Dr D, Consultant Physician

Dr E, House Surgeon

Dr F, Registrar

Ms G, Registered Nurse

MidCentral District Health Board

A Report by the

Health and Disability Commissioner

(Case 03HDC14692)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Parties involved

Mrs A	Complainant, Mrs B's daughter
Mrs B	Consumer (deceased)
Mrs C	Complainant, Mrs B's daughter
Dr D	Provider/Consultant Physician
Dr E	Provider/House Surgeon
Dr F	Provider/Registrar
Ms G	Provider/Registered Nurse
Dr H	Registrar
Dr I	General Practitioner
Mr J	Registered Nurse
Ms K	Registered Nurse
Dr L	House Surgeon
Dr N	Registrar
Ms M	Registered Nurse
Dr O	House Surgeon
Dr P	House Surgeon
Mr Q	Registered Nurse
Ms R	Registered Nurse
Ms S	Registered Nurse
Ms T	Registered Nurse
Dr U	House Surgeon
Dr V	Clinical Director (Internal Medicine), MidCentral Health
Ms W	Professional Advisor (Pharmacy), MidCentral Health
Dr X	Medical Director, MidCentral Health

Complaint

On 21 October 2002 the Commissioner received a complaint from Mrs A about the care her mother, Mrs B, received at Palmerston North Hospital. The issues identified for investigation were:

MidCentral Health
Whether, between 5 April 2002 and 10 April 2002, MidCentral Health had systems in place to ensure that Mrs B received services of an appropriate standard. In particular whether appropriate systems were in place to ensure that:

Names (other than Palmerston North Hospital, MidCentral Health and the Commissioner's expert advisor) have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

- *the correct label was attached to Mrs B's drug chart*
- *an appropriate response was made to concerns raised about her condition during the weekend of 6 and 7 April 2002*
- *Mrs B's consultant was appropriately informed about her requirements*
- *new staff to the hospital received appropriate orientation*
- *the correct ECG was attached to Mrs B's file.*

Dr D
Whether, between 5 April 2002 and 9 April 2002, Dr D provided services of an appropriate standard to Mrs B. In particular, whether he took appropriate steps to ensure that Mrs B was prescribed the correct medication.

Dr E
Whether, on 9 April 2002, Dr E took appropriate action when he discovered that Mrs B had been receiving inappropriate medication. In particular, what steps Dr E took to:

- *inform Mrs B's consultant*
- *reverse the effects of morphine and other medications.*

Dr F
Whether, on 9 April 2002, Dr F took appropriate action when asked to review Mrs B, and in particular whether she should have identified that Mrs B was receiving the incorrect medication.

An investigation was commenced on 2 October 2003.

On 11 October 2004 the investigation was extended to include Ms G and the following issues:

Ms G
Whether, on 6 April 2002, Ms G, Registered Nurse, provided care to Mrs B of an appropriate standard. In particular:

- *whether an adequate nursing assessment was made*
- *whether the care planned was adequate and appropriate.*

Information reviewed

Information from:

- Mrs A
- Dr D
- Dr E
- Dr F
- Ms G
- MidCentral Health — Mrs B's clinical records, statements made by PNH staff to the Coroner and the Accident Compensation Corporation ("ACC"), reports from Dr V, Clinical Director (Internal Medicine), Ms W, Professional Advisor (Pharmacy), Dr X, Medical Director, and the General Manager regarding MidCentral Health's relevant policies, guidelines and internal review documentation
- ACC's Medical Misadventure Unit — statements by PNH staff, expert advisors' reports, decision documents, independent reviewer reports

Independent expert advice was obtained from Dr Mary Seddon, general physician and Senior Lecturer in Quality Improvement, Epidemiology and Biostatistics, University of Auckland.

Information gathered during investigation

Overview

This report concerns the services provided to Mrs B, a 91-year-old resident of a rest home, at Palmerston North Hospital ("PNH") in April 2002. Specifically, it concerns the mislabelling of a drug treatment chart ("drug chart") — the form used to record the prescription and administration of medication to a patient — on the evening of 5 April 2002; an error not discovered until late on 9 April 2002.

Mrs B presented to PNH's Emergency Department ("ED") on the evening of Friday, 5 April 2002, with a suspected lower respiratory tract infection. At some time during the course of her clinical assessment or admission, a computer-generated patient identification "bradma" label, on which was printed Mrs B's name, date of birth, sex, age, home address, admission date, GP, and unique PNH hospital identification number, was affixed to the top of a completed drug chart intended for another patient, "[patient Z]".[1]

[1] The drug chart forms part of the patient's clinical record, and includes a sheet headed "Regular Medications" on which all drugs prescribed for the patient are to be listed by their generic name.

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The following medications had been handwritten by Dr H, registrar, on the "Regular Medications" section of patient Z's drug chart: Duride (isosorbide mononitrate — 90mg once daily, for treatment of angina); Losec (omeprazole — 20mg twice daily, for treatment/prevention of stomach ulcers); Frumil (a combination of two diuretics, frusemide and amiloride, 1 tablet in the morning); MST Continus (morphine sulphate controlled release — 100mg twice daily, an opioid analgesic for pain relief); warfarin (3mg daily — an anticoagulant, usually given following deep vein thrombosis, pulmonary embolus or cardiac valve surgery); oxybutynin (5mg daily — for urinary incontinence); and aspirin (150mg daily). Each of these drugs was to be administered orally.

In a statement provided to ACC in October 2004, Dr H explained how he believed the mislabelling of the drug chart had occurred. He said:

> "One job that should be done for each patient who is admitted is for hospital labels to be printed and made available. The labels … are a method by which every document prepared for the patient can be readily identified by means of affixing the label.
>
> The labels and any documentation are supposed to accompany each patient on a tray. When seeing [patient Z], his labels were not available. I charted his medication and arranged for him to be admitted. He suffered from chronic pain and was on morphine sulphate 100mg twice a day.
>
> A bed was not immediately available for [patient Z] so I left instructions with the nurse. In the usual course of events the nurse would prepare a file and ensure that all the patient's papers were filed away and labelled.
>
> I subsequently learned that [patient Z] had gone to the ward without a medication chart and that a new one had been done by the on-call house surgeon. Unfortunately this did not alert staff to search for the original medication chart.
>
> … I have since learned that [patient Z's] medication chart completed by me without a label [subsequently] — by someone unknown — had [Mrs B's] label on it."

Mrs B was admitted to a general medical ward for overnight care in the early hours of 6 April 2002 and was to be discharged later that day. The mislabelled drug chart was attached to her file. That morning, Mrs B was administered a number of the medications prescribed on the chart, including 100mg MST.[2] She became drowsy and confused and was not discharged. Mrs B remained an in-patient and received four further 100mg doses of MST between 6 and 8 April, together with various doses of the other above-named drugs. Apart from antibiotic and laxative medications charted after her arrival on the ward, Mrs B did not

[2] In a statement to the Coroner, Dr V, Clinical Director of Internal Medicine, MidCentral Health, advised that "the [MST] doses [Mrs B] received were significant and would be expected to be associated with sedation". Morphine is contraindicated for respiratory conditions; 100mg is a high dose for a patient who has not previously received morphine.

receive any of her own regular medications (which included a drug for her diabetes) during this time. She deteriorated into a "coma state". When the drug chart error was discovered late on 9 April, Mrs B's own medications were charted and administered and her condition appeared to improve. However, her health subsequently deteriorated and she died as a result of pulmonary oedema secondary to acute cardiac failure and pneumonia.

Chronology

Friday, 5 April — assessment in Emergency Department
Mrs B arrived at PNH at 6.48pm on Friday, 5 April 2002, with one of her daughters, Mrs A, on referral from Dr I, a locum general practitioner at a medical practice. (Mrs B's usual GP at the practice was Dr ….) Mrs A took to the hospital Dr I's referral letter (in which he requested an assessment for "pneumonia/chest infection"), Mrs B's medical records from the rest home, and all Mrs B's regular medication (in an A4-sized "bubble pack" clearly labelled with Mrs B's name and the times when the drugs were to be administered).

The "Emergency Department Medical Report" in Mrs B's MidCentral Health medical records shows that she was seen by the following nursing staff in the Emergency Department (ED): Ms K, RN, triage nurse (at 6.57pm); a Staff Nurse (at 7pm); and Mr J, RN (at 7.20pm). Ms K advised that at 7.50pm she recorded Mrs B's observations — including blood pressure, heart rate and temperature, which were within "normal limits" — and wrote a brief history, assessment and plan. She also noted that Mrs B's Glasgow Coma Score ("GCS", an indicator of level of consciousness[3]) was 15. Ms K's plan included taking blood and urine samples and an ECG reading. These were taken, although it is not clear by whom. An intravenous ("IV") cannula was inserted into Mrs B's left hand. The ED notes do not record any details under the headings "Patient property" (specifically, patient medications) or "Information to receiving Ward/Department". Ms K advised that completion of this part of the ED notes was not her role, but a matter usually "done at a later date by the nurse or doctor who is caring for the patient prior to transfer from the emergency department".

At 9.30pm, Dr L, house surgeon, examined and assessed Mrs B and recorded that Mrs B was "feeling lifeless" and had been troubled by a dry cough, which was occasionally productive with clear sputum, for about ten days. Dr L noted that Mrs B had no chest pain (but "discomfort" across her chest), no fevers and no chills, and that her oral intake that day had been "poor". She observed Mrs B's neurological signs, noting that Mrs B was orientated to date, month, year and place. Mrs B's temperature was recorded as 37.6° Celsius.

Dr L recorded Mrs B's past medical history, which included breast cancer (in 1954), skin cancer (on her scalp) and hypertension, and that she had no history of cardiac concerns such

[3] A GCS of 8 or less is considered a coma state; 15 indicates full consciousness.

as angina. She noted that Mrs B had an ulcer on her left leg, was a non-insulin-dependent diabetic, and had occasional urge incontinence and constipation. Mrs B's current medications were recorded by Dr L as: gliclazide (for diabetes, 80mg morning, 40mg lunchtime); frusemide (a diuretic, 80mg morning, 40mg evening); Slow K (supplemental potassium in slow-release form, 1 tablet in the morning); doxycycline (an antibiotic, 100mg daily); enalapril (for heart failure, 5mg morning); and emulsifying ointment and aqueous cream (for her leg ulcer). Mrs A recalls that Dr L visually identified and discussed each of these medications with Mrs B.

Dr L also noted Mrs B's allergy to penicillin and Duoderm, and recorded that on 2 April her GP had prescribed the oral antibiotic cefaclor (Ceclor) for her cough. Dr L's impression was that Mrs B had either viral bronchitis or a lower respiratory tract infection/pneumonia. Dr L ordered a chest X-ray and blood tests. The latter showed a mild increase in Mrs B's white cell count and a slightly raised blood sugar level of 10.3mmol/l. Her serum sodium level was slightly low at 130mmol/l, and her serum creatinine was in the upper limits of normal at 0.11mmol/l (indicating satisfactory — although impaired — kidney function). Dr L asked Dr H, registrar, to review Mrs B.

Dr H advised that on 5 April 2002, he completed his normal duty from 8am to 4pm, and was thereafter on call for the acute admission shift, from 4pm until 11pm.[4] He recalled that it had been a particularly busy day, because there were a number of difficult and seriously ill patients both in the ED and the wards. Prioritising patient needs had been particularly challenging, with the needs of some "very unwell" patients putting staff under pressure.

Mrs A's impression of the ED that evening was that the nurses were busy but the doctors appeared less so. She remembers that her mother was frustrated by the wait to be seen by a doctor.

Dr H reviewed Mrs B at around 10.30pm and agreed with Dr L's provisional diagnosis of a lower respiratory tract infection. In a statement provided to ACC in October 2004, Dr H advised that he could not remember "with any certainty" whether he had discussed Mrs B's medication with her or seen the bubble pack of medications, although it would have been usual to ensure that such matters had been discussed and recorded. He was aware that Dr L had recorded Mrs B's regular medications in the notes.

Dr H stated: "I did not admit this patient, therefore I did not prepare the medication chart for her. This is standard practice. This task is generally done by the admitting medical officer at the time of the patient's admission." He also advised that the admitting medical officer would usually attach the bradma label to the medication chart, but in this case "the labels may not have been prepared as quickly as they should have been. It is my practice

[4] Dr H explained that the acute admitting registrar is responsible for the acute admissions from the ED and also for the patients in the wards if their condition deteriorates.

when the labels are not put on the documents to put the patient's name and hospital number in handwriting so the label can be stuck on top once it is available."[5]

Dr H explained that he was called to see "a very ill patient at the Coronary Care Unit" and needed to leave the ED. Because Mrs B's chest X-ray was not available at that time, he did not make "a final decision" whether Mrs B should be admitted, and handed Mrs B's care over to the night registrar, Dr N. Dr H subsequently went off duty at 11pm.

Mrs A recalls that at some point that night either Dr H or Dr N made a "very brief visit" to Mrs B, and said that her notes could not be found.

Dr N confirmed: "[Dr H] told me that [Mrs B] was waiting for a chest X-ray and he was unsure whether she would need hospital admission or could be discharged home. He requested that I review [Mrs B's] chest X-ray and decide regarding the need for admission."

Saturday, 6 April
The chest X-ray ordered for Mrs B was described by Dr N as "apparently normal". It showed no consolidation; that is, it did not indicate pneumonia. However, as this result was received at approximately 12.30am, and Mrs A was not happy for her mother to be discharged at such a late hour, Dr N decided to admit Mrs B to a ward, under the care of the "Internal Medicine Line".

Mrs A is certain that a drug chart was not prepared for Mrs B, because Dr L had "fully reviewed and documented" in the assessment notes the correct medication which they had brought with them to the hospital, and advised them that it was appropriate for Mrs B to continue taking that medication. Mrs A left the hospital around 1am. She is certain that when she did so the "bubble pack" containing Mrs B's regular medications, along with her notes from the rest home, was with Mrs B in the ED.

Dr N stated that, having decided to admit Mrs B, he added the oral antibiotic Ceclor (500mg three times a day) to the drug chart (that is, patient Z's chart), which "had been written out before my arrival on duty and had Mrs B's patient identification label attached to the top of it". The entry for Ceclor was recorded immediately below the entry for aspirin.

Dr N recorded in Mrs B's notes that his plan was to "continue oral Abs [antibiotics]" and that the post-take team was to review Mrs B in the morning for "probable discharge" to the rest home. Thereafter, Dr N had no further involvement in Mrs B's care.

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[5] PNH's ED nursing staff also advised ACC that they understood it was the responsibility of the prescribing doctor to affix the bradma label to the drug chart, and that in the ED this would have been done in the "central station" where all patient notes and information were kept.

Mrs B was transferred to a general medical ward at PNH, where she arrived at approximately 2.15am. Ms M, registered nurse, was on duty in the ward and recalls Mrs B arriving accompanied by an orderly. Ms M stated that her usual practice when a patient arrives from the ED is to read the ED notes for "any instructions", and commence the Nursing Assessment form by asking the patient the name of their next of kin. In this case, Ms M recorded Mrs A's details in the relevant section of the form.

Ms M stated that having read Dr N's plan for Mrs B's care, she would have checked the drug chart to see what antibiotics Mrs B required and when. She advised, "I would only have looked down the 'frequency' column [of the 'Regular Medications' sheet] to see what medicines were to be administered three times daily. Anything to be administered od (once daily) or bd (twice daily) I would not have read in more detail as I would not need to administer them on that night shift." Of the drugs recorded on the "Regular Medications" sheet, only Ceclor was to be administered three times a day. Ms M was initially unable to find this antibiotic on the ward, but subsequently administered a 500mg dose to Mrs B at 2.30am and recorded this on the drug chart.

Ms M recorded in the clinical notes that Mrs B signed a consent form, and that a nursing care plan was commenced. A "General Consent Form" in Mrs B's notes is signed by her and dated 6 April 2002. It is not signed by a clinician or nurse. It states, "I understand that there will be ongoing discussion during my stay regarding all care and treatment and that verbal consent will be gained for examinations, various tests, medication, physical treatment, therapy from other Health Professionals."

Ms M's entries in the nursing care plan relate to Mrs B's mobility ("walks with frame, may need assistance") and hygiene requirements, and state under the heading "Observation" that Mrs B was to have "hourly physical nightly checks" and receive oral antibiotics and "oral meds as charted". Ms M stated that she would not have completed the rest of the "Nursing Assessment" form for Mrs B, because "when a person is very tired it is not appropriate to ask them information during the night. I would have left this for the morning staff to do." Ms M also did not discuss Mrs B's medications:

> "I cannot recall whether [Mrs B] had any medications with her but if she had I would have followed my normal practice when someone comes into the ward from the Emergency Department in the night, tired, and with no relatives with them and where the medicines are not needed until the morning. This is to place a bradma sticker on the medications bag and put it into the drug cupboard. … The bradma stickers come up from the Emergency Department with the patient's details. … I would not have checked [Mrs B's] medications] if she was very tired and had no accompanying relatives to verify them. I would have left this for the day staff to do."

Mrs A advised that while her mother would have been "extremely tired" at this time, she would have recognised and confirmed her own "bubble pack" had she been asked to do so.

The "Nursing Assessment" form was added to, dated and signed by Ms G, RN,[6] who assumed responsibility for Mrs B's care around 7am. Ms G explained her understanding that the "best" assessment is undertaken on a patient's arrival in the ward and, as she had begun nursing Mrs B 12 hours after her arrival in ED, "all I did was obtain [a] history from the daughter". She advised that this included "any knowledge of the patient's allergies", her medical problems and treatment, the "daughter's insight in relation to the reasons for her current admission" and any special needs affecting Mrs B's care. Ms G does not say what time the discussion occurred — Mrs A says that she did not return until the afternoon, and recalls no such discussion.

Ms G did not record the date and time of Mrs B's admission to the ward, nor the reason for her admission (the first questions asked at the top of the assessment form). She recorded some details in relation to Mrs B's sleep-rest pattern, noting her "usual sleep pattern" as "6−8 hours"; and "activity-exercise pattern", recording Mrs B's response to the question "do you normally have difficulties in caring for yourself?" as "no". In the section of the form detailing Mrs B's "nutrition-metabolic pattern", Ms G marked that Mrs B was diabetic, and that her appetite was "large". Under the heading "cognitive-perceptual pattern", Ms G recorded that Mrs B was oriented to place, person and time, but was "confused at times", had no speech problems, and that her thought process and content were coherent and "reality based". She also recorded that Mrs B was currently taking medication, and doing so "appropriately"; that she understood the reasons, side effects, dosage and time of her medications, and had brought her own medication to hospital with her. It is not clear whether Ms G visually identified and confirmed with Mrs B the medication in the bubble pack.

Ms G stated that she noted Mrs B's history of "cancer, heart condition and infection" and that these did not raise any "alarm" in relation to the medications listed on the drug chart. She commented:

> "It is common ground that when a patient gets admitted to hospital due to other problems or worsening of the current problem, the doctors alter or change the medications to suit the new diagnosis. Doctors give no explanation to nurses as to why they have altered the medications. Nurses can however raise questions if the dose is too high or low or a drug [the] patient is allergic to has been charted etc."

Ms G administered the following to Mrs B at 9am, as per the "Regular Medications" sheet: Duride tab 90mg, Losec 20mg, Frumil 1 tab, MST 100mg, oxybutynin 5mg, aspirin 150mg, Ceclor 500mg. She recorded this on the drug chart. Initially Ms G also recorded that she had administered warfarin, although she crossed this out and marked the entry as being in "error". Ms G made no substantive entry in Mrs B's clinical records for the morning of 6 April.

[6] Ms G had been qualified for four months at the time of these events.

Ms G advised that in administering medications to Mrs B she had followed "the 4 rights of medication administration" — checking that she had the right patient, right drug, right route and right time. In particular, she had checked that Mrs B's details on the bradma label on the drug chart matched the details on the name-band on her wrist. She also asked Mrs B to confirm her name, date of birth and address. Ms G recalled that Mrs B indicated that she understood the medications she was to receive. In relation to the MST, Ms G stated that she followed the "Drug Administration Protocol", obtaining the assistance of a second nurse to check and sign for the morphine before it was given.[7]

Mrs B was reviewed by Dr D, consultant respiratory physician, as part of the post-take ward round that morning.[8] Attending the ward round with him were Dr H and Dr O, house surgeon. Dr D advised that 6 April 2002 was his first time on call at PNH since commencing employment in New Zealand, and it was therefore probable that Mrs B was one of the first five general medical patients he saw in this country. He noted that Mrs B was able to give a good history and complained of "an increasing cough over the preceding few days". She was not feverish, and was able to mobilise with the use of her walking frame. Dr D diagnosed a lower respiratory tract infection and changed Mrs B's antibiotic prescription from oral cefaclor to oral roxithromycin.

Dr D advised that he knew Mrs B had been prescribed cefaclor, because he had read the GP referral letter which was on her medical file.[9] He confirmed that he did not read the Drug Treatment Chart, because it was stored separately from the medical notes and, he believed, was not available. Dr D commented that the drug chart is "a working document … used by the nurses to dispense and issue drugs".[10] He also noted that the charts were "often" not available on rounds, and his belief was that they were locked in the "dispensary", for which doctors did not have the combination access code.

As Mrs B was constipated, Dr D prescribed lactulose and senna. He considered "her evidence of recovery and good general condition was such that I did not have any reason to question or doubt her management".[11] Accordingly, he concluded that Mrs B could be discharged to the rest home that day.

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[7] MidCentral Health's policy "Procedure for Administration of Medicines, MDHB-11" states "the checking process involves Five Rights: right patient, right medicine, right dose, right time, right route". Two registered nurses are required to check the administration of morphine, as it is a controlled drug.

[8] Dr D is an overseas-qualified doctor who commenced employment as a respiratory physician at PNH on 8 January 2002. On 1 April 2002 he began general medicine on-call duties.

[9] Evidence to Coroner, 8 June 2004.

[10] Evidence to Coroner, 8 June 2004.

[11] Evidence to Coroner, 8 June 2004.

Dr H advised that he "cannot recall receiving or seeing the medication chart or not". He entered in the clinical notes details of Dr D's ward round review, and was not subsequently involved in Mrs B's care.

