

## **Hospital and Health Service**

**Dr D**

**Dr E**

**Dr F**

**Dr G**

**Dr H**

## **A Report by the Health and Disability Commissioner**

**(Case 00HDC01261)**



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## Parties involved

Ms A	Complainant / Consumer's daughter
Mrs B	Consumer
Ms C	Consumer's daughter
Dr D	House Surgeon / Provider
Dr E	Registrar / Provider
Dr F	House Surgeon / Provider
Dr G	Consultant / Provider
Dr H	Doctor, Medical Centre / Provider
Dr I	Chief Executive Officer, the public hospital
Dr J	Mrs B's respiratory physician
Dr K	Mrs B's general practitioner
Dr L	Specialist general physician and geriatrician
Dr M	Consultant physician / Expert advisor obtained by New Zealand Police
Dr N	Infectious diseases physician / Expert advisor obtained by Mrs B's family
Dr O	Respiratory physician / Expert advisor obtained by the Hospital and Health Service
Dr P	Respiratory physician / Expert advisor obtained by Dr F
Dr Q	Expert advisor obtained by ACC
Dr R	Respiratory specialist
Mr S	Consumer's son-in-law
Dr T	House Surgeon, the public hospital
Ms U	Registered nurse, the public hospital
Mr V	Registered nurse, the public hospital
Dr W	Consumer's son-in-law

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## Complaint

On 7 February 2000 the Health and Disability Commissioner received a complaint from Ms A about the services provided to her mother, the late Mrs B. The complaint is that:

### Medical Centre

- *On 23 October 1999 Ms C took her mother, Mrs B, to a medical centre with a headache, nausea and vomiting, and fitting. The examining doctor advised Ms B to take her mother to a public hospital, as she was seriously ill. The medical centre did not arrange for Mrs B to be transferred to the public hospital by ambulance.*

### Public Hospital

- *On arriving at the public hospital on 23 October 1999 Mrs B was unable to walk but no one offered to help find a wheelchair or assist her daughter, Ms C, to get Mrs B into the hospital.*

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- *The blood film results taken on Mrs B's admission on 23 October 1999 were not available to staff. Delay in obtaining those results led the medical staff to believe she had a viral infection instead of a bacterial infection.*
- *The hospital did not have adequate medical or nursing staff on duty over Labour weekend and therefore Mrs B's deterioration was not detected and she was inadequately treated.*
- *While Mrs B was in hospital she developed a throat infection. She was given toast which she could not swallow. Her family complained but no appropriate food was available.*
- *There were no experienced medical personnel on duty in the assessment area to whom Ms C could give her mother's medical history.*

#### **Dr D and Dr E**

- *The Acute Assessment Ward doctor did not commence antibiotics even though sepsis was suspected.*

#### **Dr F**

- *On the evening of 25 October 1999 when Mrs B's condition had deteriorated and she was hallucinating, had developed a rash and swelling, and was disoriented and confused, the on-call doctor commenced Augmentin. Mrs B's family informed the on-call doctor that Augmentin was ineffective as she had had it for past infections. The on-call doctor ignored this information. The delay in initiating the appropriate antibiotic treatment contributed to the deterioration in Mrs B's condition and subsequent death.*

#### **Dr G**

- *Mrs B was admitted to the public hospital on 23 October 1999 under consultant Dr G. Mrs B's general practitioner and two specialists who treated her privately were not contacted for consultation regarding her illness.*
- *Mrs B's medication Losec was not charted.*

An investigation was commenced on 5 April 2000 and broadened to include Dr H, Dr D, Dr E, Dr F and Dr G on 6 December 2000.

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### **Information reviewed**

- Report from Dr I, Chief Executive Officer, the public hospital.
  - Mrs B's medical records from the public hospital.
  - Mrs B's medical records from a hospital specialising in respiratory conditions.
  - Report from Dr J, respiratory physician, about Mrs B's medical history.
  - Mrs B's medical records from her general practitioner, Dr K.
  - Mrs B's autopsy report.
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- Report by Dr L, specialist general physician and geriatrician.
  - Mrs B's medical records from a private hospital.
  - Expert advice to Commissioner from physician Dr Carl Burgess.
  - Report from Dr M, consultant physician, obtained by New Zealand Police.
  - Report from Dr N, infectious diseases physician, prepared for Mrs B's family.
  - Report from Dr O, respiratory physician, prepared for the Hospital and Health Service.
  - Report from Dr P, respiratory physician, prepared for Dr F.
  - Report from Dr Q to ACC.
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## **Information gathered during investigation**

### *Background*

Mrs B had a long medical history of bronchiectasis (chronic dilatation of the bronchial passages with secondary infection) and oesophageal reflux (regurgitation of stomach contents into the oesophagus). Her bronchiectasis was controlled primarily with physiotherapy and postural drainage, but from time to time required antibiotics. Dr J, the respiratory physician she consulted privately, provided me with a report on Mrs B's history and medical treatment. Mrs B first saw Dr J in July 1993. Her significant oesophageal reflux was contributing to her chest symptoms. Dr J noted Mrs B's abnormal liver function test results, which reverted to normal when she stopped drinking herbal teas. Dr J informed me that Mrs B drank herbal tea for dietary purposes. He discussed this with Mrs B and they agreed that he would treat only her chest condition.

Dr J said that he consulted other respiratory specialists about Mrs B's respiratory problems. Dr R and Dr N confirmed that Mrs B had a low-grade bronchiectasis and sinusitis, and that her respiratory tract was colonised with *Pseudomonas aeruginosa*. *Pseudomonas* is a particularly difficult bacterial infection to treat because it can be resistant to many commonly used antibiotics. Mrs B had originally been treated with Augmentin and later with ciprofloxacin. She continued to consult Dr R. Dr J did not see Mrs B for almost two years between 1995 and 1997. She consulted him with a significant chest infection in September 1997, when Dr J changed her antibiotics to clarithromycin. Dr J received a report from Dr R on 17 October 1997, in which he stated:

“... Her major recent benefit had resulted from your change in antibiotics. She had had repeated courses of ciprofloxacin with only transient improvement but when you started her on clarithromycin she improved promptly and dramatically. Some of this improvement almost certainly results from vigorous postural drainage instituted by [...].  
...”

Mrs B next saw Dr J on 26 January 1999 with bronchitis and asthma. Dr J commenced Ventolin (salbutamol) and clarithromycin. A report on 29 January confirmed that her

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sputum culture grew *Pseudomonas*, which was sensitive to ciprofloxacin. Dr J commenced a two-week course of ciprofloxacin. Unfortunately, when the antibiotic finished, the infection returned. Dr J prescribed another course of ciprofloxacin. On 25 February 1999 Mrs B saw Dr R. Dr R advised Dr J as follows:

“At review today [Mrs B] showed me a diary of infective exacerbations over the last 18 months, making it clear that she relapsed every 4-6 weeks. It seems that *Pseudomonas aeruginosa* had been isolated intermittently and she has had variable responses to broadspectrum antibiotics including, at times, ciprofloxacin. ...

Plainly this is a most frustrating situation, both for [Mrs B] and her medical advisors. Four or five years ago she enjoyed reasonable health but recurrent infective exacerbations have particularly disabled her. Despite a good deal of concentration on her problems and an approach to management that works well in most patients with bronchiectasis, her treatment has not entirely met her needs. Importantly therefore, to stress two separate goals of treatment. It is essential to prevent worsening of disease if at all possible, independently of issues of day to day morbidity. As it is three years since her last procedure, I have booked her for a CT scan. If there is no change in the underlying severity of her bronchiectasis, we will feel that the present approach is working in part.

I stress these issues because the key question is whether to move to continuous antibiotic therapy. I am a little reluctant to do this but would feel very differently if the CT scan showed clear worsening of underlying bronchiectasis. If not, I think she may accept that with current treatment, it is not possible to abolish morbidity altogether. However, it will be soon enough to address this question when she returns in one month for a further CT scan.”

Dr J reviewed Mrs B again on 8 March 1999. Her symptoms were not completely controlled despite almost continuous ciprofloxacin. The CT scan taken on 11 March 1999 showed no change from her February 1996 scan. Dr J saw Mrs B for the last time in April 1999. At that time Mrs B felt much better, with a combination of physiotherapy and antibiotic treatment. She was to see Dr J again in July 1999 but her appointment was cancelled. The hospital, which specialises in respiratory conditions, confirmed that Mrs B had not attended the hospital after March 1999. (To her family’s knowledge Mrs B did not take antibiotics while she was on holiday in Australia. Her last consultation with general practitioner Dr K, when she was prescribed antibiotics, was on 10 June 1999).

During Mrs B’s admission to hospital on 23 October 1999 the attending doctors did not contact Dr J to discuss her treatment. The General Manager of the public hospital advised Mr S that community specialists are not available over the weekend but can be contacted if the doctor thinks it necessary. Mrs B and her family provided them with the only information about her medical history.

### *Medical Centre*

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On Saturday 23 October 1999 Mrs B returned from a 10-day holiday in Australia with her daughter, Ms A, and son-in-law, Mr S. Mr S and Ms A did not return with her. Another daughter, Ms C, met Mrs B at the Airport. On the way home, Mrs B complained of nausea and a headache. She was thirsty and they stopped for a drink. Ms C advised me that on the way home her mother vomited, and went rigid, and her eyes rolled back in her head. Ms C described this as a 'fit'. Ms C was driving [...] at the time and immediately took her mother to a Medical Centre ("the Clinic"). Dr H examined her. He found Mrs B had a temperature of 40.4°C. Her blood pressure was 150/90, she had no skin rashes, her abdomen was soft and non-tender, and bowel sounds were present. A ward urine test was negative. Dr H diagnosed a fever of unknown cause. He was concerned that Mrs B might have meningitis and told Ms C that her mother was very ill and should go to hospital as rapidly as possible. Dr H telephoned the medical registrar at a public hospital to arrange Mrs B's admission.

Ms C said that Dr H did not order an ambulance to take her mother the short distance from the Clinic to the hospital. Dr H was aware that Ms C had driven her mother from the airport and, as she did not need medical attention during the journey, considered that it would save time if a private car was used rather than an ambulance. Dr H said that he discussed this with Mrs B and her daughter. At the time there was no suggestion that alternative transport arrangements should be made.

#### *Public Hospital*

Ms C drove her mother to the public hospital. When she arrived she could find no one to help her find a wheelchair. A person at the reception told Ms C to take her mother to the examination centre. Ms C said that she ran around for about 20 minutes looking for a wheelchair and someone to help her. Dr I, Chief Executive Officer of the public hospital advised me that during the night there are security personnel in the foyer and wheelchairs available for patients' use.

Ms C said that, although Mrs B had a medical history of bronchiectasis, no one seemed interested in finding out what medication her mother was taking. Dr D was the house surgeon on duty in the Emergency Department. She completed an examination of Mrs B. Dr D recorded Mrs B's medical history and, in particular, her gastric reflux and bronchiectasis, and that she took antibiotics frequently. However, Dr D did not document how often Mrs B took antibiotics. Dr D found that Mrs B had no respiratory symptoms, diarrhoea, urinary symptoms, neck stiffness or photophobia. Dr D recorded the following:

"Flew back into NZ tonight. Picked up from airport – vomited in car. Daughter reports eyes rolled back in head, slight jerky movements of hands. Rash in left axilla three days ago now gone. Has bronchiectasis. Has been taking ciprofloxacin. She has a past history of bronchiectasis. Takes antibiotics frequently and has postural drainage. She also has gastric reflux."

Dr D advised me that in her opinion Mrs B appeared to be in moderate pain but was conversing freely with no abnormalities of speech, and no shortness of breath or cough. Her temperature was 38.8°C (Dr D noted that it had been 40.4°C when seen by Dr H), her pulse rate was 104 and regular, and her blood pressure was 140/62. Dr D arranged for a

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chest x-ray and for a full blood count and electrolyte investigations. The blood was taken and arrived at the laboratory at 9.54pm and the results were faxed to the Emergency Department at 10.05pm. Dr D recorded the results in her notes. Apart from some minor abnormalities of liver function, the tests were normal. No blood film was made of this specimen. (The blood film result showing toxic granulation and vaculation of neutrophils was from a blood sample taken on 27 October and was available that day.) Mrs B's white cell count was 5.3 (normal), and the differential count, which identifies the type of white cells present, showed that her lymphocytic count was reduced but her neutrophil count was normal. Dr D also listed Mrs B's current medications as:

“Ciprofloxacin

Volmax 8mg BD [twice a day]

Pulmicort inhal [inhaler]

Bricanyl inhal.”

Dr D did not list Losec as one of Mrs B's usual medications and there is no reference to it in her notes. Dr D examined Mrs B's chest x-ray, which showed that she had an enlarged heart (borderline) and some patchy changes to her lungs, which could be the result of her bronchiectasis. Dr D made a provisional diagnosis of viral illness. She decided to admit Mrs B to the Acute Assessment Ward (“AAW”) overnight for observation, prescribed medication for pain relief and vomiting, and ordered intravenous fluids and urine tests. Dr D discussed Mrs B's condition with Dr E, the on-call registrar, and asked him to come and assess Mrs B. They decided against performing a lumbar puncture at that stage. Ms C said that her mother had a travel bag containing all her medication with her, but that Dr D did not inspect this.

In the early hours of the morning Dr E examined Mrs B. Mrs B told Dr E that she did not usually suffer from headaches, and that her headache was easing. He agreed with Dr D's working diagnosis of viral illness, and that she should remain in hospital for observation. Neither Dr D nor Dr E prescribed antibiotics. Dr I advised me that Mrs B's signs and symptoms suggested she had a viral illness, and that in such cases antibiotics are not usually indicated; it is better to observe and monitor.

