this particular case, this happened. The patient was given intravenous fluids, some medication and was observed for a short period of time.

The decision to discharge Ms [A] was reasonable.

2. **If alternative courses of action should have been considered or adopted, please clearly outline the times at which these interventions should have been considered or adopted.**

Overall I am not convinced that any further courses of action were indicated. Although the notes are brief (both doctor and nurse) the inference is that the patient improved after a short period of observation and treatment. There is a note at 01.30 that [Ms A] was happy to go home.

3. **Was the advice provided by the Emergency Department staff nurse on 30 May 2001 to [Ms B] appropriate? In particular, should the staff nurse have advised that [Ms A] be brought into the Emergency Department for further clinical assessment?**

Diagnosis over the phone is difficult. As I have said earlier, the key to successful diagnosis lies with asking the right questions and examination of the patient. Clearly examination by phone is impossible, although there may be a limited place for this in the future with mobile phones and digital cameras. Also in this case, the person calling about the headache is not actually the patient. So obtaining details about the nature of the headache would have been by a 'go-between'. This is less than ideal. The advice to call the GP was quite appropriate.

4. **Do you have any comment in relation to the attached triage policies and procedures from the emergency department [at the Public Hospital]?**

In general terms and at first glance these seem reasonable. On closer examination however there are some inconsistencies. What I mean is that the different conditions or

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clinical presentations listed are a mixture of symptoms, clinical signs and specific diagnoses.

Returning to some of my earlier themes a diagnosis can only be reliably achieved after an appropriate history and examination. This is not possible at a triage desk. Triage is about the prioritisation of symptoms. To start making diagnoses at the triage desk, with limited clinical information, is a practice that can eventually lead to difficulties.

Some examples of my concerns are:

- In Code One APO (acute pulmonary oedema) can sometimes be diagnosed very quickly by an experienced clinician but triage will not be enough to diagnose it.

It may be better thought of as the third condition listed in Code One – 'extreme respiratory distress'.

Also what is the definition of extreme respiratory distress?

Why is there no reference to patients with a very fast respiratory rate (say > 28)?

- In Code One what does 'severe head injury' mean? How is this defined?

- In Code One what are the signs or definition of a severely shocked child or infant?

- In Code Two what is meant by 'significant overdose'? How does this relate to the later comment about 'significant sedative or other toxic ingestion'? What about the time the overdose or ingestion occurred?

- In Code Two what is the difference between the chemical (acid or alkali) splash to the eye and the same injury in Code One?

- In Code Three migraine is a diagnosis and not a presenting set of symptoms. Not all patients who present to an Emergency Department with 'migraine' have it.

- In Code Three what does 'non acute' mean in reference to abdominal pain?

- In Code Three what does 'now alert' mean in the context of head injury and seizure.

- In Code Three what does 'dehydration' mean? How is this defined?

In summary it is my opinion that these triage codes are helpful up to a point but there are too many variables and inconsistencies for them to instil me with confidence that they are reliably useful and safe.

Summary

On the information I have been given I believe that [Ms A] received reasonable and appropriate assessments and treatment in May 2001. Although there is limited

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information about the nature of the associated headache on the evening of the 24th May my conclusion is that it was not obviously a sentinel headache. It may well have been a sentinel headache but this can only be said with the golden benefit of hindsight.

Although I have raised some concerns about the triage codes I do not think that they will have had any bearings on the advice given by phone on the 30th May, and as such, on the final outcome."

General practitioner advice

The following expert advice was obtained from an independent general practitioner, Dr Jim Vause, in relation to the services provided by Dr C and Dr D:

"I have no professional or personal conflicts in this matter. I do not know any of the persons referred to in the various documents.

Expert Advice Required

[Dr C]

1. ***Were the services provided by [Dr C] of an appropriate standard? In particular: Was the working diagnosis of gastroenteritis appropriate in light of the history obtained and the findings on clinical examination? Were the follow up arrangements made by [Dr C] appropriate, namely that [Ms A] contact him if there was no improvement over the weekend?***

I believe that [Dr C's] services were of an appropriate standard. His tentative diagnosis of 'gastric flu' was consistent with [Ms A's] presentation as was his management and his intent to consider admitting [Ms A] to hospital the next day if her condition failed to settle.

