Northland District Health Board

Consultant Physician, Dr A

A Report by the

Health and Disability Commissioner

(Case 09HDC02089)

Health and Disability Commissioner

Te Toihau Hauora, Hauātanga

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Executive summary

1. Mr B, aged 69, was admitted to Whangarei Hospital Emergency Department (ED) at 2.55am on a Saturday in mid 2009, with suspected coronary problems. Investigations were undertaken, including a chest X-ray. The X-ray was not formally read and reported on by a radiologist until the following Monday. Mr B was kept in ED overnight for observation.

2. Mr B was admitted to the medical ward at 1.30pm, after experiencing blood-tinged vomiting. He was assessed as having an upper gastrointestinal (GI) bleed. From Saturday to Sunday, Mr B was noted to be nauseated, vomiting, and suffering from back pain.

3. Mr B was reviewed by locum consultant physician Dr A at 11.45am on Sunday, 22 hours after his admission to the medical ward. Dr A confirmed the impression that Mr B was suffering an upper GI bleed, and referred him for a gastroscopy. There is no record in the clinical notes of a physical examination, consideration of differential diagnoses, or other clinical investigations at that time. Mr B was placed on the list for gastroscopy the following day. His observations remained stable for the rest of the day; however, he was noted to be experiencing severe back pain and vomiting.

4. Dr A reviewed Mr B again during his morning ward round on Monday. Despite the notes recording ongoing vomiting, Dr A continued with the diagnosis of GI bleeding and the plan for gastroscopy. Dr A considered that other differential diagnoses were unlikely, and that surgical review was not necessary. Mr B began to deteriorate in the afternoon. It was considered that he might have aspiration pneumonia, and the gastroscopy was deferred.

5. Early on Tuesday morning, Mr B collapsed, suffered a massive haematemesis,[1] and, sadly, died.

6. Dr A's care was significantly below the standard expected of a consultant physician. Mr B's ongoing vomiting and severe back pain should have alerted Dr A and the medical team to consider alternative diagnoses and other clinical investigations, including surgical review. Dr A was held to have breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).

7. The DHB did not have clear guidelines or clinical criteria for gastroscopy referral. Further, it did not have a protocol in place to sufficiently assist and guide its staff to review and manage the risk to an acute patient thought to have an upper GI bleed, whose management may require Medical and Surgical team co-operation. Mr B's deterioration was not fully recognised by hospital staff, who gave insufficient consideration to other diagnoses once the initial diagnosis was made. The care provided by the DHB was suboptimal, highlighted systems issues, and was a moderately severe departure from expected standards. Northland DHB was held to have breached Right 4(1) of the Code. HDC made a series of recommendations

[1] Vomiting of blood.

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incorporating the expert advice received, and requested detailed follow-up on remedial steps instigated as a result of Mr B's care.

Investigation process

8. On 20 November 2009, the Commissioner received a complaint from Mrs B, which included concerns about the care provided to her husband, Mr B, by Northland District Health Board.

9. After a period of assessment, including consideration and resolution of concerns raised about another provider, an investigation into the care provided by the DHB was commenced on 22 April 2010. Relevant information was received and reviewed from:

Dr A	Consultant physician, provider
Mrs B	Mr B's wife, complainant
Mr B's GP	
Northland District Health Board	Provider
Dr C	House officer, provider
Dr D	Surgical registrar, provider
Dr E	House officer, provider
Dr F	Medical registrar, provider
ACC	

Also mentioned in this report:

Dr G	Medical registrar
Dr H	House officer
Dr I	House officer

10. The scope of the investigation was:

    Whether Northland District Health Board provided Mr B with services of an appropriate standard over a period of four days in mid 2009.

11. The scope of the investigation was extended on 2 November 2011 to include:

    Whether Dr A provided Mr B with services of an appropriate standard over a period of four days in mid 2009.

12. Independent expert advice was obtained from a general physician and geriatrician, Dr David Spriggs (attached as Appendix A and Appendix B).

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Information gathered during investigation

13. In the early hours of Saturday, Mr B, aged 69, developed chest tightness and pain radiating into his left shoulder and back. Mrs B called for an ambulance, which was dispatched at approximately 2.20am.

Ambulance

14. Mr B was assessed by ambulance staff at 2.26am. Initial observations indicated that Mr B's vital signs were stable and satisfactory. Mrs B advised ambulance staff that she believed the pain to be gastric in origin because Mr B had experienced episodes of a similar pain in the past caused by a hiatus hernia,[2] and that Mr B's GP had prescribed omeprazole,[3] simvastatin,[4] and aspirin three days earlier.[5]

15. The ambulance staff recorded: "[History] of hiatus hernia/indigestion → symptoms not like this." Mr B was in a lot of pain and had associated nausea. Ambulance staff considered that Mr B was suffering a heart attack, and so followed their protocols for chest pain and treated him with glyceryl trinitrate (GTN), aspirin, and two doses of morphine.

Hospital ED — Saturday

16. Mr B arrived at Whangarei Hospital Emergency Department (ED) at 2.55am and was triaged at 3am. He was classified as triage status 2.[6] Mr B was assessed by ED staff, and bloods were taken at 3.10am. The ED triage notes recorded shortness of breath on walking, and that the pain was not relieved by Gaviscon (an antacid). It was also noted that Mr B had been vomiting and sweating, and that vomiting relieved his pain. Mr B vomited on arrival at hospital and again at 4.28am.

17. A troponin test[7] taken three hours post-onset of symptoms was negative, and Mr B's blood count was normal. An ECG did not show any obvious sign of acute ischaemia.[8]

18. A chest X-ray was taken at 3.32am; however, the films were not able to be formally read and reported on by a radiologist until 9.36am on Monday. While some scanning facilities were available at Whangarei Hospital over the weekend, radiology reports were not able to be formally reported during the weekend. Accordingly, the report on

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[2] Mrs B submitted to HDC informal notes she made soon after the events. Mrs B has a nursing background.

[3] Used to treat conditions caused by excess stomach acid.

[4] To lower cholesterol.

[5] Mr B saw his GP three days before his admission to discuss results of a cardiovascular risk assessment performed earlier in the year. His result was a 20% risk (high). Mr B had a history including a peptic ulcer in 2002, but a normal gastroscopy in October 2002. He had had an elevated GGT (liver enzyme) result since 2001, but this was stable. Cholesterol and liver test checks were scheduled for 10 weeks' post-prescribing by his GP as a precaution.

[6] Triage status 2, using the Australasian scale, is considered imminently life-threatening or important and time-critical. The maximum clinically appropriate triage time for status 2 is 10 minutes.

[7] The troponin test is used to help diagnose a heart attack, to detect and evaluate mild to severe heart injury, and to differentiate chest pain that may be due to other causes.

[8] Inadequate blood supply (circulation) to a local area due to blockage of the blood vessels to the area.

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Mr B's chest X-ray was not available at that time to assist with his diagnosis and management.

19. When reported, the X-ray report noted:

> "Unusual appearances at the left heart border, there appears to be a gas shadow peripheral to the cardiac contour — differential diagnosis would include hiatus hernia but in the first instance follow-up examination with a lateral projection is recommended for further evaluation. The lung fields appear otherwise clear with no signs of focal consolidation or failure."

20. The ED staff notes included a diagnosis of likely acute coronary syndrome (ACS) along with possible gastritis due to the recent aspirin commencement. As there was a high index of suspicion for cardiac pain, Mr B was given the blood-thinning drug Clexane. Mr B stayed in ED overnight for observation, and a further troponin test was scheduled for the following morning.

21. Routine blood tests taken at 6am were satisfactory, and Mr B's haemoglobin was normal. At 8.10am, Mr B vomited again, described in the notes as "small [amount] fresh blood vomited". The troponin test result taken that morning was negative.

22. Mrs B's own notes[9] record that Mr B was "in pain but not ill at this time". She told HDC that early on she considered her husband to be "in pain, scared, a bit sweaty but [this] did not give [her] cause for concern". Mrs B recalled that at all times during his admission, Mr B was able to answer any staff questions, so her input was seldom sought. However, she told hospital staff that Mr B had not had symptoms associated with hiatus hernia (such as reflux) for years.

23. At 8.55am, Mr B vomited a "larger amount of blood". The ED team contacted the medical team, and requested the medical team's assessment and admission. This discussion took place between junior doctors. Dr A's experience at Northland DHB was that it was usual for such referrals to be made between junior staff, rather than consultant to consultant.

Ward admission

24. At 1pm on Saturday, Mr B was seen in the ED by the admitting medical registrar, Dr G. Mr B's history and presentation had not altered significantly, and he was assessed as having an upper gastrointestinal (GI) bleed.

25. By this time, Mr B's nausea and pain had settled, and his clinical examination was reported to be normal. Mr B was admitted to a ward under General Medicine (the ward), after spending approximately 10 hours in the ED.[10] The aspirin and Clexane

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[9] See footnote 2.

[10] Dr A told HDC that at that time it was not unusual for patients to stay under the care of the ED for a period of up to 24 hours. Since 1 July 2009 the Ministry of Health's health target *Shorter Stays in Emergency Departments* has been defined as "95% of patients will be admitted, discharged, or transferred from an Emergency Department within six hours". The DHB advised that, since the

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were stopped, and Losec (omeprazole) was started. The medical team consultant physician in charge of Mr B's care was Dr A.[11]

26. The handover forms included reference to GORD (gastro-oesophageal reflux disease) also being considered at this point, and referred to Mr B's previous history of a stomach ulcer, his treatment in the ED, and that he had vomited fresh blood.

27. The DHB did not have a written protocol for management of acute upper GI bleeding at that time. However, it advised HDC that it was customary for the medical service at Whangarei Hospital to undertake assessment and management of all cases of suspected upper GI bleeding, whereas all cases of lower GI bleeding would go to the surgical service. This was because few cases of upper GI bleeding require surgical intervention, whereas most will require medical management.

Medical team management on Saturday

28. At 3.45pm on Saturday, a nurse recorded that Mr B was nauseated, had back pain, and vomited "1/2 a cup of blood tinged vomitus".

29. Mrs B left the hospital at 5pm. She left her phone number with the ward desk in case her husband needed her. Mrs B stated that: "I made it very clear to nursing staff that I wished to be called immediately if [Mr B's] condition were to deteriorate or should he need me overnight. This did not happen over the first two nights of his admission."