On Sunday 24 October 1999 a consultant, Dr G, saw Mrs B during his ward round. He was accompanied by a registrar, and house surgeon Dr T. Although Dr G found Mrs B was a little better than she had been the night before, her nausea and headache persisted. Dr T advised me that Mrs B had no respiratory symptoms that would suggest a flare-up of her bronchiectasis. She had no cough or increase in sputum, and she said that her chest was normal for her. There were no other symptoms that suggested another focus of her infection. She was febrile and lethargic but otherwise well, and her blood pressure was normal.

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Dr G advised me that Mrs B's symptoms began about 30 hours before she was admitted to hospital. She had developed a headache, which had increased in severity over several hours. She had some muscle aches but no associated neck stiffness or photophobia. She felt unwell with hot shivers. She had lost her appetite and was nauseated. She had no productive cough and said that she was not coughing up any more sputum than usual. She had no urinary symptoms or diarrhoea, jaundice, anaemia or cyanosis. Dr G noted Mrs B's blood results and, in particular, that the white blood count was 5.3, with neutrophils 4.7, haemoglobin 134 (normal) and platelets 202, and that renal function was normal, with a creatinine of 0.09. He noted that Mrs B's liver function tests showed some disturbance, with bilirubin 25, GGT 243, and AST 42.

Dr G examined Mrs B's chest x-ray. In his opinion, her chronic lung problems could have accounted for the changes in the x-ray, although he did not have any previous x-rays for comparison. Mrs B's temperature remained elevated and he thought the diagnosis of viral illness was reasonable.

#### *Antibiotic cover*

To her family's knowledge Mrs B did not take antibiotics while she was on holiday in Australia and her last consultation with general practitioner Dr K was on 1 June 1999, when she was prescribed the antibiotic ciprofloxacin.

Dr G noted that Mrs B's medications, recorded by Dr D, included the antibiotic ciprofloxacin. Dr G understood that Mrs B took antibiotics intermittently, including ciprofloxacin and/or clarithromycin. He said that there were a number of reasons why he did not commence antibiotics. Mrs B had no apparent active bacterial infection, and her liver function tests were abnormal. There is a known association between liver toxicity, ciprofloxacin and clarithromycin. Furthermore, stopping the antibiotic was a means of identifying the organism causing the infection. Dr G decided to transfer Mrs B to the ward for another day, with the understanding that if she improved during the morning she could go home.

#### *Admission to Ward*

Ms C had remained with her mother from the time of her admission. Her brother arrived at the hospital on the morning of 24 October.

Mrs B was transferred to the Ward that morning. The receiving nurse described Mrs B as very miserable with a severe headache. Throughout the morning Mrs B remained unwell but she was able to walk about independently. Her blood pressure was 117/53, pulse 97, and temperature 37.8°C. She was given intravenous normal saline, 125ml hourly. No fluid balance chart appears in the notes provided to me for review. Mrs B's daughter accompanied her and told the receiving nurse that her mother's usual medications, Volmax, Pulmicort Inhaler and Bricanyl Inhaler, had not been ordered. The receiving nurse left a note for the on-call house surgeon, who documented these medications later that day. Losec was not prescribed.

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On the afternoon of 24 October Ms U was the registered nurse assigned to Mrs B. Mrs B's temperature remained high, ranging from 38.3°C to 39°C. She required regular Panadol (given at 8.00am, 1.00pm, 5.00pm and 9.00pm) and codeine (at 11.30am and 6.00pm) for her headache, and Maxolon for nausea and vomiting. Mrs B was unable to eat but Ms U recorded that she was drinking well. As the day progressed Mrs B's headache became worse and was not relieved by the medication prescribed. Ms U notified the on-call house surgeon, who prescribed tramadol immediately and then four hourly. The on-call house surgeon did not examine Mrs B. Mrs B took tramadol 100mg at 8.00pm.

Ms U spent much of her time that shift with Mrs B because she was more unwell than her other patients, and because Mrs B's family was very anxious about her. Mrs B's family told me that their mother was very anxious and scared. At about 5.00pm Mrs B's blood pressure dropped to 84/40 (from 117/53). Ms U did not report this to the on-call house surgeon but decided to monitor her blood pressure more closely to see whether it improved. Mrs B's daughter was concerned that she was showing signs of sepsis. Ms U told me that the drop in blood pressure was an isolated observation only and that in her experience shock (sepsis) was not the only cause of low blood pressure. Ms U recorded Mrs B's blood pressure at 7.00pm, when it had risen to 110/40. Mrs B's blood pressure remained unaltered when taken at 8.45pm and 10.00pm.

Mr S and Ms A, who had been holidaying with Mrs B in Australia, arrived at the hospital at about 8.00pm. In her complaint Ms A said that over the next 24 hours her mother's condition deteriorated rapidly. Her headache and skin rash worsened, swelling was apparent, and she became disoriented and confused. Ms A alleges that Mrs B was in extreme discomfort and her temperature fluctuated. Ms U told me that while she was on duty Mrs B did not have a rash and she was not disoriented or hallucinating.

The nurse on night duty was a bureau nurse. Bureau nurses are assigned to various wards depending on need. Having worked in a number of wards the night duty nurse could not specifically remember Mrs B. However, she documented in Mrs B's notes that at about midnight Mrs B's blood oxygen level (on room air) fell to 91%, her blood pressure was 108/50, pulse 94, respiration 20 and temperature 38.2°C. The night duty nurse administered oxygen and Mrs B's oxygen levels quickly returned to normal. The night duty nurse did not report the drop in oxygen concentration to the doctor on call. Although Mrs B's temperature remained elevated, she did not have a headache and was not nauseated. Mrs B had Panadol (at 1.00am and 5.00am) and tramadol (at 12.30am and 4.30am).

Monday 25 October was Labour Day, a public holiday. Mr V was the nurse assigned to Mrs B's care at 7.00am. He found that she was again troubled by nausea, and gave her Maxolon at 7.40am and cyclizine at 8.45am, with little effect. Mrs B had accidentally removed her intravenous fluids luer and Mr V informed the house surgeon on call, Dr W, about Mrs B's nausea and the need to replace the luer. Dr W prescribed Zofran for her nausea and replaced the luer later that day. Mr V administered Zofran 4mg intravenously. At 2.00pm Mrs B's temperature was 38.9°C and Mr V notified Dr W. Dr W took blood for blood cultures and asked that a urine specimen be sent to the laboratory for culture. Dr W

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did not record this in Mrs B's notes. (This final blood culture result was printed on 1 November 1999. It showed no growth after five days.)

Mrs B was unable to eat or drink because of her nausea, so Mr V commenced a fluid chart. Mrs B's daughters were concerned that she would be discharged, but Mr V assured them that she was too ill. Ms A said that Mrs B's family did not believe that she had a viral illness and argued with the nursing staff that their mother should be on antibiotics. Mr S said that he, Ms A and Ms C remained with Mrs B all day. He asked the nurse on duty if a doctor could assess Mrs B because she was becoming very ill. The doctor did not review Mrs B that morning and the family doubted whether he had been informed.

At 3.00pm Ms U was again assigned to nurse Mrs B during the evening. Ms U was concerned about Mrs B because she showed no improvement from the previous day although, in her opinion, she had not deteriorated. Ms U notified Dr F that Mrs B needed to be reviewed.

Dr F was the only house surgeon on call for all medical patients at the hospital on Labour Day. Ms U paged Dr F several times during the afternoon and evening but Dr F was attending other patients. Mr S said that Mrs B's family was so anxious about her that he eventually went to look for the doctor. He found her sitting in an office in the Ward drinking a cup of coffee. He told her that the family had waited some seven hours for a doctor to see Mrs B and took Dr F to see her.

Dr F advised me as the only house surgeon on call at the hospital, her shift began at 8.00am and ended at 11.00pm. During that time she covered all medical wards, inserted intravenous lines and took blood for blood tests. She estimated that she would see between 80 and 100 patients each shift. Because of the workload, the nurse in each ward would record in a ward notebook, all the work that the house surgeon was expected to complete. Given the amount of work to be done she would consult with a senior colleague only if she was uncertain of her assessment, or the case was "very bad", or "a medical emergency". Dr F advised me as follows:

"During the evening of the 25 of October, I was requested by the nursing staff to review [Mrs B] as her condition had not improved during the day, as it had been expected it would. I note that ... it is recorded that [Mr S] found me sitting drinking coffee. I do not drink coffee. Work pressures were such that I was not able to take a break. When receiving information from the nurses on patients they had paged me in relation to, I would sometimes very briefly, sit in the nurses station.

Upon reviewing [Mrs B's] history, I noted that she had a long history of bronchiectasis and had been under the care of a chest physician for a number of years. [Mrs B] had suffered from spiking fevers for 3 days and this was associated with tiredness and a headache. Before admission she was on the wide spectrum antibiotic Ciprofloxacin, which was stopped on admission. I presume this was because of her increased liver function tests. From the history notes I found that the day before when the patient was

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reviewed by [Dr G] and his team there was an expectation that rapid recovery may be possible from a viral illness and that discharge later in the day was a possibility.

At the time that I had examined [Mrs B] she was alert and orientated and conversed normally with me. She was not in any respiratory distress but upon auscultating [Mrs B's] chest some inspiratory crackles in the right lung field were heard and upon reviewing her chest x-ray I identified some patchy changes in the right lower lobe. The same things were found on admission.

Throughout that day [Mrs B's] blood pressure had been recorded at levels between 90 and 118 systolic and 42 and 52 diastolic. She had not described any symptoms of hypotension and her appearance and general clinical condition on examination did not indicate this as being significant. Although [Mrs B's] blood pressure was higher than these readings at her time of admission it was unknown what her blood pressure usually was and in the context of her general clinical state these readings were consistent with being closer to her normal baseline, adjusted for her decreased fluid intake and fever.

I was not aware of any specific orders that were made by medical staff to monitor [Mrs B's] urinary output and cannot recall whether or not I actually saw [Mrs B's] fluid balance record. However, [Mrs B] was not catheterized at the time I reviewed her and the recorded amounts are not precise. This is evidenced by such statements as UTT [up to toilet] as opposed to an amount. I knew that the recordings could not be guaranteed to include all of [Mrs B's] urination that day. The records for the day of the 25th of October were in keeping with the records for the preceding two days where only one recording of UTT was made.

On the basis of my examination findings and the chest x-ray I diagnosed [Mrs B] as suffering from a lower respiratory tract infection on top of her background condition of bronchiectasis. I instructed for saline nebulisers to be given along with chest physiotherapy, for the commencement of intravenous Augmentin and that a sputum sample be obtained. Her appearance and general clinical state in no way suggested the presence of any condition more serious than a simple chest infection. As I've mentioned before, [Mrs B] was on wide spectrum antibiotics prior to admission, and I was aware that she had abnormal LFTs. My plan was to wait for the sputum culture results and then treat her specifically if needed.

I discussed my findings and plan with [Mrs B's] daughter.”

Mr S said that he, Ms A and Ms C remained in attendance while Dr F examined Mrs B. They recalled that Dr F spent about four or five minutes assessing Mrs B. (Dr F recalled that she spent about 20 minutes with Mrs B and her family. Ms U also remembered Dr F spending 20 minutes with the family.) Mr S said that Mrs B was not really “with it”. She was not aware of her surroundings and was talking about hearing conversations when no one was talking.

Mr S and Ms A said that they tried to tell Dr F about their mother's illness and medical history. They recalled that Dr F told them that the hospital's policy was to prescribe Augmentin, and that that is what she would prescribe. They claimed that they told Dr F that Augmentin had previously been ineffective for Mrs B. However, Dr F could not recall Mrs B or her daughter informing her that Augmentin had been ineffective in the past and said that if she been informed of this fact, she may have chosen an alternative treatment.

Mr S and Ms A said that Mrs B had a fine pinpoint red rash over her chest, but that neither the medical nor the nursing staff documented this rash or made note of the hallucinations or disorientation.

Dr F responded as follows:

"I recall [Mrs B's] condition as being somewhat different at this time. ... I was not informed of any 'hallucinations, rash or swelling' or that [Mrs B] had been 'disorientated and confused'. There was no record of this in the notes and this was not conveyed to me at the time that I saw [Mrs B]. At the time of examining [Mrs B] she appeared quite well, displayed no disorientation or confusion and I had a normal conversation with her.

Given the clinical situation, my examination findings and proposed treatment there was no reason for me to consult with a more senior colleague."

Mr S and Ms A also said that they told Dr F that Mrs B carried her own antibiotics with her, and that Mrs B took the antibiotics out of Mrs B's travel bag to show Dr F. Dr F denied being told about or shown Mrs B's supply of antibiotics.

Ms U said that Mrs B informed her (Ms U) about the antibiotics. Ms U recalled seeing Dr F hold up the x-rays in the office, to show the family evidence of their mother's lung problems. Ms U did not hear what was said. She stated that to her knowledge Mrs B did not have a rash and was not disoriented or hallucinating during this duty. Mrs B's family deny that Dr F showed them their mother's x-rays or took them into the office. They also deny that Dr F spent any longer than four or five minutes with Mrs B.

Dr F told me that she did not consult a more senior colleague before prescribing Augmentin because her findings were consistent with a respiratory tract infection. Augmentin is a broad-spectrum antibiotic and, in the past, Dr F's more senior colleagues had informed her that it was the appropriate antibiotic for such a situation. Furthermore, Mrs B had no history of allergy to penicillin or colonisation with *Pseudomonas* or other bacteria that would be resistant to Augmentin. There was therefore no need to consult the registrar. Dr I told me that Augmentin is considered the appropriate treatment until the results of laboratory tests become available. He noted that Mrs B's urine specimen grew *E. coli*, which is sensitive to Augmentin. (This report, and the sputum culture report showing *Pseudomonas*, became available on 26 October 1999.)