- ***In your opinion, as [Dr C] considered that the results of [Ms A's] blood tests taken on 25 May 2001 did not contribute to a diagnosis, should he have taken further steps in following up [Ms A] to determine the cause of her symptoms?***

[Ms A's] symptom presentation is common in general practice and when associated with normal blood tests, it would be reasonable for a GP to leave follow up dependent on the patient's progress. To routinely follow up on every case such as this would overload a practice with a number of patients whose symptoms would resolve spontaneously through self-limiting conditions. Thus suggesting follow up dependent on a patient failure to improve is reasonable.

The problem in [Ms A's] case is the difficulty of diagnosing subarachnoid haemorrhage. The most appropriate method is by CAT scan. Lumbar puncture is another method but a CAT scan is preferable being a less invasive procedure. Neither of these two diagnostic methods are available to most GPs in New Zealand, being limited to secondary care, a situation I have had confirmed by a colleague as being the same in [the town where Ms A lives]. Thus a GP needs a high index of suspicion and clinical features to indicate a need for referral to secondary care, either from a patient's symptoms e.g. persistent vomiting or more particularly clinical signs (e.g. neck

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stiffness or neurological deficit such as paralysis or lack of sensation). [Ms A], according to notes and letters did not have these until the 1st June. One exception is in the 3 July 2001 (although dated 12-06-02) chronological list of events from [Ms A's] whanau which reports on her 23rd May presentation at A&E.

'[Ms A] had also informed the medical staff that she had experienced some numbness on the left side of her face below the eye'

This may have been of significance but there is no recording of this symptom elsewhere in either the GP records, A&E records or the whanau letter. I suspect this symptom did not persist.

A resultant question is what clinical feature/s led to the CAT scan being performed when [Ms A] presented to […] A&E on the 1st June. The 'case review' from the A&E notes states:

'… frontal headaches as the presenting problem leading to the request for CT scan and subsequent diagnosis'

This is a little misleading as the case review fails to mention vomiting and neck stiffness as per the A&E records which would have alerted the doctor to the need for CAT scan.

[Dr D]

2. ***Were the services provided by [Dr D] on 30 May 2001 appropriate? In particular:***

   - ***In view of the history given by [Ms B] about [Ms A's] course of events over the preceding week, including the complaint of a persistent headache, should [Dr D] have arranged to see [Ms A] immediately to make a clinical assessment of the seriousness of her symptoms and provide appropriate medical care;***

Taking [Ms B's] account in the whanau letter, the issue would be:

a. [Dr D's] ability to diagnose [Ms A's] subarachnoid haemorrhage on the evening of 30th May. This would have been dependent on whether [Ms A] had exhibited any new symptoms from those she had presented previously. [Dr D] identified [Ms A's] symptoms in her phone call on the 30th. From [Ms A's] whanau letter of 3 July, and also from [Dr D's] letter of 20-11-01 there is little to indicate a significant change in [Ms A's] symptoms, other than for the increased severity of headache.

b. The need for further investigation could have been indicated by [Ms A] having new clinical signs (as opposed to symptoms) on the evening of 30th May. [Dr D], in not seeing [Ms A], did not have an opportunity to elicit any such signs, a risk that is not uncommon in general practice. Whether [Ms A] had more specific signs indicative of haemorrhage is debatable and unknown, although the fact that she settled somewhat the next day suggests she did not.

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c. In order to allow assessment of clinical signs, [Dr D] did recommend that [Ms A] see her own GP the next day which may have (but is by no means certain) led to further investigation. As to why this did not occur I cannot determine although the fact that [Ms A] seemed to be 'more settled' (from the whanau letter) may have been a factor.

or alternatively, arranged for [Ms A] to be seen in the Accident and Emergency Department for urgent investigation of her symptoms and medical assistance?