In anticipation of Mrs B's discharge, Dr O prepared a computerised "Discharge Summary" on which he recorded Mrs B's "problem list" as: "lower respiratory tract infection, diabetes mellitus, hypertension, L leg ulcer, skin cancer scalp". Beneath this he recorded Mrs B's "discharge medication" as: "Duride LA 90mg od, Losec 20mg obd, Frumil one tablet om, MST 100mg bd, Warfarin 3mg od, Oxybutynin 5mg od, Gliclazide 80mg mane, 40mg lunchtime, Enalapril 5mg mane, roxithromycin 150mg bd". Dr O also updated the "Regular Medications" list on the drug chart, drawing a line through "Ceclor" to indicate it had been stopped, and adding roxithromycin, lactulose and senna. There is a printed label alongside these entries, which states, "Patient has own medication". It is not clear when this label was placed, by whom, or whether it was in reference to these three medications.

At 12.30pm Ms G administered to Mrs B roxithromycin 300mg, lactulose 10ml and two senna tablets. At 2.40pm she recorded in the notes that Mrs B had become lethargic and confused and said she was "feeling light-headed". Ms G contacted the duty medical house surgeon, Dr P, to report this as she did not feel it was appropriate to proceed with Mrs B's discharge. Ms G said she noted her concerns in the medical record "so that every team-player in the management of the patient is aware of the deterioration". Dr P did not review Mrs B.

Mrs A says that around 9.30am she took a call from the hospital and was advised that Mrs B would be discharged "after lunchtime". As noted above, Mrs A recalls arriving in the afternoon to collect her mother. She found her "weak, sleeping, struggling to breathe, speech not clear". She suggested to staff that her mother was in no condition to leave the hospital, and they agreed. Mrs A was concerned that her mother had had a stroke, although she was told that the deterioration was thought to be due to chest infection or pneumonia. Mrs A recalls that her mother's discharge documents were not ready.

Mrs A does not recall Ms G asking her about Mrs B's condition or medical history, or any mention of the prescription or administration of MST. Mrs A said, "MST had been administered in the [morning] which was hours before I met [Ms G]." She advised that had anyone told her Mrs B was charted to receive a high dose of morphine, she would have "seriously challenged" it and asked why. Further, Mrs A is confident that her mother normally understood and controlled her own medication, and had the medications recorded on the drug chart been described to Mrs B before administration "she would have known morphine was not her customary medication".

Registered nurse, Mr Q was on duty on the afternoon shift. He stated that he arrived at approximately 3.30pm and was given a handover by Ms G, who advised that Mrs B had been seen on the ward round that morning, and that her discharge summary was in the notes. Mr Q said:

> "[Ms G] told me that since lunchtime … [Mrs B] had been confused and light-headed and [she] did not feel that [Mrs B] was ready for discharge. She had telephoned the doctor to come and see her, but the doctor had not yet arrived. I briefly read [Mrs B's] notes then went and introduced myself to her and her daughter who was with her. Her daughter had concerns about [Mrs B] leaving the hospital as she did not seem herself. During my shift I telephoned the doctor on call to follow up [Ms G's] telephone call. I discussed with the doctor both [Ms G] and [Mrs B's] daughter's concerns. The doctor advised that it was not appropriate that [Mrs B] be discharged that day and said that she would be reviewed the next day."

Mr Q checked Mrs B's drug chart and clinical notes and saw that she was due to receive medications during his shift. He noted that while Mrs B had a lower respiratory tract infection, MST had been prescribed for her at a high dose. Mr Q therefore checked Dr O's discharge summary, and specifically noted references to skin cancer and MST. Mr Q concluded the morphine was intended as pain relief for cancer, and engaged the assistance of registered nurse Ms R to administer it.

Ms R stated that she was not allocated to care for Mrs B, and her role was one of "checking nurse" only. Mr Q advised that he followed his "normal practice", which is to take the drug chart to the patient's bedside. He checked the bradma label on the drug chart against Mrs B's wrist bracelet. He noted that they both contained Mrs B's name and details. Ms R confirmed that she followed the same process. She also advised that "checking the medication does not involve reading through the patient notes". Mr Q stated:

> "I always advise a patient what medicine they have been prescribed because sometimes at that point a patient might query the medication. I cannot recall the exact words I said to [Mrs B] but it would have been something to the effect of 'here is your MST tablet that is prescribed for your pain'. [Mrs B] did not query what I said and she accepted the tablet and took it."

Mrs A expressed concern that, as a result of the first dose of MST, Mrs B could not speak clearly by this time, and her response to any questions Mr Q may have asked about her medications "would have been very suspect". Mrs A also advised that her mother's skin cancer caused her no pain and therefore there was no "evidence" that MST was necessary.

Sunday, 7 April

At 8.30am on 7 April, Ms G administered the following to Mrs B: Duride 90mg, Losec 20mg, Frumil 1 tab, MST 100mg, oxybutynin 5mg, aspirin 150mg, roxithromycin 300mg, lactulose 10ml and senna two tablets. Ms G recorded that she was waiting for the house surgeon (again, Dr P) to review Mrs B in anticipation of discharge.

Mr Q was on duty again that afternoon and recalls that at handover Ms G advised that "the doctor had still not been around to review [Mrs B]". Mr Q recorded that Mrs B was confused and disorientated, and Mrs A had told him that this was not normal.

Mrs A stated that she again expressed concern that her mother may have had a stroke, and asked for neurological tests to be undertaken. She was anxious to seek help because Mrs B "suddenly [was] unable to speak lucidly, wake up, swallow without choking, breathe without obvious discomfort and effort, walk". It was "not common" for her mother to be sleeping "all the time".

Mr Q stated, "I followed this up with the doctor by telephone and discussed again the concerns that [Mrs B] was confused and disorientated, which was not a normal presentation … The doctor advised that she should not be discharged and that she would be reviewed." No review was undertaken.

Mrs B had received oral fluids and solids over the weekend, although, as her ability to swallow diminished, concerns had been raised as to the possibility that she was choking on or aspirating (inhaling) her food. In relation to Mrs B's nutrition during this period, Mrs A expressed concern that her mother was not always supplied with the "diabetic diet" that had been requested on admission, and that a sign or label alerting staff to Mrs B's diabetes had not been placed above her bed as expected. Mrs A said that she drew the nurses' attention to these matters several times and had intercepted "several sweet desserts, including chocolate yoghurt, peaches in syrup, and extremely sweet tea". She commented that her mother was "meticulous" regarding her diabetic diet.

Mrs A advised that she had also expressed concern that Mrs B had a number of bruises on her right lower neck and right wrist, which had not been present on the day of her admission, and which no one had explained to her. Mrs A was worried that Mrs B's condition had not been reviewed by a doctor over the weekend. However, she also began to question her own judgement and feared she would acquire a reputation for being "a difficult family member", as the medical staff seemed not to respond to her concerns. She recalls that by Sunday evening her mother was "completely unable to stand or co-ordinate any movement" and required the full assistance of nursing staff to shower. Mrs B was also unable to speak clearly.

At 6pm Mr Q administered Losec 20mg. At 8.30pm, he gave Mrs B 100mg MST having again sought Ms R's assistance and following the same procedures as on the previous evening. Mr Q saw that Mrs B was also charted to receive warfarin. He recorded that he was unable to give this, as no prothrombin ("INR"/blood clotting) results were available. He notified the on-call doctor that INR testing was required. Blood was taken for this purpose. The drug chart records that Mrs B was administered warfarin 3mg at midnight.

Monday, 8 April

Dr D had not been on duty over the weekend and next saw Mrs B on 8 April on the routine morning ward round with Dr F, first-year registrar, and Dr E, house surgeon. These three doctors had not worked together before.

Dr D and Dr E advised that, on a ward round with a registrar and house surgeon in attendance, it is usual for the patient to be "presented" to the consultant, usually by the

house surgeon. This did not happen that morning, as it was Dr E's first day at work after ten days' leave, and Dr F's first day as a registrar for Dr D's team; neither Dr E nor Dr F had previously seen Mrs B.

Dr D recalled that Mrs B's deterioration was "immediately apparent" to him, and she was drowsy and confused. A differential diagnosis and management plan was discussed and consensus was that Mrs B's condition might be a "systemic response to a respiratory infection". Dr D stated that while the initial chest X-ray taken on admission had shown no evidence of consolidation, Mrs B's presenting symptoms on the morning of 8 April were indicative of an evolving pneumonia.

Dr E recalled that Dr D's impression was that Mrs B's drowsiness and delirium were a "toxic confusional response" secondary to her chest infection. Dr E recorded in Mrs B's notes that she had "a pre-existing cognitive impairment" and assumes he was told this by Dr D, "as it is not previously recorded in the notes".

In an initial written statement detailing these events, Dr D said that during the ward round he had been concerned about Mrs B's drowsiness, but "upon being informed of some previous cognitive impairment, was reassured to an extent that I did not see the need to look for a different explanation".[12] In oral evidence to the Coroner's inquest on 8 June 2004, Dr D stated that he could not recall the circumstances of "[pre-existing] cognitive impairment" being recorded in Mrs B's notes, but did not think that this had had any bearing on his assessment of her that morning, "and certainly my impression was that there was no cognitive impairment from the discussions we had with the patient on the Saturday morning [6 April]".[13]

Mrs A advised that Mrs B had no pre-existing cognitive impairment, and until a few days before her admission to PNH had been playing competitive Scrabble. Mrs A recalled that her mother had been fully aware of the correct answers to Dr L's questions in the ED on 5 April. She stated that she had repeatedly told the nurses that Mrs B was normally alert and "actively interested in many things". It is Mrs A's view that the suggestion that her mother had a pre-existing impairment (which may have been conveyed or recorded by a member of the nursing staff and relied on by the doctors) was "entirely wrong and misleading".

Dr D advised that he did not review the drug chart during this ward round, as it was again "unavailable". He stated, "To be honest the thought of a narcotic overdose [being the cause of Mrs B's deterioration] did not enter my head. I did not think a patient could be in a hospital three days and still have a prescription error remain undetected."

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[12] Statement of Dr D, dated 20 June 2003.

[13] Transcript of evidence provided to the Coroner, 8 June 2004, page 79.

Dr E does not recall seeing the drug chart during the ward round, and stated it was likely to have been locked in the ward's "medication room", for which doctors did not have the access code. He noted: "We usually try to have all the medication charts with us when seeing our patients."[14]

Dr D advised Dr E that Mrs B could be discharged to the rest home.

At 9.30am registered nurse Ms S[15] administered the following to Mrs B: Duride 90mg, Losec 20mg, Frumil, aspirin 150mg and roxithromycin 300mg. Although an INR result recording Mrs B's blood coagulation level as 1.1 was available, Ms S did not administer warfarin. She stated that she checked Mrs B's notes, saw that she had a history of cancer, and that she had received "two to three 100mg doses of morphine" since admission. Ms S therefore "assumed" the MST had been prescribed in relation to Mrs B's skin cancer. Having checked with registered nurse Ms T that the bradma label on the drug chart matched Mrs B's wrist bracelet, Ms S administered 100mg MST as charted.

Ms T advised that she would have looked at the drug chart, but not at all of Mrs B's clinical notes. She said that 100mg MST was "a high dose, but it has been prescribed for patients on this ward before and thus such a dose would not have alerted me to a mistake having been made".

This was the last time Mrs B received the medications listed on the mislabelled drug chart, as by the afternoon she was unable to swallow. As all the medications charted were for oral administration, they were withheld.

Ms S's notes for that morning record that Mrs B was unable to communicate clearly and her speech was slurred. Ms S recalled that Mrs B was unable to stand, had a marked weakness on one side, and required three nurses to assist her into bed after going to the bathroom.

Ms S spoke to Mrs A, who also noted her mother's left-sided weakness and again questioned whether her mother had had a stroke. Ms S recalled that she spoke to Dr E when he "walked through the room that day". Her note in Mrs B's records states: "[Dr E] [was] notified of [these] concerns and will reassess her and talk to daughter."

The next note is that of Dr E and states that he was asked to see Mrs B and discuss the situation with Mrs A. Dr E said that Ms S did not advise him that she or other nursing staff had concerns about Mrs B's condition, or that Mrs B's condition had deteriorated during the day. He said he reviewed Mrs B's blood test results, noting that her white cell count had increased from 10 to 19 over the past three days, despite the oral roxithromycin. He recalls speaking to Mrs A, and believes that she expressed concern regarding her mother's "gradual

[14] Evidence provided to the Coroner, 8 June 2004.

[15] At the time of these events Ms S was a new graduate. She commenced employment with MidCentral Health on 11 February 2002.

decline" and agreed that a "not for resuscitation" (NFR) order should be placed. Dr E continued to believe that Mrs B's deterioration was due to an underlying respiratory infection and/or pneumonia, and discussed her situation with Dr F.

Mrs A stated that during the bedside discussion with Dr E regarding the NFR order, "He told me that as [Mrs B] was 91, her organs would probably be unable to cope and/or recover. He referred several times to her age as being a negative factor." Mrs A understood that her mother would not recover sufficiently to enjoy a "good future quality of life" and it was for this reason alone that she asked for a NFR order. Mrs A also informed me:

> "I was uncomfortable with [Dr E's] comments … given this [conversation] occurred beside my mother. I would NOT have described her situation as a 'gradual' decline, as he asserts. I thought she was dying."

Dr F confirmed that Dr E telephoned her to advise that Mrs B had deteriorated and that he had discussed this with Mrs A, who wished her mother to be kept comfortable and have an NFR order placed. The NFR order did not preclude the administration of IV fluids and antibiotics and, in light of Dr E's advice regarding Mrs B's white blood count, Dr F advised a change in prescription from roxithromycin to broad-spectrum anti-microbial cover.

The NFR order was signed by Dr E on behalf of Dr F, and by Mrs A. It states:

> "If this patient becomes unresponsive and pulseless:
>
> 1. DO NOT initiate CPR
> 2. DO NOT call a Cardiac Arrest
>
> This order applies **only** to decisions on instituting Cardiopulmonary Resuscitation (CPR) − it **DOES NOT** apply to other supportive measures e.g. antibiotics and fluid support. Instructions about these measures should be considered and documented separately."

Mrs B was commenced on IV fluids and IV cefuroxime (an antibiotic). Dr E started a new Drug Treatment Chart ("chart 2") — the original chart was almost complete — and recorded the prescription of IV cefuroxime on its "Regular Medications" sheet ("sheet 2").

Dr E advised that he did not examine Mrs B at this time, because no one had asked him to, and in any event he felt able to respond to Mrs A's questions without doing so. He recorded that Mrs B would be reviewed in the morning. He went off duty around 4pm.

Dr U, house surgeon, reviewed Mrs B following a report from the nursing staff that she had become "unresponsive over this evening". He noted that she had very low blood pressure, was poorly oxygenated on room air, and had taken no medications that afternoon. Dr U checked Mrs B's GCS which he recorded as 7, and requested the administration of intravenous Haemaccel 500ml, four-hourly neurological observations (of her GCS), IV fluids "as charted" and a team review in the morning.

The administration of IV fluids to Mrs B at this time was subsequently described as being for the purposes of "resuscitation".[16] Mrs A expressed concern that this indicated the NFR order had been "ignored" and no one had sufficiently explained to her this episode in her mother's care.

Mrs B's GCS was recorded on a specific "Observation Chart" as follows: "8" at 7pm, "9" at 9pm, "10" at 11pm. Ms G, who was on duty that night, recorded that throughout the middle of her shift Mrs B was "only responding to painful stimuli", although she had improved and was opening her eyes to speech "on occasion" and had become restless. Ms G also recorded that, due to Mrs B's "poor neurological condition", her oral medications had been withheld, and that an indwelling urinary catheter was to be inserted "as per [a doctor's] verbal request". Ms G completed a care plan for Mrs B setting out the "identified problems and desired outcomes" relating to her care.

Tuesday, 9 April

At 9am on 9 April, Mrs B's GCS was recorded as "12". Dr F was the acute medical registrar on call, and with Dr E she reviewed Mrs B during the morning ward round. They noted the events of Dr U's review the previous evening, observing there had been a "brief fall" in Mrs B's GCS to 7, but that it had subsequently increased to 12. The cause of this was not documented, although Dr F speculated it may have been septicaemia.

Dr F and Dr E noted that Mrs B was drowsy, opening her eyes to words, and was confused, believing that it was her birthday. She was "verbalising" occasionally and had a "very chesty cough". Dr E advised that "at that stage, we were unsure if the confusion was entirely due to her chest infection" and they queried acute renal impairment. The morning's blood tests showed that Mrs B's INR was 1.3 and her renal profile had deteriorated — her creatinine had risen from 0.11 on her admission to 0.19. It was thought this was likely due to dehydration. Dr F advised Dr E to continue IV fluids and change the antibiotic prescription to IV cefotaxime.

A chest X-ray and mid-stream urine analysis were ordered, "to confirm worsening pneumonia or urinary infection to account for [Mrs B's] deteriorating clinical condition". Daily blood tests, the insertion of an indwelling urinary catheter and monitoring of Mrs B's input/output fluid balance were ordered to assess her renal function. The X-ray subsequently showed evidence of worsening opacity in the left lung base, consistent with pneumonia. Dr F advised that "although not fully documented in the notes, I clearly recall noting no signs of a hemiparesis suggesting a stroke". She also stated that the drug chart was not available to her during the ward round.

At 12.30pm, Mrs B was reviewed by a speech and language therapist who had been asked to see her "regarding swallowing". The therapist spoke to Mrs A, who informed her that her mother's speech was "slurred when she is alert". The therapist recorded that a full

[16] Report of Dr V to the Coroner, undated.

assessment had not been possible due to Mrs B being unrousable, "but in view of reduced level of alertness, nil by mouth is recommended".

Later that afternoon, Dr E discussed Mrs B's antibiotic prescription with PNH's clinical pharmacist, specifically in relation to Mrs B's reduced renal function.[17] Having done so, Dr E recorded in the clinical notes the pharmacist's recommended doses of IV cefotaxime and clarithromycin, based on Mrs B's estimated weight. These were to be administered 12-hourly and 24-hourly, respectively. This information was also entered on "Regular Medications" sheet 2.

Notes by Ms S immediately follow those of Dr E, and record that Mrs B received IV cefuroxime at 2.30pm (drug chart 2 records administration at 2pm), and that "new IV Abs" had been charted as per the pharmacist's advice. Drug chart 2 shows that Ms G administered cefotaxime at 4.45pm and clarithromycin at 4.50pm.

Dr E stated that when he entered the new antibiotic prescriptions on "Regular Medications" sheet 2, he also reviewed the medications listed on the first drug chart and questioned the prescription of MST 100mg twice a day. He advised that he "scanned the notes [including the hospital admission note] to see if there was any obvious past medical reason for [Mrs B] to be on the morphine".[18] He went to see Mrs B, to check whether any member of her family was present. As there was not, Dr E contacted Dr I and the rest home. Dr E stated that after "double checking" Mrs B's medication list with them, "it became apparent that the medications charted for her on admission were not the medications that she had been taking prior to admission".

The rest home faxed Mrs B's "[rest home] Medication Sheet" to Dr E at 6.10pm on 9 April. This recorded her usual prescription medication as: gliclazide, enalapril, Slow K, frusemide, doxycycline, aqueous cream, Betadine Cream and Timotol drops. The prescription for Ceclor commenced on 2 April was included on a second sheet.

Dr E stated that immediately upon discovering that an error had occurred, he re-charted Mrs B's medications. Horizontal lines were drawn through entries for Duride, Losec, Frumil, MST, warfarin, oxybutynin and aspirin on the first "Regular Medications" sheet, and initialled as "stopped"; two diagonal lines were scored across the sheet and "recharted" written between them; gliclazide, frusemide, Slow K, enalapril, doxycycline, lactulose and senna were entered on "Regular Medications" sheet 2. These were all to be administered orally.[19]

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[17] Ms W, Professional Advisor (Pharmacy), MidCentral Health, confirmed that this was the first and only time the clinical pharmacist's advice was sought in relation to Mrs B's care.

[18] Evidence to Coroner, 8 June 2004.

[19] Because she could not swallow, Mrs B did not receive these medications on 9 or 10 April.

Dr E stated that he then reported the matter to Dr F. He recalls also speaking to nursing and medical staff in the ward office at that time and advising them that Mrs B's medications had been recharted.

Ms S and Ms G do not refer to such a discussion in their nursing notes for that afternoon or evening.

Dr E stated that he did not record his actions or discussions with staff in Mrs B's patient notes, due to "oversight" in the context of his concern to remedy the error. He also advised that he did not consider, or discuss with Dr F, whether naloxone ("Narcan", an antidote to morphine) should be administered to Mrs B, as this question was properly one for Dr D.

Dr F confirmed that on the evening of 9 April, while she was seeing acute medical patients in the ED, Dr E contacted her to advise that he had discovered that Mrs B had been receiving incorrect medication including 100mg MST twice daily. Dr F recalled, "[Mrs B's] medication chart was then re-written and I instructed [Dr E] to stop all offending medications and commence the correct ones. This is not documented in the notes, although the medication chart confirms this." Dr F stated that because Dr E had informed her that "the last dose of MST had been administered to Mrs B more than 24 hours earlier", she did not address the possible administration of naloxone at that time.

Dr F also advised that due to her commitments in the ED, she did not review Mrs B after speaking to Dr E. She did not inform the night staff about the medication error, believing that "all appropriate action" had been taken to that point and consequently that there was nothing the night staff needed to do. She did not inform Dr D of these events, although she had intended to do so. She acknowledged that she had been "very busy" and "simply forgot".

Mrs A was also not told of the medication error that night. Because she thought her mother was dying, she had asked Mrs B's main caregiver from the rest home to attend and sit with them. The caregiver had arrived about 5.30pm and was present with Mrs A when Dr E placed Mrs B's urinary catheter, which had been requested by Dr U on Monday night, and again by Dr E and Dr F at the Tuesday morning ward round. Mrs A is concerned by the delay in placing the catheter. The clinical records do not show what time it was inserted. However, Mrs A recalls that it was when Dr E was "awaiting a fax from [the rest home] regarding medication". She says that she would "almost certainly" have introduced the caregiver to Dr E, and noted that the caregiver "knew precise details" of Mrs B's medication. Mrs A is accordingly worried that Dr E did not mention Mrs B's medication regime or the possible drug error to them at that time.