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Dr F recorded in Mrs B's notes:

“ATSP [asked to see patient] regarding chest infection

Background longstanding bronchiectasis

under chest physicians for many years

spiking fever 3/7 [three days], rigors

feels very tired

blood culture done today

o/e [on examination] chest right side few inspiratory crackles

Review chest x-ray – patchy consolidation R LL [right lower lobe]

Imp [Impression] LRTI [lower respiratory tract infection] on the top of bronchiectasis

- Plan
1. nebs [nebuliser] with saline
  2. chest physio and postural drainage
  3. IV Augmentin
  4. sputum culture ASAP.”

Ms U administered intravenous Augmentin 1.2 grams at 8.45pm. She recalled that just as she was going off duty at 11.00pm Mrs B rang for attention. She was very short of breath. Ms U administered oxygen and Mrs B responded very quickly. Soon afterwards Mrs B coughed up some sputum, which Ms U sent to the laboratory. In Ms U's opinion Mrs B's condition had deteriorated quite quickly but she did not inform Dr F of this. Ms U recorded the following:

“Remains unwell this duty. Temp remains elevated despite 4hrly panadol nil further nausea. Mild headache continues, tramadol given. OCHS [On Call House Surgeon] notified re: pt condition not improving R/V by HS [reviewed by house surgeon] Commenced on IV Augmentin, next due 0445. Saline neb [nebuliser] given, requires sputum spec [specimen] please. Doesn't feel like eating but drinking good amts. Bowel cares given with good results. UTT [up to toilet] with assistance.”

Ms U told the nurse on night duty that Mrs B had been a little short of breath at times, requiring oxygen, and that she was coughing up sputum. The night nurse said that Mrs B appeared to sleep during the night; she only disturbed her to take her observations at 1.30am and 5.00am. Mrs B also had antibiotics at 5.00am. Her temperature remained elevated at 37.7-37.9°C, her pulse was 106-108, and her respirations were 24-26.

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Mr V nursed Mrs B during the morning of Tuesday 26 October. Dr G saw Mrs B during his ward round at 9.20am. Mrs B's family was in attendance. They told him that they were concerned about the lack of medical attention their mother had received over the long weekend.

Dr G informed me that when he examined Mrs B he found that she remained unwell and had had a continuous fever over the weekend, indicating that she had not responded to Augmentin. In his opinion she required a broader antibiotic cover. Although her headache was better she remained nauseated and described occasional dizziness. Dr G said that Mrs B's family described her as being confused at times. Her temperature was not elevated when Dr G examined her and she was not significantly breathless. However, Dr G found that Mrs B had an expiratory wheeze and "crackles" at the base of her lungs. He concluded that there was evidence of bacterial sepsis, likely to be of respiratory origin. Because of Mrs B's history of chronic lung disease and the concerns of her family, he stopped the Augmentin and commenced ceftriaxone. Mrs B was also prescribed Diflam and Losec. In Ms A's complaint she stated that Mrs B developed a sore throat but I can find no record of this in her notes.

Ms A alleges that Dr G did not change Mrs B's antibiotics from Augmentin. Mrs B's medical records indicate that the Augmentin was replaced with ceftriaxone on 26 October and that the first dose was administered before Mrs B was transferred to a private hospital. Mr V said that he discussed this change with Mrs B's family before she was transferred.

Ms A informed Dr G that the family had arranged for Dr L to resume responsibility for Mrs B's care, and for her to be transferred to the private hospital. Dr G expressed concern about the family's intention to transfer Mrs B against his medical advice. He contacted the Clinical Director of the public hospital, to ask whether the family should be asked to sign a form absolving the hospital of responsibility. Dr G telephoned Dr L to inform him of Mrs B's transfer.

Dr G advised me that in his opinion Mrs B remained unwell, with uncertain laboratory reports. He expressed concern about her fluid intake and renal function, which needed evaluation.

At about 11.00am on 26 October Mr V called Dr G's house surgeon, Dr T, because Mrs B's nausea was again proving troublesome. Her oral intake that morning was only 200ml. Dr T ordered intravenous fluids at the rate of 125ml an hour. Mr V noted in his report that Mrs B's urinary output was low (only 100mls since 8.00am) but she was up independently and had also passed urine into the toilet. Her blood pressure, which had previously ranged between 152/76 and 82/40, was 88/42. Her temperature was not elevated, at 36.8°C. Her oxygen concentration was 94% on oxygen (not room air), which was lower than previous recordings.

Her discharge summary, which accompanied her to the private hospital, recorded her blood test results, medications and that she had had blood, sputum and urine cultures taken but the

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results were not yet available. This information was to be sent. Her nursing care summary was sent to the private hospital.

Mrs B was transferred to the private hospital by ambulance at approximately midday. The family asked the charge nurse of the Ward, for a copy of Mrs B's nursing notes, as Dr G had said they could have a copy. The charge nurse thought there was some misunderstanding because the nursing notes are not separate from the patient records and would be needed for the doctor-to-doctor handover. She said that she would arrange for a summary referral to accompany Mrs B when she was transferred. A copy of the referral appears in Mrs B's medical record.

Dr L first saw Mrs B at the private hospital on 26 October 1999. He examined her; her blood pressure was 90/40, temperature 36.7°C, pulse 84 with good peripheral pulses, chest clear, heart sounds normal and she was well hydrated. Dr L did not alter the treatment commenced at the public hospital. He noted that she had been given ceftriaxone before leaving the public hospital. He ordered three litres of fluid (two intravenously and one by mouth), blood pressure recordings four times a day, and blood and sputum tests. Dr L did not record whether Mrs B had a rash, was disoriented or hallucinating. Blood film results from blood taken on 27 October revealed white cell neutrophils showing toxic granulation and vacuolation, and platelets with normal morphology. Blood cultures taken on 27 October showed no growth after five days.

When Dr L reviewed Mrs B the following morning he found that her tongue was dry and that she was jaundiced. She had passed only 300mls of urine in the past 24 hours and she had a widespread macular rash. Her liver function tests were grossly abnormal. Her blood pressure was 80/40. Dr L diagnosed liver and kidney failure and immediately arranged Mrs B's transfer back to the public hospital Intensive Care Unit.

Mrs B's diagnosis on her transfer back to the public hospital was "sepsis of unknown cause". An ultrasound performed that day did not identify a source of infection.

On 28 October Mrs B had a liver biopsy. The report indicated cirrhosis of the liver "with marked fatty changes". The cause of these changes was not identified, but they could have been due to drugs or infection. A laparoscopy and liver biopsy performed on 29 October found that Mrs B had an extremely necrotic liver with a large amount of free fluid in the abdominal cavity.

On 28 October the Intensive Care Unit team discussed Mrs B's care with Dr N, an infectious diseases physician. Dr N suggested that the cause could be either an allergy (to Augmentin or ceftriaxone) or *Rickettsia* (a bacteria-like organism).

Mrs B did not respond to treatment and died at the public hospital at 11.35am on 29 October 1999. Her autopsy results recorded the following:

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“COMMENT:

The deceased was admitted to hospital after becoming unwell while travelling in Queensland. ... A number of laboratory tests were taken on admission however a diagnosis was not made and treatment was initially supportive only. There was gradual deterioration in her condition over the next 24 hours and a skin rash became evident. ...”

There is no documented evidence that Mrs B had a skin rash 24 hours after she was admitted to hospital on 23 October 1999. Mrs B reported a rash in her axilla three days before her admission to the public hospital, but this was not present on her admission. A skin rash was first reported by Dr L at the private hospital on 27 October. The autopsy report continues:

“... ”

Severe fatty change was present in the liver in association with agranulomatous inflammation; these appearances are non-specific however could be consistent with infection or reaction to drug. Histological examination of other organs does not contribute to establishing a diagnosis.

IN MY OPINION DEATH RESULTED FROM MULTIPLE ORGAN FAILURE OF UNKNOWN AETIOLOGY.”

*Complaint to the public hospital*

On 27 October Ms C and Ms A made a complaint to the public hospital. In their opinion Mrs B’s deterioration was missed because it was a long weekend. They stated that the nursing staff constantly told them that nothing could be done because the “team doctors” were not on duty. Their complaint specifically excluded Ms U and Mr V who, in their view, provided excellent care and were very concerned about Mrs B.

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## Expert advice

I obtained independent medical advice from a physician, Dr Carl Burgess. The Police obtained independent medical advice from a consultant physician, Dr M. Mrs B’s family obtained medical advice from an infectious diseases physician, Dr N. The Hospital and Health Service obtained a review of the care provided to Mrs B, from an independent respiratory physician, Dr O.

In response to my provisional opinion Dr F provided a report from a respiratory physician, Dr P, and the public hospital sent a copy of a report supplied to ACC by an independent physician, Dr Q. I obtained further clarification from Dr Burgess. I have considered all this information in forming my opinion.

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*Independent expert advice to Commissioner – Dr Burgess*

I obtained the following independent expert advice from a physician, Dr Carl Burgess:

“I have been requested to provide expert advice to the Health and Disability Commissioner regarding whether [Mrs B] received an appropriate standard of care from [the public hospital], and in particular [Dr G], [Dr F] and [Dr D]. I have been asked to comment on the following:

- Whether antibiotics should have been started sooner
- Whether blood test results were available in a timely fashion
- Whether [Mrs B] had an appropriate medical assessment over the weekend of 23<sup>rd</sup> October 1999
- Whether appropriate antibiotics were commenced on 25<sup>th</sup> October 1999
- Comments on [Mrs B's] overall medical management
- Any other matter which should be brought to the attention of the Commissioner.

I have been supplied with a letter to the Commissioner dated 14<sup>th</sup> February 2000 from [Ms A], which includes the report from [the public hospital's] independent review, notification and investigation to [the public hospital] and doctors who attended [Mrs B], [the public hospital's] response which includes reports from its investigation, [Mrs B's] medical records including autopsy report from [the public hospital] and [the private hospital], report from [Dr J], respiratory physician [at the hospital specialising in respiratory conditions], referral letters and general practitioner records, letter from [Dr L] the doctor asked by [Ms A] to review [Mrs B] prior to her transfer to [the private hospital], and interviews with [Ms C] and Nurse [Ms U].

The circumstances of this complaint relate to the care given to [Mrs B] who was admitted to hospital on 23<sup>rd</sup> October 1999. She had recently arrived from Australia where she had become ill. On arrival in New Zealand she had been taken to a medical centre because of vomiting, headache, a possible seizure and fever. When examined there she was found to have a temperature of 40.4° and because of a suspicion of sepsis she was referred to [the public hospital] for further investigation. She was seen in the Accident and Emergency Department at 2210 hours by the house surgeon, [Dr D] who took a history outlining the present illness and noted as well that this patient is known to have bronchiectasis for which she is treated with frequent antibiotics and postural drainage. She is also known to have gastroesophageal reflux. According to [Dr D's] note, the patient was using terbutaline and budesonide inhalers, oral salbutamol and ciprofloxacin. In other parts of the notes there is a suggestion that this patient was also taking clarithromycin but it is not clear whether she was taking this currently at the time of admission. It is also not clear whether she was currently taking ciprofloxacin but one would imagine from [Dr J's] submission that she probably was taking ciprofloxacin on a regular basis.

On examination the patient was in pain, she had a temperature of 38.8° and there was no localising features besides coarse crackles in both lung fields which would be consistent

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with a history of bronchiectasis. There were in particular no neurological findings and no skin rash at this time. Blood count showed that she had a white cell count of 5.3, a neutrophil count of 4.7 and decreased lymphocytes of 0.3. Her renal function tests were normal, blood glucose was slightly elevated at 7.1, and a gamma glutamyl transpeptidase was 243, which is elevated. Total bilirubin was just slightly elevated at 25, the rest of her liver function tests were within normal limits. A chest x-ray showed slight cardiomegaly with some patchy change at the right lower lobe. It was thought that this probably related to her previous bronchiectasis. [Dr D] felt that this patient had a viral illness and was to be admitted for observation overnight. She was put on regular analgesia and anti-emetics as required. She was also given intravenous fluids. [Mrs B] was then reviewed by the registrar, [Dr E], and [Dr E] concurred with [Dr D] that this was likely to be a viral illness and she was transferred to the medical ward. She was reviewed by the consultant, [Dr G], the following morning (24<sup>th</sup> October 1999) who also felt that this patient had a probable viral illness.

There are a number of nursing notes on 24<sup>th</sup> October which noted that [Mrs B's] temperature was elevated at 37.8°, her blood pressure at this time was normal at 117/53. On admission her blood pressure had been noted at 140/62. She remained tachycardic. Her temperature remained elevated but her headache and nausea persisted. Eventually her headache began to settle with a change of her analgesia. It was noted that on 24<sup>th</sup> October her blood pressure dropped to 84/40 at five o'clock in the afternoon, but by ten o'clock that evening had risen to 110/40.

The next note relates to 25<sup>th</sup> October 1999 at 0600 hours. The patient had been requiring regular paracetamol and tramadol and her temperature remained elevated at 37.8°. She had now begun to require oxygen and still complained of some nausea. Her temperature climbed back up to 38.9° and blood cultures were taken. She had a urine sample taken to the laboratory. She was reviewed by [Dr F], the on-call house surgeon but it is not clear what time this occurred. She diagnosed that [Mrs B] had a chest infection and prescribed her intravenous Augmentin. [Mrs B] began coughing up thick brown sputum and a specimen was sent to the laboratory. A note at 0630 hours on the 26<sup>th</sup> October 1999 notes that the temperature had varied between 37.7 and 37.9°, tachycardia persisted and her respiratory rate was also increased. She was reviewed on 26<sup>th</sup> October by [Dr G], the consultant, who noted that her headache had improved and she was now afebrile. The impression was that she had a lower respiratory tract infection with bronchiectasis. The plan was to commence postural drainage but the family requested that she be moved to [the private hospital]. Because the family requested a change of antibiotic, [Dr G] changed her over from Augmentin to ceftriaxone. She was transferred to [the private hospital] but deteriorated there and was returned to [the public hospital] Intensive Care Unit but did not recover.