This suggestion seems reasonable except that A&E will often redirect to the GP on call patients with problems that are regarded as 'GP'. This is indicated by the A&E triage of [Ms B's] phone call on the evening of the 30th May and is supported by my enquiry with a colleague […]. In addition from the […] DHB website:

> 'Persons presenting with conditions suitable to be managed by a GP will be triaged back to their local medical practitioner. […]'

I presume [Dr D] was aware of this A&E policy and while I feel a degree of discomfort with such policies, they are a reality and GPs must work within the confines of a system.

[…]

Like [Dr D], the A&E did not see [Ms A] although they would have had doctors in the department at the time. This is countenanced by the reasonable A&E advice for [Ms B] to ring back if her daughter did not settle and for [Ms A] to attend her own GP the next day, emphasising [Dr D's] advice.

[The] Medical Centre

3. ***Assuming that the calls were made on 1 June as alleged by the complainant, did the Medical Centre staff respond appropriately when the complainant called the Centre on 1 June 2001, informing them that [Ms A] was suffering very bad headaches?***

The whanau letter of 3 July 2001 indicates that [Ms B] made three phone calls in quick succession to the clinic. The fact that staff at the clinic cannot recall these (as per [Dr G's] letter of 28-11-01) suggests a need to explore as to what actually occurred. Whether the problem was at the practice, at [Ms B's] end or in the communication I cannot ascertain and I feel uncomfortable in assuming that the events occurred exactly as per the complaint without further evidence on the matter.

Nevertheless, it poses a need to consider methods to prevent a sentinel event such as this occurring again. One possible solution would have been for [Dr D] to have drawn the attention of the reception/triage staff to the need for [Ms A] to be seen on the morning of the 31st, as a follow on from the phone conversation of the night before.

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The fact that it was a day later when [Mrs A] contacted the clinic means it would require a practice system to maintain this knowledge for the reception/triage nurse.

In exploring improvement based on this case, I refer the practice to the RNZCGP Significant Event Management: A General Practice Guide as a suitable tool.

Are there any other matters arising out of this case that you wish to comment on?

An observation is that [Dr D] did not make any recording of her conversation with [Ms B]. The reality for general practitioners on call is that frequently phone calls are received in locations where it is difficult to record the conversation, more so nowadays with cell phones, and to require this begins to place unnecessary burdens on GPs when 'on call'.

I note the lack of medical records for [Ms A] prior to this presentation. Such information may give insight into both her health problems and environmental factors that could have influenced this case.

In Summary

The disastrous outcome for [Ms A] and her family highlights the problems of subarachnoid haemorrhage. The high mortality from this uncommon condition (38 patients age 40-45 were discharged from hospitals in NZ in 1998/99 with this diagnosis) and the high incidence of brain damage even after surgery, along with the diagnostic difficulty for GPs, reduces the likelihood of a good outcome for a patient with subarachnoid haemorrhage."

Code of Health and Disability Services Consumers' Rights

The following Rights in the Code of Health and Disability Services Consumers' Rights are 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.

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Opinion: No Breach – The District Health Board

With the benefit of hindsight, there seems little doubt that when Ms A presented on the night of 23 May 2001 at the Emergency Department of the Public Hospital, she was suffering symptoms of a subarachnoid haemorrhage. The issue on which I must form an opinion is whether, without the benefit of hindsight, the response of the Emergency Department doctors and nurses was appropriate.

On balance, I consider that services were provided with reasonable care and skill and accordingly that the District Health Board did not breach the Code.

Diagnosis of gastroenteritis
My expert advisor considered that based on the information provided in the clinical notes, Ms A's presentation was consistent with gastroenteritis. Dr Hughes noted that the symptoms of gastroenteritis include nausea, vomiting, diarrhoea and abdominal pain. Those were symptoms that Ms A displayed. In its response to the complaint, the District Health Board stated that the headache was attributed to mild dehydration and, although this is not recorded in the clinical notes, it is confirmed by the fact that an intravenous saline drip was inserted.

My advisor noted that treatment with intravenous fluids, analgesics and an anti-emetic was appropriate given the preliminary diagnosis of gastroenteritis. I note that Ms A did appear to make some improvement, as her vomiting seemed to settle and her headache was only mild. There was therefore some indication that the treatment administered was having effect.