30. At 5.45pm, the nursing notes record "nausea and back pain radiating to stomach 8/10 — vomited x 1 coffee grounds, and further vomit shortly after. Encouraged oral intake."

31. At 8.30pm, Mr B's blood pressure rose. Persistent nausea and pain was also noted, although his other readings were stable. An Early Warning Score (EWS) of 2 was recorded.

32. The EWS is a trigger system or tool used to calculate and recognise when a patient's physiological state is deteriorating and to help staff to increase observation frequency and/or escalate care to the most appropriate level. It uses a simple scoring system that can be calculated at the patient's bedside, using key physiological parameters and vital sign monitoring.[12] The DHB policy outlines that patients with an EWS of 2 should be reviewed by medical staff within 30 minutes, and an EWS of 3 or greater should result in review within 20 minutes. The DHB informed HDC that its policy on EWS was first developed in 2008 and formally signed off in March 2009. Prior to Mr B's case it had started project work on new observation charts incorporating use of the EWS, with associated guidance around escalation of management to more senior staff.

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introduction of the targets, it has used the "3-2-1" tool to help expedite care of patients in ED. Its expectation is that patients will be referred from ED to an inpatient service, where appropriate, within three hours.

[11] At the time of Mr B's admission, Dr A worked as a locum on contract with the DHB.

[12] See HDC Opinion 05HDC11908 and the subsequent review by Dr Mary Seddon, *Safety of Patients in New Zealand Hospitals: A Progress Report* (6 October 2007), which identified key areas where national collaboration would assist systematic improvements — one being the development of EWS.

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In addition, an educational document, *NDHB management strategies for the at risk or unstable patient*, was produced around February 2008.

33. On-call house officer Dr C was called to review Mr B in response to his 8.30pm observations, including the haematemesis. Dr C changed Mr B's medication to ondansetron (for nausea) and increased his morphine dose. The notes record: "[Repeat haemoglobin] if persistent vomiting blood." Losec injections (40mg twice daily) were started at 8.40pm. Mr B vomited again at 9.15pm.

Sunday

34. According to the nursing notes, at 1am on Sunday Mr B had "ongoing haematemesis". Although he denied being in pain, it was noted that he was unable to drink sips of water without needing to vomit. Mr B was afebrile, but his blood pressure was still high. Mr B was reviewed by an on-call house officer at 1.30am. It was noted that Mr B had vomited five times since tea, with a total of 300ml of "coffee ground" vomit. Mr B's pain was recorded as intermittent, and was described as mainly a "burning sensation behind [the] sternum". It was noted that Mr B was mildly dehydrated.

35. On physical examination, Mr B's abdomen was soft and non-tender. The house officer recorded that the blood in the vomit was secondary to the anticoagulation medicine he had been given. IV fluids were commenced.

36. Mrs B recalled being present with her husband on Sunday from 9.30am until 5pm. When she arrived, Mrs B was told that Mr B had had a "very rough" night, although she was not contacted overnight as she had requested.

Consultant physician review

37. At 11.45am on Sunday morning, Mr B was reviewed by consultant physician Dr A on the post-acute consultant ward round.[13] At this time, Mr B's blood pressure was high but stable, his pulse was 96 beats per minute, and he was afebrile.

38. Notes for this ward round were taken by Dr C, who recorded:

> "On losec for last 3–4 months Hiatus hernia
> Started on statins + aspirin by GP 3 days ago
>
> Being monitored by GP for elevated LFTs/fatty liver
> — [previous] malaria
> — [previous] + [alcohol] intake (not for last 5 yrs)
>
> Started vomiting then → haematemesis
> initially frank then coffee ground.

[13] This was approximately 22 hours after being transferred from ED to the medical team's care. Dr A responded that the purpose of the post-acute ward round is that patients will be seen by a senior medical officer within 24 hours of admission to the team. The DHB confirmed that this was its expectation.

HDC

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Pain in lower back, sub-sternal.

[Impression] ? ulcer

Plan i) needs to be on Losec lifelong
ii) Gastroscopy – acute list (team to arrange)
iii) Able to [eat and drink] today
iv) [nil by mouth] from 0200 tonight."

39. Dr A told HDC that he performed a physical examination, although this is not documented in the notes. He also advised that he reviewed the ECG, chest X-ray and the laboratory results. Dr A noted that Mr B's blood pressure remained stable and his haemoglobin had not dropped since admission. He thought that Mr B might have a bleeding ulcer, and requested an acute gastroscopy to confirm or exclude a gullet or stomach cause for Mr B's symptoms. Dr A advised HDC that he instructed the house officer to request a gastroscopy from the surgical team, to take place as soon as possible. Dr A advised that ideally the gastroscopy should have been performed early on Sunday, because "the localisation of an acute upper GI bleed [is] much more difficult to establish 24 hours after the onset". Dr A further advised HDC that if the gastroscopy was negative, then other investigations would be indicated.

40. There is nothing documented in the clinical records to show that Dr A considered other possible causes for Mr B's symptoms. However, in Dr A's initial response to HDC, he stated that he also considered a bleeding varix or an oesophageal, gastric, or duodenal ulcer. After reflecting on comments made by HDC's expert advisor, Dr A subsequently told HDC that other possible causes for Mr B's condition included a bleeding ulcer, gastritis, duodenitis, reflux oesophagitis, viral or bacterial gastroenteritis, or Mallory-Weiss tear.[14] Less likely causes were cholelithiasis (gallstones[15]), cholangitis (bile duct infection), or pancreatitis (inflammation of the pancreas). Upper GI discomfort as a side effect of the recently started statin was also possible.

41. Dr A commented that Mr B did not, at that stage, meet any clinical criteria that indicated he was high risk and required surgical treatment, so he did not ask for a formal surgical review. Dr A was under the impression that gastroscopy would go ahead that day and that therefore Mr B would be seen by a surgeon from the surgical team in any event. Dr A did not consider arranging a lateral chest X-ray, as he did not expect it to establish the cause of pain. There was no free air under the diaphragm and he did not consider there was lower GI pathology or a bowel obstruction at that time.

Documentation

42. Dr C told HDC that everything she wrote in the notes at the time of Dr A's ward round (see paragraph 38) came from the history taking and conversation held between

[14] A Mallory-Weiss tear occurs in the mucus membrane of the lower part of the oesophagus or upper part of the stomach, near where they join. The tear may bleed. Mallory-Weiss tears are usually caused by forceful or long-term vomiting or coughing.

[15] Mrs B advised that her husband had no gall bladder and that Dr A was aware of this.

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the patient and Dr A. She advised that her usual practice when taking notes for ward rounds was to document all pertinent history and examination as it took place. Typically she would document a physical examination with accepted drawings, etc. She could not be certain whether the lack of clinical examination recorded reflected an omission by Dr A to conduct the examination or her own omission to record the examination. She said that, in general, prior to a ward round, house officers are not given instructions of what the consultant expects to be written.

43. Dr A acknowledged that the amount of written information documented for the ward round on Sunday was very brief and incomplete. He stated that he "accept[ed] that the notes ought to have recorded the full examination that was undertaken, [his] differential diagnoses … and the plan for gastroscopy. They also ought to have included that the result of the assessment [was] discussed with the patient and his wife and plans and options explained."

44. Dr A advised HDC that he did not review the notes taken by Dr C, who was not the usual house officer attached to the team, to check that they reflected the examination and plan. He stated that owing to time constraints on a busy ward it is not always possible to review the notes made by the house officer and make any necessary additions. Dr A felt that Dr C might not have been familiar with his expectations, and he acknowledged that he did not give express instructions as to the details of the assessment to be recorded.

45. Dr A stated that this has reinforced to him the need to review notes taken by junior staff and to verbally reinforce discussions to ensure the notes clearly reflect the patient's condition and what is to occur.

Mrs B's recollections

46. Mrs B's recollection of her discussion with Dr A was that he advised her and her husband that a hiatus hernia was showing on the X-ray. This was when she commented that Mr B had had no symptoms or reflux for about six years. She did not recall any test result discussion, except the X-ray comment.

47. Mrs B was unsure whether Dr A undertook a physical examination. She was aware that examinations were performed but believes these were done by other staff.

Gastroscopy booking

48. The DHB stated that it had been unable to recruit a gastroenterologist for the medical team, and that the medical team did not provide an emergency endoscopy service itself — one consultant physician did provide a limited number of gastroscopies one day per week. Requests for acute endoscopies were referred to the surgical service, which accommodated most requests within weekday lists. It provided emergency endoscopies after hours for unstable patients with severe, acute GI bleeding.

49. Dr A stated that Mr B met the criteria for same-day gastroscopy, and although he advised Dr C that Mr B should have the gastroscopy as soon as possible, he was aware that this might not be possible (due to resource constraints). Dr A indicated that if Mr B's condition did not deteriorate it would be acceptable for the gastroscopy to

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be performed the following morning. He could not recall what specific instructions he gave regarding making Mr B nil by mouth for the procedure.

50. Mrs B recalled that Dr A told his assistant to "book/arrange or order an acute gastroscopy for Monday afternoon".

51. The process at the time for the referral of patients for urgent gastroscopy involved the referring clinician completing an acute booking form and, at his or her discretion, allocating an urgency category (as above). The DHB advised HDC that it did not have specific guidelines in place regarding clinical criteria for gastroscopy referral, but it was in the process of developing its own criteria and guidelines (based on those of another DHB) for access to acute endoscopy.

52. The on-call Surgical Registrar, Dr D, said that at the time it was hospital policy for all medical or surgical patients requiring gastroscopy to be discussed with the on-call surgical registrar for the purpose of placing them on the acute theatre list. If the patient was stable then, owing to acute theatre constraints, the gastroscopy was typically performed on the first list the following morning.

53. A standard Northland DHB acute surgery booking form was completed by Dr C on behalf of Dr A on Sunday. Dr C noted on the booking form: "Discussed [with] [Dr D]." Dr C said that she discussed the gastroscopy with Dr D to ensure that Mr B would end up on the acute list and to ensure that she had submitted the appropriate paperwork.

54. The gastroscopy was scheduled for the next day. The booking form noted that Mr B was haemodynamically stable, and indicated an acuity category of 4,[16] which means that the procedure should be performed within 24 hours, although only after more urgent cases have been completed.