These are the circumstances of [Mrs B's] care whilst in [the public hospital] and it is this initial stay in hospital that is the subject of the complaint rather than the stay whilst she was in Intensive Care. It should be noted that a urine examination grew *E. coli* which

was sensitive to Augmentin. It should also be noted that sputum taken from [Mrs B] grew *Pseudomonas* which was sensitive to ciprofloxacin.

There is also a report of the post-mortem examination which is unable to provide a concise cause of death. In the opinion of the pathologist death resulted from multiple organ system failure of unknown aetiology. The pathologist has noted in the comment that the findings found at histology would be consistent with either infection or reaction to a drug. There is no evidence that any of the medicines that [Mrs B] was prescribed would be likely to cause the syndrome she died from. Therefore it is more likely that she died from overwhelming infection, but there is no absolute proof for this.

In answer to the questions:

- Whether antibiotics should have commenced before 25 October.

The diagnosis of a severe viral infection was in keeping with the clinical history and signs that [Mrs B] presented with. Although it is known that she had bronchiectasis and had been treated for this for some years, she had not presented with any increase in sputum production and there were no other symptoms to suggest a bacterial infection. However, it should be noted that [Mrs B], according to letters from [Dr J], was on almost regular antibiotics, and these antibiotics included ciprofloxacin and clarithromycin. It is not clear from any of the notes whether [Mrs B] had been taking these two antibiotics on a regular basis, or even in the period just prior to admission and at the time of admission. If this were the case, then it would account for the fact that she may very well have had a partial response to her bacterial infection and this may have accounted for the normal white cell count. If on the other hand she had not been taking any regular antibiotics, then the clinical picture would be that purely of a viral infection and the management that was instituted was correct. If she had been taking antibiotics on a regular basis then it seems unusual that her antibiotics were stopped. It could be argued, however, that at the time of admission when her temperature had ranged between 40° (at the [Medical Centre]) and over 38° when she presented to [the hospital], the antibiotics that she would have been taking may have been ineffective and a change of antibiotic would be required. Normal practice would suggest that if she were taking antibiotics on a regular basis, these would be continued until cultures of urine, blood and sputum were returned, which would suggest either an alternative antibiotic or no antibiotics were required. The assessment by [Dr D] was full and would be that which would be expected of a house surgeon. In addition, the patient was checked by the medical registrar who agreed with her findings.

- Whether blood test results were available in a timely fashion

The standard blood tests of a full blood count, renal function test and liver function tests were obviously obtained rapidly as they are recorded in [Dr D's] note. The area of contention here is that there was toxic granulation, vacuolation of neutrophils which may have suggested a bacterial infection. This report was obviously not available initially. [The result was not available until 24 October 1999]. Unfortunately, there

would have been delay in this arriving as [Mrs B] arrived on a long weekend and thus it is probable that it was only by the 27<sup>th</sup> October that this data would have been made available to the clinicians. By this time she had already begun antibiotic treatment. Obviously, in a perfect world, such reports would be available rapidly. However, in the present situation and indeed that which pertained in 1999 where funding inadequacies would have prevented there being sufficient people to be available on a regular basis to provide such diagnostic information, one can only say that the blood tests were available in a timely fashion.

- Whether [Mrs B] had an appropriate medical assessment over the weekend of 23<sup>rd</sup> October 1999

This patient was reviewed in the evening of 23<sup>rd</sup> October and then on Sunday morning, 24<sup>th</sup> October 1999. She was then not reviewed until she saw [Dr F] in the afternoon of the 25<sup>th</sup> October 1999. This seems unusual as it is noted from Staff Nurse [Ms U] that [Mrs B's] blood pressure had fallen to 84/40 on 24<sup>th</sup> October 1999 (at 5pm) but then it eventually picked up on its own. It seems unusual that an on-call doctor was not requested to see the patient at that time. At the time when she was reviewed by [Dr G] on the morning of the 24<sup>th</sup> October 1999 he had noted that she probably had a viral illness. At that time her temperature was 38.4° and blood pressure was 130/70. Later on that afternoon her blood pressure began to fall and was reduced to 90/40. Although it rose to 110/40 by that evening, the blood pressure had fallen once again to 90/50 by early the following day. It is also noted that oxygen saturation had fallen to 91% by midnight on 24<sup>th</sup> October. At this time she had been put on 2 litres of oxygen and this had improved her oxygenation. Her pulse remained initially around 100 beats per minute but did rise at one time to 114 and 118 beats per minute – this was on 25<sup>th</sup> October. It is possible that a doctor was not asked to see the patient initially because [Mrs B's] temperature had dropped to normal by 0740 hours on the 25<sup>th</sup> October. It is usual practice in most hospitals that on weekends that if an inpatient is ill then there is a request from one team to the team that is going to take over the care of patients in the hospital to be asked to review that patient. This obviously did not occur in this case. I would suggest that the reason for that is that a diagnosis of viral infection had been made and usually the prognosis with such conditions is good. According to the notes the assessment by [Dr F] was clearly adequate. She has recorded that the patient had long-standing bronchiectasis and had a spiking fever. She also noted the signs in the chest and decided that [Mrs B] probably had a lower respiratory tract infection. This required treatment.

- Should [Mrs B] have been seen earlier by medical staff?

I am not certain of the guidelines that are used at [the public hospital] for when a nurse should ask a doctor to review a patient. However, it would seem that it would not have been out of order for [Mrs B] to have been reviewed when her blood pressure dropped, her temperature remained elevated and her oxygen saturation had also fallen. This would have been an opportune time for her to be reviewed.

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- Whether appropriate antibiotics were commenced on 25<sup>th</sup> October 1999

This is an area of contention in that the patient was started on intravenous Augmentin whereas the family suggested that [Mrs B] should have been given her usual antibiotics, these being ciprofloxacin and clarithromycin. In essence this patient's temperature responded to the Augmentin, and therefore it may have had a beneficial effect. [Dr F] knew that this patient had bronchiectasis and also knew that this patient was regularly taking ciprofloxacin. It is likely that if she believed that the underlying problem was a chest infection, that it probably related to this patient's bronchiectasis. Under such circumstances one would have expected [Dr F] to have covered this patient for a *Pseudomonas* infection. However, whether this would have benefited [Mrs B] is another matter, particularly when one considers that she was admitted with a very high temperature in the face of having taken ciprofloxacin and perhaps clarithromycin in the very recent past. This would suggest that the organism responsible for the present illness is insensitive or resistant to her usual antibiotics, and therefore would be unlikely to help. It can also be argued that whatever other infection she had re-activated her *Pseudomonas* infection and the treatment of that may have benefited [Mrs B]. Thus, the answer to the question is that the usual treatment for lower respiratory tract infection in a patient with known lung disease is Augmentin plus a macrolide antibiotic such as erythromycin or clarithromycin. Only if one thinks that the organism responsible for the present infection is a *Pseudomonas* that one would consider using ciprofloxacin or other agents such as gentamicin. Therefore the answer to the question is that, although Augmentin may have been an adequate choice, it is likely that an additional antibiotic should have been added, for example erythromycin or clarithromycin. [Dr Burgess later clarified his advice by noting that Augmentin was a reasonable choice of drug for Dr F to prescribe whilst waiting for the results of the sputum tests.]

- Comments on [Mrs B's] overall medical management

Overall, there were some problems with this patient's management. This obviously occurred because the patient was admitted over a weekend and was not reviewed on a regular basis. There was no problem with the initial assessment by [Dr D] or by [Dr G]. However, obviously the severity of [Mrs B's] illness was not appreciated. If it had been then regular review by the medical consultant or medical registrar on call would have been recommended. It is this area which is the major concern. It is usual when one feels that there is an ill patient on the ward that one asks colleagues to review the patient over a weekend. It could be argued in retrospect that perhaps [Dr F] ought to have asked the registrar to assess [Mrs B] after she had assessed her. However, it is obvious that [Dr F] thought that this patient had a lower respiratory tract infection and treated her accordingly. Due to the present rostering of junior hospital doctors, it is often that they do not return to assess whether patients have improved. Such assessments are very important and can only be performed where there is good communication between staff. I am not sure of the hand-over requirements of [the hospital] but presume that the staff going off and staff coming on do exchange information. I would imagine that [the hospital] is similar to other hospitals of its size in that it has inadequate numbers of

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junior hospital doctors available and therefore patients are seen only when complications develop. Thus, in my opinion, this patient ought to have been checked again, particularly in the light of the fact that her blood pressure had fallen and that a diagnosis of a bacterial infection had been made.

- Any other matter which should be brought to the attention of the Commissioner.

There seems to be a marked difference in the complainant's report of what occurred at [the public hospital] and what was recorded in the notes. The complainant has mentioned that [Mrs B] was hallucinating and had developed a rash, she was disoriented and confused. None of the symptoms or signs are mentioned at all in the medical or nursing notes of [the public hospital]. First mention of a rash is on 27<sup>th</sup> October at [the private hospital]. The complaints of hallucinations, disorientation and confusion are very important as they would push one towards a diagnosis of septicaemia. It is difficult to accept that these symptoms occurred but were not recorded. I was also asked to comment on [Dr G's] standard of care. He saw the patient on two occasions. The first occasion consultation was good and that expected of a consultant. On the second occasion he agreed to change the antibiotic after discussion with the family. He also instituted the use of Losec, which had been omitted following admission to hospital. He changed her intravenous antibiotic from Augmentin to ceftriaxone although it is not clear why this antibiotic was chosen in preference particularly in the light of the fact that her temperature had now returned to normal. By this time the family wished to transfer [Mrs B] to [the private hospital] and obviously after discussions he facilitated this transfer.

### **Conclusion**

This patient was admitted to [the public hospital] with a severe infection. Unfortunately her condition deteriorated over a long weekend and following transfer to the private sector she was re-admitted to the Intensive Care Unit but unfortunately did not survive.

In answer directly to the Health and Disability Commissioner's question, whether [Mrs B] received an appropriate standard of care from [the public hospital] and the doctors involved, the answer would be that in general the standard of care was fair. However, due to non-regular review over a weekend the severity of this patient's illness was not appreciated. As soon as there was deterioration in her condition medical staff ought to have been called to re-assess her. This did not occur and re-assessment only occurred some 24 hours after the occurrence of deterioration of her blood pressure and approximately 16 hours after her respiratory function also deteriorated. It is likely that these factors would have been recognised earlier and treated if this patient had been seen on a period outside of a long weekend. From the notes it would seem that there was inadequate staffing with junior hospital doctors at the time that [Mrs B] was admitted to [the public hospital]. Presumably this has been rectified."

*Policy on medical oversight*

Dr Burgess indicated that in all public hospitals it is customary for junior doctors to consult senior colleagues and in some hospitals there is a written policy on the matter. I asked the Hospital and Health Service whether it had a policy that required junior medical staff to consult a senior doctor for advice when faced with a situation for which they were not prepared or experienced. I was advised that there is not such a written policy at the hospital. Usually it is a matter of clinical judgement, or specific directions will be recorded in the patient's notes.

*Independent expert advice to Police – Dr M*

The New Zealand Police obtained independent expert advice from Dr M, consultant physician. What follows is the relevant part of Dr M's report:

“ ...

**APPRAISAL AND CONCLUSIONS**

1. The initial medical assessments at [the hospital] by the House Surgeon, Registrar and Consultant were all performed to an acceptable and proper standard. In particular, I would commend the house surgeon, [Dr D], for a clear and comprehensive admitting note. The presumption of viral infection was reasonable under the circumstances.
2. The initial withholding of antibiotics (Ciprofloxacin) was entirely appropriate, as the presumed infection had clearly developed while [Mrs B] was taking that antibiotic and the organism was therefore likely resistant to the antibiotic. It is standard practice under such circumstances to withhold antibiotic therapy while awaiting culture results, and to repeat cultures when previously administered antibiotics have been cleared from the blood. The main exception to this rule is when the patient's condition appears to be causing, or is deemed likely to cause, severe compromise of vital functions. On the night of admission, there were no indications that this was the case.
3. The initial withholding of Losec (a drug which blocks acid production in the stomach) and other anti-acid medication may have been inadvertent, but there is no evidence that it contributed to the patient's subsequent clinical course.
4. There were several occasions on which the vital signs of the patient should have alerted the nursing staff to call the on-call house surgeon (OCHS). This first occurred late on the afternoon of 24.10.99 when the blood pressure dropped. The need for medical reassessment was reinforced when the oxygen saturation fell during the night, and was further reinforced the following day when urine output also fell. Documentation in the notes as to the circumstances under which the OCHS should be called may have prompted the nursing staff to alert the OCHS at an earlier stage. Such contingency plans were not included in the medical documentation. Alternatively, a more general policy regarding circumstances for

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calling medical staff exists in some hospitals; I do not know whether such policies are in place at [the hospital]. Finally, experienced nursing staff may be expected to recognise that the combination of fever, hypotension, and falling urine output is a sign of septic shock requiring intervention.