Ms G was on duty that night. At 10.40pm she recorded that Mrs B's GCS was 9 (it had remained at 9 throughout the day); and she had been "more responsive to speech — eyes open — and more alert at times with family". The indwelling catheter was draining urine, and "cares [were given] as per care plan".

Wednesday, 10 April
At the morning ward round, Dr F and Dr E told Dr D of the medication error. A note was entered in Mrs B's records as follows: "Patient found to have been prescribed another patient's medication including 100mg bd of MST!"

Dr D reviewed Mrs B, noting that her GCS had risen to 14. He formed the impression that her clinical condition was improving as her pulse, blood pressure and respirations were "in the normal range". He decided that IV fluids and antibiotics should be continued, and that administration of naloxone was unnecessary. The latter is not recorded in the notes and Dr D cannot recall whether it was discussed at the ward round. In a statement to the Coroner, Dr D acknowledged it was clear in retrospect that Mrs B's drowsiness, which he had observed on 8 April, had been due to the administration of MST.

Ms S recalled that "on or about 10 April 2002 Dr E notified me that Mrs B's drug chart had been recharted". She advised:

> "The original drug chart had been transferred to the back of the notes. Apart from the [doctors' ward round] note which seemed to indicate that the original prescription may have been incorrect, I had no other communication that it may have been incorrect."

Ms S says that she then made her Clinical Nurse Co-ordinator aware of the error.

Mrs B was reviewed that afternoon by a dietitian, the speech and language therapist, and a student physiotherapist — with the latter two noting she was "very drowsy" and "non responding". As Mrs B still could not swallow, she was to remain "nil by mouth". Ms S recalled that the dietitian had pointed out the doctors' note regarding the MST error, and had stated that Mrs B would "only get better now".

Ms S's notes record that Mrs B's GCS rose to 13−14, and that she developed a fever around 2pm. She remained feverish, but comfortable, overnight. The night nurse noted that Mrs B's reaction to light was sluggish in both eyes and she had "pinpoint pupils".

Thursday, 11 April
On 11 April Mrs B received one dose each of gliclazide, frusemide, enalapril and lactulose.[20] Dr F saw Mrs B on a ward round, and noted that her GCS was 15, and she was awake and alert. Mrs A disputes this, and recalls that her mother "never became coherent before she died, which was 12 days later".

[20] Mrs B received the same medication on 12 April. On 13 April, gliclazide was stopped. From then on, Mrs B received all her remaining correctly charted "Regular Medications".

Dr F also observed that initially Mrs B had a fast, irregular pulse of 140 bpm (which subsequently dropped to 90 bpm and regular). She ordered an ECG, which indicated that Mrs B had an abnormal heart rhythm. The copy of the ECG report provided to the Commissioner by MidCentral Health states:

> "11-Apr-2002
> 12.04.14 [12.04pm]
> [Ms B] 91 years
> [Heart] Rate 153 – Supraventricular tachycardia …
> [Pulse rate] 80 – Left anterior fascicular block … Abnormal ECG Unconfirmed diagnosis"

Mrs B's bradma label is not on this ECG report. On the basis of the ECG findings, Dr E and Dr F arranged for Mrs B to be transferred to the Coronary Care Unit ("CCU") for treatment and cardiovascular monitoring. On arrival in CCU, Mrs B's heart rhythm again spontaneously returned to normal and she was returned to the ward. Mrs A confirmed that her mother had been in CCU only very briefly, for about 10−20 minutes.

Mrs A expressed concern that the copy of Mrs B's medical records which she received from MidCentral Health after her death contained an ECG report dated "11 February 14.19 hours" which bore no patient name but referred to the patient being "55 years old" and male. Mrs A advised that as the wrong drug chart was on her mother's medical file, the inclusion of an ECG report which also appeared to be for another patient gave her "no confidence" in the actions of PNH staff. Mrs A provided me with a copy of an ECG report, which I note is in fact dated 11 April 2002, with the time "14.19" recorded. This report does not have a name or bradma label attached, but records the location of the patient ("BED 4") and age ("55 years"), and notes it is "from CCU". It shows "normal sinus rhythm, lateral infarct, age undetermined, abnormal ECG" and has a handwritten note, "spontaneously reverted".

Dr F recorded that Dr D was to meet with Mrs B's family later in the day to discuss the medication error. She also completed an incident report for PNH's Specialist Medical Officer (at that time, Dr V) and the Clinical Nurse Co-ordinator.[21] She recorded: "[Mrs B] given wrong medication. Although right person['s] drug chart, medications were those of another patient." Dr F's recommendations to "avoid repetition of this incident" included "checking medicines charted with those written in notes or discussed with patient to ensure correct meds". The incident report also states that Dr F conducted a medical assessment of Mrs B "in person" on 9 April (the time of which is not recorded).

[21] The Commissioner has received two versions of this Report: one is handwritten, the other computerised. Dr F's handwritten report records that Dr H was the admitting medical registrar "who prescribed medication initially". These comments are omitted from the computer version of the report.

Friday, 12 April
On 12 April, Dr F again reviewed Mrs B and felt she had "improved considerably". Clinically, Mrs B had a left-sided pneumonia and, as her white cell count was still rising, metronidazole was administered "in case she had aspirated while she had been drowsy". Mrs B was also given supplementary insulin to help control her blood sugar levels, as they had become erratic as a result of her infection.

Later that day, Dr F and Dr E met with Mrs A and Mrs B's other daughter, Mrs C, to explain that a medication error had occurred, and to apologise. Dr E stated that this was the first day that both of Mrs B's daughters had been available to meet them. Dr F stated:

> "I explained that I was not sure how the error had occurred but that appropriate action had been taken. I informed them of [Mrs B's] current clinical situation which was of pneumonia and renal failure presumably secondary to dehydration. I stated that [Mrs B] was receiving treatment for these problems and clinically appeared to be making some progress. I touched briefly on the possible effects the morphine might have had on her condition. [Mrs B's] daughters requested a further meeting with the medical team after the weekend to assess ongoing progress. This was agreed to."

Subsequent events
Dr F had a further meeting with Mrs A and Mrs C on 15 April to discuss such issues as how and why the mistake occurred, and why it was not discovered for four days. Dr F recorded in the notes that she had explained to them that the morphine was "totally out of [Mrs B's] system", that her pneumonia was not improving and that her renal impairment was severe. She also noted that the family had requested copies of Mrs B's medical notes and wished to be kept informed of the results of the hospital's investigations/incident review. They were "considering a formal complaint to ensure it doesn't happen again".

Mrs B had a second ECG on 16 April. The report filed in her notes, which has her bradma label attached, has the following entered at the top of the page: "Age not entered, assumed to be 50 years for purpose of ECG interpretation".

Over the next few days, Mrs B's condition appeared to improve, and on 19 April Dr F requested that she be considered for transfer to another hospital on 22 April, for a period of rehabilitation before returning to the rest home. However, on 21 April Mrs B deteriorated and when Dr E reviewed her he noted she was likely to have pulmonary oedema (excess fluid on her lungs). Dr E prescribed a diuretic for Mrs B and decreased her IV fluids.

Mrs B became increasingly short of breath overnight and died shortly after. Her death was formally noted by Dr F and, in view of the medication error, the Police and the Coroner were informed and a post-mortem arranged.

Mrs A stated:

> "The failure of any staff to phone me in time to be with my mother during her last few hours — when a terminal condition was recognised — is beyond my comprehension and is something I can probably never forgive. The time of the call which suggested I travel to the hospital immediately was at the time of death, give or take five minutes either way. This failure causes me more distress than any other single episode or subsequent event."

Post-mortem report — a pathologist
The pathologist reported that an ESR forensic toxicologist had tested Mrs B's blood and liver for traces of morphine, Losec, Duride, warfarin and oxybutynin. These drugs, other than warfarin, remain in the blood for hours only.[22] As Mrs B last ingested them on 9 April, analysis of her post-mortem specimens was not able to provide any information on the levels that may have been present "some 13 days earlier". Only "traces" of morphine were detected.

The pathologist concluded that the drugs which Mrs B incorrectly received were no longer present in her body at the time of her death and "would be unlikely to have produced any ongoing toxic effect". He reported that the "major findings remain in the lungs", where there was evidence of pneumonia and infection, and advised that Mrs B died from "pulmonary oedema secondary to acute cardiac failure occurring in a background of an organising pneumonia".

Coroner's inquest
The Coroner heard evidence from a number of witnesses during an inquest held in March and June 2004, including evidence from the pathologist and a general practitioner with a diploma in forensic medicine. The general practitioner's report, prepared for the Police Inquest Officer in July 2003, stated:

> "I am unsure as to how much the considerable mix up of both diuretics, morphine and vasodilators have contributed to [Mrs B's] demise. Certainly it appears from her blood that a number of processes were going on and it would not be for me to comment on the associations. Be that as it may, it is hard to imagine that a 91 year old who was previously relatively fit, would co-incidentally decease in the manner to which she succumbed. There must be grave concerns raised regarding the medication that she received and to the lack of clinical correlation and audit that should have detected these discrepancies much earlier. One cannot also decide what role the mix up of drugs played in her subsequent renal impairment secondary to dehydration. Similarly one must be

[22] The "half-life" of a drug is the time taken for the drug level in the blood to reduce by one half. The half-life of morphine is in the range of up to six hours, although it may be prolonged if the patient has renal disease; warfarin has a half-life of up to three days.

> concerned with the potential adverse effect of stopping [Mrs B's] regular medications, in particular her diabetic drug."

The Coroner also considered a report prepared by a respiratory specialist (8 October 2003), which concurred with the general practitioner that the administration of morphine to Mrs B could be considered to be the primary precipitating factor leading to her death, in that her multiple medical problems were a direct consequence of the morphine overdose and absence of her own regular medications.

On 14 June 2004 the Coroner issued his Inquest Report. He accepted the pathologist's advice as to the cause of Mrs B's death. The Coroner stated:

> "There is no doubt in my mind that the administration of morphia did not assist the recovery of [Mrs B] since it is contra-indicative to a respiratory condition from which [she] suffered. … [H]ad she not had the wrong medication she might well have been discharged back to her Rest Home which was the plan for her."

The Coroner expressed concern that none of the staff involved in Mrs B's care could give direct evidence as to how the drug chart was wrongly labelled, and that Mrs B received the wrong medication because it took five days for the error to be discovered, despite various clinicians attending her. He noted that these factors highlighted "a systems defect" or "systems error" in patient admission processes which the Board needed to address, and made the following recommendations:

> "1. That MidCentral District Health Board reviews its processes for the storing and accessing of patient's medication charts to ensure that the medication charts are at all times accessible including but not limited to during ward rounds.
>
> 2. That patients' medication charts when they are first made out have the patient's name written in 'long hand' at the appropriate place even if it is covered with a label at a later time."

Providers' comments

In statements provided to ACC in October 2004, Dr H said:

> "I was devastated [by the drug chart error] and tried to think how this could have happened. On a busy night when we are under pressure it is important for the system to deliver labels with the patient and to be aware that pressures can cause error. I am terribly sorry for this event … After this incident, which was terribly distressing for all concerned, we had a meeting to discuss … what had happened and how we could ensure it did not happen again."

Dr E advised that these events demonstrated to him the importance of accurate documentation. He stated: "I have made a concerted effort since to keep my documentation

consistently accurate, legible and complete. I am also particularly careful to ensure that every piece of clinical paper I use is appropriately labelled". In response to my provisional opinion, Dr E expressed deep sympathy to Mrs B's family, and regret for the failures in the care Mrs B received.

In correspondence to this Office and to the Coroner, Dr F identified a number of systems in place at PNH which she considered had contributed to the medication error occurring and remaining unchecked. She noted the difficulty in accessing drug charts during ward rounds and stated:

> "There was no time … to find a nurse to let you into the drug room to retrieve the chart or to locate the chart if it was not in the room. Consequently, any changes to medications were made 'in bulk' at the end of the ward rounds when the house surgeon would return to each ward and find the appropriate charts to make the necessary changes. This system is obviously unsatisfactory and allows for errors to go unchecked."

Dr F also commented that the working conditions for medical registrars at PNH at the time were "exceptionally difficult". She stated, "I would often be called off ward-round to attend to an acute admission, leaving the house surgeon, and sometimes the consultant to carry on. This was not ideal as important information could be lost through this process."

Dr F advised:

> "There should have been twelve registrar positions but only eight of these were filled … [Registrars] would often admit patients for a medical team other than [their] own or many of [their] own patients on a post-take round would have been admitted by [another registrar]. As [a registrar's] on-call commitments were so high, often your inpatients would be reviewed only by a house surgeon to inform you of any changes … and to ask you to review any patients that caused concern. Admitting patients for a medical team other than your own means that invariably there is no continuity of care … and patients can often see several doctors in the first few days of their admission meaning that mistakes are often perpetuated. This is seen with [Mrs B] in that her [provisional] discharge summary was written by [Dr O] who had never met her before that post-take ward round and the medication error is apparent in the discharge papers that he prepared. When you admit your own patients … I believe that mistakes are less likely to go unnoticed and you are also more likely to notice any apparent deterioration or improvement in the patient in the day(s) following admission as you have a bench mark to compare."

Dr F also stated that the lack of a ward pharmacist in PNH due to "severe staff shortages" was significant and meant there was no "back up" to ensure that correct medication charting occurred. She summarised:

> "I think the system in place at [PNH] at that time and the timing of events ([Mrs B] was admitted over a weekend when only skeleton staff would have been working, the changing of the medical team on that Monday, the lack of ward pharmacists due to shortages etc) let [Mrs B] down rather than one defining event as there were plenty of episodes when the error could have been detected and it was not.
>
> …
>
> My own professional conduct has certainly been affected by the events in Palmerston North and I scrutinise each patient's drug charts daily. It is easier to do this [in the hospital where [Dr F] now works] as you admit for your own team, drug charts are freely available and are always reviewed by a ward pharmacist but I do not let these facts interfere with what has become a very important part of my management of patients and I am trying to pass the importance of checking the drug chart onto the house surgeons who work with me."

In response to my provisional opinion, Dr F stated:

> "[I] wish to repeat [my] deepest sympathies for [Mrs B] and [Mrs B's] family. [I] sincerely regret the failures in the care received by [Mrs B] while a patient at Palmerston North Hospital in April 2002."

In a letter to my Office, Dr D said:

> "I thought there would be safeguards in place to try and prevent the giving of the wrong medication, such as asking patients to identify their usual medications, prior to giving them to patients. I still find it difficult to understand how a patient who becomes drowsy and confused can continue to be given sustained release morphine whilst in hospital. However I must accept the fact that I did not review the prescription chart [on 8 April]. The medication error was discovered the following day, Tuesday 9 April 2002. I am not familiar with the error of putting a patient label on another patient's prescription; it has become a requirement in many [overseas] hospitals that the entire prescription, including the patient details, be handwritten by the prescriber. Had this been a requirement here, the error would not have happened.
>
> … The effect that this tragedy has had on me so soon after starting a new life in New Zealand must be self-evident. The fact that the first inpatient I saw in New Zealand should have suffered from a medication error has affected me profoundly. I have suffered a devastating loss of self-confidence that I no longer feel confident in General Medicine. … I have learnt not to assume anything, but check it myself. I always review prescription charts personally. I have learnt that continuity of care in New Zealand hospitals especially over weekends is often not possible, because of frequent shift changes of junior staff, and these times call for increased vigilance. I will never forget [Mrs B]."

MidCentral District Health Board — Policies and Guidelines

Relevant policies and guidelines in place at PNH in April 2002 included the following:

MidCentral Health Resident Medical Officers ("RMO") Handbook 2001/2002 (October 2001):

> "Daily and careful checking of the Treatment Record is necessary in order to maintain a safe and efficient standard of drug therapy. The charting of all drugs should be signed or initialled by the Resident Medical Officer concerned. Signature must be legible." (section 58.4)

The Handbook also required that all RMOs be familiar with the procedure for completing drug charts, documented in the "Medicines Advice and Policy Committee Manual" (section 58.14).

Clinical Records Content and Maintenance (July 2000) ("MDHB-672"):[23]

> "5.0 POLICY
>
> **A) <u>Writing entries into the clinical record</u>**
> All entries into the clinical record will be legible, current, factual, timely, objective and accurately reflect the care, treatment and status of the patient/client/resident.
>
> **B) <u>Patient identification within the clinical record</u>**
> Each page within the clinical record will be identified with the:
> - patient identification label (bradma), or
> - National Health Index number (NHI) or patient name in full and their date of birth. …
>
> …
>
> **I) <u>Content/core documentation that could be contained in each clinical record</u>**
> …
>
> <u>Medication charts</u>
> - Medical staff are to chart medications using generic name unless specifically determined … Any changes in medications are to be brought to the attention of nursing staff at the time of charting. …
> - Medication charts are to be co-located with nursing observation charts in close proximity to the patient (where appropriate).

[23] This policy has been updated since these events (see discussion below).

Discharge reports and letters

- A summary of each episode of care must be completed at the time of discharge. ... in triplicate, a copy is then given to the patient/client, a copy sent to the GP … and a copy retained in the clinical record.

Medication prescription

- Approved clinical staff must document on an official Drug Treatment Chart all medication prescriptions."

Procedure for Administration of Medicines (Version 1: July 1998) ("MDHB-11"):[24]

"Those authorised to administer medicines are responsible for:

a. Accurate interpretation of the prescription and recognition of the correct medicine. *Question any lack of clarity.*

b. Correct identification of the patient. *Check identification (ID) bracelet with Drug Treatment Chart (inpatient only) … Seek verbal verification from the patient whenever possible. Do not give any medication until you have confirmed the patient's identity.*

c. Administration of the right medicine at the time, in the form and dose and by the method ordered. *Relate medication order details to the patient and their condition as you go through your checking process. Seek assistance and clarification if you have any concerns …*

…

f. Monitor patient for drug effects and adverse reactions.

g. Accurate and timely documentation (the accurate time of administration to be recorded rather than the scheduled time). *Withhold dose and seek assistance if uncertain about medicine or administration instruction ...*

Administering Medication

The role of the registered nurse …
To exercise a professional judgement which involves application of knowledge of the medicine, the patient and their medical condition …

During and following administration the registered nurse has responsibility to:

- monitor the patient
- report and document any area of concern …

[24] This policy has also been subsequently revised and updated.

Checking

The checking process involves Five Rights:

- Right patient — accurate patient identification
- Right medicine to be given
- Right dose — including its form and mode …
- Right time — frequency of administration
- Right route eg IV etc …

Controlled drugs

Two people are required to check out [controlled drugs] — a registered nurse ... and one other appropriate person … All controlled drugs must be double checked at the patient's bedside and administered immediately by one of the people who checked the drug."

Dr V, Clinical Director (Internal Medicine) advised that "similar drafts" of a policy document entitled "Introduction to the Internal Medicine Line for Medical Staff" was in circulation among PNH registrars prior to its formal release in May 2002.[25]

Section 10.0 of the May 2002 document, relating to "Medical Record/Care Planning", stated: "Each page of the clinical records has a patient ID label" and "as all medications are stored and dispensed under their generic names, all prescriptions must use generic names".

Section 10.2 required the registrar to supervise the house surgeon in the preparation of discharge summaries. Following discharge, registrars were required to check the summaries and countersign them. If found to be inaccurate or misleading, a separate letter was to be dictated and filed in the clinical notes.

Dr V confirmed that Dr H had received a copy of an early draft of this policy as well as the RMO Handbook, and was expected to "read and comply with all relevant work instructions".

Accident Compensation Corporation

Mrs B's family lodged a medical misadventure claim with ACC, on the basis that the wrongful administration of another patient's medication had led to Mrs B's renal failure and respiratory depression, and had contributed to her death. On 14 July 2003, ACC concluded that Mrs B had suffered a personal injury caused by the incorrect administration of medication and that a medical error — a failure by Dr H, Dr D, Dr F and Dr E to observe a standard of care and skill reasonably expected in the circumstances — had occurred.

[25] This policy was updated in October 2003.

ACC noted that the claim was complicated by the number of health professionals involved and stated: "Often it is found that medical error is never an isolated event in itself, once the original error has occurred it can be compounded by future events."[26] It was "inconclusive" that Dr H was "responsible for the placement of the wrong medications chart on Mrs B's clinical notes". Ultimate responsibility for the ongoing consequences of that event lay with Dr D.

While no medical error was found in relation to PNH nursing staff, ACC observed:

> "There is no entry in the clinical notes that reflect that the nursing staff challenged the need for the medication prescribed. It is to be remembered that nurses have a duty of care and their standard of care should reflect: what the drugs are for, why they are being prescribed, and what can be the expected effects." (letter to MidCentral Health, 14 July 2003)

ACC's decision was based on the following expert advice:

Report of a registered nurse (30 April 2003):

> "The registered nurses who administered the morphine to [Mrs B] were not at fault as they were carrying out the written and signed treatment instructions of the medical practitioner documented on the drug sheet with [Mrs B's] label on it. The fault lies with the doctor in the Emergency Department who attached [Mrs B's] name tag to another patient's already filled out drug treatment sheet, whoever that may be. It is also worthy of note that the error of the medication was not picked up until the 4th day of administration. Therefore the doctors attending [Mrs B] in [the ward] did not thoroughly check her medications and in view of her own medications not being on the ward when the patient was admitted why wasn't her GP contacted sooner concerning her medication regime?"

Report of a specialist emergency physician (23 March 2003):

> "Frumil, Losec, Oxybutynin, a single dose of Warfarin and Aspirin are all unlikely, in my opinion, to significantly negatively impact on [Mrs B's] health. Duride (at a dose of 90mg mane) may cause hypotension, headache and light-headedness on walking for someone who has not received it previously. MST morphine will cause sedation and respiratory depression particularly to a patient not previously receiving it. This is exaggerated in the elderly and in those suffering renal impairment. … [Mrs B] received a very large dose [of MST] over 3 days (500mg) the effects of which were exacerbated by her age, poor renal function, and concurrent respiratory illness. … Whilst receiving the incorrect drugs, she failed to receive her usual drugs. She did not receive her Gliclazide (oral hypoglycaemic) which would have aggravated her glucose control. Omission of her

[26] Report of […], ACC Clinical Advisor.