55. Dr D commented that it was not standard practice for the surgical registrar to formally review patients requiring gastroscopy unless requested to do so by the admitting team. He would, however, often suggest that the referring team consider alternative diagnoses if, on the information supplied by the referring team, he thought it clinically appropriate to do so. Dr D advised HDC that he was not asked to formally review Mr B but it has always been his policy to review a patient if requested.

56. Dr A said that he was not informed about the house officer's discussion with the surgical registrar. He assumed that the gastroscopy would occur either on the Sunday or at the first possible opportunity, which would be Monday morning. He did not receive any further updates, and was not asked to review Mr B.

57. The DHB response to HDC summarised the rationale for initially booking the gastroscopy for the Monday as follows:

[16] Category 1 is listed as [to be seen] ASAP — in 20 minutes to one hour; Category 2, in 1–6 hours; Category 3, in 6–12 hours; Category 4, in 24 hours.

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> "The key investigation considered necessary to elucidate the cause of [Mr B's] chest pain and vomiting was gastroscopy. This was booked but because his initial condition appeared stable — in particular, his blood pressure and haemoglobin had not dropped — it was not considered necessary for this to occur until the usual acute list on the Monday."

Further reviews — Sunday

58. At 2.45pm, the nursing notes record that Mr B had discomfort in his back radiating into his chest, and ongoing nausea, and that he was vomiting dark coloured fluid "approx 300ml today". Oral intake was not attempted "due to vomiting" and it was noted that Mr B's bowels had not opened.

59. At 4.15pm, Dr C reviewed Mr B because of his increased blood pressure. She noted that he had increased substernal pain, which was not relieved by morphine, but that his vomiting was improving and that there was no blood in his previous three vomits.

60. Dr C examined Mr B. The abdominal examination was normal and bowel sounds were present. Dr C had a telephone discussion with the on-call medical registrar, Dr G,[17] who agreed that the elevated blood pressure appeared secondary to Mr B's pain. Mr B's morphine was changed to fentanyl, and the plan was to monitor his blood pressure and continue fluids. Dr C noted that at the time of her review she found no evidence of an enlarged aorta. It is unclear why an examination for an enlarged aorta was undertaken. However, Dr C believes it was because Dr D had asked whether an abdominal aortic aneurysm (AAA)[18] had been ruled out. She believed this was the most likely reason she documented an abdominal examination specifically looking for this, as well as discussing it with Dr G.

61. Dr D advised HDC that Dr C's entry shows that Dr D had sufficient concern regarding alternative diagnoses to an upper GI bleed such that he specifically requested the medical team rule out an AAA and aortic dissection. It appeared to him that both Dr C and Dr G felt that aneurysm and dissection were unlikely based on their clinical evaluation.

62. Dr C stated that on the occasions she reviewed Mr B he was in pain, with high blood pressure, but that he was stable and there was no urgency to the situation. She felt that Mr B was reviewed by her and Dr G in a timely manner based on the information they had available to them. At 6.30pm on Sunday, it was noted that Mr B had persistent pain, nausea, and vomiting of "clear fluid" in spite of regular pain relief and anti-nausea agents. At 8.30pm, the nursing records describe Mr B vomiting blackish vomitus "with some particles in it".

[17] Dr C advised HDC that all discussions with on-call registrars would have been via the telephone due to the fact that the medical registrar looks after all admissions in ED, and the surgical registrar can be anywhere from the opposite side of the hospital to theatre. The medical registrar on call would have been present during morning ward rounds.

[18] A ballooning or widening of the main artery (the aorta) as it courses down through the abdomen. The aneurysm weakens the wall of the aorta and can end in the aorta rupturing.

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63. Mr B was assessed again around 8.30pm by Dr G, in relation to the pain and vomiting. The abdominal examination was normal with active bowel sounds. Mr B's haemoglobin was stable. Dr G considered that the raised blood pressure, pain, and vomiting were due to an ulcer bleed, and arranged for two units of fresh plasma to be given.[19]

64. At 10.50pm, the nursing notes record that Mr B's oxygen saturation had decreased and that Mr B was "vomiting intermittently with blackish vomitus".

Monday

65. At 5am on Monday, the nursing notes record that Mr B's oxygen saturation remained low. Mr B vomited, and his vomit was described in the notes as "black gastric juice, foul smelling". It was also noted that Mr B had right flank pain.

66. When Mrs B arrived at the hospital that morning, she was told that the previous night had been "very rough" for her husband. Again, she had not been contacted overnight. She said that she was very unhappy about this. Mrs B recalled being told in the morning by nursing staff that what her husband had coughed up was faecal matter. She was also concerned that Mr B had developed a chest rattle.

67. Mr B was reviewed on Dr A's consultant ward round at approximately 9am. A first-year house officer, Dr E, made notes of this ward round for Dr A. At that stage, Mr B's vomit was described as "mucousy-coffee ground". It was noted that Mr B's bowels had not opened since the previous Friday, he was afebrile, and his blood pressure remained slightly raised. The plan was to continue with the gastroscopy that day. Dr A told HDC that "although [Mr B] had continued to vomit, he had no other symptoms to point to a diagnosis outside his upper GI tract". In contrast, Dr A stated in his response to the provisional opinion that "[t]he symptom of ongoing vomiting was not present when I saw [Mr B]". This is inconsistent with the clinical notes recorded at 5am and at 9am that day (as set out above).

68. Dr A's assessment was that Mr B had a form of gastritis or ulcer, which at that stage was not actively bleeding. Given that the physical examination was unremarkable, Dr A considered that other differential diagnoses were unlikely.

69. There is nothing documented regarding consideration of other diagnoses in the clinical records for the 9am ward round.

70. In response to the preliminary comments of my expert advisor, who considered that the vomiting, back pain, absence of fresh blood in the vomitus, and stable haemoglobin should have led to consideration of alternative diagnoses, Dr A stated that the diagnosis of upper GI bleed was the first to be confirmed or excluded, because it would have had major therapeutic consequences. Dr A advised that if gastroscopy had been performed and excluded an upper GI bleed or ulcer, and failed to reveal a diagnosis, then other causes would have been investigated by way of imaging, most likely a CT scan.

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[19] Used to reverse the effects of the anticoagulant used earlier.

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71. At 11.40am, Mr B's temperature rose to 38°C and his heart rate was 112bpm. At around 1pm Mrs B told the nurses that she was concerned that her husband was looking bluish around his mouth and nose and had not had sufficient oxygen.

72. At 1.23pm, a second chest X-ray was taken. The X-ray was read, compared with the previous X-ray, and reported by a radiologist at 2.49pm. It was reported that there was not much interval change and no evidence of aspiration.

73. At 1.55pm, a nurse asked Dr E to see Mr B because his oxygen saturation levels had dropped. Dr E said that both Medical Registrar Dr F and Dr A were on the ward at the time, and that they came immediately to review Mr B.

74. Mr B was noted to have become tachycardic and drowsy, and had decreased air entry at the right lung base, but normal heart sounds. It was noted that he had no chest crackle or wheezes, but that he was looking cyanosed.[20]

75. The Medical Team's impression was that Mr B might have aspiration pneumonia. Dr E advised HDC that Mr B was too unwell to proceed with the gastroscopy. Accordingly, the recorded plan was to take blood cultures, supply oxygen, commence IV antibiotics, and defer the gastroscopy for 48 hours.

76. At 2.20pm, Dr F acknowledged Dr E's previous entry and also noted: "Plan: As discussed [with] [Dr A]", with hourly observations for the next four hours then four hourly if stable.

77. Dr F told HDC:

> "… regarding the decision to defer gastroscopy, again I do not recall how this decision was made. My entry at 14.20hrs does state that the management plan, including the decision to defer gastroscopy, was discussed with [Dr A]. The entry by the team house officer at 13.55hrs did indicate that X-rays were reviewed with [Dr A]. It would appear that the consultant in charge was managing the clinical situation at that point."

78. Dr A advised that he was not contacted to discuss the decision to defer the gastroscopy or to discuss other investigations that might be undertaken. Dr A advised HDC that Dr F informed him of the altered situation and deferral. Dr A also advised that a gastroscopy in a patient suspected to have aspiration pneumonia was probably not the best way to proceed. Dr A did not consider that any other diagnostic test would have been helpful at that stage.

79. At 3pm, the nursing record recounted in detail the symptoms from earlier in the day, and noted that the EWS had increased to 4 over the day. Mr B's clinical records note: "coffee coloured vomit continues throughout the shift, offensive smell … [bowels not opened] … [abdominal] pain 8/10 at times continues".

[20] Bluish discolouration of the skin.

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80. Dr F made an entry in Mr B's notes at 4.40pm, after reviewing him with Mrs B present. Dr F recorded that Mr B had "ongoing intermittent vomiting — coffee ground", remained feverish, was tachycardic, and was requiring high dose oxygen and had crackles at the right lung base. The documented plan was to repeat his arterial blood gases that evening. Dr F noted that an on-duty house officer, Dr H, was informed of Mr B's condition.

81. Dr A was not on duty or on call in the evening.

82. Dr H reviewed Mr B at 7.10pm, and discussed his oxygen levels with the on-call registrar. Dr H recorded:

> "… if unable to maintain SaO2 > 90% [despite supplemental oxygen] will need → [respirator] & Med reg to review +/- ? ICU".

83. The treatment plan also noted that the night house officer, Dr I, would review Mr B overnight. The records indicate that nursing staff were aware of the plan. Over the shift, Mr B's oxygen saturations improved with supplementary oxygen. Dr H responded via the DHB, based on the clinical record, that the apparent improvement did not give any obvious indication to request further review by more senior staff at that stage.

84. In response to the provisional opinion, Dr H commented that he had discussed Mr B's care with the medical registrar, who advised that Mr B should continue to be monitored, and that he did consider transfer to ICU as recorded in the notes. Dr H further commented that "had it been my impression during the course of my shift that there was deterioration then I would have contacted the on-call senior staff, and further discussed transfer to ICU". Dr H further stated that he is very sorry for the outcome and expressed his condolences to Mr B's family.

85. A nursing note made at 10.15pm records that Mr B was still intermittently vomiting "coffee ground vomit", and that he was tolerating small sips of water.

Tuesday

86. The overnight house officer, Dr I, advised HDC that he received a verbal handover from Dr H. At 2am, Dr I was asked by nursing staff to see Mr B. Dr I reviewed Mr B and noted the background, and that Mr B's oxygen saturation was adequate. Dr I noted that Mr B had vomited "faecal material" that evening, that Mr B's abdomen was distended and was soft and non-tender with fullness on the left side, and that the chest X-ray had showed no sign of heart failure.