5. It seems that the OCHS who reviewed Mrs B on 25 October 1999 did not notice the low blood pressure and urine output, and therefore did not respond appropriately to these problems. Had these been noticed, repeat blood tests (in particular for renal function) could have been requested, alerting the medical staff to [Mrs B's] deteriorating liver and renal function.
6. The discharge note from [the hospital] on 26.10.99 reported the renal function and electrolytes as normal, but did not indicate that this referred to the day of admission.
7. It seems that the severity of the patient's condition was not recognised on transfer to [the private hospital]. Contingency plans for calling medical staff were again not made clear.
8. Specific instruction may have allowed [Dr L] to be alerted when [Mrs B] became jaundiced, and was noted to pass concentrated urine containing protein and bilirubin. The need for urgent review of the blood test results was not appreciated. Since the previous tests on admission to [the hospital] there had been a very severe deterioration in renal function (creatinine rising from 0.09mmol/L to 0.381mmol/L, reflecting an approximate 80% reduction in renal function over those few days). At the same time, there was a marked deterioration in all liver function tests, and a significant fall in the serum protein.
9. From the morning of 27.10.99, [Mrs B] had deteriorated further, and when results of her updated blood tests were reviewed, the severity of her condition was recognised. From that point onwards she received appropriate and intensive attempts at resuscitation. Her subsequent care at [the hospital] occurred in two phases: first, a phase of aggressive resuscitation together with intensive attempts to establish the underlying nature of her disorder (including the laparotomy) and second, a phase of withdrawal of interventionist care when it became apparent that she was not likely to recover. As a general physician, I believe that the care provided during [Mrs B's] final admission, and the decision to withdraw intensive therapy, were entirely appropriate. The notes record that [Mrs B's] family were kept fully informed of the overall state of her health, the management options and the likely outcome throughout her second admission to [the hospital].

In summary, [Mrs B] received appropriate care and treatment when she first presented to the hospital. During the Sunday and Monday of Labour Weekend, her deteriorating condition was not appreciated, and it appears that this led to further delays in resuscitation and further investigation. Her transfer to [the private hospital] was associated with a further 24-hour delay in the appreciation of her deteriorating status.

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After returning to the public hospital she received intensive and appropriate care, despite which she died of multi-organ failure due to presumed sepsis (organism and site not known).”

*Independent expert advice to ACC – Dr Q*

The Accident Compensation Corporation obtained the following independent expert advice from Dr Q:

“[Mrs B] was admitted with a febrile illness which progressed to multi-organ failure at death despite appropriate investigations and management. The details of her medical management are accurately summarised in the medical reports of [Dr M], [Dr O] and [Dr G], which also provide balanced opinions regarding the standard of medical and nursing care that [Mrs B] received. In general they consider that her overall management was appropriate. In addition to their comments:

1. The inability to determine the underlying cause of her illness at post mortem indicate that the inability to make a diagnosis during her admission was a feature of her illness rather than a reflection of the standard of care that she received.
2. The inability to identify the nature of the presumed infection, either during her hospital admission or at post mortem suggests that there may well have been a viral infection for which no treatment was available. This suggests that the earlier administration of broad spectrum antibiotics would not have influenced the outcome.
3. The possible diagnosis of dengue shock syndrome (raised by [Dr N]) is significant in that for this disorder a presumptive diagnosis is required, no specific diagnostic test is available, no antibiotic treatment is available and mortality is up to 20%. These features characterised [Mrs B’s] illness in that none of the investigative tests, including the examination at post mortem, revealed the diagnosis there was no response to appropriate treatment (including broad spectrum antibiotics) and there was a fatal outcome.
4. [Dr L’s] assessment at the time of admission to [the private hospital] was that no change in her management was required, indicating that he supported the medical approach taken previously.
5. The clinical significance of the fall in blood pressure on the evening following her admission is an issue requiring consideration. There were a number of potential causative factors for the hypotension including dehydration from inadequate fluid intake, vasodilation secondary to the fever, an adverse effect from tramadol or septic shock. With the blood pressure subsequently stabilising to around 110 systolic, no specific response was made until the following evening when intravenous antibiotic were started. While in retrospect it is apparent that the low pressure indicated septic shock, it was not unreasonable to come to a different conclusion at the time. Furthermore, it is unlikely that a more aggressive medical

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approach would have changed the course of the disease in view of the subsequent events.

6. The appearances of toxic granulation of white cells is non-specific, may occur in both viral and bacterial infections, as well as tissue damage from non-infective causes.

### Summary

1. [Mrs B] suffered a devastating illness of unknown cause, which progressed to death despite appropriate investigations and management.
2. It is most unlikely that a different management approach would have had any influence on the outcome of this illness.
3. [Mrs B] received a standard of care and skill reasonably expected in these circumstances. As a result, this case cannot be considered to be one of medical error or medical mishap.”

### *Expert advice to Mrs B's family – Dr N*

Mrs B's family obtained medical advice from Dr N, infectious disease physician. Dr N reported:

“I have read the documents included with [the family's lawyer's] letter of 31.5.01. I have taken particular note of the hospital records (both the two admissions to [the public hospital] and that to [the private hospital]), the report of [Dr F], the written concerns of the family members and the post mortem report. I have not seen the report from [Dr G], consultant in charge, nor that of [the clinical director], both of which are referred to by others.

I believe the careful description of events written by [Dr M] most accurately reflects the events from a medical perspective and I do not think it needs restating.

In terms of trying to come to a definitive diagnosis (and I recognise that is not the family's immediate concern), there are two medical points I need to make.

1. I am unable to find any normal liver function tests in any of the information provided to me. In July, August and October 1993 they are significantly abnormal in [Dr J's] notes, he clearly recognises that point and comments on it, but no diagnosis or further explanation is available to me. They are next recorded and again are abnormal (although the albumin is perhaps importantly normal) on admission to [the hospital] on 23.10.99 and remain so during this admission. The liver biopsy of 27.10.99 in particular and the post mortem report of the liver tissue both comment on granulomatous change in the liver, with the biopsy histologist raising, among other explanations, the possibility of primary biliary cirrhosis.

My point is that on the evidence available to me, [Mrs B] may have had prior longstanding liver disease. I can take that no further.

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2. There are no precise details of where she spent her time in Australia. I acknowledge that will be known to her family. The possibility, and I acknowledge it is an outside one, is however that the clinical events which eventually led to her death were the result of dengue fever, proceeding onto dengue shock syndrome and dengue haemorrhagic fever. The latter two are rare complications of primary dengue fever in adults, but have been described and many aspects of her illness fit.

The striking feature of the illness sequence is visible on the temperature chart of her initial admission to [the public hospital]. As her temperature comes down to normal, over the days of that admission, an observation which is broadly in keeping with the initial diagnosis of viral infection, or perhaps as response to antibiotic treatment, there is however another event which is quite dramatic. While there has been some blood pressure instability beforehand, it clearly falls on the afternoon of 24.10.01 and at no stage (until resuscitated in [the hospital] Intensive Care Unit) is ever again recorded at the initial levels, which I presume are normal for her. It is recorded at 100/40 on admission to [the private hospital] on 26.10.99, and at 90/60 (temperature 34.9°C) on admission to [the public hospital] Critical Care Unit on 27.10.99 (I cannot read the time). The falling temperature in retrospect was probably malign rather than benign.

The sequence of events, dominated by hypotension and impaired renal function (and presumably to a lesser extent, the impaired hepatic function) which ensue, are being set in train over this period and are at no stage commented on by medical personnel in the notes at either house surgeon or consultant level, nor is there evidence of this observation, which is recorded in the nurse's notes, being drawn to the attention of the medical staff. The earlier recognition of this abnormality would have precipitated further tests (only one lot of relevant blood tests were done during her [public hospital] stay, or are at least available in the Hospital notes I have reviewed) to sort out why this was happening. Strategies to reverse the abnormalities minimise their effects and determine the cause would have then taken place earlier. The abnormalities, which were subsequently demonstrated at [the private hospital], had they been available prior to discharge from [the public hospital], would have argued extremely strongly against such a transfer, whatever events were pushing the family to make that decision. There is similarly no statement which shows that these abnormalities, were actually drawn to the attention of, or seen by [Dr ]L on the evening of 26.10.99.

To the particular concerns of [Ms A] and [Mr S]:

- a) [Mrs B] was in fact very carefully evaluated initially and the initial treatment seems totally appropriate. There seems, however, to have been a failure of the nursing and medical staff to recognise the significance of, or respond appropriately to [Mrs B's] hypotension. This persisted from the afternoon of 24.10.99 until return from [the private hospital] on 27.10.99, by which time she was in established renal failure.

She was seen by several medical staff members over the period of her [public hospital] hospitalisation including a senior consultant on two occasions, and a further one at [the private hospital], an initial house surgeon and registrar on admission and an on call house surgeon. It was their impressions, as I read the notes, that the general trend of [Mrs B's] illness was in the direction of improvement.

The issue seems less to me 'non existent treatment or monitoring', but rather that the events which the monitoring demonstrated were not appropriately pursued.

- b) This is essentially covered above in relation to the hypotension, which is the critical issue. No definitive diagnosis has been made even with hindsight and the post mortem findings and I have not gone deeply into that issue, other than to draw attention to some issues at the beginning of this document.
- c) The letter from Mr [...], General Manager, [the public hospital], states that a house officer and registrar are on duty at [the hospital] with a consultant on call. While I do not know the numbers of these individuals available, nor the numbers of patients they were covering at [the hospital] that weekend, this is standard practice throughout the English speaking medical world. Where there are concerns expressed by junior staff, they pass them up the chain. Senior staff make decisions on their need to review individual patients primarily on the basis of their own knowledge of the patient's status, their concerns or otherwise about that, and the knowledge and skills of the junior staff on call for the patients at the particular institution.

There were, therefore, experienced medical professionals on duty as I understand it.

- d) I cannot and do not have views on the medical – family interface.”

*Expert advice to the Hospital and Health Service – Dr O*

The public hospital obtained a review of the care provided to Mrs B from an independent respiratory physician, Dr O:

“... ”

**Comment**

This house surgeon's reaction appears appropriate in the face of a worsening clinical state and initial antibiotic therapy with IV Augmentin would be appropriate unless it were known that the patient was colonised with *Pseudomonas* or another gram negative bacteria known to be resistant to this combination. There is no information that this was so and given that the patient had been an oral Ciprofloxacin prior to hospitalisation, IV Augmentin is not unreasonable as an antibiotic to use at this stage. Appropriate

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investigations had been taken prior to initiation of antibiotics and appropriate recordings continued.

Coincidentally the *E. coli* noted in the mid-stream urine result obtained on admission was also sensitive to Augmentin.

On 26 October the patient was seen again by [Dr G] and his team, antibiotics were changed to Ceftriaxone because of a past history of failure on IV Augmentin. The patient was subsequently transferred to [the private hospital] where the next day it was clear that further clinical deterioration had occurred and multi-organ failure was beginning to supervene. The patient was subsequently transferred back to Intensive Care at [the public hospital] for ongoing management. Unfortunately once multi-organ failure had supervened the known mortality from this disorder in the setting of sepsis is in excess of 70-80%.

### **Conclusion**

I believe the initial assessment of a probable viral illness, as a cause for [Mrs B's] symptoms was appropriate. I think the initial management was appropriate and that the decision to introduce antibiotics on 25 October on the basis of a failure to improve as expected, was also appropriate. It may be argued that a broad-spectrum antibiotic such as Imipenem should have been introduced at this point, but I think it was reasonable to use Augmentin in the first instance by the intravenous route.

There were only two clues of the potential seriousness of her sepsis, the first being the laboratory report of toxic granulation and vacuolation on the blood film obtained on admission, however this data would not have been available to the admission staff, as only cell count is provided. The second clue was the low blood pressure recording obtained at 1700 hours on 24 October, this blood pressure recording had increased at the subsequent recording time, although diastolic pressure remained low.

Clearly the outcome for [Mrs B] and her family has been devastating and, whilst in retrospect, management could have been different, I think the decisions made during her hospital stay were appropriate in light of the information available at the time.

I can not of course comment on the attitudes and behaviour displayed by staff toward the family as this information is not available to me.”

#### *Expert advice to Dr F – Dr P*

In response to my provisional opinion, Dr F provided a report prepared for her by respiratory physician Dr P:

“... ”

## **2. Background Information**

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You have asked specifically that I comment on certain aspects of the management of the patient, [Mrs B]. In order to do so in a logical fashion it is necessary to provide some basic background information. The specific questions I am asked to address relate specifically to bronchiectasis and *Pseudomonas aeruginosa* (PA) infection.

The term 'infection' (rather than 'colonisation') will be used as recent experimental data suggests that PA may play a role in the development/progression of airway damage ie PA and anti-PA antibodies participate in a bacteria-driven, host-mediated inflammatory response that leads to irreversible airway damage. Once the person with bronchiectasis is infected by PA, the organism can seldom be eradicated.

In a recent analysis of the [hospital which specialises in respiratory conditions] cohort, 22% of patients with idiopathic bronchiectasis were chronically infected with PA. In idiopathic bronchiectasis PA infection is associated with greater impairment of baseline lung function, more severe bronchiectasis, worse quality of life, higher sputum volumes and higher rate of decline in FEV1 – although it is not entirely clear as to whether chronic PA infection causes accelerated decline in lung function or whether it is simply a marker of those whose lung function is declining more rapidly for other reasons.

Infective exacerbations of bronchiectasis generally behave as an airway (mucosal and intraluminal) infection generally not associated with Overt parenchymal involvement (that would produce new radiologic abnormalities). Such exacerbations are characterised primarily by increased cough and sputum production. Features of systemic infection (apart from sub-acute general ill health) are relatively uncommon but can occur. As with exacerbations of other forms of airways disease, there is some dispute as to the major microbiological aetiologies; this deliberation being complicated by the fact that sputum culture produces growth of a variety of organisms even when the patient is clinically stable. In idiopathic bronchiectasis, it is most likely that the 'invasive' organisms are *Streptococcus pneumoniae* and/or *Haemophilus influenzae* – rather than *Pseudomonas* Species. Bacteremia (blood stream infection) by PA is extremely uncommon as is 'Pseudomonas pneumonia'. (Even in cystic fibrosis in which chronic infection by PA is common, bacteremia by *Pseudomonas* or related organisms is very uncommon -with the exception of the extremely uncommon 'Cepacia syndrome' due to certain genomovars of *Burkholderia cepacia*).

Thus, even if chronically infected with PA, exacerbations of bronchiectasis are generally not due to PA but to other organisms, which are responsive to more common or conventional antibiotics.