For these reasons, I consider that the preliminary diagnosis of gastroenteritis was appropriate in the circumstances, and that the treatment given based on this diagnosis was also appropriate.

Urinalysis
My advisor considered that the analysis of the dipstick urine test was a reasonable indication of the presence of a urinary tract infection.

The diagnosis of a urinary tract infection does not appear to have been material to the management adopted in respect of Ms A. My advisor informed me that such dipstick tests are routinely performed for patients with abdominal or non-specific symptoms such as Ms A was experiencing. At the time the dipstick test was performed, Ms A had been receiving intravenous fluids for some time, had shown significant improvement and had indicated that she was happy to go home. I am satisfied that while the dipstick analysis was suggestive of a urinary tract infection, the results were not determinative of the management adopted in respect of Ms A.

I am satisfied that, in diagnosing and treating a urinary tract infection, medical staff at the District Health Board provided appropriate services. In any event, I do not consider that this diagnosis had any significant bearing on Ms A's management that evening.

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Further investigation of the headache

The critical issue in this case is whether staff at the Emergency Department should have further investigated the cause of Ms A's headache.

With the benefit of hindsight, it is obvious that the underlying cause for Ms A's headache was the haemorrhage she had suffered. The more difficult issue for me to determine is whether, based on her presentation to the Emergency Department, staff should have further investigated the underlying cause for the headache, rather than relying on the explanation of the headache being due to dehydration resulting from gastroenteritis.

My advisor noted that headache or headpain is an extremely common presenting symptom in emergency departments, and the vast majority of these headaches are not representative of a severe underlying disease. The goal in managing a patient who has a headache is to identify if they are one of the small group of patients with a serious illness who need immediate diagnosis and attention, and to distinguish this group from "the vast majority in whom the clinical focus is directed towards headache-specific short term pain management".

My advisor referred me to a passage from a text on emergency medicine, which noted the following relevant points:

- While the presentation of subarachnoid haemorrhage may be dramatic, some patients present atypically and symptoms may be absent or subtle.
- A sudden headache occurring days to weeks before the onset of subarachnoid haemorrhage occurs in 30-50% of patients.
- This "sentinel headache" may be characterised by neurologic symptoms, vomiting, nuchal [neck] pain, dizziness or drowsiness, and generally resolves in 2-3 days.
- The headache may be mild.

My advisor considered that, on balance, there was insufficient information to indicate to the clinicians involved that this was a sentinel headache. He noted that the exact nature of the headache was not recorded, and therefore the reasonable assumption is that the headache appeared to be a non-specific one similar to the type seen in some systemic illnesses such as gastroenteritis.

On the basis of my expert advice, I have formed the view that Emergency Department staff did not breach the Code by not further investigating the cause of Ms A's headache, or by not determining that the headache was caused by a brain haemorrhage. My opinion in this respect is based on a number of key matters:

- Presentation to an emergency department with a headache is a very common scenario, and in the absence of information suggesting that the headache was a "sentinel headache" representative of a more serious underlying illness, it would be difficult to make a diagnosis of subarachnoid haemorrhage.
- My advisor's view, discussed above, was that there was insufficient information to characterise this as a sentinel headache.
- Ms A had other symptoms that were more indicative of a gastroenteritis-type illness.

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- The headache appeared to improve following administration of intravenous saline, which was consistent with the explanation that the headache was due to dehydration caused by gastroenteritis.

There is one other matter that causes me some concern. When Ms A arrived at the Emergency Department, she informed the nurse she originally spoke to – whose name Ms B cannot remember – that she had a numb patch under her left eye. This was not recorded and Ms B cannot recall Ms A subsequently bringing it to the attention of subsequent medical or nursing staff to whom she spoke.

I discussed this issue further with my expert advisor. Dr Hughes informed me that although ideally the symptom should have been recorded in the notes, a nurse in an emergency department is often confronted with a large amount of information, and it is unrealistic to record every piece of information. I accept that this advice reflects the practical reality.