87. At 3am, a nursing entry records that Mr B "[v]omited [blank] mls of faecal smelling fluid with old blood after having Mylanta at 2400hrs". It also showed an EWS of 6 for 1am and 7 for 1.30am. Dr I was called after the first EWS recording and was initially unable to attend, but came after the second recording. Mr B's oxygen saturation had improved, and his haemoglobin was normal. Dr I said that there did not appear to be any reason to consult ICU staff or other senior staff at that point.

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88. Dr I noted that he had considered an early onset bowel obstruction and that he planned a team review of Mr B in the morning and further X-rays; use of a laxative; continuing oxygen to keep saturation above 90%; and to await gastroscopy. It was also recorded that if Mr B continued to have vomiting then a nasogastric tube (NGT)[21] should be considered.

89. Mrs B recalled that at about 5am she went to the nurses' office to request a sedative for her husband, as he was tired, hot, and feverish. She recalls being told that he could not have anything as he was going to theatre that morning. Mrs B said she was surprised by this, as her husband appeared to be worse than when the Monday gastroscopy was deferred. She also recalled that when she asked the nurse if her husband had a perforated ulcer, the nurse responded that there was a discussion planned with the doctors in the next few hours.

90. A nursing entry recorded at 6am states that Mr B had not slept, had an EWS of 3–7, and that he had had no further vomiting overnight. However, an addendum by Dr I in the notes at 6am states that Mr B continued to vomit, and that he was for an NGT, nil by mouth, and intravenous fluids. It was also noted that a form was "taken for [abdominal X-ray]".[22]

91. The DHB response to HDC commented that all of the medical staff involved appeared to have considered that Mr B's condition was manageable in the general ward setting, and did not anticipate that he would require ICU. The DHB advised that:

> "We acknowledge that in retrospect this was not well judged. Furthermore, the observations recorded should have prompted consultant review and consideration of referral to ICU no later than the evening and night of [Monday – Tuesday]."

Collapse

92. At 6am it was decide to insert an NGT. Mr B vomited again. At 6.30am, Mr B was taken to the shower and developed "massive faecal smelling haematemesis and became unresponsive". A cardiac arrest was called via an emergency page. Unfortunately, resuscitation attempts were unsuccessful, and Mr B died at 6.52am.

93. A nursing note, written in retrospect at 7.30am, outlines that Mr B had been uncomfortable and agitated, with no bowel sounds, and an EWS of 7 at 6am, and that the house surgeon had been informed. The entry notes:

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[21] A nasogastric tube allows staff to empty the stomach and prevent the build-up of fluids, which may get into the lungs when the patient vomits. The tube also provides a way to give medication or food to a patient who cannot swallow.

[22] The DHB advised that it did not have written criteria for use of nasogastric tubes on medical wards. Some work was underway at the time to develop a relevant protocol for use on its rehabilitation ward, which may be extended for use in general medical wards once developed. The DHB responded that it is not clear why an NGT was not trialled earlier. It acknowledges that this should have been done sooner and is "perhaps a reflection of customary practice on medical, as opposed to surgical wards; in surgical wards nasogastric tubes are used much more commonly in management of the many cases of bowel obstruction treated in that setting".

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> "Pt vomiting coffee ground faecal matter. Plan insert N/G tube. On attempting to insert tube pt vomited +++. Pt taken to shower on commode with portable O2 by wife. On return to room pt looking very blue and vomited +++ … pt continually vomiting. Team arrived and CPR commenced at 0630. CPR stopped … at 0652."

94. The DHB concluded, in relation to Mr B's deterioration, that:

> "[Mr B's] deteriorating condition over the remainder of [Monday] and overnight was managed by the medical registrars and house officers on duty. There was no further discussion with consultant physicians. The possibility of a need for referral to intensive care staff was noted but not acted upon as staff do not appear to have realised the serious significance of the ongoing deterioration …"

Post-mortem discussion

95. Dr A spoke to Mrs B on the phone at 10.30am, expressed his sympathy, and discussed the issue of a post-mortem. Mrs B had requested that the undertaker arrange the funeral for the next day. It was decided not to proceed with a post-mortem. The funeral went ahead the next day as planned. In the absence of a post-mortem, the exact cause of death is not known.[23]

Death certificate

96. The notes state that Mrs B was advised that Mr B's death was caused by a "cardiac arrest [secondary] to massive GI bleed". Mr B's death was not reported to the Coroner.

97. The death certificate records the cause of death as "exsanguination 30mins" due to "gastric ulcer disease — years" and "hiatus hernia — years". Aspiration pneumonia was not mentioned as a contributing cause. Mrs B was concerned about the death certificate details, owing to the number of days of vomiting Mr B experienced.

98. Dr A did not review the death certificate. He responded that the accuracy of the death certificate was not sustainable, and that exsanguination does not accurately record the cause of death. The DHB responded:

> "Having assumed that [Mr B's] primary pathology was GI bleeding, medical staff also assumed that this was the principal cause of death and completed the death certificate on that basis … clearly aspiration pneumonia should have been added, at least as an antecedent cause."

Other issues

99. On later reading her husband's clinical notes, Mrs B felt that there were some occasions of inaccurate reporting of symptoms by DHB staff, particularly in Mr B's last 17–20 hours when he vomited frequently. During this period Mrs B was constantly with her husband providing his essential hygiene cares and cleaning up his

[23] Dr A, learning from this case, indicated that he will discuss cases with colleagues and the Coroner in situations where no definite diagnosis has been made and there are issues that will likely be resolved by a post-mortem.

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vomit. Mrs B was of the view that some descriptions of the vomitus as smelly or containing frank blood should, in her view, have been described as faecal.

100. Mrs B also stated that while the nursing staff appeared professional in their approach, she felt that there was poor communication between staff, and there seemed to be little "compassionate basic hands on nursing care". She felt that she was left to attend to Mr B's personal cares, without offers to give her occasional respite, which she would have associated with good nursing.

Vomitus interpretation

101. The DHB response to HDC acknowledged that staff observation and interpretations regarding the vomitus and those of Mrs B do differ, but that it is difficult to determine whether the observations were inaccurate or not. Many differing descriptions were used as Mr B's condition changed (including "blood-tinged", "coffee-grounds", "blackish", "foul smelling" and "faecal smelling").

102. The DHB stated that it appeared that nursing and medical staff considered, based on their experience, that up until the early hours of Tuesday, the vomitus represented "altered blood"[24] rather than faecal material. It stated:

> "Although the vomiting was described as foul-smelling at times, it was considered to be altered blood, not faecal, until a few hours prior to his death, when early bowel obstruction was considered as a possible diagnosis. There was no clear indication prior to that to revise the diagnosis of GI bleed, presumed most likely to be due to a peptic ulcer; in particular, previous repeated abdominal examinations noted that his abdomen was soft and bowel sounds normal, making bowel obstruction unlikely. However, we do acknowledge that the cause of the ongoing vomiting was never clearly established and the persistent vomiting might have been a reason to reconsider the diagnosis."

103. The DHB acknowledged that Mrs B was with her husband for his last 20 hours and may have observed more of the vomitus than staff. The DHB consider that it is possible that staff misinterpreted what they saw on the basis of the presumed diagnosis of GI bleeding.

Meeting with DHB

104. In October 2009, Mrs B met with Dr A, the Clinical Director for Acute Services and Consultant Anaesthetist/Intensivist and the Chief Medical Officer to share her experience, discuss Mr B's care, and go through the medical records. The meeting was followed up with correspondence to Mrs B.

105. In a letter to Mrs B, the DHB made the following points:

[24] "Altered blood" refers to appearance other than bright red fresh bleeding, and would include dark blood clots (secondary to oxidisation of haemoglobin) or "coffee grounds" appearance secondary to action of gastric acid on the blood. Bright red in the vomit suggests bleeding from the oesophagus. Dark red vomit with large clots suggests profuse bleeding in the stomach, eg, from a perforated ulcer. Coffee ground-like vomit suggests less severe bleeding in the stomach, because the gastric acid has had time to change the composition of the blood.

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- It was not possible to resolve the uncertainty about the eventual diagnosis and therefore adequacy of treatment, as several alternative diagnoses remained possible explanations for Mr B's symptoms and deterioration.

- The initial treatment for presumed acute coronary syndrome appeared to be reasonable on the basis of the initial presentation but was revised promptly when investigations suggested an alternative diagnosis was more likely.

- The initial in-hospital treatment with Clexane, and pre-hospital treatment with aspirin "might have contributed to his symptoms, but could not be held responsible for the later abrupt deterioration".

- Patients presenting at weekends may receive less prompt investigation than those presenting during the week, mainly owing to resource allocation and workforce availability. However, the DHB felt that this was not the reason for the delay in Mr B's gastroscopy, which was based initially on clinical judgement at the time, and on the second occasion was owing to Mr B's deterioration.

- It was recognised that further training and improved communication regarding EWS use was required.

- Mrs B was made aware of current quality improvement programmes and was asked if the notes of her experience could be used as a teaching aid in the future. The DHB provided a document prepared by the Clinical Director for Acute Services that summarised areas for improvement and related recommended actions that were to be implemented.

Apology

106. The DHB's response from the Chief Medical Officer concluded with an apology to Mrs B for being unable to provide a clear explanation for the events leading to Mr B's death. The DHB acknowledged that it "could have done better in a number of ways". The Chief Medical Officer apologised that the DHB did not provide the best possible care, and assured Mrs B that it was "committed to learning from these experiences and to doing better".

107. Mrs B said that there was an open discussion at the meeting in October 2009, and "[i]nitially [she] came away feeling good about the meeting". Mrs B advised HDC that, at the meeting, the DHB agreed to sign an ACC form, but the DHB subsequently advised her that it could not complete the ACC form as there was "no injury" to report. Mrs B advised HDC that the failure by the DHB to complete an ACC form at that time led to her reversing "any good feelings [she] had about the meeting".

108. In his response to HDC, Dr A stated, "I feel very sorry not only that [Mr B] died, but that this was such a traumatic experience for [Mrs B] … I would like to again convey my sincere condolences to [Mrs B] for the loss of her husband."

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ACC

109. Mrs B lodged an ACC claim. The claim was accepted in early 2010. Clinical advice provided to ACC concluded that there had been undue delays in securing a diagnosis, and that in the absence of a clear diagnosis and stabilisation, additional measures should have been considered.