### **3. [Mrs B's] Bronchiectasis**

Review of the original [hospital specialising in respiratory conditions] notes reveals that a high resolution CT scan of the chest performed in March 1999 showed right lower lobe bronchiectasis (with thick walled bronchi and some mucous impaction in terminal small airways). However, there was no evidence of bronchiectasis in other areas of the lung. There had been no progression when compared with an earlier CT scan. Referral

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letters from Dr J indicated that Mrs B had been chronically infected with PA but the only sputum cultures performed at [the hospital specialising in respiratory conditions] failed to grow this organism. Nevertheless, it seems reasonable to assume that Mrs B was chronically infected by PA and it is likely that she remained so until her death.

#### **4. Appropriateness of Antibiotic Therapy**

*'Did Dr F's action in prescribing Augmentin, with a plan of obtaining a sputum test, and reviewing medication upon receipt of the result of that sputum test, accord with good clinical practice? Should she have supplemented this with an antibiotic to cover the possibility of Pseudomonas infection or with Erythromycin or Clarithromycin.'*

*'Was it a failure on her part to provide medical services with reasonable skill and care, because she did not prescribe such additional antibiotic regime?'*

The initial antibiotic therapy prescribed by Dr F was Augmentin (Amoxycillin plus Clavulanic Acid). This antibiotic provides good cover for Strept pneumoniae and Haemophilus influenzae (in New Zealand and Australia) and as these are generally regarded as the most likely 'invasive' organisms, this antibiotic choice was entirely appropriate.

For the reasons given above, I would regard this to be an appropriate initial antibiotic choice, whether or not the patient was chronically infected with PA. (It is the antibiotic I expect the resident staff under my supervision in Respiratory Services at [the hospital specialising in respiratory conditions] to use for patients admitted with an exacerbation of bronchiectasis). It is worth restating at this point that [Dr F] was not aware of chronic PA infection at the time she saw Mrs B; and that this information was not recorded in the [the public hospital] records. Furthermore, the sputum culture results did not become available until some days later. However, it is noted that at the time [Dr F] began antibiotics, she not only instituted other appropriate therapy but arranged for sputum culture to be performed 'as soon as possible'.

Mention is made of the fact that the family felt that [Mrs B] had previously not responded to Augmentin. It is not possible to comment on the relevance of this without further information, viz: When did this apparent lack of response occur? In what context? What dose of Augmentin was used? And was it administered orally or intravenously?

I agree that the situation may have been complicated by prior antibiotic use but I am unable to gather accurate information on this. The last antibiotics prescribed (?type) by [Mrs B's] general practitioner were in June 1999 – it is not clear as to whether these were for an exacerbation of bronchiectasis or a resupply 'to have on hand' (a common practice in the management of bronchiectasis). Although the initial record suggests that [Mrs B] was taking Ciprofloxacin at the time of her admission, statements by her family suggest that she was not using antibiotics whilst on holiday in Australia. Whilst this medication may have accompanied the patient to hospital, it is not clear as to whether



this agent was being used immediately prior to admission or merely represented an 'on hand' supply.

Reference is made (but no reliable information supplied) to the patient being on 'almost continuous Ciprofloxacin'. This would not represent standard practice; the duration of Ciprofloxacin use is usually two weeks or less because of concern about the rapid development of resistance to this agent by *Pseudomonas*. It is therefore not clear why [Dr Burgess] drew the conclusion that [Mrs B] was '*probably taking Ciprofloxacin on a regular basis*'.

I agree with [Dr M] that, under the circumstances, it would not have been appropriate for [Mrs B] to continue on this antibiotic after admission. As [Dr M] points out, it is usual practice in the context of the admission situation to stop antibiotics and to take all relevant specimens for culture. If the patient had been using Ciprofloxacin prior to admission, there had clearly not been a beneficial response and thus cessation would have been indicated. Furthermore, if the presumptive diagnosis was that of an exacerbation of bronchiectasis then there is concern that Ciprofloxacin does not provide adequate antibacterial cover for usual respiratory pathogens, particularly gram positive organisms. (It is for this reason that Ciprofloxacin is not recommended for the treatment of community acquired pneumonia (CAP) in the 2001 American Thoracic Society (ATS) Guidelines, whilst other drugs in this class (quinolones) are recommended as first line treatment).

Dr Burgess suggests that there should have been co-administration of a macrolide antibiotic (Erythromycin or Clarithromycin). Such a suggestion would be consistent with the 2001 ATS Guidelines for the treatment of CAP in patients with co-morbidity and/or admitted to hospital (and consistent with earlier guidelines). However, in the situation of a presumed infective exacerbation of bronchiectasis, there is not such a concern about organisms such as *Legionella* and *Mycoplasma* which require macrolide cover. Thus I would not regard the failure to add a macrolide antibiotic in this situation as inappropriate management; rather it represents management consistent with best practice at [the hospital specialising in respiratory conditions].

There are a number of comments in the material supplied about the patient's purported use of Clarithromycin, but insufficient detail is provided to draw any meaningful conclusions. However, use of this medication may have direct relevance to the patient's hepatic derangement present at the time of admission to hospital and which led to fulminant hepatic failure. A literature search has revealed that both Clarithromycin and Ciprofloxacin have been reported to rarely produce fulminant hepatic necrosis.

[Dr R's] correspondence is quoted in the Commissioner's Report. The good response to Clarithromycin to which he refers took place in 1997 and thus the relevance of this is questionable. (However this response in the presence of chronic PA infection reinforces the importance of treating conventional respiratory pathogens rather than the *Pseudomonas* alone). An antibiotic such as Ceftriaxone would not be indicated as first line treatment of CAP or exacerbation of bronchiectasis. However, I regard its use as

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reflecting uncertainty about the source of any infection and the desire to provide much broader antibiotic cover.

Thus, in summary:

- The choice of Augmentin as initial antibiotic therapy was appropriate.
- The other management instituted at the time by Dr F was appropriate.
- For an exacerbation of bronchiectasis (as opposed to CAP) there was not an indication for the use of a macrolide antibiotic.
- Even if chronic PA infection was known, specific anti-PA antibiotics are not indicated in this situation.

## **5. Diagnosis of Infective Exacerbation of Bronchiectasis**

The above discussion focuses on the appropriateness of management of an exacerbation of bronchiectasis/CAP. Whilst such a provisional diagnosis was not inappropriate considering the circumstances, with the benefit of hindsight there must be very serious doubts as to whether this was the cause of the patient's presenting complaints;

- The cardinal features of increased cough and sputum were lacking;
- The patient had no specific respiratory complaints on admission;
- The major initial symptoms were those of fever, headache and nausea;
- The radiologic abnormalities were likely to represent long-standing changes and attributable to the known bronchiectasis. (At the present time I have not been able to obtain the [the public hospital] radiology).
- The patient's subsequent course with the development of multi-organ failure was not consistent with an exacerbation of bronchiectasis.

## **6. Consultation With More Senior Members Of The Medical Team**

[Dr F] saw [Mrs B] on a single occasion. At that time she concluded that [Mrs B] had an exacerbation of bronchiectasis. Although I think, in hindsight, that this was unlikely, [Dr F's] diagnosis was agreed to by the clinical team and more senior colleagues. As has been pointed out by others, there were no clinical features at the time of [Dr F's] assessment that would have been a cause for serious concern. Specifically none of the British Thoracic Society criteria for intensive care unit admission or increased risk of mortality from CAP were present. Her choice of antibiotic and the other management measures she initiated were entirely appropriate for the diagnosis made. Under those circumstances I would not have expected her to consult with more senior members of the medical team. To do so under these circumstances, on a regular basis, would have been very impractical.

Dr Burgess states that:

*'In all public hospitals it is customary for junior doctors to consult more senior colleagues ...'*

He then, quite appropriately, qualifies this statement along the following lines:

*'... when faced with a situation for which they were not prepared or experienced.'*

As pointed out by [Dr F], she was confident about her management and had identified no clinical features to cause concern. I think that it is appropriate for a doctor in [Dr F's] position and with her experience to feel that it was not necessary to consult with more senior persons at that time.

...

[Dr N] stated:

*'Where there are concerns expressed by junior staff they pass them up the chain. Senior staff make their decisions on their need to review individual patients primarily on the basis on their own knowledge of the patient's status, their concerns or otherwise about that, and the knowledge and skills of junior staff on call for the patient at the particular institution.'*

As such and for the reasons given above, I do not believe that [Dr F's] actions are contrary to the statements made by [Dr N].

## **7. Other Points**

The Commissioner states [in the provisional opinion]:

*'... It would have been reasonable for [Dr F] to suspect that pseudomonas was the cause and prescribe an antibiotic to cover that possibility.'*

Even in the [the hospital specialising in respiratory conditions] cohort with arguably the most severe disease and greatest need for antibiotic therapy, chronic PA infection occurs in only one fifth of patients with idiopathic bronchiectasis. As such, I would not regard it 'well known' that Pseudomonas maybe a chronic infecting organism. In the two volume US text 'Pulmonary Diseases and Disorders' by Fishman, PA is mentioned once in relation to bronchiectasis – as one of at least 10 organisms that may infect the sputum in that condition.

As pointed out earlier, if an exacerbation of bronchiectasis had been present, it is unlikely that PA was the 'cause' and anti-Pseudomonal antibiotics would not generally have been indicated.

## 8. Conclusions

- A: I do not think that [Mrs B's] clinical presentation was consistent with an infective exacerbation of bronchiectasis. As such, the discussion of the appropriateness of management of this condition is not really directly relevant.
- B: Nevertheless, [Dr F's] management of a presumed exacerbation of bronchiectasis, including the antibiotic cover used, was appropriate, as were the other management strategies that she instituted.
- C: Under the circumstances prevailing at the time of [Dr F's] single involvement with [Mrs B], there were no clear indications that she should have consulted with more senior members of the management team."

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## Response to provisional opinion – The Public Hospital

In response to my provisional opinion, the public hospital made the following submission in relation to nursing observation of Mrs B:

“ ...

### Nursing Observations

- 2. It is not uncommon for nurses to record atypical patient observations from time to time (eg a lowered blood pressure or raised temperature). These results can occur for many reasons. In the absence of an indication that there is cause for serious and immediate concern it is usual for nurses to undertake basic remedial action or to continue monitoring to see if a trend develops. If the recordings improve, or the patient responds appropriately to the intervention, there may be no need to notify on-call medical staff and the matter will be recorded in the notes in the normal way. The information is then available to subsequent staff.
- 3. The nurse on duty on [24] October has informed you that the drop in blood pressure appeared to be an isolated observation and that when she took another reading two hours later the reading had returned to 110/40. Likewise, when [Mrs B's] oxygen saturation fell slightly later that night the nurse on duty administered oxygen and the saturation levels returned to normal. In both situations the nursing staff identified a problem and responded by monitoring further or by initiating corrective action. I do not agree with [Dr N's] or Dr Burgess' view that the events were not appropriately pursued. I draw your attention to the report prepared by [Dr Q] for the Accident Compensation Corporation (copy enclosed). He states that there are a number of different causes for hypotension. While in retrospect the low blood pressure indicated septic shock, in his view it was not unreasonable to come to a different conclusion at the time.

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4. In addition, [Mrs B's] blood pressure on admission to [the private hospital] was 90/40, which is similar to the level recorded on the evening of October 24. There is no indication that [Dr L] believed that this recording was significantly abnormal in the circumstances.
5. The nursing staff notified the medical staff when [Mrs B's] condition did not improve. [Dr F] reviewed [Mrs B] on 25 October as a result of a request from a nurse. Your own adviser states that '*according to the notes the assessment by [Dr F] was clearly adequate*'. Even if a medical review had been requested earlier, there is no evidence that it would have altered the course of treatment or the long term outcome in any way. This is supported by the report prepared by [Dr Q], referred to above.

### **Medical Management**

6. A number of medical staff had input into [Mrs B's] care during the period 23 to 26 October. These staff included [Dr D] and [Dr E] on 23 October, [Dr G] on 24 October, [Dr F] and [Dr W] (twice) on 25 October and [Dr G] and [Dr T] on 26 October 1999.
7. [Dr F] was the on-call house surgeon on duty at the hospital on Labour Day, 1999. Senior staff were available 'on-call' if required. Such a system is common throughout New Zealand hospitals. During the last few years [the hospital] has increased the number of medical teams from 8 to 14. Correspondingly, the number of 'on-call' staff during weekends and holiday periods has also increased. This staffing increase has been necessary to cope with the growing number of acute medical admissions at the hospital (admissions are increasing by approximately 8% each year).
8. I note [Mrs B's family's] reported comment that [Dr F] was located having a cup of coffee in the doctor's office. The inference appears to be that [Dr F] was not responding to a request to review a patient and that she was engaged in an unimportant activity at a time when she was required elsewhere. I can't comment on the exact circumstances but believe it is extremely unlikely that [Dr F] would have ignored a request for review or been slow responding to such a request. During her time at [the hospital], [Dr F] was highly regarded as a competent and diligent doctor.
9. [Dr F] carried out a full assessment and concluded that [Mrs B] was suffering from a lower respiratory tract infection. She appropriately prescribed augmentin and documented a plan in the notes that included use of a nebuliser, chest physio and postural drainage. She requested that a sputum culture be sent for testing as soon as possible. I believe it would be rare for a house surgeon to consult with a senior doctor before prescribing an antibiotic for what appeared to be an infective exacerbation of a pre-existing lung condition.