> other drugs is probably not of any consequence as their effects were to some degree provided by her 'new drugs'."

ACC's specialist emergency physician concluded that, while there had been a medical error, "which registered health professional is responsible is more complex". He noted that it is a reasonable expectation of registered medical practitioners and those acting under supervision that a drug chart will be completed accurately and legibly; this includes ensuring the correct patient name is on the chart. He stated: "The implications of wrong prescribing are profound and each individual doctor has a duty to be accurate." The doctor who initially mislabelled the drug chart was responsible for the error, but Dr D and Dr H "have to accept partial responsibility" for failing to check the chart the next morning on the post-take ward round.

Report of a consultant physician (5 March 2003):

> "Patient identification labels are used universally on patient notes and requisition forms, helping cutting down clerical work and saving on time. This case highlights one reason caution and restraint is required when these are used and is in support of a view that important patient documents should be personally identified with handwritten details. This is already mandatory for a blood transfusion requisition."

ACC's consultant physician commented on the role of the medical team involved in Mrs B's care, and the absence of involvement of the hospital pharmacist:

> "The change over to the medical staff in the ward would have been [an] area where a more thorough daily review of the clinical signs, symptoms, results of tests, medications and the treatment chart may have detected much earlier the reason why the patient was not making progress despite appearing to be on what was optimal therapy. The rule of thumb when the patient is not getting better is (a) the diagnosis is wrong (b) the medications are wrong or (c) sometimes both …
>
> In some hospitals, one of the hospital-based pharmacists is usually involved in patient education informing and advising them (and the ward staff) on their current medication, drug side-effects and assists in the provision of a drug card prior to discharge. The error may have [been] flagged at this level."

Comments from Mrs A
Following receipt of ACC's decision, Mrs A wrote to my Office (letter dated 23 July 2003) and stated:

> "I think (perhaps unfairly) beyond the finding and consequences of error for individuals, is evidence of an administrative system which has allowed practices to exist which do not enable doctors to pick up on mistakes.

> The lack of responses by doctors to several requests from nurses for attention; the decisions to retain her in the hospital instead of discharging her (on 6 and 7 April) being made without being seen by a doctor — these are examples of things we find difficult to accept.
>
> Systems which enabled an A4 medication pack, named and identified, to be lost for ever — how can this happen? Or the medication incorrectly given to my mother not to be linked back to the relevant patient, and the situation addressed for that patient.
>
> These are just some things which undermine our confidence in the expected standard of care a patient should receive.
>
> Our family's feelings have changed from the initial one of accepting 'human error' where we thought only one person was involved; I regret that several doctors now need to be called to account, and I think that the management of systems which existed is questionable."

Independent review — 8 October 2004

Drs E, F, D and H all sought an independent review of ACC's decision. In September 2004 a review was held, with all the doctors' applications being heard together. The reviewer considered the following information:

Report of a medical advisor (21 July 2004) (for ACC)

ACC's medical advisor was asked to consider whether there had been an "organisational error". Although he ultimately concurred with the advice of ACC's three advisors that the medical error was attributable to individuals, ACC's medical advisor also stated that it was unusual for several clinicians to make the serious errors which occurred in this case, and:

> "Taking the view that this is an organisation of essentially competent people doing their best, this incident raises questions as to why clinicians would behave in this way. It points to deficiencies in systems and the way in which functions are integrated. It also raises questions regarding the general working environment."

Report of a consultant respiratory physician (in support of Dr F and Dr E):

The consultant respiratory physician submitted that there had been a number of opportunities to identify and correct the mislabelling error during the first 24 hours of Mrs B's admission, before Dr F and Dr E became involved in her care, and therefore they were not responsible for what occurred. It was suggested that the error was less likely to be detected on ward rounds after 6 April, when careful scrutiny of the drug chart was less likely. The consultant respiratory physician noted that, while Dr F's failure to review the drug chart on 8 and 9 April "would under other circumstances constitute a poor standard of care (given Mrs B's deterioration), the circumstances pertaining at PNH were 'not usual' and organisational issues such as the lack of ready and unfettered access to the charts were

a factor." The consultant respiratory physician acknowledged that Dr F made an error of judgement in failing to immediately report identification of the mislabelled drug chart to Dr D on the evening of 9 April, but submitted this did not influence the clinical outcome for Mrs B.

The reviewer did not accept the consultant respiratory physician's advice in relation to Dr F and specifically criticised Dr F's failure to detect the reason for Mrs B's worsening condition (on the morning of 9 April), and her subsequent failure to report, assess and treat, or document consideration of treatment for the effects of wrongful drug administration (on the evening of 9 April following discussion with Dr E). The reviewer stated: "The evidence suggests that may well have caused [Mrs B's] pneumonia to develop further prior to [Dr D's] role as the final decider of whether or not to give an antagonist … The medical evidence notes that this failure to examine the patient with a drug error of that magnitude is below a level of care and skill that would be expected [of a registrar]."

Consideration was given to whether these events constituted "organisational error" pursuant to section 33(2) of the Injury Prevention, Rehabilitation, and Compensation Act 2001, which states:

> "If the treatment in question is being provided at the direction or under the management of an organisation … and the error cannot be readily attributed to a particular registered health professional involved in the provision of the treatment, medical error includes the failure of the organisation to observe a standard of care and skill reasonably to be expected in the circumstances."

The reviewer concluded that this was not such a case:

> "I find that there is ample evidence that there were organisational problems at the hospital at the time the medication error occurred. However, I find that these organisational problems are not causative of the specific medical error. I find that the failures attributable to [Drs F, D and H] and the role of these failures in the chain of causation, readily identify the registered health professionals who failed to observe a standard of care and skill reasonably to be expected in the circumstances."

In the case of each doctor, the circumstances varied depending on where their involvement in the treatment of Mrs B came in the chain of causation, and their role within the medical team. The reviewer commended Dr E for identifying the drug chart error and reporting it to Dr F, and accepted that while he lacked judgement in failing to document his actions, "an error of judgement does not necessarily constitute medical error". The reviewer also accepted that it would not be unusual for a doctor in Dr E's specific circumstance — a house surgeon under supervision — not to notice previous medications when charting a new one. She concluded that there was no proof that Dr E failed to observe a reasonable standard of care and skill, and accordingly quashed ACC's decision against him. ACC's medical error findings against Dr D, Dr H and Dr F were upheld.

Actions taken by MidCentral Health

In April 2002, MidCentral Health apologised to Mrs A and to Mrs B's wider family and acknowledged a "human error" had occurred when Mrs B's bradma label was placed on patient Z's drug chart. Mrs A was advised that PNH's systems would be reviewed and steps taken to prevent a recurrence of such an error.

In March 2003, in response to notification of the Commissioner's investigation, Dr V stated:

> "MidCentral Health did not provide an appropriate standard of care for [Mrs B] as she was inappropriately given the wrong medication and was subsequently sedated … MidCentral Health accepts that this error should have been discovered well before it was. MidCentral Health has always acknowledged the drug prescribing error and has previously apologised for this. It took immediate steps to reduce the likelihood of this recurring. In addition, it continues to educate the staff and improve the underlying systems to help ensure that such errors are detected sooner."

Dr V provided comprehensive information regarding the problems identified through MidCentral Health's incident review process, and the steps taken to improve services following these events. They are as follows:

- *Patient records and drug charts*
  In April 2002, patient records and associated documentation (including bradma labels) were kept in a separate plastic basket allocated to each individual patient, while the patient was in the ED. The Clinical Director of the Emergency Department was required to review this storage method; the system was subsequently changed, with document baskets stored in individual cubicles, physically separated, "to prevent the possibility of accidental mixing of documents from separate patients".

  Dr V noted that it was not accepted practice that a patient's drug chart be completed without appropriate identification. He said: "Normal procedure would be to identify the drug chart first and then complete the prescribing details." He reminded medical staff of the necessity to properly identify the medication charts prior to their use.

- *Co-ordination of medical staff*
  During 2001 MidCentral Health had conducted an extensive review of the requirements for medical staff in the Internal Medicine Line. As a result, changes had been made to medical staff numbers and the way the on-call system was managed. Weekday meetings at 8.00am were implemented to co-ordinate handover of new and existing patients and monitor workloads.

  After these events, Dr V asked the medical teams to review how ward rounds were conducted, and clarify roles and responsibilities to ensure that all appropriate

documents were reviewed, including clinical notes, observation charts, drug charts and investigations. The need for medical staff to properly account for unexpected changes in patients' conditions was reinforced.

Between April 2002 and March 2003, emphasis was placed on the Medical Line's continuing improvement (education) programme including a "personalised orientation" for new registrars (when time is spent with peers in a supernumerary capacity), and discussion of issues arising from incidents, complaints and Health and Disability Commissioner opinions. The latter information is widely distributed to consultants and registrars and, when appropriate, to nurses and relevant allied health professionals in this area.

- *Pharmacy staffing*
  The hospital pharmacy service was "limited" in April 2002 due to a shortage of pharmacists. Weekday clinical pharmacist involvement with individual patient therapy was conducted on a referral basis. Over the weekend, a pharmacist was available on-call 24 hours, and present in the pharmacy between 9am and 12pm on Saturday and Sunday. From 5pm Friday until 8am Monday, a pharmacist would not visit the wards to monitor therapy unless contacted specifically and asked to do so. Medications were administered from ward stock supplied and not routinely individually dispensed.

  By March 2003, additional pharmacy staff had been recruited and this led to "the development of a more comprehensive hospital wide clinical pharmacy service which includes the medical wards". This included routine review and checking of all new admissions during normal working hours and "advice available on request for the clinical staff". Dr V advised that, as a result of these measures, it would be expected that an error such as occurred in Mrs B's case "would now be discovered".

- *Nursing training and competence*
  In April 2002 there was "a high turnover" of nursing staff at MidCentral Health, particularly on the medical wards. Due to staff shortages, nurses were carrying higher workloads than would normally be expected. A number of initiatives had previously been undertaken in 2000−2001, including the development of the roles of Clinical Nurse Specialists and Clinical Nurse Co-ordinators/Charge Nurses, and capping the number of beds in each ward to assist appropriate nursing workloads. In mid-2002 the role of medical ward Nurse Educator was developed and steps were taken to increase the supervision of nurses, and to ensure the ongoing revision and audit of admission documentation. The Director of Nursing was required to arrange for the appropriate education of nursing staff regarding the processes for identification of patients' medications on admission.

In June 2004, the General Manager of MidCentral Health provided my Office with an update on additional measures taken to ensure that medical and nursing staff are aware of their responsibilities for administering medication:

- A report from Ms W, Professional Advisor (Pharmacy), confirmed that pharmacists' orientation at MidCentral Health includes being made aware of the policy and procedures for the administration of medicines. The pharmacy delivers "one session early in each calendar year" to medical staff regarding prescribing and administration issues.

- A report from the Director of Nursing, confirmed that induction training for all nurses includes a week-long orientation in which medication administration and "document management processes" are covered. Nurses starting in a ward are involved in a "familiarisation programme under supervision by a preceptor", and a module on medication administration has an assessed competency component.

  Every qualified nurse at MidCentral Health is expected to function according to the Nursing Council of New Zealand's Code of Conduct, and to uphold the Nursing Standards of MidCentral Health. According to Board policy, nursing registration competencies and accepted guidelines for nursing practice, PNH nurses are required to assess patients to determine their nursing needs, and deliver the nursing component of the multidisciplinary treatment plan. They are expected to have knowledge of a patient's condition as well as the drugs to be administered; this includes knowledge of the action of the drugs, effects, known side effects, interactions and contraindications, and the rationale for the drugs prescribed. Where a prescription is unclear, the nurse is expected to clarify with the treating doctor or his/her agent immediately and have the prescription rewritten prior to administering the drug. The nurse can determine whether it is necessary or advisable to withhold a drug pending consultation with the prescriber or colleague.

In November 2004, MidCentral Health's General Manager advised me that the Coroner's recommendations had been tabled before MidCentral Health's Clinical Board in August 2004. The Medicines Advice and Policy Committee ("MAPC") was delegated to undertake an audit process to consider the handling of patient medication charts across clinical situations. All clinicians filling out a medication chart have been asked to fill in patient details in longhand prior to the patient identification label being attached.

At the MAPC's request, in August 2004 PNH's Pharmacy Department conducted a baseline audit of the availability of drug charts and medical notes. Six pharmacists and a pharmacy intern visited the wards they routinely attend as clinical pharmacists. The audit instructions were that the pharmacists print a ward list of patients for each of their wards, and then locate the notes and charts of each of the patients. If unable to find the charts after five minutes, the search was to be abandoned. From a total of 295 charts, 15 (5%) were not located, and from 295 sets of notes, 10 (3%) were not located. The wards were busy and

several ward rounds were in progress at the time (between 9am and 10am). Most of the notes and charts found out of their "Home Base" were in legitimate use.

Ms W, who reported the audit findings to the MAPC, stated:

> "What became apparent is that every ward has their own system. As a general observation, very few areas keep the notes and the charts together … Even where charts and notes are in the same location the charts are in different folders to the notes folders. This probably comes from the traditional approach of keeping the drug chart hooked over the end of the patient beds (a practice which is no longer acceptable in order to help preserve patient privacy) …
>
> It is my opinion that if a doctor came onto a ward to do a round and presented a list of patients s/he intended to see, then as long as the patient was on the ward, a nurse especially could easily locate within an acceptably short time, all the notes and charts to accompany that round. Basically the nurses are the keepers of the notes and charts in any particular area because they and the notes and charts stay with the ward (or patient). The doctors, and most other health professionals eg pharmacists, physios, respiratory nurses, social workers, etc, are moving ward to ward."

As a result of the audit, the MAPC made a number of recommendations, subsequently endorsed by the Clinical Board. They are as follows:

1. That patients' notes and drug charts are present on all ward rounds.
2. That identification labels (bradmas) are kept in patient files in the ward, and not in a separate location.
3. That drug charts be reprinted to include adequate space for the patient's name to be clearly visible in both handwritten and electronic form.
4. That consideration be given to replacing the ward drug room key pads with electronic swipe cards to enable improved access for medical staff into ward drug rooms.
5. That there be consistency throughout acute services in the storage of patients' notes and charts. The Medical Director requested the Nursing Practice Committee and Combined Medical Forum to agree on the location of these to ensure ease of use for all concerned.

Recommendations 1, 2, 3, and 5 had been implemented as at 10 November 2004, and the swipe-card access system to ward drug rooms was introduced in September 2005. Summarising the actions taken as a result of the review processes, the General Manager of the DHB advised:

> "It is not intended that at any stage during the provision of health care, a health professional would do an assessment of a patient without all the relevant information. It

is expected in the normal circumstances that medication charts will be in the medicine room during medication preparation, at the bedside during administration and back in the office with the remainder of the file at other times, and available to all staff to review or to take on ward rounds. The exception would be when a patient is under intensive monitoring. This practice is standard throughout MidCentral Health acute services."

Independent advice to Commissioner

On 17 December 2004, the following report was obtained from Dr Mary Seddon:

"I have been asked to provide an opinion to the Commissioner on case number 03/14692, and I have read and agree to follow the Commissioner's Guidelines for Independent Advisors.

Qualifications: MBChB, FRACP, MPH, FAFPHM.

Training: Graduated Otago Medical School 1987, MPH (Auckland) 1999.

Experience: Medical Registrar appointments in Auckland and Tauranga 1990−1995. General Physician Middlemore Hospital 2000−2002. Senior Lecturer in Quality Improvement, Epidemiology and Biostatistics, School of Population Health, University of Auckland, 2000−2004.

Referral instructions — Expert Advice Required:
To advise the Commissioner whether, in [my] opinion, the care provided to [Mrs B] by staff of Palmerston North Hospital was of an appropriate standard […][27]

The following documentation was received and reviewed:
1. Letter of complaint (pages 1 to 2)
2. Responses from MidCentral DHB (pages 3 to 32)
3. Responses from [Dr D] (pages 33 to 42)
4. Responses from [Dr F] (pages 43 to 56)
5. Responses from [Dr E] (pages 57 to 68)
6. Records from Coroner (pages 69 to 74)
7. Clinical record (pages A1 to A178)

[27] Commissioner's note: At this point in her report, Dr Seddon set out the list of 18 questions she was asked to address. As she has listed these again below with her answers, they are not repeated here. The footnotes that follow in this section of this Opinion are, with the exception of footnote 36, those of Dr Seddon.

Synopsis of case:
[Mrs B], a 91 year old resident of [a rest home], was admitted to the Emergency Department at Palmerston North Hospital on the evening of 5 April 2002. [Mrs B] was seen by [Dr L], house surgeon, who noted that she complained of being lifeless and had been troubled by a dry cough, occasionally productive with clear sputum, for about ten days. [Dr L] noted that [Mrs B] was a Type II diabetic, controlled on oral hypoglycaemics. [Dr L] noted [Mrs B's] past history which included a mastectomy in 1954, hypertension, and skin cancer of her scalp for which she was receiving radiotherapy. [Dr L] also recorded that [Mrs B] had been on oral antibiotics (Cefaclor) for 3 days. [Dr L] documented Mrs B's usual medications in her admission note: Gliclazide — for diabetes; Frusemide — for hypertension; Slow K — to replace the potassium the frusemide decreases; Enalapril — for hypertension; doxycyline — an antibiotic.

[Dr L] asked the on-call medical registrar, [Dr H], to review [Mrs B]. [Dr H] recorded his impression that [Mrs B] was suffering a lower respiratory tract infection and ordered an X-ray of her chest. It is presumed that [Dr H] was involved in the admission of another patient at around the same time because he wrote up a drug treatment chart which included MST 100mg twice per day, Duride [90]mg, Losec 20mg, Frumil, Warfarin as needed, Oxybutynin 5mg and Aspirin 150mg. At some point a patient label with Mrs B's details was incorrectly attached to this chart. ([Dr H] has since left New Zealand and has not been included in this investigation.)

[Mrs B's] chest X-ray was interpreted by the night registrar as showing no consolidation, which is sometimes the case in early chest infections (when reviewed by the radiologist there were in fact some subtle changes). Her blood count revealed a mild increase in the white cell count and her blood sugar level was slightly raised at 10.3mmol/l (consistent with being a diabetic). She was also slightly hyponatraemic with her serum sodium being 130mmol/l and [her] serum creatinine was 0.11mmol/l, which for a woman of her age indicated at least mild renal impairment.

Because it was late in the evening by the time investigations were finished, [Mrs B] was admitted to Palmerston North Hospital overnight. [Ms M], registered nurse, admitted [Mrs B] to [the ward] at the hospital at 2.15am on the 6th of April 2002. [Ms M] stated because it was late and [Mrs B] was tired, she did not check her medications with her, but left this for the day staff to do. [Ms M] administered Cefaclor 500mg to [Mrs B] at 2.30am.

At 9.00am on 6 April 2002 registered nurse [Ms G] gave [Mrs B] the medication listed on her drug treatment chart. The medicines administered were Duride 90mg, Losec 20mg, Frumil, MST 100mg, Oxybutynin 5mg, Aspirin 150mg and Cefaclor 500mg.

At some time on the morning of 6 April 2002, [Mrs B] was reviewed by [Dr D], respiratory physician. [Dr D] advised that he is not sure whether this occurred after [Mrs B] had been dispensed her medications, or before. [Dr D] is an experienced [overseas]

qualified doctor (Fellow of the College of Physicians since 1982) who commenced employment as a respiratory physician at Palmerston North Hospital on 8 January 2002. On 1 April 2002 [Dr D] took on general medicine on-call duties. The night of 5/6 April 2002 was [Dr D's] first night on-call and his first experience of the New Zealand medical system after hours and during weekends. He advised that it is probable that [Mrs B] was one of the first five general medical patients he saw in New Zealand.

[Mrs B] was able to give a good history and after examination [Dr D] diagnosed her with a lower respiratory tract infection. [Dr D] recommended that [Mrs B's] antibiotics be changed from Cefaclor to roxithromycin. [Dr D] reviewed [Mrs B's] drug history (written in the notes), but not the medication chart. He advised that the medication chart is kept separate from the notes and is often not available during ward rounds.

[Dr D] felt that [Mrs B] could be discharged from hospital and after he left, a discharge summary was prepared. It is not clear who wrote the discharge summary, but it was presumably a house surgeon (un-named).

During the day of 6 April 2002 [Mrs B] became lethargic and confused. [Ms G] became concerned and contacted the on-duty medical house surgeon. After a further telephone discussion involving registered nurse [Mr Q] and the house surgeon, it was decided not to discharge [Mrs B] and to review her the next day (Sunday).

At 9.30pm [Mr Q] administered the MST that was incorrectly charted for [Mrs B]. He checked the details on the medication chart against [Mrs B's] wrist bracelet. He noted that the MST was at a high dose and that [Mrs B] had a lower respiratory tract infection. [Mrs B] wore a little red cap to cover a bald spot and he checked the notes, which indicated she had skin cancer of the scalp. [Mr Q] advised that having read this, he concluded that the MST was for relief of the pain of that condition. Because MST is a restricted drug, [Mr Q] asked [Ms R], registered nurse, to check the medication for him. [Ms R] advised that she would have checked the medication against the medication chart and would have checked [Mrs B's] details on her wrist bracelet to confirm that they were the same as the details on the chart.

At 8.30am on 7 April 2002, [Ms G] administered Duride 90mg, Losec 20mg, Frumil, MST 100mg, Oxybutynin 5mg, Aspirin 150mg and roxithromycin 300mg to [Mrs B].

The nursing notes indicate that during the afternoon of 7 April 2002, [Mrs B] was confused and disorientated and that [Ms A], [Mrs B's] daughter, had advised that this was not normal. [Ms G] contacted the duty house surgeon, [Dr P]. [Dr P] advised [Ms G] that [Mrs B] should not be discharged, but did not review her.