Subsequent actions by DHB

110. The DHB reported that Mr B's case was reviewed. It was considered that there had been a "failure to rescue".

111. The DHB commented that it was well recognised nationally and internationally that junior staff are commonly slow to recognise the deteriorating, unstable patient, and are reluctant to call senior staff after hours. That issue had helped prompt initial development of new observations charts incorporating EWS prior to this case.

112. This case has resulted in ongoing training for nursing and medical staff, and further auditing of EWS use. EWS revision and update sessions were held for hospital staff in December 2009. Communication training, regarding changes in patient condition, was initiated.[25] The case was used as part of teaching and in "grand round" presentations.

113. A new position was created for an evening "Ready Response" nurse, and additional overnight ICU registrar positions were established, with a view to increasing the availability of staff with specialised skills for ward nurses and doctors to call upon when managing a deteriorating patient, and to introduce earlier effective interventions.

114. The DHB said that the provision of acute endoscopy services remains a challenge in the face of escalating demand. It initiated a review of demands and prioritisation processes.

DHB actions

115. The DHB advised that the shortcomings it identified were viewed as systems issues. It noted that "we have taken this seriously and have attempted to learn as much as we can from it".

116. The DHB felt that Mr B's case illustrated the challenge faced by health services to provide "coordinated care for those individual patients requiring input from more than one specialist team", noting that although Mr B's case was discussed with a surgical registrar and considered for endoscopy, "there was no consultant surgeon involved in the treatment plan as the patient was already under the care of a consultant physician" as per the usual process for upper GI bleed cases.

117. The DHB planned to implement an "acute surgeon of the week" in an effort to "increase the availability of consultant surgeons to actually see patients with their

[25] Involving the SBAR technique (**S**ituation, **B**ackground, **A**ssessment, **R**ecommendation) — a structured communication technique designed to convey a great deal of information in a succinct manner.

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registrars on medical wards when the registrars have been consulted" enhanced by the introduction of specific criteria for referral to the surgical team.

118. The DHB's newly formed Medical Executive Leadership Team also planned to carefully consider the issue of improving coordination of care across specialties for patients requiring multiple input.

Response to provisional opinion

119. Excerpts from the responses provided by Mrs B, Dr A, Dr H and Northland DHB have been added to the report where relevant. Northland DHB advised that Dr I did not have any substantive corrections in relation to the provisional opinion.

120. Dr A responded:

> "I accept that on reviewing the information now available, [Mr B's] care could have been escalated at an earlier stage and greater emphasis put on differential diagnoses. I regret that this did not happen, and that I was not advised of [Mr B's] condition after my ward round on [Monday morning] as you have recorded, I was not on duty or on call on [Monday evening]."

121. Dr A also stated that he has:

> "… take[n] on board the very clear statement from [HDC's expert] advisor … about the need for a consultant to very clearly spell out expectations to junior staff and as I have said already I have been very careful about this. I am approachable, and I do expect junior staff to not hesitate to contact me with concerns."

Opinion: Preliminary comments

122. In accordance with Right 4(1) of the Code, Mr B had the right to have services provided with reasonable care and skill. In my view, Mr B did not receive the standard of services he was entitled to.

123. A series of systemic and individual failures led to unacceptable delays in Mr B's management and treatment. Those failures included: a delay in being admitted as an inpatient from the ED which, in turn, contributed to a delay of 22 hours before Mr B was assessed by a consultant; the DHB's failure to have clear protocols in place to guide staff adequately in the management of acute patients thought to have an upper GI bleed; a failure by junior staff to appropriately escalate Mr B for review by a senior doctor; and a failure by the senior doctor responsible for Mr B's care and treatment to respond appropriately to Mr B's deteriorating condition when Mr B was reviewed.

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124. Systems and individuals need to work together to ensure that, regardless of the time and place of presentation, patients receive seamless and safe services. Individual clinicians need to be competent in their clinical assessment and management of patients; and those individuals need to be supported by systems that appropriately guide individual clinical decision-making and promote a culture of safety.

Opinion: Northland District Health Board

125. My expert advisor, physician Dr David Spriggs, considered that the overall standard and appropriateness of care provided to Mr B by Northland DHB was suboptimal and a moderately severe departure from the standard expected.

ED — No breach

126. On arrival at the hospital ED in the early hours of Saturday, Mr B was promptly triaged within five minutes. Bloods were taken 10 minutes later and a chest X-ray followed in a further 20 minutes. An ECG was also taken. ED staff gave some consideration to possible gastritis owing to Mr B's recent commencement of aspirin; however, he was initially managed for suspected acute coronary syndrome.

127. I accept Dr Spriggs' view that the initial investigation and management of Mr B as having suspected acute coronary syndrome was reasonable.

128. Dr A advised HDC that, at the time of these events, it was not unusual for patients to stay under the care of the ED for a period of up to 24 hours. I agree with my advisor that this is not acceptable. However, the DHB has advised that since these events, it has introduced targets to expedite the care of patients in the ED, and the expectation is that patients will be referred from the ED to an inpatient service, where necessary, within three hours. The Ministry of Health's target is that patients will be admitted, discharged, or transferred from the ED within six hours.

129. Mr B was referred to the medical team after six hours in ED; however, a delay meant that he spent 10 hours in ED until he was physically transferred to the ward. This is longer than Ministry targets and the DHB's current expectations. While the delay itself is not a breach of the Code, I note that it had significant ongoing effects on Mr B's care and management. The delay meant that Mr B was not admitted to the medical ward until the afternoon of Saturday, after the ward round had already taken place. This meant that Mr B was not able to be reviewed by a consultant on the medical ward until the following day, Sunday, approximately 22 hours after he was admitted to the medical ward, and 32 hours after he first presented to the ED. This was an unacceptable result of the delay to transfer Mr B from the ED to the inpatient service.

Initial diagnosis of GI bleed — No breach

130. On Monday morning, Mr B vomited fresh blood and he was admitted to the medical ward under the Medical Team. I accept Dr Spriggs' advice that Mr B's admission to

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the medical ward, rather than a surgical ward, was appropriate. I also accept Dr Spriggs' advice that the diagnosis of a possible upper GI bleed at that stage was tenable, and the initial assessment on the medical ward was satisfactory. Dr Spriggs stated that it was:

> "reasonable to suggest that that the initial vomiting was secondary to the morphine and that the fresh blood [was] secondary to a small oesophageal tear".

Recognising and responding to a deteriorating patient — Adverse comment

131. The DHB used the EWS system for recognising and responding to a deteriorating patient. Although, as the DHB acknowledged, the EWS system was not "entrenched" or working perfectly, I accept Dr Spriggs' advice that it was effective in identifying the severity of Mr B's illness, as Mr B was reviewed frequently by junior doctors.

132. Despite the fact that the EWS system was effective in identifying the severity of Mr B's condition, it appears that the junior doctors reviewing him did not fully appreciate the significance of his deteriorating overall condition and his corresponding need for more senior review. As noted by my advisor, there were several occasions where Mr B would have benefited from review by a more senior clinician, including surgical review, but this did not happen. For example, there should have been sufficient concern about Mr B's condition to request a surgical review as early as Sunday afternoon; however, there was a failure by the house officer and registrar to consult Dr A at that time. Indeed, Dr A was not contacted at all by junior staff on Sunday or asked to review Mr B. While I acknowledge that consideration was given to ICU transfer of Mr B, neither the house officer nor the registrar requested that a senior doctor review Mr B on Monday evening.

133. Mr B was left to deteriorate without appropriate senior review. I agree with my advisor that the junior staff must carry some responsibility for this failure. However, as this Office has previously commented, "[j]unior doctors will inevitably find themselves out of their depth at times".[26] DHBs have a responsibility to ensure that junior doctors are adequately and appropriately supported in the event that they face a situation in which they are out of their depth. As noted in previous HDC opinions, this includes a safety net of vigilant senior nurses and readily available consultants,[27] and a culture where it is acceptable and commonplace for questions to be asked, to and from any point in the hierarchy, at any time.[28]

134. Dr A's response to HDC, which was often at odds with the recollections of his junior staff, poses questions about the effectiveness of Dr A's communication with his junior medical team members. As this Office has previously commented:

> "It is incumbent on consultants to spell out very clearly their expectations about being contacted by junior doctors; and for registrars to provide similar guidance to house officers. Teamwork is critical within hospitals, and within the medical

[26] 08HDC04311 (31 March 2009), p 24.
[27] 08HDC04311 (31 March 2009), p 24.
[28] 09HDC01146 (28 April 2011), p18.

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hierarchy the more senior doctors have particular responsibility for clarifying their expectations, and for welcoming contact and questions from their juniors."[29]

135. The DHB commented that medical staff appeared to believe that Mr B's condition was manageable on the ward, but acknowledged that in retrospect this was not well judged. I suggest that the DHB consider steps it can take as an employer to ensure it promotes a culture in which junior staff are encouraged to obtain timely senior review, and to ensure that it provides junior staff with clear expectations as to the circumstances in which it is wise for junior staff to obtain senior review.

136. In this case, the referral of Mr B from the ED to the medical team was undertaken by junior staff members, as was the referral of Mr B for gastroscopy. My advisor believes that senior staff need to be involved in referrals. He noted that "leaving referrals to junior doctors over the phone will inevitably result in miscommunication … the proposed 'acute surgeon of the week' may improve such communication but this can only work if referrals are made appropriately".

DHB systems — Breach

137. Radiology reports for X-rays taken during the weekend were not available to weekend ward round staff, and were not formally read and reported on by a radiologist until the following Monday morning. In this case, Mr B's admission X-ray was not formally reported for approximately 54 hours.

138. This meant that the radiologist's recommendation for a follow-up lateral X-ray was not made until Monday morning, and was not immediately available to staff on Saturday. This delay influenced the path of Mr B's care, in that additional investigations were not subsequently undertaken on the day of admission. Dr Spriggs commented that:

> "[h]ad the radiologist report been available to the medical team on the day of admission they may have performed a lateral chest X-ray and other differential diagnoses may have been considered".