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10. [In the provisional] opinion you state that [Dr F] did not call back and check whether the treatment she had prescribed earlier was effective. [Dr F] was covering a large number of patients on Labour Day and was very busy. When an on-call doctor has seen a patient and has prescribed appropriate treatment then it would be usual to rely on the nursing staff to alert the doctor if the patient did not respond as expected. To suggest that on-call medical staff should call back to check on every patient that has been seen during the course of the shift would not be practicable or usual.
11. There is now a system that identifies the particularly sick patients on each ward so that they can be reviewed by the on-call team during weekends. It is quite likely that a similar, but informal, system was in place in 1999 but I can not be certain of this. In any case, any system listing particularly unwell patients requires such patients to be identified in the first place. In [Mrs B's] case, her condition was reasonably assessed and treated as a viral infection. It is only with the benefit of hindsight that we now know that [Mrs B] was becoming unwell prior to 28 October 1999. However, at the time, staff felt that her presentation and symptoms were consistent with the initial diagnosis of viral infection and the later identification of a lower respiratory tract infection.
12. It is not clear what doctor you are referring to when you state [in the provisional] opinion, '*one doctor completing a shift did not hand over responsibility for [Mrs B's] care*' so it is difficult to respond to this point. Due to the significant length of time since these events took place it is not possible to determine whether there was any formal or verbal hand-over of information between teams in [Mrs B's] case. It is also impossible to determine whether this would have had any impact on the care she received or the decisions that were made.
13. The discharge summary prepared for [Mrs B] on 26 October did not state the date of the blood results. It is usual for test results to be dated. In the absence of a specific, identified date it is open to the receiving doctor to seek clarification of the result dates or to review the full laboratory result forms if this is felt to be significant. Clearly, [Dr L] did not. In any event [Dr G] also spoke to [Dr L] by telephone prior to the transfer and provided details of the clinical problems and his concerns.
14. [Mrs B's] family was very angry at the time of her discharge from [the public hospital]. They wanted to shift her to [the private hospital] as soon as possible (against the advice of [Dr G]). It is highly likely that the discharge summary was completed quickly and under significant pressure and this possibility should be considered when assessing the adequacy of the information contained in the document.

### **Other Issues**

15. I enclose for your information a copy of a document titled 'Operational Policies for Acute General Services'. This policy was introduced in January 2000 and is

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currently due for review. You will see that this policy covers the following matters:

- A requirement that on-call medical staff review patients if this is warranted by the patient's condition or if there is an alert at hand-over.
  - A requirement that on-call medical staff review a patient if the nursing/midwifery staff identify any significant alteration in the patient's condition.
  - A requirement that medical staff attend ward calls in accordance with the requests of the nurse/midwife shift co-ordinator. The nurse/midwife shift co-ordinator will alert the medical staff to the priority of the request.
  - Documentation of after-hours medical reviews and the necessity to identify a clear plan.
  - General requirements regarding nursing and medical hand-overs between shifts.
16. [Mrs B's] death was very sad and unexpected. However, I do not agree that the care provided was inadequate.
17. I note your view that it is impossible to say whether [Mrs B's] life could have been saved. As advised earlier in this letter, I have enclosed a copy of a report from [Dr Q], a highly respected physician who provided independent advice to the Accident Compensation Corporation in relation to this case. [Dr Q] concluded that it is most unlikely that a different management approach would have had any influence on the outcome of this illness. He also advised the Accident Compensation Corporation that in his view [Mrs B] received a standard of care and skill reasonably expected in the circumstances.

...”

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## **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 – Dr H**

### **Right 4(1)**

In my opinion Dr H did not breach Right 4(1) of the Code of Health and Disability Services Consumers' Rights.

Dr H was the doctor on duty at the medical centre on 23 October 1999. He assessed Mrs B when she arrived at the clinic. Recognising that she was very ill he recommended she proceed to a public hospital promptly. Dr H rang the registrar on call at the public hospital to arrange Mrs B's admission.

Ms C thought that her mother should have travelled by ambulance. In Dr H's opinion, taking Mrs B to hospital by private car was faster than waiting for an ambulance, since the hospital was a short distance from the clinic. Mrs B's observations were stable and he considered that she would not need medical care during the journey. I can find no evidence that Mrs B suffered as a result of Dr H's actions. In my opinion Dr H provided medical services with reasonable care and did not breach Right 4(1) of the Code.

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## **Opinion: No Breach – Dr D**

### **Right 4(1)**

In my opinion Dr D did not breach Right 4(1) of the Code of Health and Disability Services Consumers' Rights.

Dr D was the house surgeon on duty in the Emergency Department on 23 October 1999. Dr D did not prescribe antibiotics after examining Mrs B on that date. Dr D consulted Dr E, the medical registrar on call in the Acute Assessment Ward, about Mrs B, in particular as to whether a lumbar puncture should be arranged. Dr E examined Mrs B and agreed with Dr D's diagnosis that Mrs B's illness was likely to be of viral origin. Dr E did not order antibiotics.

One element of Ms A's complaint was that antibiotics should have been commenced when Mrs B was admitted to hospital because she showed signs of sepsis. However, there is no record of sepsis. No blood film was made of the blood taken on 23 October. There were findings from the blood film result, namely toxic granulation and vacuolation of neutrophils, which could indicate either a viral or bacterial infection. These results were from blood obtained from a specimen taken on 27 October. At the time Dr D and Dr E examined Mrs B this information was not known.

There is no evidence that Mrs B displayed any other signs of sepsis. Mr S and Ms A reported that Mrs B had hallucinations, disorientation, confusion and a fine red rash, all of

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which were ignored by staff. These allegations are not corroborated by the contemporaneous medical records. Mrs B reported to Dr D that she had a rash in her left axilla three days before her admission but it had since disappeared. In the autopsy report Dr Vuletic commented that Mrs B developed a rash within 24 hours of her admission, but the basis for this statement is not clear. Dr D examined Mrs B and recorded "no skin rash". Dr F said that Mrs B was not disorientated. Dr F said that she was not informed that Mrs B had any rash or swelling.

My medical advisor commented that signs of sepsis are very important but are not recorded in any of the medical or nursing reports from the hospital. He commented that he would find it hard to accept that these sign and symptoms were present and not recorded by Dr D, Dr E, Dr G or any of the nurses who cared for Mrs B from 23 to 24 October 1999. I accept this advice and conclude that these signs were not evident to any of the staff at that time.

My advisor, and the other medical experts who provided reports on the management of Mrs B's final illness, confirmed that it is appropriate medical practice to withhold antibiotics during the initial phase of such an illness (pending sputum, urine and blood culture reports), unless there are specific indications of deterioration to warrant antibiotic therapy. Had Mrs B's condition deteriorated to the point that her vital functions were compromised, it would have been appropriate to commence antibiotics. There were no such signs present on 23/24 October 1999. I therefore conclude that when Dr D saw Mrs B she showed no signs of sepsis and it was appropriate to withhold the administration of antibiotics.

Accordingly, in my opinion Dr D provided medical services with reasonable care and skill and did not breach Right 4(1) of the Code.

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## **Opinion: No Breach – Dr E**

### **Right 4(1)**

In my opinion Dr E did not breach Right 4(1) of the Code of Health and Disability Services Consumers' Rights.

Dr E was the medical registrar on call in the Acute Assessment Ward on the night of 23 October. Dr D consulted Dr E about Mrs B, in particular as to whether a lumbar puncture should be arranged. As noted above, Dr E examined Mrs B, agreed with Dr D's diagnosis that Mrs B's illness was likely to be of viral origin, and did not commence antibiotics.

At the time Dr E examined Mrs B the later results that subsequently indicated sepsis were not available. There is no record of the signs and symptoms described by Mrs B's family. I accept that these signs and symptoms – which would have warranted further investigation – were not evident to any of the staff at that time.

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I am satisfied that when Dr E saw Mrs B she showed no signs of sepsis and it was appropriate to withhold the administration of antibiotics.

Accordingly, in my opinion Dr E provided medical services with reasonable care and skill and did not breach Right 4(1) of the Code.

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## **Opinion: No Breach – Dr G**

### **Right 4(1)**

In my opinion Dr G did not breach Right 4(1) of the Code.

Mrs B had the right to medical services provided with reasonable care and skill. Knowledge of Mrs B's medical history, and in particular the medication she took to control her disease, needed to be considered when planning her treatment.

Mrs B had chronic lung disease. Her family were concerned that Dr G, who was the consultant in charge of her care, did not consult Mrs B's general practitioner or respiratory specialists and was therefore unable to prescribe an appropriate antibiotic to combat her bacterial infection. Dr K, Dr J and [the hospital specialising in respiratory conditions] respiratory specialists knew that Mrs B's sputum had grown *Pseudomonas*, a bacteria known to be resistant to some antibiotics. Mrs B had tried several different antibiotics over the preceding six years in an effort to control her infection. It would seem reasonable to consult with Mrs B's physicians rather than commence an antibiotic known to be ineffective.

Mrs B's family wanted her recommenced on ciprofloxacin. Dr G had a number of clinical reasons why he did not comply with their request. When Mrs B was admitted she showed no obvious signs of bacterial infection. Furthermore, blood tests taken on 23 October 1999 revealed her liver function to be mildly abnormal. Ciprofloxacin is known to be toxic to the liver.

I asked my medical advisor whether Mrs B should have been commenced on antibiotics before 25 October 1999. Dr Burgess reported that when a patient is taking regular antibiotics it would be unusual not to continue with them until blood, urine and sputum culture confirmed whether antibiotics were necessary.

Mrs B took antibiotics intermittently, but I have been unable to establish whether Mrs B took any antibiotics after June 1999. To her family's knowledge Mrs B did not take antibiotics while she was on holiday in Australia. She did not attend the hospital specialising in respiratory conditions after March 1999. Her last appointment with Dr J was 12 April 1999, and her last consultation with her general practitioner, Dr K, prescribed antibiotics was 1 June 1999. It was therefore reasonable, on the basis of the information available to the medical team at the time, to refrain from prescribing antibiotics before 25 October.

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Dr G knew that Mrs B took antibiotics intermittently, and in particular ciprofloxacin and clarithromycin. This was documented in Dr D's notes that Dr G referred to in his report. When Dr G first saw Mrs B he agreed with Dr D's and Dr E's diagnosis of viral infection and that she did not require antibiotics. My medical advisor, and the other medical experts who provided reports, commented that this was entirely appropriate.

When Dr G examined Mrs B on 26 October there was evidence of bacterial infection and that Augmentin, which had been commenced by Dr F the previous day, was ineffective. Dr G agreed that Mrs B needed antibiotics and changed the Augmentin to ceftriaxone, as a broader spectrum antibiotic was needed. I note that Dr L continued this antibiotic when Mrs B arrived at the private hospital later that day.

After reviewing all of the evidence it is my conclusion that Dr G did take Mrs B's medical history into consideration and provided medical services with reasonable care and skill. Accordingly, Dr G did not breach Right 4(1) of the Code.

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### **Opinion: No further action – Dr G**

#### *Failure to prescribe Losec*

Dr G saw Mrs B twice at the hospital, on 24 and 26 October 1999. During the latter consultation Mrs B's family were in attendance.

Dr G advised me that he did not prescribe Losec when he saw Mrs B on 24 October 1999. Dr D did not list it as one of Mrs B's normal medications. Ms C did not tell Ms Lucas that Losec was one of Mrs B's regular medications and therefore it was not ordered by the on-call house surgeon on 24 October. When Mrs B's family raised the issue with Dr G on 26 October he prescribed it and apologised for the omission. The evidence would suggest that this was the first time it was noted that Mrs B's Losec had not been prescribed.

Ms A made a complaint directly to the hospital on 27 October 1999. Dr G's apology to Mrs B's family is recorded in the hospital's report of the complaint. Both Dr G and Dr M reported that failure to prescribe Losec was unlikely to have impacted negatively on the course of Mrs B's illness. Because the failure to prescribe Losec was rectified at the earliest opportunity, I do not intend to take any further action in relation to this matter.

### **Opinion: No Breach – Dr F**

#### **Right 4(1)**

In my opinion Dr F did not breach Right 4(1) of the Code of Health and Disability Services Consumers' Rights.

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*Mrs B's medical history*

Mrs B had the right to medical services provided with reasonable care and skill, in a manner consistent with her needs. The Code imposes a duty on providers to provide services that are reasonable in the circumstances. Mrs B had a significant and relevant medical history and any doctor called to see her needed to take her history into account when forming her treatment plan.

Dr F was the house surgeon called to see Mrs B on Monday 25 October. This was the first time that she had seen Mrs B. It was a public holiday and she was the only house surgeon covering the medical wards at the hospital. There was a medical registrar and a consultant on call. By the time Mr S had located Dr F, it was about 8.00pm and the family had been seeking a medical review of Mrs B for about seven hours. Mrs B and her family were understandably very distressed and upset.

Dr F informed me that as far as she is able to recall she told Mrs B and her daughter, Ms C, that she intended to prescribe intravenous Augmentin. Dr F noted Mrs B's medical history, spiking fever and increased sputum production. Dr F concluded that Mrs B's chronic lung disease was exacerbated by a bacterial infection. At no time did Mrs B or her family tell her that Augmentin had proven ineffective in the past. If they had told her she would have explored Mrs B's history in more detail and may have chosen another antibiotic. Dr F was never informed that Mrs B had antibiotics with her in her travel bag.

Three of Mrs B's family remained in attendance while Dr F examined her. Mr S, Ms A and Ms C confirmed that Dr F told them she intended to give intravenous Augmentin. Mrs B and her family were familiar with her illness and treatment. They knew that Augmentin had proven ineffective in the past. Ms C said that she took the alternative antibiotic, which Mrs B carried with her, out of her travel bag to show Dr F.

I am faced with a conflict of evidence. There is no independent witness to substantiate this conversation between Dr F and Mrs B's family. Dr F did not make a written record of it and Ms U was not close enough to hear what was said. There is no basis for me to prefer the evidence of the family to that of Dr F on this critical issue. However, I find it hard to believe that Dr F would not have further explored Mrs B's medical history and considered prescribing another antibiotic, if she had been aware of the history of Augmentin use. Accordingly, in my opinion Dr F did not breach Right 4(1) of the Code in relation to this issue.