In terms of the significance of the numbness, Dr Hughes was unable to give a definite answer. He informed me that there could have been a large number of causes for the symptom and its relationship to the haemorrhage is impossible to determine. Dr Hughes informed me that even if the symptom had been noted, it would not have amounted to a clear signal to the doctor who assessed Ms A that her headaches required further investigation; the symptom was not a clear flag for concern. While it is possible that the doctor would have given the issue further thought, this is speculative only, and there is no basis for suggesting that awareness of the numb patch would have triggered further investigations or altered the course of management that ultimately was adopted.

In my opinion, the nurse to whom the information was relayed should have recorded the symptom. It was a relevant consideration in assessing Ms A's condition and may have been useful information for medical staff in assessing her condition.

Appropriateness of discharge
My expert advisor noted that "when making a decision to discharge somebody home from an emergency department, staff must be convinced that the patient does not have a critical or life threatening illness. Also, if the patient has presented with an acute problem, staff need to be happy that the acute problem is resolving or has resolved."

My advisor felt that this occurred in this case. Based on his comments regarding the reasonableness of the diagnosis of gastroenteritis, I concur with this advice. Ms A was given pain relief and intravenous fluids and was observed for almost two hours. During that period she appeared to make a significant improvement, with her vomiting seeming to settle and her headache becoming less intense. She was happy to go home.

In these circumstances, I accept my advisor's conclusion that the decision to discharge Ms A was reasonable, and accordingly the District Health Board did not breach the Code.

Telephone advice
My advisor considered that when Ms B called the Emergency Department on 30 May seeking advice as to treatment for Ms A, it was appropriate for the nurse to advise her to call Ms B's general practitioner.

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My advisor noted that it is very difficult to make an assessment over the phone, given that an examination could not be performed.

I accept my expert advice that in these circumstances it is appropriate for patients to be referred to their general practitioner, who is able to arrange an after-hours consultation if considered necessary based on the information from the patient.

Accordingly, the actions of the Emergency Department nurse, in advising Ms B to contact Ms A's general practitioner, did not constitute a breach of the Code.

Opinion: No Breach – Dr C

Initial diagnosis of gastric flu
My general practitioner advisor considered that Dr C's diagnosis of a gastric flu was reasonable in light of Ms A's presentation. I accept this advice. I note that Dr C performed a comprehensive assessment of Ms A, taking into account her presentation to the Emergency Department a few days previously. Dr C did consider the possibility of admission to hospital, but it was decided between him and Ms A that they would wait to see if her symptoms settled before further canvassing that option. My advisor also considered this management plan appropriate.

Based on the comments of my advisor, I consider that in the context of the information available to him Dr C provided services of an appropriate standard to Ms A. His diagnosis was consistent with Ms A's presentation, and his management was also appropriate, allowing the possibility for more positive action the following day if things had not improved.

Follow-up of blood tests
I do not consider there was any obligation on Dr C to undertake further investigation as to the cause of Ms A's symptoms once the blood tests came back negative.

Dr C had already made a provisional diagnosis of gastric flu, one that my advisor notes was consistent with Ms A's symptoms. In his response to the investigation, Dr C informed me that the reason that the blood tests were ordered were to see if they could provide any diagnostic pointers, given that there was still some uncertainty as to the diagnosis. He had also left open the option for admission the following day, and suggested a review if Ms A's condition did not improve. He did not hear again from Ms A and was justified in assuming that the situation had spontaneously resolved.

My expert general practitioner advisor informed me that symptoms leading to Ms A's presentation are common in general practice. It would overload a general practice to routinely undertake further investigations on such a common presentation when the majority of these cases will resolve spontaneously.

Opinion: No Breach – Dr D

The issue for determination is whether Dr D had available sufficient information to indicate a need either personally to examine Ms A or alternatively to arrange for her assessment at the Emergency Department.

Dr D spoke to Ms B on only the one occasion, although it is evident that she obtained a detailed history from her. Dr Vause, my general practitioner advisor, informed me that the key issue is whether there was information to suggest that Ms A had developed any new symptoms from her previous presentations. He did not consider there was such information, as there was "little to indicate a significant change in [Ms A's] symptoms, other than for increased severity of the headache".