139. The availability of acute endoscopies at Whangarei Hospital was also limited over the weekend. Requests for acute endoscopies were referred to the surgical service, which accommodated most requests within weekday lists. Provision of emergency endoscopies after hours by the surgical service was for unstable patients with severe, acute GI bleeding. HDC was informed that if a patient was deemed stable then, owing to acute theatre constraints, such cases were typically gastroscoped on the first acute list the following morning. Although Dr A advised that he hoped that Mr B would receive a gastroscopy on Sunday, Mr B was not deemed to meet the criteria for an emergency endoscopy, and his gastroscopy was instead booked for the following day. Earlier access to acute gastroscopy may have aided Mr B's diagnosis and management.

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[29] See Opinion 05HDC11908 (22 March 2007), p 109.

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140. My expert advisor commented that problems with the provision of weekend medical care for acutely ill patients are not unique to Whangarei Hospital. Mr B did not receive a gastroscopy within 24 hours of admission, which would be a usual week-day standard, he did not have surgical review, and did not receive further radiological imaging in the first 24 hours — all of these are likely to have occurred had Mr B been admitted on a week day. The DHB advised Mrs B that patients presenting at weekends may receive less prompt investigation than those presenting during the week, mainly because of resource allocation and workforce availability.

141. In these circumstances, it is important that patient acuity is appropriately assessed and kept under review. Initially, Mr B's acuity level appears to have been appropriately assessed. However, Mr B's clinicians did not adequately review his acuity level in response to changes in his condition. While a formal radiologist review of the admission X-ray would have been helpful early on, the individuals caring for Mr B must accept some responsibility for failing to respond adequately to changes in his condition pending the X-ray report and gastroscopy.

142. As this Office has previously commented, the responsibility to prioritise and manage acute patients extends beyond individuals to the DHB.[30] DHBs should provide clear direction to staff about their options for monitoring and managing acute patients out-of-hours within the services available. That did not happen in this case.

143. The DHB did not have a written protocol for management of acute upper GI bleeding, nor did the DHB have a specific set of clinical criteria for gastroscopy referral. Dr Spriggs stated:

> "It is common practice to have guidelines for the management of acute upper gastrointestinal bleeding available to nurses and junior doctors. This is particularly important when the management of such patients depends on the co-operation of General Medicine and Surgery. It is usual in New Zealand for such patients to be admitted under the Medical Service however there needs to be a clear referral system based on set clinical criteria for gastroscopy. Such criteria need to stratify the risk to the patient of the upper GI bleed."

144. The DHB acknowledged shortcomings in its systems, and commented that Mr B's case highlighted the challenges of provision of acute endoscopy services as well as co-ordinated care for patients requiring input from more than one specialist team.

145. Since these events the DHB has clearly reflected on this case, met with Mrs B and provided her with an apology, and implemented some positive remedial changes as a result of learning from Mr and Mrs B's experience, including developing criteria and guidelines for access to acute endoscopy.

146. However, at the time of Mr B's admission to the ward, the DHB did not have clear guidelines or clinical criteria for gastroscopy referral. Nor was there a clear protocol

[30] Opinion 09HDC00836 (3 February 2010), pp 6–7.

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in place to assist and guide staff adequately in reviewing and managing the risk to an acute patient thought to have an upper GI bleed, whose management would likely require medical and surgical team co-operation. The result was that Mr B did not receive the care and management he required. In my opinion, Northland DHB breached Right 4(1) of the Code.[31]

Opinion: Dr A

147. Dr A was the consultant physician responsible for Mr B's care and treatment during his admission to Whangarei Hospital.

Initial examination — Breach

148. Dr A first assessed Mr B on a late morning post-acute ward round on Sunday, approximately 22 hours after Mr B's admission to the ward. Dr A said that Mr B's history was checked, a physical examination was performed, test results were reviewed, and differential diagnoses were discussed with Mr B and his wife. Dr A said that although he considered alternative diagnoses, his initial impression on Sunday was that Mr B had had an upper gastrointestinal bleed.

149. Mrs B, however, does not recall any test result discussion, except regarding the X-ray, or any management plan discussion. Furthermore, no physical examination, consideration of differential diagnoses, or discussion with Mr and Mrs B about the assessment, options and management plans, is recorded in the notes.

150. Documentation of the ward round assessment on Sunday was recorded by house surgeon Dr C. Dr Spriggs commented that it is accepted practice that the house officer documents consultations during senior medical officer ward rounds; however, the responsibility for the content of what is written in the notes remains with the senior medical officer. Dr Spriggs also noted that it would be unusual for a house officer not to record any of the physical examination or discussion.

151. HDC has made numerous comments in previous reports stressing the importance of the accuracy of the medical record.[32] In *Patient A v Nelson-Marlborough District Health Board*,[33] Judge Baragwanath noted that it is through the medical record that doctors have the power to produce definitive proof of a particular matter. As previously noted by this Office, doctors whose evidence is based solely on their subsequent recollections (in the absence of written records offering definitive proof) may find their evidence discounted.[34]

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[31] Right 4(1) of the Code states: "Every consumer has the right to have services provided with reasonable care and skill."

[32] For example: 10HDC00610, 09HDC01765, 08HDC10236, 06HDC12164, 04HDC17230, 03HDC11066 and 01HDC04847.

[33] (HC BLE CIV-2003-204-14, 15 March 2005.)

[34] See opinion 05HDC07699.

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152. In this case, I consider that the lack of documentation of a physical examination, consideration of alternative diagnoses, and discussion with Mr and Mrs B, likely indicates that these did not, in fact, take place. My conclusion on this point is also reinforced by Mrs B's lack of recollection of any such discussion.

153. Dr A arranged for a gastroscopy to confirm or exclude a gullet or stomach cause for Mr B's symptoms, and noted that if the gastroscopy was negative, then other investigations would be indicated. Dr A advised that he did not ask for formal surgical review of Mr B because he did not consider that Mr B was at high risk or that Mr B required surgical treatment.

154. Dr Spriggs advised that on Sunday it was reasonable for Dr A to consider a diagnosis of bleeding peptic ulcer, and that a gastroscopy was the appropriate investigation. However, Dr Spriggs advised that Mr B's presentation was atypical, and that Dr A should also have considered alternative diagnoses and other clinical investigations such as a lateral chest X-ray, CT of the chest, and urgent surgical review. From the time of Mr B's admission to the ward on Saturday, to the time of Dr A's review of Mr B on Sunday, Mr B was noted to be nauseated, vomiting (including half a cup of blood-tinged vomitis at 3.45pm on Saturday) and suffering back pain. Dr Spriggs advised that Mr B's ongoing vomiting and severe back pain should have alerted the medical team to alternative diagnoses.

155. I accept my expert's advice that it would have been appropriate for Dr A to consider alternative diagnoses and other clinical investigations during his ward round on Sunday. There is no evidence in the clinical record that Dr A did so.

Gastroscopy instruction — No breach

156. There are differing accounts of the exact nature of Dr A's instructions given on Sunday morning regarding the gastroscopy. Dr A initially responded that there was no discussion with him about the appropriateness of the placement of Mr B on the Monday list, and that he felt the gastroscopy should ideally have been performed early on Sunday. Dr A advised HDC that the localisation of an acute upper gastrointestinal bleed is much more difficult to establish 24 hours after the onset. However, he later responded that he was aware that it might not be possible for Mr B to have the gastroscopy on Sunday, and that he indicated to Dr C that if Mr B's condition did not deteriorate it would be acceptable for the gastroscopy to be performed on the Monday morning. Dr A could not recall what specific instructions he gave regarding making Mr B nil by mouth; however, the notes Dr C took during the Sunday ward round record that Mr B was to be nil by mouth from 2am that evening.

157. Mrs B's recollection, the DHB response, Dr C's recollection, and the contemporaneous clinical record indicate that the gastroscopy was planned for Monday. In addition, the gastroscopy booking form, which was completed by Dr C, indicated that Mr B had an acuity category of 4, which meant that gastroscopy should occur within 24 hours.

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158. Dr Spriggs advised that:

> "[i]f [Dr A] believed that the underlying problem was gastrointestinal haemorrhage then deferring the gastroscopy for a further 24 hours was reasonable as there were no high risk signs".

159. If Dr A's intention was that the gastroscopy be performed on Sunday, it appears that he did not communicate that intention clearly to Dr C. Furthermore, if Dr A had intended the gastroscopy to be performed on Sunday, he should have followed up with his staff on the outcome of the gastroscopy. There is no evidence that he did so. In any event, I accept that, clinically, it was reasonable for the gastroscopy to take place on Monday morning, given Mr B's stable condition at that time.

Ongoing management and diagnosis — Breach

160. Mr B's recorded observations on Sunday remained stable. However, as documented by the nursing staff, Mr B continued to experience severe back pain and vomiting. No fresh blood was noted in Mr B's vomit, which was described on that day as follows: "dark coloured";[35] "last 3x [no] blood/coffee grounds";[36] "clear fluid";[37] "blackish";[38] and "black gastric juice, foul smelling".[39]

161. Dr C reviewed Mr B at 4.15pm and discussed the proposed gastroscopy with surgical registrar Dr D. A medical registrar, Dr G, reviewed Mr B at 8.30pm as he was in pain and vomiting. It was noted at that time that Mr B's abdominal examination was normal, with active bowel sounds, and that his haemoglobin was stable. Mr B's raised blood pressure, pain and vomiting was attributed to a bleeding ulcer.

162. Dr A was not asked to review Mr B again on Sunday.

163. Mr B was reviewed on Dr A's Monday ward round at around 9am. Dr A initially advised HDC that "although [Mr B] had continued to vomit", his observations were stable and he had no other new symptoms to point to a diagnosis outside his upper GI tract. Dr A subsequently stated, in his response to the provisional opinion, that "the symptom of ongoing vomiting was not present". However, the contemporaneous notes clearly record that Mr B was vomiting that morning.

164. Dr A's assessment was that Mr B had a form of gastritis or an ulcer, which was not actively bleeding, and the plan was to continue with the gastroscopy.

165. Dr Spriggs advised that although Mr B's observations on Sunday remained stable and satisfactory, the nursing comments regarding ongoing vomiting and back pain should have alerted nursing and medical staff to other potential diagnoses, including other surgical catastrophes. Dr Spriggs noted that there was no clear evidence of ongoing

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[35] Noted at 2.45pm on Sunday.
[36] Noted at 4.15pm on Sunday.
[37] Noted at 6.30pm on Sunday.
[38] Noted at 8.30pm and 10.50pm on Sunday.
[39] Noted at 5am on Monday.