*Appropriateness of antibiotic treatment*

In my opinion, in prescribing Augmentin for Mrs B, Dr F responded appropriately to the circumstances at the time, and did not breach Right 4(1) of the Code.

When Dr F saw Mrs B on the evening of 25 October she prescribed Augmentin, nebulisation and chest physiotherapy. She decided to wait for the results of the sputum culture before reviewing the antibiotic. Dr F told Mrs B's family that it was hospital policy to prescribe Augmentin for chest infections. Dr I advised me that Augmentin was the antibiotic of choice at the hospital when the offending bacteria have not been identified.

I have carefully reviewed all the expert advice in relation to the appropriateness of the antibiotic treatment Dr F prescribed for Mrs B. It is unreasonable to suggest that Dr F contributed to Mrs B's deterioration by prescribing Augmentin and failing to add a broader spectrum antibiotic. In my opinion, given Mrs B's medical history, the choice of Augmentin was reasonable while Dr F awaited the results of the sputum culture.

In these circumstances, Dr F's decision to prescribe Augmentin was appropriate in the circumstances and did not amount to a failure to provide medical services with reasonable care and skill. Accordingly, Dr F did not breach Right 4(1) of the Code.

*Consultation with senior colleagues*

Dr N advised Mrs B's family that where a junior doctor is working alone it is standard practice to consult a senior colleague "when faced with a situation for which they were not prepared or experienced". Dr F advised me that, as a house surgeon at the hospital, she would consult a senior colleague only if she was uncertain of her assessment or the case was "very bad" or "a medical emergency".

Dr F advised me that she did not refer to the consultant on call because she had no need to do so. She was confident in her diagnosis that Mrs B had an overriding bacterial infection and she had no reason to believe Mrs B's condition was complicated with *Pseudomonas*. The results of sputum culture were not available to Dr F and so she followed hospital policy when the cause of an infection is unknown, and prescribed Augmentin.

Dr F's expert, Dr P, noted that Dr F was confident about her management and had identified no clinical features for concern; and that he considered it "appropriate for a doctor in Dr F's position and with her experience to feel that it was not necessary to consult with a more senior person at that time". I agree.

I am satisfied that Dr F acted reasonably in not consulting a senior colleague, and did not breach Right 4(1) of the Code.

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## **Opinion: No Breach – Hospital and Health Service**

### **Right 4(1)**

In my opinion the Hospital and Health Service did not breach Right 4(1) in relation to the following matters.

#### *Delay in obtaining blood film results*

Dr O's report to the hospital indicated that medical staff would have been alerted to the potential seriousness of Mrs B's condition if they had had the blood film report showing toxic granulation and vacuolation of neutrophils sooner. I asked my medical advisor to comment on this aspect of Mr S and Ms A's complaint.

The blood tests results taken on the night of 23 October were available that night and documented by Dr D in her admission assessment. However, no blood film was made from that specimen. A blood film is not routinely done on a full blood count unless the results are abnormal. The blood film report showing toxic granulation and vacuolation of neutrophils was not available until 27 October, from blood taken earlier that day. Where positive, this test may indicate bacterial infection but may also indicate viral infection. The information forms a part of the overall clinical picture to be considered along with the signs and symptoms the patient presents with.

I am advised that the presence of toxic granulation and vacuolation of neutrophils is determined visually by a laboratory technician viewing each blood film under the microscope. The time taken to produce the report is dependent on the availability of laboratory staff. Dr Burgess advised me that in an ideal world these reports would be available rapidly but, given the circumstances operating over a long weekend in 1999, Mrs B's blood tests were provided in a timely fashion. I am guided by this advice.

In my opinion the time taken by the hospital laboratory to produce the blood test results was reasonable in the circumstances and the Hospital and Health Service did not breach Right 4(1) of the Code in relation to this matter.

#### *Staffing of assessment area*

The Hospital and Health Service employed Dr D. Dr D was the house surgeon in the Emergency Department when Ms C brought her mother to hospital on the evening of 23 October 1999. The complaint alleged that Dr D was not experienced enough for Ms C to relay her mother's medical history to her. However, my advisor noted that Dr D took a complete history, recorded Mrs B's medication, ordered appropriate blood tests and recorded the results in her records. Dr M commended Dr D on the thoroughness and clarity of her assessment and documentation. I am guided by my expert advice. Ms C's complaint that there was not experienced medical personnel on duty to take her mother's medical history is not substantiated.

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In my opinion Dr D was appropriately qualified to be on duty in the assessment area of the hospital. Accordingly, the public hospital did not breach Right 4(1) of the Code in relation to this matter.

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### **Opinion: No further action – The Public Hospital**

An investigation of a complaint involves corroboration of information provided by the complainant or provider. Where facts can be established from an independent source I am able to form an opinion on whether the Code of Health and Disability Services Consumers' Rights has been breached. However, in some instances elements of a complaint cannot be corroborated or are not given in enough detail to enable the provider to respond. Section 37(2) of the Health and Disability Commissioner Act permits me to take no further action on a complaint where it appears unnecessary or inappropriate to do so in all the circumstances.

In this case, some aspects of Ms A's complaint cannot be corroborated. I have decided, therefore, to take no further action on the following aspects of the complaint.

*Mrs B could not walk but no one offered her a wheelchair or offered to assist Ms C to take her mother into hospital*

Ms C advised me that when she arrived at the hospital she was directed to the emergency treatment room. Ms C said that she ran around for about 20 minutes but no one offered to help her with a wheelchair or offered other assistance.

Dr I informed me that during the night the foyer of the hospital is staffed by a security guard and wheelchairs are available for patients' use. Obviously, if Ms C required help in transferring her mother to the emergency treatment room it would have been reasonable to seek and obtain assistance. However, I have been unable to establish the exact circumstances surrounding Ms C's arrival at the hospital. It is therefore not appropriate to take any further action in relation to this matter.

*Mrs B developed a throat infection but no appropriate food was available*

Ms A complained that her mother developed a throat infection but was given toast, which was not appropriate. She stated that although Mrs B's family complained to staff, no appropriate food was available. Dr I informed me that ice cream, yoghurt and soft food is available at all times if a patient cannot take solid food. I have reviewed Mrs B's medical notes. Nursing staff were informed that Mrs B had a sore throat on 26 October when Dr G ordered Diflam. It is clear that Mrs B's family was particularly caring and attentive and would have insisted that she be provided with a more appropriate diet had she remained at the hospital. However, later on 26 October Mrs B was transferred to the private hospital. In the circumstances, it is not appropriate to take any further action in relation to this matter.

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## **Other comments – The Public Hospital**

### *Nursing observations*

Mrs B was admitted to the hospital for observation and monitoring. At 5.00pm on 24 October 1999 Mrs B had a significant drop in blood pressure. Although her blood pressure had recovered when it was taken again two hours later it never returned to the baseline level recorded on her admission the night before and her diastolic pressure remained low throughout this admission. The drop in blood pressure was not reported to the doctor on call.

A second significant event occurred later that night when Mrs B's oxygen concentration dropped to 91% (100% being normal) at midnight. Mrs B was given oxygen and her oxygen concentration returned to normal. Dr F was aware of these observations, when she saw Mrs B on 25 October, but did not consider them significant because a fall in blood pressure and oxygen saturation were consistent with her diagnosis of a chest infection and possible dehydration. The following day Mrs B had a drop in urinary output and her intravenous fluids were increased. However, the day that Dr F saw Mrs B she had used the toilet and her urinary output was not recorded.

I am advised that these seemingly isolated events signalled deterioration in Mrs B's illness. Dr N said that the issue for him is not "non-existent treatment or monitoring" but rather that events which the monitoring demonstrated were not appropriately pursued". The significance of Mrs B's observations was not recognised and as a result the deterioration in Mrs B's condition was not detected. Medical staff rely on nurses to report any deterioration in patients' observations and seek medical assessment where it is considered necessary.

I have reviewed the reports from Dr M, Dr N and Dr O and the advice from my independent advisor, Dr Burgess. I am concerned that important signs of Mrs B's illness and deterioration between 24 and 26 October 1999 appear to have been missed by nursing staff who did not recognise the significance of the observations and did not report their findings to medical staff.

In response to my provisional opinion, the public hospital submitted that nursing staff had correctly identified and responded to changes in Mrs B's observations. Reliance was placed on the advice of Dr Q to ACC that "[w]hile in retrospect it is apparent that [the fall in Mrs B's blood pressure on the evening of 24 October] indicated septic shock, it was not unreasonable to come to a different conclusion at this time". Dr Q noted:

"It is most unlikely that a different management approach would have had any influence on the outcome of this illness."

Dr Q advised ACC that Mrs B had "received a standard of care and skill reasonably expected in these circumstances". He implicitly accepted that none of the registered nurses involved in caring for Mrs B had provided substandard care.

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Although I am satisfied that Dr Q's conclusions are justified, this case highlights the importance of nurses identifying, recording and responding to changes in a patient's observations.

#### *Medical management*

Dr M, Dr N, Dr O, Dr P and Dr Q commented that Mrs B's initial treatment was appropriate and reasonable. However, there were some overall medical management problems with continuity of the care provided. My medical advisor, Dr Burgess, raised the following: there should have been regular medical review of ill inpatients over a long weekend; one doctor completing a shift should have handed over the responsibility of care to the incoming medical staff; and, the doctor on call should have followed up to see whether the earlier treatment had been effective. I note, however, that Dr F saw Mrs B quite late on the evening of 25 October and that Dr G saw her the following morning, before the sputum culture result was available. In those circumstances I accept that Dr F did not need to follow up Mrs B's treatment unless specifically requested to do so by nursing staff.

Dr M noted that Mrs B's discharge summary did not give an accurate picture of her clinical state. The discharge summary advised that Mrs B's renal function and electrolytes were normal but there was no indication that these were 23 October results. Dr L did not receive the next renal and liver function test results until 27 October. In the meantime severe deterioration in renal and liver functions had occurred. Thus there was a delay of 24 hours, from when Dr L saw Mrs B on 26 October, before further tests became available and the severity of her condition was recognised. There is also no reference in her transfer referral to her low blood pressure, low oxygen concentrations and low urinary output. There was, therefore, further delay before Dr L obtained this information.

I accept that Dr G was concerned about Mrs B's transfer from the public hospital and telephoned Dr L to report on Mrs B's treatment directly. I also accept that Mrs B's family wanted her transferred urgently and staff were anxious to comply with her family's wishes. I note that the public hospital advised me that the discharge summary was completed in haste and it was not the usual practice to omit such important information. However, there was important clinical information that was missed. It is clear that Dr L did not appreciate the severity of Mrs B's illness because he did not order urgent laboratory investigations, alter the treatment commenced at the public hospital, or alert the private hospital nursing staff about the possibility of her deterioration.

If Mrs B's fall in blood pressure, oxygen concentration and urinary output had been brought to the attention of the medical staff sooner, further blood tests, including renal and liver tests, may have been initiated sooner and strategies to reverse her condition could have been put in place.

Clearly Mrs B was expected to make a recovery and her illness took an unexpected course. Because the deterioration in Mrs B's condition was not recognised, there was a delay in initiating appropriate treatment. This case demonstrates the need to implement systems that promptly signal and respond to any deterioration in a patient's condition.

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## Subsequent developments – The Public Hospital

The public hospital advised me that, because of the increasing numbers of sick patients, the number of medical teams has increased from 8 to 14 and the number of on-call staff during weekends and holiday periods had also increased. It has also introduced the following policies:

- A requirement that on-call medical staff review patients if this is warranted by the patient's condition or if there is an alert at hand-over.
  - A requirement that on-call medical staff review a patient if the nursing/midwifery staff identify any significant alteration in the patient's condition.
  - A requirement that medical staff attend ward calls in accordance with the request of the nurse/midwife shift co-ordinator. The nurse/midwife shift co-ordination will alert the medical staff to the priority of the request.
  - Documentation of after-hours medical reviews and the necessity to identify a clear plan.
  - General requirements regarding nursing and medical hand-overs between shifts.
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## Other comments – Ms A

I note with concern that on 3 February 2002 Dr F received a card at her private address signed by Ms A that stated as follows:

“[Dr F]  
It is the 2 year Anniversary of Your Medical NEGLIGENCE and now you LIE about it!!  
**... pretend you're at work!**  
We know the TRUTH and will never forget it! – it's never over!  
We intend to tell the truth to everyone!  
[Ms A].”

Dr F was understandably very distressed to receive the card, and found it threatening, particularly since it had been received at her general practice address, which neither she nor the Commissioner's Office had communicated to Ms A.

I sought a written assurance from Ms A that she would not send any such mail or attempt to contact Dr F again. Ms A responded to me as follows:

“... In regard to sending a card to [Dr F], I was merely commemorating the 2<sup>nd</sup> anniversary of my Mother's death and stating that I felt [Dr F] was not being truthful about her part in the lack of care provided. Perhaps [Dr F] was so disturbed because

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she has a guilty conscience about this? However I can assure you I will not be entering into any other communication with [Dr F].”

Ms A attempted to justify her actions by stating that she was suffering from post-traumatic stress disorder and in particular to the stress of waiting for “some justice”.

Ms A suffered a great loss and I acknowledge that the investigation has been lengthy and difficult for all involved. Nevertheless, this type of correspondence between complainant and provider is highly inappropriate and does not assist the complaint resolution process.

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### **Further actions**

- A copy of this opinion will be sent to the Medical Council of New Zealand.
- A copy of this opinion, with personal identifying features removed, will be sent to the College of Nurses, Aotearoa (New Zealand), the Royal Australasian College of Physicians, the Resident Doctors Association, the Director-General of Health, and the Chief Medical Advisors for all District Health Boards, for educational purposes.

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