The drug treatment chart indicates that at 6.00pm [Mr Q] administered a further 20mg Losec to [Mrs B] and that at 8.30pm he gave her another 100mg MST. [Mr Q] advised that he again asked [Ms R] to check the MST for him. [Mr Q] stated that he noted that [Mrs B] had been prescribed Warfarin, but did not administer this medication because he could not find blood test results showing that her INR had been measured. [Mr Q]

arranged for a blood sample to be taken and, when the results of this indicated that the sample was insufficient, asked that a further sample be taken.

On the Monday morning (8 April 2002) [Mrs B] was reviewed during a ward round by [Dr D], [Dr F] (registrar) and [Dr E] (house surgeon). [Dr D] advised that he was concerned about [Mrs B's] drowsiness, but attributed this to a pre-existing cognitive impairment. [Dr D], [Dr F] and [Dr E] decided that it was appropriate to discharge [Mrs B] to the hospital section of [the rest home]. [Dr D] stated that he was not alerted to question [Mrs B's] medication and that during a ward round it is usual for a consultant to be given an oral report, usually by the house surgeon, and for medications to be charted by the house surgeon or registrar and administered by nursing staff. Given that the house surgeon did not know [Mrs B] and given that the medication chart was not available, it is likely that if asked about the medications, the house surgeon would look in the notes for [Mrs B's] usual medications and assume that these were the same ones recorded on the drug chart.

At 9.30am on 8 April 2002, registered nurse [Ms S] administered Duride 90mg, Losec 20mg, Frumil, MST 100mg, Aspirin 150mg and roxithromycin 300mg to [Mrs B]. [Ms S] advised that she checked the MST with another nurse by ensuring that the patient label on the drug treatment chart matched the patient identification label worn by [Mrs B]. [Ms S] stated that she assumed the MST was being administered for [Mrs B's] cancer.

During the day of 8 April 2002 [Mrs B] became increasingly confused and disorientated and her level of consciousness decreased. [Mrs B] fell asleep with her fingers in her food at breakfast, and did not recall being given breakfast when woken. By lunchtime [Mrs B] was unable to swallow and [Ms S] asked [Dr E] to review [Mrs B].

[Dr E] spoke to [Mrs A] who told him that her mother's functioning had declined since admission. [Dr E] reviewed [Mrs B's] blood test results and noted that her white cell count had increased from 10 to 19, despite the oral roxithromycin. [Dr E] had a discussion with [Mrs A] and [Dr F] and as a result a 'not for resuscitation' order was placed and the antibiotic was changed to a broader spectrum antibiotic. [Mrs B's] oral medications were stopped because she was unresponsive.

During the night of 8 April 2002, [Dr U], house surgeon, reviewed [Mrs B]. [Dr U] noted that [Mrs B] was hypotensive and poorly oxygenating on room air. He ordered the administration of intravenous haemaccel 500mls and asked for more regular patient observations. No information has been provided by [Dr U] — he no longer appears on the medical register.

The following morning, 9 April 2002, [Dr F] and [Dr E] reviewed [Mrs B] during a ward round. [Dr E] was unsure if [Mrs B's] continuing confusion was related to her chest infection. Further blood tests were taken and these indicated her renal profile had deteriorated, with creatinine rising from 0.11 on admission to 0.19. [Dr E] and [Dr F] started [Mrs B] on IV fluids and changed [Mrs B's] antibiotics once more. A chest X-

ray and mid-stream urine analysis were ordered to determine whether worsening pneumonia or a urinary infection were to account for [Mrs B's] deteriorating condition.

Later that morning [Dr E] discussed [Mrs B's] renal impairment with a pharmacist and adjusted her antibiotic dosage. After this discussion [Dr E] reviewed [Mrs B's] medication regime. He checked with [the rest home] and [Mrs B's] general practitioner and realised that [Mrs B] had been charted the wrong medications. He immediately advised [Dr F] and re-charted [Mrs B's] medications. [Dr E] did not record these actions in the notes, but [Dr F] confirmed that [Dr E] spoke to her about the error and the re-charting of medication.

Registered nurse [Ms G], as the nurse responsible for [Mrs B] on the evening of 9 April, has been asked if she recalls being informed of the prescription error on the evening of 9 April, but has not responded to this question.

[Dr F] stated that she intended reporting the medication error to [Dr D] on the evening of 9 April 2002, but was very busy with acute admissions. Instead, [Dr F] and [Dr E] told [Dr D] of the error when they met to conduct a ward round on the morning of 10 April 2002. [Dr F] advised that during the ward round it was felt that [Mrs B's] level of awareness had improved and it was agreed to continue her on the fluid and antibiotics. [Dr F] stated:

> 'On the evening of 9 April 2002, [I] was informed by [Dr E] that the last dose of MST had been administered to [Mrs B] more than 24 hours earlier. For that reason [I] did not address the possible administration of an antagonist at that time.'[28]

At 5pm and 9pm on 9 April, [Mrs B's] conscious level was recorded as a GCS of 9.

[Dr F] completed an Incident Accident Hazard Report at 9am on 11 April. On this she described the prescription error, and stated that she had performed a medical assessment, in person, on 9 April.

During 11 April 2002 [Mrs B] was noted to have a fast, irregular pulse. An ECG indicated she had an abnormal heart rhythm and she was briefly transferred to the Coronary Care Unit, where her heart rhythm spontaneously returned to normal.

[Dr F] reviewed [Mrs B] on 12 April 2002 and stated that she had improved considerably and that she was alert and communicating more freely. Later that day [Dr F] and [Dr E] advised [Mrs B's] family of the medication error.

[Dr F] advised that [Mrs B's] condition appeared to improve over the following days and on 19 April 2002 she requested that [Mrs B] be considered for transfer to [another

[28] The last 100mg dose of MST was given (according to the drug chart) at 09:30 hours on the 8th, that is 36 hours prior to the decision not to give naloxone.

hospital] on 22 April for a period of rehabilitation before her final discharge back to the [rest home].

In the early hours of 22 April 2002 [Mrs B] developed acute left ventricular failure. She died at 8.35am that morning. The post mortem (according to the Coroner's documentation) identified the cause of death as pulmonary oedema secondary to acute cardiac failure in a background of organising pneumonia. The reason for the acute cardiac failure is unclear from the documentation that I have (I do not have the post mortem report), however the earlier finding of a rapid pulse and known atrial fibrillation could point to a heart attack as the cause.

Expert Opinion

General:

This case demonstrates a number of systematic errors in the way that care was provided for [Mrs B]. I will address these briefly before going on to consider the specific questions posed by the Commissioner.

The initial error appears to have been made by [Dr H], when [Mrs B's] patient label was put onto another patient's medication chart.[29] This was probably a 'slip error'[30] but what is concerning is that the error was not detected and it was allowed to impact adversely on [Mrs B]. Any reliable process involving a complex system (such as healthcare) should have a number of defence systems that prevent harm from simple errors of this nature. Such defences in this case include:

1. Continuity of care

i. The initial failure in continuity here was that the admitting doctor ([Dr L]), who had written down [Mrs B's] correct medications in the notes, did not also write up the medication chart. It is unclear why this may have been the case, but excessive workload and distraction are likely factors.

ii. Continuity continued to be a problem. [Dr D] saw [Mrs B] on the Saturday post-take ward round, presumably with junior doctors (not named), but did not see her again until Monday, when he had a different registrar and house surgeon who did not know [Mrs B's] case, and had not worked with [Dr D] in the past. The house surgeon was in his second run, and had been on leave for the previous 10 days, so none of the patients were known to him. The registrar ([Dr F]) notes in her response

[29] This is supposition as [Dr H] has not been interviewed for this investigation. [Commissioner's note: Statements by [Dr H] were subsequently made available to this Office, by ACC.]

[30] J T Reason, *Human Error*, Cambridge University Press 1990.

to the HDC that only eight of the recommended twelve registrar positions were filled. This meant that she was on acute call every second day and not available to supervise the house surgeon on the ward rounds. It also threatened continuity directly as in this situation the registrar would be admitting patients to several teams rather than to one's own team, necessitating multiple handovers and loss of continuity.

iii. Nursing continuity is always compromised by the shift system, however, it appears that the handover system which is supposed to address this problem was not sufficiently robust. There is no evidence that the first nurse ([Ms M]) read the admission note (which had the correct medications) and handed this information on to the nurses of the next shift. Nor does it appear that she handed over the fact that she had not gone over the medications with [Mrs B]. Nursing continuity is also threatened when nurses do not accompany medical staff on ward rounds. This is most likely impossible without having 'home wards' (see below).

iv. From the opinions of [Drs F and D] it would appear that Palmerston North Hospital does not run a system of 'home wards.' The fact that [Dr F] states that she didn't know the code for the medication room, suggests that she had to look after patients on several wards. She also states that changes to the medication charts would be made 'in bulk' when the house surgeon would return to each ward to find the charts and make the changes. The 'home ward' system allows the medical team to admit most of their patients to one ward, which means that a team ethos can develop between nurses, clinical pharmacists and doctors. Not having home wards is a direct threat to continuity and quality of care. It would be interesting to know whether Palmerston North Hospital subscribes to the theory of 'a bed is a bed' (irrespective of where) or whether they have identified 'home wards' and team-based care as priorities for quality care.

2. Medication defences and failings:

i. Involving the patient in the medication process. It appears that no attempt was made to discuss the medications with [Mrs B]. I note that [Mrs B] was hearing impaired and that she was admitted in the early hours of the morning — both these factors could have meant that this defence was not effective. However, it is unclear whether Palmerston North Hospital has a policy on patients self-medicating and whether this is encouraged, but it is one way to ensure that patients know what medication they are on and can question irregularities.

ii. Accessibility of the medication chart on ward rounds. It is stated in several places that medication charts were difficult to find for ward rounds, and that they were often kept in the 'drug room' which was only

accessible by a code that only the nurses and presumably the pharmacists knew. This is a major systemic failing, apparently set up when some medications went missing, but without thinking of the problems that it could cause. It is vital that the RMOs and Consultant are able to review the medications every time that they see a patient, but this would be hard to do if the charts are effectively unavailable. After this incident a survey was done by the pharmacy department of the availability of the medication charts,[31] but this is from the perspective of a group who would have been privy to the drug room access codes and so is not likely to replicate the situation that doctors found themselves in. This survey did report that even knowing the codes, the pharmacists could not find 5% of charts and that each ward seemed to have its own system. Allowing non-standardised approaches is likely to promote errors.

iii. Nurses checking medications. This requires more than checking the patients details on their bracelet against the label on the medication chart. It requires that nurses understand the actions of, and indication for, each medication. There was no indication for many of the medications and the fact that Warfarin was charted but an INR test not requested should have alerted the nursing staff. Likewise the consistently high blood sugar results should have rung alarm bells. The MST dose was large and should have sent the nurses back to the notes to see the indication. [Mr Q] did go to the notes, he read about the localised scalp cancer and made an assumption about the MST, however he did not look for the medications on admission, or contact the rest home. There is no evidence that the nurses questioned the medications, giving morphine even when the respiratory rate was as low as 13. Again it would be useful to see if Palmerston North Hospital has a medication policy and what the nursing education programs are like. Interestingly the form that nurses fill out when a patient is admitted onto the ward (documentation checklist), does not even have a space for listing the medications and indications. This means that there is no expectation from the nursing organisation of the hospital that medications will be checked.

iv. Clinical pharmacists. Having a clinical pharmacist available on ward rounds is recognised as one of the most effective ways to decrease medication errors.[32] There are problems recruiting enough pharmacists, but these can be overcome if their importance is recognised. An equally

[31] 28/08/04 Ms W.
[32] Bates, DW et al. *Journal of General Internal Medicine* 1993, "Incidence and preventability of adverse drug events in hospitalised adults".

fundamental problem related to the way that Palmerston North Hospital is set up; the fact that each ward would have several medical ward rounds every morning with no way of knowing when or being able to cover all of them. This again relates to the problem of not having 'home wards' (see above).

Addressing the specific questions posed by the HDC Office:

1. *Should a pharmacist have reviewed [Mrs B's] drug treatment chart?*

Yes. Best practice and evidence from overseas would recommend that the clinical pharmacist act as integral part of the clinical team including reviewing the medical chart of each patient on a ward round. As stated above in Palmerston North Hospital at the time of the incident, this would not have been possible due to the lack of home wards and the shortage of pharmacists.[33]

2. *Was it appropriate to store the drug treatment charts separately?*

No. The drug chart needs to be available to the entire clinical team (doctors, nurses, pharmacists and allied health), and to be seen to be part of the clinical record.

3. *Should the drug chart be reviewed at all medical ward rounds? If yes, which member of medical staff bears the responsibility for ensuring this review occurs?*

Yes. As the consultant [Dr D] bears the responsibility, however, systemic failings (particularly but not exclusively the barriers to availability of the chart), made this difficult and contributed to the failure.

4. *Should the drug chart be reviewed at all assessments (outside the formal ward rounds) by medical staff?*

Yes. They were seen at some times (e.g. when re-charting the antibiotics) but the junior staff involved do not appear to have reviewed the entire chart. At other times I suspect that staff on busy on-call duties did not pursue charts if they could not find them quickly.

5. *Did sufficient medical review (including clinical assessment) occur, given [Mrs B's] deteriorating condition?*

No. On-call house surgeons were called and sometimes gave telephone advice, but even when they came to the ward, they did not always assess her. However, several of these house surgeons would be junior and require supervision. It appears that the medical staff were stretched generally with too few registrars. This meant that registrars were on-call every second day and therefore not available to supervise the house surgeons on ward rounds and when busy after hours.

[33] Documentation from Dr V (provided by HDC Office).

6. *Was an adequate assessment made prior to the decision being made on 8 April not to resuscitate [Mrs B]? What clinical assessment should be performed prior to the decision not to resuscitate? Who bears the responsibility for ensuring this assessment be made?*

Given that the medication chart had not been reviewed then one can say that there was not an adequate assessment done. The clinical assessment needed prior to such a decision would involve discussion with the patient and/or family to gauge their wishes, review of the medical condition and an estimate of prognosis. It should be noted that the 'do not resuscitate' decision refers to not providing CPR in the event of cardiac arrest. This is usually only successful if the arrest is witnessed and is not generally successful when patients die of other causes (e.g. pneumonia). Ultimately the consultant bears the responsibility for such orders however, it is quite common and appropriate for the registrar to provide this decision after hours.

7. *Should the 'not for resuscitation' order have been reconsidered by medical staff following the discovery of the drug prescription error on 9 April? If so, whose responsibility was it to perform this review?*

Possibly, although by that stage [Mrs B's] pneumonia and frail state made it unlikely that resuscitation attempts would have been successful. Again either the registrar or consultant could make this decision.

8. *Should the clinical note by the nurse on the morning of 8 April [have prompted] a clinical examination by the doctor being asked to review [Mrs B]?*

Yes.

9. *Should Narcan [naloxone] have been administered to [Mrs B] on the evening of 9 April, when the error in prescription was noted by [Dr E]? If, 'yes', was the responsibility to make this decision [Dr E's], [Dr F's] or was the responsibility shared?*

No. The half life for MST is ~ 6 hours (reaches a peak effect in 2−3 hours). The major metabolic transformation occurs in the liver but it is cleared by the kidneys, therefore the dose needs to be decreased if either liver or renal impairment is present. [Mrs B] had significant renal impairment by this time and it is likely that had been accumulating the morphine metabolite (Morphine-6-glucuronide).[34] However the last dose of MST was given 36 hours prior to the discovery of the error and even with renal impairment, one could be fairly confident that most of the MST would have been out of her system.[35] In

[34] *Oxford Textbook of Palliative Medicine*. Second Edition ©1998 Oxford University Press.

[35] Although [Dr F] in her letter dated 12th October 2004 states that the MST was last given 24 hours previously, the drug chart documents the last dose as being 9.30 on the morning of the 8th, with the evening dose withheld.

this case naloxone was unlikely to have an effect. Having said that, the GCS was 9/15 (although respiratory rate normal at 18), and naloxone, a low risk treatment, could have been given as a trial. It would have been more important to advise regular observations and oxygen if her saturation were decrease[d].[36]

[36] The final report was sent to [a specialist emergency physician], who provided expert advice to ACC in this matter. [The specialist emergency physician] also provides the Commissioner with independent expert advice in relation to emergency medicine. [The specialist emergency physician] wrote to me on 3 October 2005, and stated:

"[Mrs B] was admitted with a serum creatinine concentration of 0.11mmol/L. Given her advanced age and weight of 66kg (from post mortem), her creatinine clearance, a measure of renal function, was 0.5ml/second (normal being 1.5ml/second). Therefore, at the time of her admission to hospital, her renal function was one third normal, due largely to her advanced age. Doctors understand the implications of this on drug therapy in the elderly and amend their drug dosing in the elderly.

The serum creatinine was not measured again until 7.35am on 9 April 2002, 3½ days after admission and 24 hours after cessation of MST. At this stage, serum creatinine had deteriorated to 0.19mmol/L, probably due to inadequate fluid intake relative to fluid output. Using basic pharmacological calculations one can determine that [Mrs B's] creatinine clearance had now fallen further to 0.3ml/sec, or one fifth normal.

MST is absorbed after oral administration and metabolised in the liver. The metabolite morphine-6-gluconide is pharmacologically active and is excreted via the kidneys. Diminished renal function will obviously allow this metabolite to accumulate in the circulation with resultant toxic effects.

Half-life in the above clinical situation is clearly extended significantly. The definition of half-life is the time for the concentration of the drug in plasma (or the amount of drug in the body) to halve. Half-life of MST is somewhat arbitrary anyway because it is a sustained release preparation. However, there is no doubt that any suggested half-life would be profoundly prolonged in a 91 year old woman with 20% normal renal function.

In addition, there are observations recorded in the clinical notes by attending health professionals that would suggest persistent opiate toxicity [to 12 April]. …

Chest X-ray on 12 April 2002 then demonstrated left lower lobe pneumonia … according to the clinical notes. Some difficulty with coughing, swallowing and verbalising was still being recorded days later. …

Naloxone has a short half-life and is given intravenously (or intramuscularly). In the context of opiate toxicity due to cumulative doses of MST, repeated doses (or an infusion) would need to be administered with close monitoring of respiratory status and level of consciousness."

10. *When should the consultant have been informed of the prescription error?*

Ideally it would have been best if the consultant was informed immediately as was [Dr F's] intention before she became busy in ED with new admissions. A registrar's role includes prioritising work and new admissions would have taken precedence. Furthermore as no action was considered necessary then it was appropriate to wait for the next day.

11. *Should [Dr F] have reviewed [Mrs B] personally on 9 April after having been informed by [Dr E] of the prescription error?*

Again this would be ideal, but given the staff shortages (for registrars), adequate supervision of house officers would not appear to have been possible at the time of the incident (see general comments above).

12. *Should [Dr F] have ensured that the doctor relieving her at 11pm on 9 April was aware of the events relating to [Mrs B]?*

Probably, however for the reasons given above (i.e. the decision not to give naloxone) there was no urgent need to handover [Mrs B's] care. Handover for the night shift is reserved for patients who may deteriorate, need to be reviewed or need blood tests assessed.

13. *Should [Dr E], in discovering the prescription error, have specifically informed the registered nurse responsible for [Mrs B's] care on the evening of 9 April?*

Yes, it would have been a courtesy to inform the nurse (a reflection of team-based care) but having re-charted the medication chart (stopping the MST) this would have been enough to prevent further doses. Note: HDC have not at the time of writing, had a reply from [Ms G] as to whether she was informed by [Dr E].[37]

14. *Given [Dr E's] experience, was adequate support and guidance provided by his senior colleagues?*

No. Again the systematic failures (inadequate registrars employed) made this inevitable.

15. *Should Narcan have been administered on the morning of 10 April following review by [Dr D]?*

No — see answer to question 9. [Dr D] in his letter (19 October 2004) states that he reviewed [Mrs B] on the morning of the 10th and her vital signs, including her respiratory rate were in the normal range. This further supports not giving naloxone (Narcan) as one would expect a decreased respiratory rate if she still had a significant morphine load. Her GCS had also improved to 14/15.

[37] Commissioner's note: [Ms G] has not replied to my letters inviting her response to this question.

16. *Was [Dr F's] completion of the Incident Accident Hazard form on 11 April performed appropriately?*

I have received a poor copy of the incident form and I am unable to read it in full. I cannot find the documentation which the HDC alleges shows that [Dr F] says that she examined [Mrs B] on the night of the 9th. What I can decipher appears appropriate with the incident (incorrect patient label attached to the drug chart) correctly identified as occurring at admission on the 5th of April. Question 11 'Was anyone injured?' has not been completed, but with hindsight the 'yes' circle should have been ticked. The form is somewhat restrictive — for example question 13 'what type of injury was it?' [Dr F] was forced to tick 'chemical effect' as there is no category for medication error. While technically correct, collecting medication errors would give Palmerston North Hospital a better indication of the rate of medication errors and hopefully some response to them. This form was designed to cover accidents, hazards, and harm to patients and staff, and as such attempts to do too much, resulting in little room for detail on incidents such as the one described. To obtain good incident documentation, the hospital needs to ensure that it has systems in place that promote fair investigation and feedback to those writing the incident reports.

17. *If, in answering any questions, you believe that any member of staff did not provide an appropriate standard of care, please indicate the severity of his or her departure from that standard. To assist you in this last point, we note that some experts approach this question by considering whether the provider's peers would view the conduct with mild, moderate, or severe disapproval.*

I believe that this incident resulted from an initial 'slip' error, but that at the time Palmerston North Hospital had a number of systemic failures which allowed this error to go undetected for four days and to harm the patient. I do not think that any one member of staff failed to provide appropriate care — the clinical team failed as a whole, not as a conscious effort but mostly due to the conditions of work and lack of a team culture. There were at least four nurses who administered the incorrect medications without questioning the indications or checking what was written in the notes. There were several largely unsupervised house officers who made changes to the medication chart without reviewing the need for the medications already charted, and others who supplied advice to nursing staff and Mrs B's daughter without reviewing the patient. [Dr F] was hampered by the clinical load and the constant on-call duties (due to staff shortage). [Dr D] walked into this environment not appreciating its inherent weaknesses and as SMO is left carrying the can. However, if medicine is seen as a team endeavour, rather tha[n] a hierarchical medical one, then it becomes clear that it is the team dynamics and the system which are the fundamental problems in this case.