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bleeding after Mr B's initial vomit of a half cup of blood-tinged vomitus at 3.34pm on Saturday. Dr Spriggs stated, "To persist with the diagnosis of bleeding peptic ulcer in the absence of significant amounts of fresh blood in the vomitus, a drop in haemoglobin or melena was not appropriate."

166. Dr A advised HDC that given that his physical examination of Mr B was unremarkable, he considered that other differential diagnoses were unlikely. Dr A further advised that the diagnosis of upper gastrointestinal bleed was the first to be confirmed or excluded, because a bleed could have major therapeutic consequences. He noted that if a gastroscopy had been performed and an upper gastrointestinal bleed excluded, then other causes of Mr B's symptoms would have been investigated by way of imaging, including a CT scan. Again, there is nothing documented in the clinical records for this ward round regarding any consideration of other diagnoses. I accept Dr Spriggs' advice that it would have been appropriate for Dr A to reconsider his diagnosis of upper GI bleed at that time.

167. By early Monday afternoon, the records show that Mr B's observations and condition had worsened.

168. At 1.55pm, Mr B's oxygen saturation levels dropped. He was noted to be tachycardic, drowsy, and had decreased air entry at the right lung base. The impression was that Mr B might have aspiration pneumonia, and this was discussed with Dr A. The plan was to take blood cultures, supply oxygen (to keep saturation above 90%), commence IV antibiotics and defer the gastroscopy for 48 hours.

169. As noted by Dr Spriggs, on Monday Mr B was clearly unstable, and his condition was deteriorating. I accept Dr Spriggs' advice that, at that point in the afternoon, a gastroscopy was no longer appropriate. Dr Spriggs noted that Mr B's deteriorating observations were "attributed to aspiration pneumonia despite the chest X-ray not confirming this and the signs in the chest being minimal". Dr Spriggs noted again that there appeared to be no consideration of alternative diagnoses, and it would have been appropriate to seek surgical and ICU advice at that time. Indeed, Dr Spriggs noted that, in his opinion, there should have been sufficient concern about Mr B's condition to request a surgical review of Mr B as early as Sunday afternoon.

170. The contemporaneous clinical record indicates that both Drs E and F discussed Mr B's condition with Dr A. Dr A had also seen Mr B earlier in the morning on the ward round and was aware of his condition.

171. Dr Spriggs considered that the monitoring of Mr B and his observations were satisfactory. Dr Spriggs also commented that the description of the vomitus varied, but that it was described by both nurses and doctors as foul smelling and faeculant at various stages. This important clue was noted, but not followed up on.

172. I accept my advisor's advice that Dr A should have considered differential diagnoses and other clinical investigations, including surgical review, during his assessments of Mr B. Dr A missed several opportunities to do so on both Sunday and Monday. Despite the absence of major haematemesis, a fall in haemoglobin, or melaena, he

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continued to believe that Mr B had an upper gastrointestinal bleed, and did not adequately consider different diagnoses despite indications that a review of his patient was warranted.

173. Dr Spriggs commented that the clinical team's diagnostic reasoning may have become fixed by the blood-tinged vomitus on Saturday morning, and that the presumed diagnosis of GI bleeding accordingly influenced the medical team's interpretation of Mr B's ongoing vomiting and his subsequent care. This case illustrates the need for clinicians to be alert to the possibility that diagnoses may need to be revised as conditions and symptoms develop.

Conclusion — Dr A

174. Dr A held primary responsibility for the care of Mr B during his admission. Dr Spriggs concluded:

> "I consider that [Dr A's] care of [Mr B] was significantly below the standard expected of a Consultant Physician and I believe that his colleagues would consider that departure with moderate disapproval."

175. After reviewing Dr A's further response to HDC, Dr Spriggs continued to believe that the care provided was significantly below the standard expected, but felt that Dr A's colleagues would now consider the departure with mild disapproval. Dr Spriggs confirmed to HDC that his revision of the severity with which he considers Dr A departed from expected standards was based on the actions Dr A has taken in response to the complaint to improve his practice.

176. When investigating a complaint I take into account the appropriateness of the care and treatment provided at the time. While I strongly encourage providers to reflect on complaints and make changes to improve their practice, any subsequent changes made to a practitioner's practice are not relevant to the severity of the departure at the time; however, those changes are relevant to any recommendations I may make.

177. No differential diagnoses, or consideration of further investigations, including surgical review, were documented during Mr B's admission. Dr A persisted with a diagnosis of GI bleeding, despite indications that Mr B's presentation was atypical on Sunday and Monday. Dr A missed several opportunities to question and review his diagnosis and to consider the appropriateness of further clinical investigations. In my opinion, Dr A did not provide services to Mr B of an appropriate standard, and breached Right 4(1) of the Code.[40]

[40] Right 4(1) of the Code states: "Every consumer has the right to services provided with reasonable care and skill."

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Recommendations

178. I recommend that Northland District Health Board, in light of this report and my expert's comments, and as part of its quality improvement process, update and report to HDC by **30 July 2012**, the following:

1. Action taken as a result of the DHB review of demands and prioritisation relating to provision of acute endoscopy services and diagnostic imaging "out of hours";
2. Steps taken to develop a written protocol for management of acute upper GI bleeding;
3. The development of specific guidelines (including risk stratification) regarding clinical criteria for gastroscopy referral;
4. The progress and effectiveness of the ongoing development of the Early Warning Score;
5. Guidance provided to staff around managing deteriorating patients and escalating management to more senior staff where appropriate;
6. Action taken by the DHB as an employer to ensure it promotes a culture in which junior staff are encouraged to seek the advice of senior colleagues and to obtain timely senior review;
7. The effectiveness of the implementation of an "acute surgeon of the week" and criteria for referral to the surgical team;
8. The effectiveness of the introduction of an evening "ready response" nurse and additional overnight ICU registrar positions;
9. Steps taken to remind and educate staff about the importance of maintaining an open mind when a clinical course does not fit an expected pattern;
10. Progress made by the Medical Executive Leadership Team to improve co-ordination of care across specialties; and
11. Steps taken to educate staff regarding the accuracy of death certification, as in the Ministry of Health's "Guide to Certifying Causes of Death" document.

Follow-up actions

- A copy of this report with details identifying the parties removed, except the expert who advised on this case and Northland DHB, will be sent to the Medical Council of New Zealand. The Council will be advised of Dr A's name.

- A copy of this report with details identifying the parties removed (except Northland DHB, Whangarei Hospital, and the expert who advised on this case) will be sent to DHBNZ, the Director-General of Health, and the Royal Australasian College of Physicians, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Independent expert advice — Physician

The following expert advice was obtained from a General Physician, Dr David Spriggs.

"I have been asked to provide an opinion to the Commissioner on Case Number 09/02089. I have read and agreed to follow the Commissioner's guidelines for Independent Advisors. I practise as a General Physician and a Geriatrician at Auckland District Health Board. I am vocationally registered in Internal Medicine and have been a fellow of the Royal Australasian College of Physicians since 1993.

I have been asked to comment on the following:

1. Please comment generally on the overall standard and appropriateness of care provided to [Mr B] by Northland DHB.
2. Was [Mr B's] condition investigated and managed in a timely and appropriate manner during his admission?

(If not covered above, please answer the following questions with reasons for your views.)

3. In your view, was it reasonable for initial management of [Mr B] to be focused on Acute Coronary Syndrome?
4. The initial medical team's assessment (at 1300 hrs on [Saturday] — four hours after being referred to the medical team from ED) considered [Mr B] had an upper GI bleed and should be admitted to a medical ward. Was this assessment appropriate?
5. Do you consider that the DHB should have a written protocol for management of acute upper GI bleed?
6. Was it reasonable for the consultant physician, when first reviewing [Mr B] at 11.45am on [Sunday], to consider a diagnosis of a bleeding ulcer and then request an acute gastroscopy?
7. Was discussing the case with the surgical registrar later that day adequate in these circumstances, or should [Mr B] have been reviewed by the surgical registrar? Was it reasonable in the clinical circumstances for the surgical registrar to advise a diagnosis of Acending (sic) Aortic Aneurysm be considered?
8. Was it appropriate for the first requested acute gastroscopy booking to have been deferred to [Monday], and is the rationale given for doing so (that [Mr B] was sufficiently stable) reasonable?
9. Do you consider that while uncomfortable, the patient's "vital observations remained satisfactory" on [Sunday]?
10. Do you agree that [Mr B's] condition was too unstable on [Monday] to proceed with gastroscopy, which had been recommended for a second time by the consultant physician? Was further deferral warranted?

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11. Were the actions taken on [Monday] appropriate and timely in response to [Mr B's] changes in blood pressure and oxygen saturation, as well as the chest X-ray findings?
12. The radiologist's recommendations for further chest films were not available until the Monday (as the initial films were taken on a Saturday). Do you consider this delay contributed to [Mr B's] deterioration in any way?
13. In your view, should a diagnosis of an upper GI bleed have been revised in light of the frequency and nature of [Mr B's] vomiting? Based on the information available, do you consider the vomiting symptoms described to be of a faeculent or altered blood nature?
14. What is the likelihood that a presumed diagnosis of GI bleeding affected staff interpretation of the vomitus they observed?
15. Was the medical team's management and reaction to [Mr B's] deteriorating condition late on [Monday] appropriate, or should the team have sought further discussion with consultant physicians and/or referred him to ICU given the clinical picture at that time?
16. At what stage do you consider the clinical picture observed prompted consultant review and/or referral to ICU?
17. Please comment on the standard of staff calculation and response to abnormal Early Warning Scores (EWS) in this case.
18. Should an abdominal X-ray have been ordered sooner once a gastrointestinal cause was considered? Would it have helped clarify a diagnosis?
19. Should the medical team have considered any other diagnoses in this case?
20. Should IV fluids have been commenced earlier by the medical team? If so at what stage?
21. Should a nasogastric tube have been trialled earlier?
22. How much significance do you place on the standard of medical ward nursing observations and interpretation (especially those of the vomitus), as well as completion of fluid balance charts, as contributing factors in establishing a diagnosis in this case?
23. Should specific instructions have been given to nursing staff regarding monitoring [Mr B] and if so, by whom and when?
24. Please comment on the overall effectiveness of communication between staff at Whangarei Hospital in relation to the coordination and management of [Mr B's] care.
25. Are there any systemic or provision of service issues of note affecting [Mr B's] care that you consider warrant comment?
26. Please comment on the appropriateness of the series of remedial actions subsequently taken by Northland DHB and as a result of this complaint.
27. In your view, have the concerns raised about [Mr B's] care been adequately addressed by the DHB? Please outline any recommendations you may have to address any issues raised by this case.