I accept this advice. The information that Dr D gleaned from Ms B suggested another fluctuation – but of a very similar nature to what had occurred previously – in what had been a fluctuating course of symptoms. Dr D was aware that Ms A had previously seen other doctors in relation to these same symptoms, and had diagnostic blood tests, but that no serious illness had been identified. In these circumstances, where the previous doctors had had the opportunity to physically examine Ms A, and when there were no new symptoms on which to base a diagnosis, I think it was reasonable for Dr D to indicate that there was little more that she could do at that time, but that Ms A should consult her general practitioner in the morning. In the absence of any information indicating the need for immediate further investigations, it was also reasonable for Dr D not to arrange an assessment in the Emergency Department.

Opinion: No Breach – The Medical Centre

Ms B, in her complaint, alleged that she had made three phone calls to the Medical Centre on the morning of 1 June 2001, during which she indicated that she required medical assistance for Ms A, but that she was unable to move her to bring her in.

The complaints co-ordinator for the Medical Centre advised me that none of his staff recall taking the phone calls from Ms A, and that he would have expected that they would have responded to the urgency of Ms B's phone calls.

Accepting that Ms B made the calls, I do not think that the response of the Medical Centre staff amounts to a breach of the Code. According to Ms B, the Medical Centre staff did offer her an earlier opportunity to see a doctor when she indicated that Ms A's condition was serious, and when she indicated in a subsequent phone call that she was unable to move Ms A, the receptionist sought medical advice. I am satisfied that this was an appropriate response by the receptionist. It was while the receptionist was seeking advice that Ms B decided that she needed to call an ambulance.

Other Comment

Based on the reports from my expert advisors, I have confidence in my opinion that the health care providers who saw or spoke to Ms A provided services of an appropriate standard. My advisors were clear that the failure to diagnose Ms A's brain haemorrhage was not the result of poor quality care.

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But looking at this case from Ms A's whanau's perpective, it must be very difficult to understand how it was possible for Ms A to spend a week in such severe discomfort – and at times extreme pain – and seek medical help on a number of occasions to no avail. From a layperson's perspective it is difficult to understand how Ms A's brain haemorrhage could go undetected for over a week.

My expert general practitioner advisor explained that a subarachnoid haemorrhage is difficult to diagnose. Generally a CT scan or a lumbar puncture is required to make the diagnosis. In Ms A's case, the tragic but critical fact is that she never displayed any clinical signs or symptoms that pointed specifically to a brain haemorrhage. It was obvious that she was ill, but her symptoms remained consistent with the initial diagnosis of gastroenteritis. A referral for a CT scan or lumbar puncture is made only in circumstances where the clinical evidence indicates a need. In the absence of such clinical signs, the doctors who treated her had no basis on which to make such a referral. No one was at fault, the brain haemorrhage simply did not manifest itself in such a way as to make diagnosis reasonably possible. In the present case, what the doctors did was reasonable given the available information. The tragedy for Ms A and her whanau is that the information was not sufficient to lead to a suspicion of a brain haemorrhage.

However, there is the potential for other doctors to learn from this situation. For this reason, I intend to send a copy of this report, with all identifying details removed, to the District Health Board Chief Medical Advisors, The Australasian College for Emergency Medicine, and the Royal New Zealand College of General Practitioners, to highlight the difficulty of diagnosing subarachnoid haemorrhage, and the need for a higher index of suspicion if patients present with ongoing symptoms similar to those of Ms A.

Recommendations

I recommend that the District Health Board review the Emergency Department triage protocols in light of the comments of my emergency medicine advisor, Dr Hughes.

Further actions

- A copy of this report will be sent to the Medical Council of New Zealand.

- A copy of this report with identifying details removed will be sent to the District Health Board Chief Medical Advisors, the Australasian College for Emergency Medicine, and the Royal New Zealand College of General Practitioners, and will be placed on the Health and Disability Commissioner's website, www.hdc.org.nz, for educational purposes.