18. *Are there any aspects of the care provided by any of the staff of Palmerston North Hospital you consider warrant additional comment?*

No."

Responses to provisional opinion

MidCentral Health

Medication chart availability
MidCentral Health does not accept that drug charts were "unavailable or inaccessible", to its medical staff, and submitted that the comments of Dr F, Dr D and Dr E — regarding drug charts being often "unavailable" because they were in the locked dispensary — are "factually incorrect".

MidCentral Health provided an affidavit by Dr X, Medical Director of MidCentral District Health Board dated 1 September 2004. Dr X described the process for the storage of medication charts on the medical wards at PNH in April 2002.

Dr X stated that the "home base" for medication charts, observation charts and patient records was an open filing cupboard in the unlocked clinicians' workroom on each ward. This would be the "first place" that a doctor would look for the chart. If the chart was not there (for example, because it was in use), then the second place to look would be the workbench in the clinicians' workroom. If the drug chart was not immediately locatable within the workroom, a doctor would be expected to identify and locate the nurse responsible for the patient concerned, and engage the nurse's assistance to find the chart.

Dr X agreed that the ward dispensary was kept locked to ensure the safety of nurses and prevent unauthorised access to the drugs, and confirmed that doctors generally did not know the lock combination. He also acknowledged that there would be occasions when nurses would take the drug chart into the dispensary. However, he said there is a window between the main ward and the ward dispensary, through which the doctor could look to check the location of the chart. If a nurse was in the dispensary, then the doctor could ask for the chart; if a nurse was not there, the doctor could ask any other registered nurse on the ward to open the door and check the dispensary him- or herself. Dr X stated:

> "It is accepted that the system at Palmerston North Hospital does mean that on occasions clinicians may not immediately be able to locate the medication charts and that there is the potential for short delays. However it is not correct to suggest that the medication charts are unavailable for ward rounds. There being only one medication chart for each patient it is obviously inevitable that the chart will from time to time be moved from its home base. Internal medicine ward rounds can often take several hours. It would not be practical for all the patient notes and medication charts to accompany the ward round thereby making them unavailable for others to use over this entire time."

Incident reporting
MidCentral Health confirmed that its staff are encouraged to complete incident forms and requested to add extra pages in cases where the standard forms are restrictive. The incident reporting process used at PNH (in place since 1996) is described as "robust". A copy of PNH's current incident reporting policy, including the forms used when an incident is

Names (other than Palmerston North Hospital, MidCentral Health and the Commissioner's expert advisor) have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

reported, was provided to the Commissioner. The current forms are different from the form used by Dr F on 11 April 2002. There is no separate form for the reporting of medication errors.

MidCentral Health also advised that "all the [handwritten] information [on the form] is entered into a database", so that reviews can be undertaken electronically. MidCentral Health emphasised that "many service improvement activities, projects and education sessions have been initiated from the incident reporting process".

Mrs A

Mrs A responded to my provisional opinion as follows:

> "The family's opinion, based on the high incidence of unsatisfactory events, is that [Mrs B] was the victim of an inefficient organization where the 'health of the system' was poor. [Mrs B's] death was not the result of a single error or the actions or inaction of a single person. It was contributed to by a series of errors by several people. Effective audit and improvement processes severely limit the possibility of such tragic events. Efficient organizations are characterised by isolated errors that are identified and addressed without delay, thereby averting repetition.
>
> We would not have expected such a series of unsatisfactory events for one patient. …
>
> My general impression throughout both the [Coroner's] inquest and the [ACC] Review has been that [Dr D] has integrity and has faced the inquiries honestly. I regret the effect this case has had on him, as he states. Perhaps he relied on the system and the efficiency of others too much."

In relation to the care provided by nursing staff, Mrs A stated her belief that "a more pro-active attitude" was lacking. As to the conduct of Ms G on 6 April, Mrs A stated:

> "I can only add … that I thought [Ms G's] attitude seemed relaxed. …
>
> [Ms G] stated to me that the deterioration was probably due to chest infection or pneumonia. That observation alone should surely have energized her — and other nurses — to report to a senior nurse, or perhaps the consultant; certainly to more actively obtain a review. Instead it seems nothing — or very little — was done. The deterioration just continued."

Mrs A described some of the consequences of the events surrounding her mother's death:

> "Total loss of confidence in [Palmerston North Hospital]. A distrust of becoming a patient there, sufficient to lead me to sell my home … and relocate …
>
> Guilt — for taking my mother to PNH in the first place, and secondly for not taking her home upon discharge from the ED. Thirdly for not getting her out of PNH before

further wrong medication was given to her, and while the error could have been recognised. Guilt for all she suffered, and her death."

Further expert advice

Further advice was requested from Dr Mary Seddon in light of MidCentral Health's response to my provisional opinion. In relation to the system for location of drug charts at PNH in April 2002, as described by Dr X, Dr Seddon stated:

"[Dr X] outlines the process for storing medication charts on the medical wards. He quite rightly points out that these charts are in use every day and as such need to be taken to various places on the ward — including to the patient's bedside, and the medication dispensary room. When not in use he contends that they are stored in an open cupboard in the clinicians' room. … [My] only comment relates to the fact that when the charts are in the dispensary room they are relatively inaccessible to the medical team as they do not know the different codes to access this room on the various wards that they would visit on a ward round. Although [Dr X] contends that the medical staff could find a nurse to open the door, this remains a relative block as nurses may not be available when the doctors wish to see the charts. Evidence of this being a barrier is the fact that both the registrar and house officer [Dr F and Dr E] stated that the drug charts were often not available and that they had adapted to this by going back after the ward round to find them to make any alterations to medications. …

I am happy to stand by my statements that the unavailability of the medication charts (when in the inaccessible medication dispensing room) contributed to the medication error being made in this case. Even if doctors had the time to follow [Dr X's] 4-step process to find medication charts on any given ward, the perception by the medical practitioners interviewed for this case was that the medication charts were often unavailable and this had led to a change of practice (house surgeon reviewing all charts at the end of the ward rounds)."

Code of Health and Disability Services Consumers' Rights

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

2) Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards.

…

5) Every consumer has the right to co-operation among providers to ensure quality and continuity of services.

Other relevant standards

The Medical Council of New Zealand's publication *Good Medical Practice — A Guide for Doctors* (2000) states:

"2. Good clinical care must include:
- an adequate assessment of the patient's condition, based on the history and clinical signs and, if necessary, an appropriate examination
- providing or arranging investigations or treatment when necessary
- taking suitable and prompt action when necessary.

3. In providing care you must: … keep clear, accurate, and contemporaneous patient records that report the relevant clinical findings, the decision made, the information given to patients and any drugs or other treatment prescribed."

The New Zealand Nurses Organisation's publication *Guidelines for nurses on the administration of medicines* (2002) includes the following relevant standards:

"4. NZNO believes the safe administration of medicines by qualified nurses requires the exercise of professional judgment, which involves the application of knowledge and experience to the situation. This judgment is directed to:

4.1 Confirming the correctness of the prescription;

4.2 Making make a clinical assessment of the suitability of administration at the scheduled time of administration …"

The Nursing Council of New Zealand's publication *Competencies for the Registered Nurse Scope of Practice* (October 1996) requires that a nurse:

"4.1 Uses an appropriate nursing framework to assess and determine client health status and the outcomes of nursing intervention

…

4.10 Evaluates the effectiveness of the client's response to prescribed interventions, treatments and medications and monitors prescribing, takes remedial action and/or refers accordingly

…

9.8 Collaborates and consults with, and provides accurate information to client, client's family and other health professionals about the prescribed interventions or treatments and/or medications."

Excerpts from relevant policies and guidelines in place at Palmerston North Hospital in April 2002 have been set out earlier in this report. The following standards are particularly of note in the context of the issues under investigation by my Office:

- *MidCentral Health Resident Medical Officers Handbook* (October 2001):
  "58.4 Daily and careful checking of the Treatment Record is necessary in order to maintain a safe and efficient standard of drug therapy."

- *Clinical Records Content and Maintenance* (July 2000):
  "5.0 POLICY …
  I) … Medication charts are to be co-located with nursing observation charts in close proximity to the patient (where appropriate)."

- *Procedure for Administration of Medicines* (Version 1: July 1998):
  "… The role of the registered nurse [includes]: To exercise a professional judgement which involves application of knowledge of the medicine, the patient and their medical condition."

Opinion: Breach — MidCentral District Health Board

Introduction

The key facts in this case are not in dispute. Due to an error in placing Mrs B's patient identification ("bradma") label on a drug chart intended for another patient ("[patient Z]"), Mrs B received incorrect medications (and did not receive her own regular medications) from 6 April 2002 to 9 April 2002. MidCentral Health has openly acknowledged that the error should have been discovered sooner than it was.

Mrs B received three doses of Duride (treatment for angina), five doses of Losec (treatment for stomach ulcers), three doses of Frumil (a diuretic), two doses of oxybutynin (for urinary incontinence), three doses of aspirin, at least one dose of warfarin (an anticoagulant) and, most significantly, five doses of sustained-release morphine (MST) at 100mg per dose. Her general health and the presenting medical condition (a lower respiratory tract infection for which she was referred to Palmerston North Hospital ("PNH") by a locum general practitioner on 5 April 2002) did not justify these medications. While she occasionally suffered urge incontinence, she had normal kidney function; she did not have angina, a stomach ulcer, a propensity to thrombo-embolitic conditions, or acute pain requiring opioid analgesia. Her usual medications, which she brought into the hospital with her, included gliclazide (for diabetes), enalapril (for heart failure), a diuretic (of a lower strength than Frumil) and a recent prescription of Ceclor, an antibiotic for her cough.

It is also not disputed that repeat administration of a high dose of morphine may have potentially fatal effects in an elderly patient with respiratory impairment (including respiratory and central nervous system depression and hypotension), and that Mrs B experienced these effects subsequent to the administration of MST. It is probable that the combined effect of a diuretic which was stronger than her regular medication and decreased fluid intake contributed to her renal impairment and dehydration.

However, it is not for me to determine whether Mrs B's final illness and death was caused or precipitated by the administration of incorrect drugs and the absence of her regular medication. That question has been properly and extensively considered (and answered in the affirmative) by ACC and the Coroner. ACC concluded that Mrs B suffered a personal injury caused by the medical errors of specified individual providers responsible for her care. The independent reviewer examining ACC's decision concluded that, as the errors were readily attributable to particular individuals (Dr D, Dr F and Dr H), it was not found to be a case of "organisational error" in terms of ACC's legislation. The Coroner had "no doubt" that because Mrs B received morphine, her recovery was compromised. He said: "Had she not had the wrong medication she might well have been discharged back to her Rest Home which was the plan for her." The Coroner also concluded that a "systems defect" in patient admission processes at PNH needed to be addressed.

The focus of the Commissioner's investigation is how and why the drug chart labelling error occurred and went unchecked, irrespective of its ultimate tragic consequence. Unlike ACC,

Names (other than Palmerston North Hospital, MidCentral Health and the Commissioner's expert advisor) have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

the Commissioner is not limited to finding either individual staff *or* the organisation (MidCentral Health) in error; an employer organisation such as a District Health Board may be directly liable for a breach of the Code of Health and Disability Services Consumers' Rights (the Code) and, under section 72 of the Health and Disability Commissioner Act 1994, may be held vicariously liable for a breach by an employee.

Accordingly, the questions for determination in this report are whether MidCentral District Health Board had systems in place at Palmerston North Hospital in April 2002 to ensure that Mrs B received services of an appropriate standard, and whether the actions of Dr D, Dr E, Dr F and Ms G were appropriate. These must be answered by reference to the Code. Under Rights 4(1) and 4(2), Mrs B had the right to have services provided by MidCentral District Health Board and PNH staff with reasonable care and skill and in accordance with relevant standards. Under Right 4(5) she was entitled to co-operation among her providers, to ensure quality and continuity of care.

At the outset, it is important to note that the error in placing Mrs B's patient identification label on patient Z's drug chart cannot be conclusively attributed to any individual member of staff (including Dr H). The error was perpetuated by a number of individuals, including Dr D, Dr F, Dr E and Ms G, and in my view their judgement and actions fell short of the standard expected given their roles in the medical and nursing teams.

However, it is also significant that a number of policies, procedures and systems were in place at PNH to guide staff in record-keeping and drug administration practices, and these were generally followed. The critical issue, therefore, is whether these systems were sufficient, in the context of the overall operational management of PNH, to prevent the sequence of events that occurred. I note the comments of ACC's medical advisor:

> "Taking the view that this is an organisation of essentially competent people doing their best, this incident raises questions as to why clinicians would behave in this way. It points to deficiencies in systems and the way in which functions are integrated. It also raises questions regarding the general working environment."

My own advisor, Dr Seddon, took a similar view, concluding that no one member of staff had failed to provide appropriate care, but rather, that the clinical team failed "as a whole, not as a conscious effort but mostly due to the conditions of work and lack of a team culture. … [I]f medicine is seen as a team endeavour, rather than a hierarchical medical one, then it becomes clear that it is the team dynamics and the system which are the fundamental problems in this case."

I accept Dr Seddon's advice. In my view, various organisational factors outside of the individual providers' control ultimately conspired to create a dangerous situation for Mrs B, and an unsafe situation for staff, for which the MidCentral District Health Board is directly liable. The discussion which follows examines how these circumstances led to errors and omissions at various stages of Mrs B's admission.

Emergency Department
On the night of 5 April 2002, three key factors contributed to the "slip error" that occurred when Mrs B's patient label was placed on patient Z's drug chart: an inadequate system for the physical storage and collation of patient documentation in the ED; an inadequate system for identifying and labelling patient records; and poor continuity and handover by staff under pressure.

Records of patients being assessed in the ED were placed in separate baskets, but not in physically separate or isolated cubicles. Bradma labels would also be placed in the patient's basket, once available. This system was inadequate to prevent an inadvertent "mix-up" of documents — for instance, as a result of records being misfiled or overflowing from one patient's basket to another. In addition, the system was unsafe in instances where computerised bradma labels were unavailable at the time of a patient's assessment. The obvious initial precaution of handwriting the patient's name on the record — pending the attachment of a bradma label — was not mandatory.

Labelling patient records appropriately is a fundamental requirement of safe medical practice. As Dr V advised, "normal procedure would be to identify the drug chart first and then complete the prescribing details". It was the responsibility of the prescribing doctor to affix a bradma label to a patient's drug chart. MidCentral Health's draft policy document "Introduction to the Internal Medicine Line for Medical Staff" (which was in circulation in April 2002, and formally introduced in May 2002) required that each page of the clinical records (including the drug chart) have a patient's bradma label attached. However, it did not specifically require that the patient's name be handwritten on the records beforehand.

Dr H prepared patient Z's drug chart and decided to admit him. As patient Z's labels were not available, and a bed was not free in a ward, Dr H "left instructions with a nurse", expecting that a file would be prepared and patient Z transferred. Dr H said that it was his practice to handwrite a patient's name on the record in situations where labels were not available. In my view it is probable that he did not do so in this case. It also appears that his instructions were not clearly understood by the nursing staff, as patient Z was transferred to a ward without the drug chart. It is concerning that this did not alert staff on the ward to make enquiries of ED staff.

A drug chart was not prepared for Mrs B, presumably because Dr L was satisfied that her regular medications had been brought into the hospital, had been clearly listed in the clinical record, and it was appropriate for her to continue taking them. It was also possible, given Mrs B's presenting clinical condition, that she would not require admission; she had a normal white blood count, renal function tests, oxygen saturation, and respiratory rate. While it would have been prudent practice for Dr L to have highlighted these points on a drug chart bearing Mrs B's name, the hospital's systems did not require her to do so. Dr Seddon has noted that "excessive workload and distraction" may also have been factors in Dr L not writing up a drug chart for Mrs B.

Dr H understood that drug charts were "generally done by the admitting medical officer at the time of the patient's admission". Neither he nor Dr L was responsible for admitting Mrs B. The decision to admit, in light of the late hour, was made by Dr N, to whom Mrs B's care had been handed over. In my view, it is likely that Dr H and Dr L did not tell Dr N that a drug chart had not been prepared for Mrs B, or that details of her regular medications were set out in the notes. There appears to have been a degree of confusion among relevant staff as to their roles and responsibilities in relation to the use of patient notes and charts, a matter that is to some extent reflected by Dr H's apparent failure to supervise or check Dr L's preparation of Mrs B's notes, and Mrs A's recollection that during the evening a doctor in the ED told her that Mrs B's notes could not be found.

It also seems that Dr H's handover to Dr N did not include a detailed summary of Mrs B's clinical condition. According to Dr N, all he was asked to do was "review Mrs B's chest X-ray and decide regarding the need for admission". In addition, it is concerning that no information was recorded on Mrs B's "Emergency Department Medical Report" under the headings "Patient property" (specifically, patient medications) or "Information to receiving Ward/Department". Ms K, the triage nurse who initially saw Mrs B, advised that it was not her role to record these details, but that of the doctor or nurse caring for the patient prior to transfer out of the ED.

In my view, it is probable that had such information been available to Dr N on handover, his index of suspicion would have been raised, and he may have questioned the prescription of MST when he subsequently located a drug chart bearing Mrs B's patient label. He added the prescription for Ceclor to this chart, and made a brief entry in Mrs B's clinical notes. This was the first opportunity for the error to be discovered, since it would have been evident that the information provided on handover, the regular medications entered in the notes, details on the "Emergency Department Medical Report", and the medications listed on the drug chart were incompatible.

Why, then, was handover in respect of both Mrs B and patient Z inadequate? One reason may have been that the ED and the wards were very busy that night, and staff were under pressure. Dr H advised that prioritising patient needs was a challenge and, as the acute admitting registrar, his time was divided between the ED and the wards. He was unable personally to provide continuity of care to patient Z or Mrs B. This helps explain why a "slip error" in the documentation for these two patients occurred.

Further, there was no "defence" mechanism, such as a protocol for listing and/or charting medications and cross-referencing records, to check for and prevent the error. A simple prevention would have been to require the house surgeon or registrar to label a drug chart for the patient at the time of assessment, affix a sticker advising "patient has own medications", affix a bradma label to those medications, and ensure that the patient's regular medications are listed on the drug chart. In situations where handover to another shift occurs before the decision whether to admit the patient has been made, extra care needs to

be taken to draw this information to the attention of oncoming staff. Instructions to ED nursing staff regarding responsibility for entering details on the "Emergency Department Medical Report" need to be clear to provide a "back-up" defence.

In my view, MidCentral District Health Board did not have adequate systems in place in April 2002 to prevent the mislabelling and incorrect filing of patient Z's drug chart, and to ensure effective co-operation between individual members of staff. In these circumstances, the Board breached Rights 4(1), 4(2), and 4(5) of the Code.

Transfer to the ward and nursing handover

The next opportunities to discover the drug chart error arose when Mrs B was transferred to the ward at approximately 2.15am, and when Ms G assumed responsibility for Mrs B's care at 7am on 6 April. In my view, these opportunities were missed because MidCentral Health's system for handover between nursing staff, and requirements and instructions for assessment and care planning involving the patient, were inadequate. I note the advice of Dr Seddon that nursing continuity is "always compromised by the shift system, however, it appears that the handover system which is supposed to address this problem was not sufficiently robust [at PNH]".

Ms M, who saw Mrs B on arrival in the ward, said her "usual practice" was to read the ED notes to check for instructions and, in the case of a patient arriving with their own medications, to ensure a bradma label was placed on the pack before it was placed in the drug cupboard. As noted above, this information had not been entered on the "Emergency Department Medical Report". Ms M recalls reading the drug chart's "frequency" column only, to check whether she would be required to administer any medications to Mrs B during her shift, and checking Dr N's note. It is poor practice for a nurse receiving a new patient to limit herself to such a cursory review of the patient's notes, and it is concerning that review of these two documents did not raise an alarm in Ms M's mind. Dr N's plan was only to continue Mrs B on Ceclor and discharge her later that day, whereas the drug chart recorded a number of medications of which Ceclor was the last. It is also worrying that Ms M appears not to have read Dr L's clinical notes. Had she done so, it is probable that she would have discovered the inconsistency between the drugs listed there and on the drug chart.

If the bubble pack containing Mrs B's regular medications *was* with her when she arrived on the ward, Ms M should have examined the contents of the pack, discussed the medications with Mrs B, documented the contents and relevant discussion, and drawn the bubble pack to the attention of nurses on subsequent shifts, by recording its location in the notes. Nurse M did not take these steps. If the bubble pack was missing, Ms M should have asked Mrs B (even though Mrs B was tired) whether she was taking any regular medications. As Dr Seddon notes, involving the patient in the medication process is a helpful defence mechanism. A discussion with Mrs B may have brought to light that the bubble pack was missing.

Instead, Ms M's documentation of Mrs B's situation was limited to the preparation of a consent form (a rather meaningless step for a patient being kept in hospital under observation, particularly when the form was not countersigned by a clinician) and commencement of the Nursing Care Plan which stated that Mrs B was to receive "oral meds as charted". Ms M left responsibility for completing the nursing assessment and discussing medications with the day shift staff, who included Ms G. This made it all the more important that clear instructions be given at handover — in particular, a thorough review of the notes, completion of the Nursing Assessment, and discussion of medications were required. However, a proper nursing handover did not occur.

Ms G, who was on duty that day, seems to have somewhat naïvely and misguidedly assumed that, because the "best" assessment is undertaken on a patient's arrival in the ward, Mrs B had been assessed by Ms M. This, together with poor communication at handover, inadequate recognition (within PNH) of the need for team-based care, and the fact that Ms G was only recently qualified, may explain her generally relaxed approach to the additions she made to the "Nursing Assessment" form later that day, and her failure to make any substantive entry in the nursing notes. I am satisfied that, as it was anticipated that Mrs B would be discharged that afternoon, it was acceptable that Ms G did not add to the care plan at that time. Nevertheless, Ms G did have a duty as a registered nurse to ensure that any assessment she undertook of Mrs B was appropriate, and any records she made were accurate. In my view, she did not discharge that duty, for the following reasons.

Ms G did not record the date and time of Mrs B's admission, nor the reason for admission, despite these being the first questions on the assessment form. While she noted that Mrs B was currently taking medication, doing so "appropriately", and that her own medication had been brought to hospital, she appears not to have visually identified and confirmed the presence and contents of the bubble pack. It is worrying that she did not recognise the incongruity in Mrs B's clear answers to questions regarding her usual sleep patterns, nutrition and cognition, and the medications listed on the drug chart; in particular, she did not question the absence of gliclazide on the chart despite being informed of Mrs B's diabetes, and she did not challenge the charting of morphine in the absence of significant pain (discussed in more detail below).

Ms G states that she noted Mrs B's history of "cancer, heart condition and infection" and therefore no "alarm" was raised. Yet at that time this information was recorded only in Dr L's note, which also set out Mrs B's usual medications. If Ms G had in fact read this, her failure to recognise the difference between the drugs listed by Dr L and those recorded on the drug chart is inexplicable. I am not convinced by Ms G's explanation that it is "common ground" for a doctor to alter or change medications to suit a patient's new diagnosis without advising the nurses. I am also concerned by the marked discrepancy between Ms G's recollection that she obtained a "history" of Mrs B from Mrs A, and Mrs A's emphatic denial that this discussion ever took place. I am not convinced that such a discussion did occur.

Ms G's actions were less than optimal. However, the induction, training and appropriate supervision of newly qualified nurses, the implementation of adequate handover processes for nursing staff, and the maintenance of sufficient checking systems to ensure medication brought in to the hospital is not lost, are all matters which are MidCentral District Health Board's responsibility. In respect of the latter, I consider it important to note that the loss of Mrs B's regular medications — despite being in an A4-size pack and clearly labelled by Mrs A — cannot be attributed to any individual member of hospital staff. The fact that the hospital systems were not sufficiently robust contributed to the drug chart error remaining undetected by either Ms M or Ms G. The Board breached Rights 4(1) and 4(5) of the Code in respect of these issues.

Post-take ward round — 6 April
As Dr Seddon noted, continuity continued to be a problem at the post-take ward round conducted by consultant respiratory physician Dr D with Dr H and Dr O, a house surgeon. In particular, nursing continuity was threatened because Ms G did not accompany the medical staff on the round and therefore could not confirm or question Mrs B's prescriptions. Clinical staff continuity was compromised because Dr D and Dr H (who had assessed Mrs B less than 12 hours previously) did not see the drug chart during the round, while Dr O subsequently recorded Dr D's requested amendment and additions on the chart, and prepared a discharge summary, without assistance or supervision. Furthermore, a clinical pharmacist was not involved.

Dr D was satisfied on the basis of his assessment and a "good history" provided by Mrs B that there was no reason to question or doubt her management insofar as it had been recorded in the clinical notes by Dr L and Dr N the night before. He saw from Dr I's letter in the file that Mrs B had been prescribed cefaclor (Ceclor). He decided to change the antibiotic prescription to roxithromycin, prescribed lactulose and senna, and concluded that Mrs B could be discharged.

As this was the first clinical review of Mrs B since her admission, full and careful scrutiny of her records, including her charted medication, was necessary to ensure that the decision to discharge her was appropriate and safe. The post-take ward round represents a time when the drug chart should be reviewed and checked with the patient, the notes, or other sources, including family. Had this been done, and the drug list on Dr L's assessment notes compared, the drug chart error would have been immediately obvious. It is vital that the drug chart be available to the entire clinical team and part of the clinical records. Registrars and consultants must be able to review the charted medications every time they see a patient.

At PNH in April 2002, guidance on the location and use of patient records and drug charts was included in the *Clinical Records Content and Maintenance* policy, which required medication charts to be co-located with nursing observation charts "in close proximity to the patient", and the *MidCentral Health Resident Medical Officers Handbook*, which required "daily and careful checking of the Treatment Record … to maintain a safe and

efficient standard of drug therapy". In response to my provisional opinion, MidCentral Health acknowledged that because drug charts are "working documents" they will not always be stored with the observation charts and remaining records in their "home base" (an open filing cupboard in the clinicians' workroom), and may be elsewhere (for example, at the patient's bedside, with the patient in another location such as the radiology department, or in the ward dispensary to which only nurses, and presumably pharmacists, had immediate access — doctors did not know the access code). Checking the "home base" was the starting point in the four-step process described by Dr X, which he anticipated clinical staff would follow to locate drug charts during ward rounds. The next sequential steps were checking the workbench in the clinicians' workroom and, if necessary, identifying and locating either the nurse assigned to the patient, or another registered nurse, and enlisting their help, which might include asking the nurse to open the dispensary.

In her initial advice, Dr Seddon commented that when charts are locked in the dispensary, they are "effectively unavailable" to clinical staff. She described this as a "major systemic failing". Her view — which I endorse — is unchanged in light of Dr X's evidence. For the system he describes to have worked efficiently when the drug chart was not in its "home base", doctors would have needed sufficient time to locate the chart elsewhere or find the responsible nurse, and relevant nursing staff would have had to be present.

It is not clear from the evidence of the individuals involved whether they were in fact aware of this process, and if so whether in general they implemented it and found it workable. The perception of Dr D, Dr E and Dr F was that drug charts were "often" not available to them. I consider an inference can be drawn that the system for storing and locating charts was frustrating and time-consuming for the clinical staff given their resource constraints, particularly on the occasions when the doctor could see the required chart through the dispensary room window, but could not immediately unlock the door themselves. It is likely that this contributed to house surgeons adopting the practice of returning to review all charts at the end of the ward round — which in itself was a poor use of their time, and unsafe.

I acknowledge that during the 6 April ward round, the actual location of the drug chart bearing Mrs B's bradma label was unknown. Evidently, Dr D and his colleagues did not follow the requisite process to find it. Had the drug chart been seen by Dr D, he would doubtless have questioned the prescription of MST in the presence of a lower respiratory tract infection. It is likely that Dr H would have recognised that the drugs recorded were those he had prescribed for patient Z. While I accept that the chart may have been accessible, had the doctors taken steps to find it, it is clear that they believed it was for all practical purposes "unavailable", since it was not immediately present with the medical records during the round. This was a significant factor in the error remaining undetected, and one which has subsequently been specifically addressed by the Coroner and MidCentral Health's Medicines Advice and Policy Committee. MidCentral Health now requires that patients' notes and drug charts *are* present on all ward rounds and has provided doctors with swipe-card access to dispensaries.

Dr Seddon also noted that "best practice … would recommend that the clinical pharmacist act as an integral part of the clinical team including reviewing the medical chart of each patient on a ward round". This is one of the most effective ways to decrease medication errors. However, this was not possible at PNH in April 2002, when the hospital pharmacy service was limited because of a shortage of pharmacists. Weekday clinical pharmacist involvement with individual patient therapy was conducted on a referral basis. Medications were administered from ward stock supplied, and not routinely individually dispensed. These limitations in pharmacy services meant that further avenues by which the drug chart error could have been detected were unavailable.

Yet another opportunity to remedy the drug chart error was lost when Dr O prepared Mrs B's provisional computerised discharge summary and entered her prescriptions on the chart. While Dr O correctly recorded Mrs B's "problem list", presumably after reviewing Dr L's notes, he also transcribed the medications listed on patient Z's chart. To that list, he added gliclazide and enalapril (again, presumably on the basis of Dr L's record) and roxithromycin, which he knew Dr D had requested. It is worrying that Dr O did not notice that these two lists did not "match", and it is relevant that MidCentral Health's *Clinical Records Content and Maintenance* policy (July 2000) provided for the preparation and distribution of a discharge summary but did not require that a senior member of staff check its content.

However, the draft document "Introduction to the Internal Medicine Line for Medical Staff", in circulation prior to its formal release, *did* require the registrar to supervise the house surgeon in the preparation of discharge summaries. Section 10.2 of the formal policy adopted in May 2002 required that if a discharge summary was inaccurate or misleading, a separate letter was to be dictated and filed in the notes by way of correction. Had this approach been taken by Dr O and Dr H on 6 April (and had Mrs B been discharged), it is likely that the drug chart error would have been detected, since Dr O's entries did not reflect Mrs B's true clinical picture.

Mrs B was ultimately not discharged. It was inappropriate for the provisional discharge summary to remain prominently on Mrs B's file once the decision was made to keep her in hospital. The summary was subsequently relied on by nursing staff, who justified the administration of morphine on the basis of Dr O's reference to skin cancer.

While I commend MidCentral Health on the updates and changes that have since been made to its policies regarding the storage, content and maintenance of patient records in the Internal Medicine Line and hospital-wide, in my opinion the systems in April 2002 were inadequate to ensure the safe care of patients. In respect of these issues the Board breached Rights 4(1), 4(2) and 4(5) of the Code.

Weekend nursing care

For the remainder of the weekend (6 and 7 April), the drug chart error was perpetuated and Mrs B's care further compromised, primarily because nursing staff relied on unchecked

clinical documentation, and no clinical review — including a pharmacy review — took place.

In strict terms, the nurses responsible for administering medication to Mrs B over the weekend generally followed MidCentral Health's policy *Procedure for Administration of Medicines* (July 1998). As ACC's nursing expert advised: they "were carrying out the written and signed treatment instructions of the medical practitioner documented on the drug sheet with Mrs B's label on it". They accurately interpreted the prescriptions as written, correctly identified the patient, administered the medicines charted, monitored and recorded Mrs B's deterioration, and reported their concerns to clinical staff. They complied with the requirements for "double checking" in the administration of MST, a controlled drug.

However, it would be overly simplistic to conclude that having taken these steps the nursing staff had fully discharged their duty to provide services to Mrs B with reasonable care and skill. As Dr Seddon notes, a registered nurse administering medications must do more than confirm a patient's identity by checking bradma labels — he or she must also understand the actions of and indication for each medication, relate the medication order details to the patient and their condition, and actively question any lack of clarity or apparent irregularity.

These requirements were specifically included in MidCentral Health's policy on the administration of medicines, and are a principle of the New Zealand Nurses Organisation's "Guidelines for nurses on the administration of medicines": a nurse must exercise professional judgment, applying "knowledge and experience to the situation", and making a clinical assessment of the suitability of a drug's administration to the patient's medical condition. They were also highlighted by ACC in its "decision letter" to MidCentral Health in July 2003: "Nurses have a duty of care and their standard of care should reflect what the drugs are for, why they are being prescribed, and what can be the expected effects."

Moreover, the Nursing Council of New Zealand's publication *Competencies for the Registered Nurse Scope of Practice* (October 1996) requires that a nurse collaborate and consult with, and provide accurate information to, the patient, the patient's family, and other health professionals regarding the prescribed medications. For the reasons that follow, I am not persuaded that the nurses involved in Mrs B's care complied with these standards.

On the morning of 6 April, Mrs B was coherent, oriented to place, person and time, and had no speech problems. Ms G states that prior to administering the charted medications, she asked Mrs B to confirm her name, date of birth and address, and was satisfied that Mrs B "understood the medications she was to receive". This statement is misleading and not supported by the available evidence. It implies that Ms G told Mrs B she was to receive morphine. I do not believe this to be the case. Rather, in my view, Mrs B's answers in response to specific questions about medication, which Ms G had recorded on the Nursing Assessment form, related to her *regular* medications that she had brought into the hospital. This is consistent with Mrs A's statement that Mrs B usually understood and controlled her

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own medication and would have known morphine was not one of her regular medications had it been mentioned to her by that name. Accordingly, I conclude that Ms G did not adequately correlate Mrs B's clinical condition with the charted medications or appropriately discuss this matter with her.

Mr Q says that on the evening of 6 April, he said to Mrs B words to the effect of "here is your MST … for your pain", and she did not question him. Again, this somewhat distorts the true picture of events. While the information Mr Q gave to Mrs B was appropriate, and in a coherent, alert patient may have prompted questions about the drug's clinical suitability, the critical point is that by this time Mrs B was confused — according to Mrs A, unable to speak clearly and struggling to breathe. I agree with Mrs A's view that Mrs B's response to any questions asked or information provided at this time "would have been very suspect".

By the evening of 7 April, Mrs B was showing signs of opiate toxicity. Concerns had been raised that her ability to swallow had diminished, and that she might aspirate her food. According to Mrs A, Mrs B was "completely unable to stand or co-ordinate any movement" and required the full assistance of staff to shower. She could not speak coherently.

In these circumstances, as Dr Seddon advised, it was incumbent on the nursing staff to check Mrs B's notes for the clinical indication of 100mg sustained-release morphine twice daily. This is a significant dose of opioid analgesia, and a care plan for pain control should be included in the records of any patient requiring it. If Mrs B was in fact such a patient, her pain should have been obvious and clearly recorded.

The nurses did check the notes, but limited their review to Dr O's provisional discharge summary, which was incorrect. Mr Q and Ms R (and later, on 8 April, Ms T and Ms S) made an assumption regarding the MST based on the reference to "skin cancer", in the absence of any clear physical indicators of that disease or its symptoms in their patient. In this respect, the view expressed by Ms R that "checking the medication does not involve reading through the patient notes" is worrying. Ms T's advice that 100mg MST "has been prescribed for patients on this ward before and thus such a dose would not have alerted me to a mistake" is also of concern.

In my view, registered nurses exercising appropriate professional judgement would have questioned the clinical suitability of administering this dose of MST to an elderly patient with a respiratory tract infection and showing signs of confusion. Had Ms G, Mr Q or any of their nursing colleagues reviewed Dr L's admission notes, attended the ward rounds or spoken directly with relevant medical staff, contacted the rest home, or — most importantly — spoken to and *listened* to Mrs A, they would have discovered that Mrs B did not require MST and had not been prescribed it.

Moreover, there was no clinical indication for Mrs B to receive warfarin. As Dr Seddon noted, the fact that warfarin was charted but an INR test not requested by the medical staff should have alerted the nurses to the prescription error. It is disconcerting that at 9am on 6

April, Ms G initially charted the administration of warfarin, but subsequently crossed this out as being in "error". She appears not to have questioned why warfarin was on the chart, nor explained in the records or to Mr Q on handover that it had not been given; she did not raise her own charting error with her seniors. On the evening of Sunday, 7 April, Mr Q recorded that warfarin could not be given because INR results were not available. He made arrangements for blood to be taken for this purpose (presumably, with the involvement of a duty doctor) and Mrs B was subsequently administered 3mg warfarin at midnight. Once again, questions regarding Mrs B's clinical need for this drug were not asked.

Conversely, there were clinical indicators that Mrs B required treatment and drugs that had not been charted, including IV fluids (as her ability to swallow decreased), and enalapril and gliclazide (listed in Dr O's discharge summary which the nurses had read). It is worrying that despite Mrs A expressly raising with the nurses her concerns about Mrs B's diabetic diet (and intercepting inappropriate food and drink), her consistently high blood sugar results, and early signs of dehydration, questions were not asked about Mrs B's diabetic medication or her fluid intake and output. She did not receive gliclazide until after the drug chart error was discovered, IV fluids were charted late, and nurses subsequently did not follow clear instructions (issued on the evening of 8 April and the morning of 9 April) for the insertion of a urinary catheter. The latter is an issue that caused Mrs A particular concern, and a task that I would have expected a nurse to attend to promptly for an elderly female patient. Instead it was Dr E who placed Mrs B's catheter on the evening of 9 April. No explanation has been provided for the lengthy delay between Dr U's initial request for catheterisation and the request being actioned, and so one must conclude it stems from poor nursing care.

It is also evident that nursing staff also did not discuss with Mrs B's family (ie, Mrs A) either the charted medications or Mrs B's clinical needs. Had they done so the connection between the drugs administered and Mrs B's deterioration would have been made. Mrs A knew that her mother's presentation, by the evening of 7 April, was quite abnormal and was concerned her mother had suffered a stroke. I note with sadness that Mrs A began to question her own judgement and feared she would have a reputation for being "difficult" — presumably, because she was actively questioning and advocating for her mother's care. A patient's family is very often in the best position to offer information to those providing nursing or medical care, particularly in situations where patients cannot speak for themselves.

I am also concerned that although Ms G and Mr Q reported their concerns to the duty doctor (Dr P), no clinical review was undertaken. I accept that because the clinical staff responsible for Mrs B's initial admission and ward round review did not intend that she remain an in-patient, a care plan had not been developed for her, and clinical handover on the Saturday did not occur. However, in these circumstances, and particularly once Mrs B showed signs of sudden deterioration, it was incumbent on the nurses to specifically draw this to Dr P's attention. I am not satisfied that they did so.

However, I accept that organisational circumstances beyond the nurses' control were a factor. A high turnover of nursing staff at PNH, particularly on medical wards, meant that nurses were carrying higher workloads than normal. It is also apparent that rostering systems and staff shortages disadvantaged the clinical teams. As Dr Seddon noted, "the medical staff were stretched generally with too few registrars", who were not always available to supervise the house surgeons or monitor the telephone advice they provided to the nurses when called. In addition there was apparently no system to cover a situation where a patient intended for discharge subsequently required ongoing in-patient care over the weekend. I note that MidCentral Health's policy "Introduction to the Internal Medicine Line for Medical Staff", which came into effect in May 2002, specifically stated that "the registrar is to ensure that each house surgeon prepares a written weekend management plan for each patient" (section 9.2). It is possible that had this policy been in place at the time of Mrs B's admission, and the weekend duty doctors been made fully aware of Mrs B's situation, a plan might have been implemented for her on the Saturday afternoon.

A shortage of clinical pharmacy staff may also have played a part in the breakdown in Mrs B's care. At PNH in April 2002, pharmacists did not visit the wards during the weekend unless contacted specifically and asked to do so. It appears that nursing staff did not consider it their role to request pharmacy input, in the absence of clinical review by the doctors. In any event, the nurses did not identify the need for review by a pharmacist. As the consultant physician who advised ACC noted in her report, a pharmacist's involvement is a useful element in patient and ward staff education as to medication and side effects. I consider it likely that had a pharmacist been called to see Mrs B and review the drug chart, the error would have been identified.

Ultimately, the MidCentral District Health Board is responsible for the nurses' shortcomings in consulting with Mrs B, her family and other clinical staff, and the failure to determine the clinical suitability of the drugs charted, because the systems and staff structures in place at PNH were inadequate to ensure continuity and quality of care was maintained and clinical reviews undertaken. In respect of these issues, the Board breached Rights 4(1), 4(2) and 4(5) of the Code.

Ward round and NFR order — Monday, 8 April
Regrettably, all of the above factors came to a head again on Monday, 8 April, when Dr D returned to duty and conducted the morning ward round with Dr F and Dr E. No nurses or pharmacist participated in the ward round, reflecting a lack of recognition by MidCentral Health of the importance of team-based care.

The three doctors who did participate in the ward round had not worked together before. Only Dr D had seen Mrs B previously. He immediately noticed her deterioration and was concerned. It is curious that Dr E should have recorded in the notes of this ward round that Mrs B had a "previous cognitive impairment", and it is difficult to know whether this was a point the nurses had raised in relation to Mrs B's confusion over the weekend, or if it resulted from a misunderstanding between Dr D and Dr E. I am satisfied that no such

impairment affected Mrs B, and appreciate that this is a matter which has caused Mrs A considerable distress in the aftermath of these events.

However, I also accept that any such misconception did not inform Dr D's impression of Mrs B's condition that morning. Rather, he determined that Mrs B's drowsiness and confusion was "a systemic response to a respiratory infection" and decided she could be discharged. I acknowledge Dr D's point that he did not think that a prescription error in relation to an in-patient could remain undetected for three days, and that "the thought of a narcotic overdose did not enter [his] head". However, in the practice of medicine, matters are not always as they seem, and all providers, especially those with a consultant's degree of responsibility, must be vigilant and questioning. As ACC's consultant physician advisor noted, the rule of thumb when the patient is not getting better is (a) the diagnosis is wrong, (b) the medications are wrong, or (c) sometimes both. Dr D did not take appropriate steps to eliminate these possibilities. In particular, he did not seek out the drug chart and review it. As the consultant, it was his responsibility to obtain the drug chart, and he should have done so. In his response to this complaint, Dr D acknowledged this and said, "I have learnt not to assume anything, but check it myself."

Mrs B's condition further deteriorated after she received a fifth and final dose of MST, administered by Ms S at 9.30am. I am unable to resolve the conflict in the evidence of Ms S and Dr E as to whether a specific request for clinical assessment was made that afternoon. However, it is alarming that one was not done, in light of the marked contrast between Dr E's observation of Mrs B's condition during the ward round, and that recorded by Ms S subsequently. In my view, a thorough review of Mrs B's clinical signs, symptoms, test results, medications, and drug chart should have been undertaken in an effort to discover why she was not making progress despite appearing to be on what was optimal therapy. The active involvement of Dr F and/or Dr D should have been sought.

Instead, having spoken to Mrs A, Dr E decided that a "not for resuscitation" order should be implemented. Mrs A was uncomfortable that this conversation was held by her mother's bedside. Dr F approved the order but did not review Mrs B, and Dr D was not involved. It is not clear from the information provided by MidCentral Health whether there was a formal policy in place at PNH in April 2002 requiring the assessment of a patient and review of their clinical records and medication regime before an NFR order was placed, and whether registrars were entitled to approve them. However, I am concerned that Dr F did not take active steps to assist and guide Dr E — at that time, a very recently qualified doctor — in relation to such a major decision for this patient, whom he had seen only once previously and not assessed. It is clear that Dr E failed to review the original drug chart when he prepared the NFR order and started "chart 2" to record the amended antibiotic prescription requested by Dr F. Once again, the lack of supervision and monitoring of junior staff and the heavy workloads of the registrars meant that the "team-care" approach to Mrs B's care simply did not work.

Discovery of error — 9 April
Dr F reviewed Mrs B on the morning of Tuesday, 9 April, and observed that the previous day her GCS had been as low as 7 — a coma state. Although Mrs B's GCS had risen to 12 by the time she was seen by Dr F and Dr E, she was still confused. In an effort to discover the cause, test results were reviewed and a chest X-ray and urine analysis ordered. A plan was implemented to monitor Mrs B's renal function. However, once again, the drug chart was not read. Dr F stated that it was not available to her.

The respiratory physician who advised ACC submitted that while Dr F's failure to review the drug chart at this time "would under other circumstances constitute a poor standard of care (given Mrs B's deterioration), the circumstances pertaining at PNH were 'not usual' and organisational issues … were a factor".

Certainly, there is "ample evidence" that there were organisational problems at PNH; indeed, that is the focus of this report. There were also many opportunities for staff other than Dr F to identify the drug chart error in the preceding three days. Nevertheless, Dr F must accept responsibility for her own conduct and the standard of care she personally provided to Mrs B. She had a duty to undertake a proper review of her patient on the ward round, particularly in light of her approval of the NFR order the previous day, and the serious findings recorded by Dr U. She should have taken active steps to locate and review the drug chart, and applied herself to determining the cause of Mrs B's low GCS. The fact that Mrs B could no longer swallow and therefore could not take oral medication should have provided further impetus to check the chart, and to assess whether drugs other than the antibiotics needed to be amended to IV administration. As it was a Monday morning, she could also have requested the clinical pharmacist to review the drug regime. In these circumstances, Dr F's heavy workload, the fact that she had not admitted Mrs B to the ward, and the separation of the drug charts from other records do not excuse her inadequate care for Mrs B.

It is ironic that later that afternoon, Dr E — who had been significantly involved in Mrs B's care the previous day, and started drug chart 2 — was the first member of the medical team to fully and properly read the mislabelled drug chart and discover the error, following the first involvement of a clinical pharmacist. The exact time at which this occurred is not clear. However, I am satisfied that Dr E took immediate and appropriate steps to address the matter. In particular, he went to see Mrs B to check whether her family were present and contacted Dr I and the rest home to check her medication history. Regrettably, Dr E did not consult with Mrs A or the rest home caregiver, which would clearly have been appropriate. (This issue is dealt with in more detail below.)

The evidence of Dr E and Dr F differs as to whether Dr E charted Mrs B's medication correctly on his own initiative, or at Dr F's instruction. Irrespective, Dr E acted appropriately to report his discovery of the error to his registrar, and to discontinue the mislabelled chart.

The *Clinical Records Content and Maintenance* policy required "any changes in medications … to be brought to the attention of nursing staff at the time of charting". Dr Seddon also noted that it would have been courteous for Dr E to inform the registered nurse responsible for Mrs B's care that an error had been identified and significant changes made to the chart. The nurses on duty that afternoon and evening were Ms S and Ms G. They do not refer to such advice in their nursing notes for those shifts or in their responses to Mrs A's complaint. Dr E says he did advise the nursing and medical staff in the ward office of these matters, but acknowledges that his failure to record his actions or discussions in the notes means that this cannot be confirmed. I accept, as did the independent ACC reviewer, that this was an error of judgement on Dr E's part rather than a serious falling short of the standards expected of a junior house surgeon.

I also accept that it was not Dr E's role, as a junior doctor, to raise or pursue the issue of whether naloxone (a morphine antidote) was necessary, or to further discuss the matter with Dr D. These were matters for Dr F, as his registrar.

Dr Seddon advised that "ideally it would have been best if the consultant was informed immediately". Dr F says that while she had intended to speak to Dr D, because of pressure of work she "simply forgot" and did not do so until the next morning during the ward round. Dr F also did not inform the night staff of the drug error, believing "all appropriate action" had been taken.

The ACC reviewer was highly critical of Dr F's inaction and said that the failure to report, assess and treat, or document consideration of treatment for the effects of wrongful drug administration may have influenced Mrs B's clinical outcome (in that her pneumonia had developed further by the morning of 10 April). In the reviewer's opinion, Dr F's conduct in failing to examine Mrs B on the night of 9 April fell well short of the level of skill and care expected of a registrar.

My advisor Dr Seddon took a more lenient view. She noted that there are both clinical and organisational factors which should be considered in the assessment of the standard of care provided by Dr F at this time. These include that the last dose of MST was given to Mrs B at 9.30am on Monday, 8 April (ie, between 24 and 36 hours prior to notification of the error by Dr E), by which time "one could be fairly confident" that the morphine was mostly out of her system (because it has a half-life of up to six hours only). Naloxone was unlikely to have an effect, although it could have been given as a trial, and it was appropriate to wait for the next day to report to Dr D. In these circumstances, and given the registrars' workload, Dr Seddon considered that Dr F's admission of acute patients in the ED appropriately took precedence over an urgent review of Mrs B and handover of her care to the night shift staff.

As Commissioner I must balance an "ideal" approach to the provision of care against what is reasonable in the circumstances. In this case, I am concerned that Dr F's actions on the evening of 9 April were less than optimal, and I do not condone her attempts to justify them on the basis of systemic problems. Dr F is not absolved from responsibility for her errors of

judgement — a drug error of this magnitude *should* have been notified to the consultant that evening, irrespective of when the drug was last given and whether an antidote was required. Nevertheless, I accept Dr Seddon's advice that Dr F's omissions can in part be explained and understood when viewed in the context of the organisational pressures on registrars at PNH at that time. I am pleased to note Dr F's advice that these events have led to improvements in her management of patient care.

It concerns me greatly that neither Mrs B nor her family were told that night that the drug error had been discovered. Mrs A's evidence is that, because she thought her mother was dying, she had asked Mrs B's main caregiver from the rest home to sit with them that evening. The caregiver arrived at around 5.30pm and she and Mrs A were present when Dr E placed Mrs B's catheter. Taking into account that the rest home's fax to Dr E was received at the hospital at 6.10pm, it seems likely that Mrs A, and possibly her support person, were present in the ward around the same time that Dr E reported the drug chart error to Dr F. It is also apparent from Ms G's nursing notes that Mrs A had remained at her mother's bedside for some time (it was recorded at 10.40pm that Mrs B's GCS was 9 and she had been "more alert at times with family").

Mrs B had the right to be informed that a serious error relating to her care had been identified. Her cognitive responses were improving and Mrs A was with her for support. If Mrs B was not able to understand, then Mrs A should have been offered this information on her mother's behalf. Mrs A had been very anxious about her mother's state of health both that night and over the preceding weekend, and had persistently sought explanations and answers, but had ultimately agreed to implement an NFR order. Dr F and Dr E knew this. As the registrar on duty, Dr F was responsible for ensuring that Mrs A was advised, as soon as possible, that the reason for her mother's deterioration had been discovered. Her failure to do so is inexcusable, notwithstanding her workload pressures. There is no valid reason why this was a matter best left for Dr D to address; in any event, it was ultimately Dr E and Dr F who met with Mrs A and Mrs C on Friday, 12 April, to explain the error and apologise.

Subsequent events

On the morning of 10 April, Dr D was advised of the error and an appropriate note was entered in Mrs B's records. Her condition had improved overnight and naloxone was not considered necessary. I understand that Mrs B's family are very happy with the standard of care provided to her from this time on, and for that reason the scope of my investigation does not extend beyond this point. However, I have a number of further concerns about the events of the days immediately following discovery of the error. As they arise from the systemic issues discussed above, for sake of completeness they are addressed below.

Notification of error to staff

It seems that the identification of the drug chart error and its impact on Mrs B's state of health may not have been fully and clearly conveyed to the nursing staff who continued to manage her care on 10 April and subsequently. It is worrying that Ms S, who was on duty

that morning, commented that "apart from the [doctors' ward round] note which seemed to indicate that the original prescription may have been incorrect, I had no other communication [regarding this]". Ms S says she then reported the error to her Clinical Nurse Co-Ordinator.

In my view, an error of this magnitude, which had been perpetuated for a period of four days, needed to be urgently and explicitly drawn to the attention of all staff, both senior and junior, caring for Mrs B. As she had been admitted through the ED, staff there should also have been notified, particularly as at that time there may have been the possibility of a second patient (patient Z) also receiving wrong or insufficient medication. I am concerned that no system appears to have been in place at PNH for ensuring this happened. Rather, it seems the information merely had a "trickle down effect", being picked up by individual providers as they saw Mrs B throughout the day. This was inadequate.

A separate issue is the hospital's system for incident reporting and reviews, and Dr F's actions. It was not until Thursday, 11 April, that Dr F completed an incident report. On the handwritten version provided to my Office, Dr F recorded: "although right person[']s drug chart, medications were those of another patient". She noted that Dr H was the admitting medical registrar who prescribed medication initially, and that she conducted a medical assessment of Mrs B "in person" on 9 April. Dr F did not record the time when this assessment took place.

I am concerned that Dr F's comments, made before a full internal investigation into the circumstances of the chart error had been conducted, are inaccurate and potentially misleading. They served to skew the initial "blame" for the error towards Dr H, who, in fact, did not admit Mrs B or prescribe medication for her. Further, they indicated that after the error was discovered Dr F saw Mrs B and assessed her. This was not the case. Dr F had reviewed Mrs B during the morning ward round on 9 April, but did not see her thereafter for at least 24 hours. Dr F should have made this clear.

Dr Seddon commented on the incident report form used by Dr F, noting that its format is "somewhat restrictive" in that it did not allow for accurate detailing of a medication error as the "type of injury" involved and "attempt[ed] to do too much" by categorising "incidents, accidents and hazards". A drug chart or prescription error does not fall squarely into any of these and Dr F identified the error as "chemical effect". Dr Seddon noted that collecting details of medication errors is a useful mechanism for quality improvement: "To obtain good incident documentation, the hospital needs to ensure that it has systems in place to promote fair investigation and feedback to those writing the incident reports."

In response to my provisional opinion, MidCentral Health advised that it has a "robust" incident reporting process, and provided copies of the forms currently used. It acknowledged that all forms are necessarily somewhat restrictive, but noted that staff using them are asked to add extra pages as required. Medication errors and administrative errors do not fit easily into the incident reporting forms at MidCentral Health. Overall, I am satisfied that MidCentral Health has adequate policies and systems to promote investigation

of any incidents occurring at PNH, but I recommend that the Board monitor and review its incident reporting system.

Notification of error to family
As noted above, Mrs B and her family were not told of the error on the night it was discovered. According to Dr F's notes for 11 April, Dr D was to meet with the family to discuss the error some time that day. However, it was not until Friday, 12 April, that Dr F and Dr E met with Mrs A and Mrs C, to explain the error and apologise for it. Dr E recalled that this was the first day that both of Mrs B's daughters had been available. In the circumstances, this seems a rather unsatisfactory explanation for the delay.

Documentation
Mrs B was given the wrong medication because her bradma label had been placed on another patient's drug chart. It is concerning that other documents within her medical records also appear to have been inadequately used, labelled or identified. For example, although Mrs A had requested that Mrs B receive a diabetic diet, and Ms G had correctly recorded Mrs B's diabetes on the Nursing Assessment, a sign alerting other staff to this was not placed above her bed, nor was an alert sticker or label placed on the front page of her clinical records. Both should have been done, even if in the first instance it was expected that Mrs B's admission was going to be short. She had been admitted in the early hours of 6 April and it was proposed that she would be discharged at some point later that day. Realistically, she was likely to require breakfast, morning tea and possibly lunch before that happened. An appropriate alert to the need for a diabetic diet was required.

Additional inconsistencies and errors arose within Mrs B's clinical record during her admission, which served to compound the initial drug chart error. For example, the drug chart had a sticker placed next to entries for roxithromycin, lactulose and senna, advising "patient has own medication", yet these were not Mrs B's regular medications, and they were administered from hospital supplies. The provisional discharge summary prepared by Dr O was not removed, transferred to the back of Mrs B's file or crossed out as being obsolete, once the decision had been made to keep her in hospital on the afternoon of 6 April. Steps were not taken at that time to implement a care plan or more fully document Mrs B's nursing needs. As it was uncertain at that point how much longer she was likely to remain in the hospital, such action should have been taken. Because it was not, there was no defined mechanism for cross-referencing and correlating Mrs B's various clinical requirements in relation to medication, nutrition, fluid balance, and prescribed insulin therapy.

On 9 April, the NFR order was not reconsidered or revoked in light of the discovery of the drug error. As Dr Seddon noted, by this stage it was unlikely that any attempt at cardiac resuscitation would have been successful if Mrs B had suffered an arrest, given her overall frail state and pneumonia. Nevertheless, the order had been placed on 8 April in response to deterioration caused by the administration of the wrong medication. In my view steps should have been taken to review the order, or at least discuss the matter with Mrs A, once the error and cause for Mrs B's deterioration had been discovered.

ECG
MidCentral Health provided me with a copy of a report for an ECG performed on Mrs B at 12.04pm on 11 April 2002. The report has Mrs B's name and age on it, but not her bradma label.

In response to my provisional opinion, Mrs A provided a copy of a report for an ECG recorded at 2.19pm on 11 April 2002, apparently in CCU. This report had been provided to her by MidCentral Health as part of Mrs B's clinical notes. There is no name or bradma label on this document, and information potentially identifying the patient to whom it is related is limited to a room and bed location and the age "55 years". Although the date and time are coincident with Mrs B's brief admission to CCU and her apparent clinical condition on 11 April 2002, the ECG is not labelled in any way that identifies the patient to whom it relates. I am therefore unable to be sure whether this is in fact a further ECG report for Mrs B — and therefore correctly included within her medical notes — or the report of another unidentified patient which was mistakenly included in the records sent to Mrs A after Mrs B's death. It is also not clear why this report was not included in the set of notes provided to my Office by MidCentral Health during this investigation. What is evident, from the absence of bradma labels on both reports, is that PNH staff had not been sufficiently trained, and were not appropriately supervised, to comply fully with the policies in place at PNH regarding care in documentation and labelling.

Summary

Between 5 and 9 April 2002, no detailed review of the drug chart in Mrs B's file was undertaken, despite her care passing through the hands of several medical and nursing staff, a number of key treatment decisions being made, the deterioration of her health from "normal" to a state of coma, respiratory depression, renal failure and pneumonia, and the clearly voiced concerns of her family. Significantly:

- the drug chart was added to by Dr N, and read by Ms M, before any medications were administered (5−6 April);
- the drug chart advised "patient has own medication" (in relation to three drugs that were not her own), but Mrs B's A4 bubble pack was not accessed or identified after her admission;
- the drug chart and regular medications chart were read and/or added to by five registered nurses — Ms G, Mr Q, Ms R, Ms S and Ms T (6−8 April);
- on five drug rounds, medications were administered for which Mrs B had no medical history, and on at least two occasions a high dose of oral MST was given when she was exhibiting clinical signs of opiate toxicity (6−8 April);
- Mrs B did not receive gliclazide despite recorded evidence and the verbal advice of her family that she was diabetic (6−9 April);

- the drug chart was reviewed and transcribed by Dr O for the purposes of completing a provisional discharge summary (6 April);
- Mrs B was seen on three ward rounds — two that included Dr D (6 and 8 April) and two that involved Dr F and Dr E (8 and 9 April);
- on two occasions her worsening condition was discussed by nursing and on-call medical staff, but she was not reviewed (6 and 7 April);
- her blood was taken for INR testing in the absence of clinical indication (7 April);
- two house surgeons (Dr E and Dr U) made significant amendments to her care regime on the same day, altering her antibiotic and fluid regime, requesting an NFR order, and regular GCS monitoring (8 April);
- a new drug chart was commenced by Dr E when the original drug chart was full (8 April).

Why was the drug chart error not discovered on any one of these occasions? The answer appears to be that Palmerston North Hospital did not have adequate systems in place to defend against such an error. On the evidence of this case, the hospital's systems allowed the care of an elderly patient to be compromised by mistakes and a lack of co-ordination. Basic tasks were undertaken with a lack of careful analysis by individuals and teams. There was insufficient commitment to team-based care involving nursing and medical staff. In Mrs A's own words, "beyond the finding and consequences of error for individuals, is evidence of an administrative system which has allowed practices to exist which do not enable doctors to pick up on mistakes". I agree with Mrs A's further statement that her mother was "the victim of an inefficient organization where the 'health of the system' was poor".

In my view, it is clear that staff training at PNH in April 2002 was inadequate to maintain appropriate adherence to existing policies and protocols, while high staff turnover meant organisational knowledge was lost. Staff shortages in nursing, medical and clinical pharmacy roles made the overall environment unsafe.

In Mrs B's case, nurses exhibited a mechanistic approach to their role, and administered medications without giving sufficient thought to her clinical presentation. Doctors amended Mrs B's treatment regime without reviewing the drug chart. Multiple junior staff members, including recently registered nurses and house officers, were unsupervised at points of critical decision-making for an elderly patient with increasingly complex medical problems. Some decisions were made in the absence of assessment or review. Dr F and Dr H were hampered by their clinical load, constant on-call duties and a rostering system which did not allow for continuity in the care of patients they admitted or reviewed. Foreign-trained doctors new to the hospital were placed in positions of senior responsibility with no appreciation of the inherent weaknesses of their general working environment. In particular, Dr D, who had begun general medical on-call duties only that week, was unaware that the staff on his team were as inexperienced as he was in the workings of a system which, in retrospect, he has described as "complex and intimidating … cumbersome and disjointed".

The implications of incorrect prescribing are, as ACC's specialist emergency physician noted to ACC, "profound". Every health professional involved in a patient's care has a duty to be accurate in the prescription and administration of medication. The incorrect identification of a drug chart is a major failure, inconsistent with good clinical practice. In a hospital setting, a District Health Board's failure to have adequate defence mechanisms in place to prevent or detect such an error is negligent. MidCentral District Health Board did not have adequate or appropriate systems in place in April 2002 and is accordingly directly liable for the mislabelling of patient Z's drug chart, its placement on Mrs B's file, and the perpetuation of that error for four days.

Other comment

For the family
Mrs B's case is a tragedy. It has rocked the confidence of her family in the quality and accountability of the publicly funded health system. It is understandable that the family has demanded answers. Mrs A and Mrs C have shown dignity and compassion in advocating for their mother throughout the course of inquiries by ACC, the Coroner and my Office, and suffered significant personal and financial costs.

The purpose of this investigation has been to analyse objectively the evidence available to me, including expert advice, in order to form my own opinion on the quality of care Mrs B received, and to make recommendations that may help prevent similar events occurring. It is important that lessons are learned from this case, not only by those involved in the events at Palmerston North Hospital in April 2002, but by hospital staff, management, and Boards throughout New Zealand.

I hope that the conclusion of this inquiry will also bring some sense of closure to Mrs B's family. I extend my sympathy for their loss.

Names (other than Palmerston North Hospital, MidCentral Health and the Commissioner's expert advisor) have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

Actions taken

As noted earlier in this report, MidCentral Health accepts that it did not provide an appropriate standard of care for Mrs B, and has taken steps to improve its systems and reduce the likelihood of such an error recurring. While I am somewhat concerned — as was Mrs B's family — that a number of these preventative measures took some time to be formally implemented (for example, in response to the Coroner's recommendations in 2004), I am nevertheless reassured that they have been comprehensive and wide-ranging. In particular, recruitment and staffing issues have apparently been addressed, education programmes enhanced, handover processes in the Internal Medicine Line improved, and access to and review of drug charts standardised. The locks on ward dispensaries have been replaced by a swipe-card system, and all doctors now have access. Written policies relating to clinical records, in place at the time of these events, have since been reviewed and amended. All clinicians at PNH are required to fill in patient details in longhand prior to the patient label being attached.

A number of the individual providers involved in Mrs B's care, who have been involved in ACC and HDC investigations, have taken steps to improve their practice. For example, Dr F has advised that she now emphasises to house surgeons working with her the importance of checking the drug chart and that it is now a "very important part of my management of patients".

I have no doubt that Dr H, Dr E and Dr D were devastated by their role in these events. Dr H indicated that, as a result, his awareness that "pressure can cause error" was heightened. Dr E said this incident had demonstrated to him the importance of accurate documentation, and he now makes concerted efforts to ensure "every piece of clinical paper I use is appropriately labelled". Dr D has expressed remorse and has been profoundly affected. I note his advice that following these events he lost confidence in his practice in general medicine.

Ms G did not provide substantive or helpful responses to my requests for information about her role in Mrs B's care, and the information she did provide was delayed and somewhat lacking in credibility. She did not respond to my provisional opinion. Responding to complaints from patients, or an investigation by the Commissioner, is part of the professional responsibility of a registered nurse. That Ms G was a newly qualified nurse at the time of these events does not excuse her failure to respond appropriately. I am concerned by Ms G's lack of co-operation, despite the support and encouragement of MidCentral Health and I have drawn this matter to their attention.

Recommendations

Mrs A has indicated that she will not accept a further apology from MidCentral Health, and I can understand her position.

I recommend that MidCentral District Health Board:

- confirm that the Commissioner's final report on this matter will be circulated, for orientation and training purposes, among staff and management at every level within Palmerston North Hospital;
- provide the Commissioner with documentary evidence of its current policies relating to:
    - storage and labelling of patient records in the Emergency Department;
    - medical and nursing staff arrangements in the Internal Medicine Line;
    - incident reporting, including the reporting, review and audit of medication errors; and
    - the implementation and review of "Not for Resuscitation" orders; and
- confirm that policies are in place for:
    - the involvement of nursing staff in ward rounds;
    - home wards;
    - regular audit and assessment of the content and accuracy of patient records; and
    - regular audit of staff compliance with internal and external policies, guidelines and standards.

I intend to visit Palmerston North Hospital on 1 November 2005 to confirm that these recommendations have been complied with.

Follow-up actions

- A copy of this report will be sent to the Minister of Health, the Director General of Health, the Medical Council of New Zealand, the Nursing Council of New Zealand, the Royal Australasian College of Physicians, the Accident Compensation Corporation, the Palmerston North Coroner, the Quality Use of Medicines Group of DHBNZ, and Mrs B's former GP.

- I have written to the Nursing Council of New Zealand with a recommendation that it consider whether a review of Ms G's competence is warranted.

- This report, with details identifying the parties removed but naming the hospital and Board (in light of the public interest in this case and prior publicity), will be sent to all District Health Boards and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Names (other than Palmerston North Hospital, MidCentral Health and the Commissioner's expert advisor) have been removed to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.