[Documents reviewed were listed here by Dr Spriggs. These have been omitted for the purpose of brevity.]

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Summary of Events:

At 0220 on [Saturday] an ambulance was dispatched to [Mr B] at the request of his wife. About midnight [Mr B] had developed chest pain described as 'a tight band underneath both breasts'. The pain was radiating into the left shoulder and through to the left back. It was worse on breathing. Initial observations by the ambulance staff showed that his vital signs were satisfactory. He was in considerable pain rated at 7/10. [Mr B] was noted to be suffering from an hiatus hernia, that had apparently been confirmed on endoscopy 8 years previously and had previously had a peptic ulcer which had bled. He had a fatty liver and was known to be dyslipidaemic and was an ex-smoker. He had been assessed by his GP on [a few days earlier] and was found to be at high cardiovascular risk and had been started on low dose aspirin. The ambulance staff note that the symptoms of his hiatus hernia 'were not like this'. The ambulance staff treated him as an acute coronary syndrome with GTN, which did not help the pain, aspirin 300 mg and oxygen. He was also given morphine in 2 doses to relieve the pain.

On arrival at ED he was triaged at 0300 hours, his blood pressure was 88/53 in the right arm and 94/61 in the left arm. He scored 6–7/10 on the pain scale. His other observations were satisfactory. The ED assessment is in the form of a discharge summary. The only addition to the history from the ambulance staff was of vomiting and sweating. The ECG was essentially satisfactory as was the admission troponin. He had a chest X-ray presumably [read as] showing an hiatus hernia. He became pain free after about 20 minutes but then vomited and had further pain. He was monitored and given Clexane in the usual dose of 1 mg/kg as there was a high index of suspicion for cardiac pain. His routine blood tests at 0600 hours were satisfactory with a haemoglobin of 157 g/l. At 0800 hours he had a further bout of chest pain and vomiting. He also coughed up a small amount of blood stained sputum and he was referred to the Medical Team. At 0830 he vomited again some fresh blood, his observations were stable.

[Mr B] was then transferred to [the ward] under General Medicine ([Dr A]). I think it was at this stage that he came off telemetry. He was clerked by [Dr G] at 1300 hours on [Saturday]. The history and examination had not changed significantly. The abdomen was soft and non tender. The chest x-ray is recorded as showing 'no widening mediastinum, no consolidation. A hiatus hernia'. Both troponins were negative. At 1545 hours the nursing notes say that he was nauseated, had further back pain and was given morphine and metoclopramide. He vomited '1/2 a cup of blood tinged vomitus' and then settled. He was mobilising independently. He further vomited at 1745 hours what was said to be 'coffee ground'. His blood pressure rose at 2030 hours to 192/112 and at that time the House Officer was called as he was still having 'haematemesis'. The morphine was increased, he was given IV Omeprazole and changed to Ondansetron. It was felt that the high blood pressure was a reflection of the pain. At 0150 on [Sunday] the House Officer reviewed him as he was not able to take fluids. He continued to vomit 'coffee ground'. His abdomen was soft and non tender. His observations showed some mild hypertension at 162/108, heart rate

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102. He was considered to be haemodynamically stable and the blood in the vomit was explained by the use of anticoagulation. At that stage he had received one dose of Clexane and his aspirin. The nursing notes overnight describe an unsettled night with further haematemesis. At 1145 hours he was reviewed on the Consultant Ward Round and his observations were noted. There is no account of physical examination. The impression was '?ulcer' and the plan was for life long Losec and gastroscopy 'on acute list'. He was able to eat and drink and was to be put nil by mouth from 2.00 o'clock the following morning presumably for a gastroscopy the following day. I assume that the plan was to continue with the IV fluids which had been started overnight. At 1615 he was again reviewed by the House Officer with raised blood pressure. His vomiting was said to be improving and on the last three occasions his vomit did not contain any blood or coffee grounds. It was felt the BP was elevated secondary to pain and his morphine was changed to Fentanyl. At that stage the House Officer discussed with the On Call Surgical Registrar the need for gastroscopy. The Surgical Registrar suggested that they exclude an aortic aneurysm as the cause of the back pain. Abdominal examination was repeated which was normal. At 2030 hours [Mr B] was assessed again by the Medical Registrar with ongoing pain and vomiting. The vomit was described by the nurse as 'blackish'. The haemoglobin was stable and the Registrar thought that it was unlikely that there was an aneurysmal rupture. He put down the raised blood pressure, pain and vomiting to an ulcer bleed and arranged for 2 units of fresh frozen plasma to be given.

[Mr B] continued to vomit overnight and by 0500 hours the vomit was 'foul smelling'. He was reviewed by [Dr A] at 0900 hours, the vomit was said to be 'mucousy-coffee ground', the bowels had not opened and the observations at that stage were satisfactory. It was decided to proceed to a gastroscopy however at 1140 hours [Mr B] developed a fever and at 1355 hours he suddenly desaturated down to 78% on 6 litres of oxygen. At that stage he had become tachycardic at 110 bpm, he was drowsy, he was said to have decreased air entry at the right base with normal heart sounds. There were no wheezes. The chest x-ray was reviewed with [Dr A]. He saw a very large hiatus hernia and increased opacity of the left base. The impression was 'aspiration ?left pneumonia'. At 1420 hours there was a further discussion with [Dr A], it was decided to treat him with him with empiric antibiotics, oxygen supplementation and to defer the gastroscopy which had been planned for that day. He continued to vomit coffee coloured and offensive material and had severe pain 8/10 in his stomach. At 1630 hours the observations recorded would suggest that he would score 6 on the Early Warning Score, however this was calculated as 4. He was however referred to the Medical Registrar at that time. He remained feverish, tachycardic, requiring high dose oxygen and at this stage had crackles at the right base. At 1837 hours he was requiring 15 litres of oxygen and remained hypoxic with a PO2 of 77mmHg. The Medical Registrar was informed by the House Officer who had considered the need to refer to ICU. By 0200 hours on [Tuesday] he was becoming more hypoxic and when reviewed by the Night House Officer he was vomiting 'faecal material', his haemoglobin remained stable and a chest x-ray did not suggest any heart failure. The House Officer considered a bowel obstruction and suggested

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the team review his abdomen in the morning and perform a chest and abdominal x-ray, 'if [Mr B] continues to have vomiting consider NGT'. By 0600 hours he was continuing to vomit and it was decided to place an NG tube which resulted in further vomiting, he was taken to the shower and at 0630 hours he developed massive faecal smelling haematemesis and became unresponsive. A cardiac arrest was called which was unsuccessful.

In the morning [Dr A] spoke to [Mr B's] wife on the phone, expressed his sympathy and discussed the need for a post mortem. It was decided not to proceed with this. The Death Certificate has cause of death:

1. (a) Exsanguination 30 minutes
   (b) Gastric ulcer disease
   (c) Hiatus hernia

On reviewing the investigations, at no stage was there a significant drop in [Mr B's] haemoglobin, he was not coagulopathic, the biochemistry was essentially satisfactory although his creatinine did rise slightly during his admission to a peak of 126 mmol/L, his liver function tests on admission were essentially satisfactory, the last liver function tests available showed a significant elevation in his transaminases. The chest x-ray from 03.32hrs [Saturday] was reported at 09.36 on [Monday] as 'unusual appearances at the left heart border, there appears to be a gas shadow peripheral to the cardiac contour — differential diagnosis would include hiatus hernia but in the first instance follow up examination with a lateral projection is recommended …". The repeat x-ray on [Monday] was reported as essentially unchanged.

<u>Advice to Commissioner:</u>

1. The overall standard and appropriateness of care provided to [Mr B] by Northland DHB is suboptimal for the reasons discussed below.
2. The initial investigation and management of [Mr B] as a suspected acute coronary syndrome was satisfactory and in keeping with usual guidelines. It was reasonable to suggest that the initial vomiting was secondary to the morphine and that the fresh blood [was] secondary to a small oesophageal tear. However the ongoing vomiting with severe back pain should have alerted the Medical Team to alternative diagnoses. To persist with the diagnosis of bleeding peptic ulcer in the absence of significant amounts of fresh blood in the vomitus, a drop in haemoglobin or melena was not appropriate (see 13 below). While there is disagreement about the nature of the vomit there seems to be absolute agreement that it was foul smelling. This is not a characteristic of altered blood in the vomit. While I accept that the x-ray report may not have been available to the clinical team there was no consideration of alternative diagnoses for the abnormal retro-cardiac shadow and this was assumed to present an uncomplicated hiatus hernia. Further investigations were not undertaken on the day of admission. A lateral chest x-ray was not considered necessary. His general condition was stable such

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that an acute weekend gastroscopy was felt to be unnecessary. It is not clear who made this decision, it was discussed with the Surgical Registrar who did not assess the patient but felt that an abdominal aortic aneurysm needed to be excluded. Chest pain, thoracic back pain and vomiting would be a very unusual presentation of such an aneurysm. It may be that he was considering a thoracic aortic aneurysm in which case a CT scan is the appropriate investigation. I am uncertain as to whether such a scan was available on [Sunday]. Despite the persistent vomiting without fresh blood the diagnosis of bleeding peptic ulcer was retained and other surgical catastrophes were not considered. He was not made nil by mouth or given a nasogastric tube. Both of these could have been considered as appropriate management of intractable vomiting as early [as] [Sunday morning].

3. It was reasonable for the initial management of [Mr B] to be focused on an acute coronary syndrome.
4. Admission to the Medical Ward rather than a Surgical Ward was appropriate at 1300 hours on [Saturday], as it was felt that [Mr B] had an upper GI bleed. At that stage such a diagnosis was tenable. His early assessment on the Medical Ward was satisfactory.
5. It is common practice to have guidelines for the management of acute upper gastrointestinal bleeding available to nurses and junior doctors. This is particularly important when the management of such patients depends on the co-operation of General Medicine and Surgery. It is usual in New Zealand for such patients to be admitted under the Medical Service however there needs to be a clear referral system based on set clinical criteria for gastroscopy. Such criteria need to stratify the risk to the patient of the upper GI bleed.
6. It was reasonable for [Dr A] to consider a diagnosis of bleeding peptic ulcer on [Sunday morning]. A gastroscopy is the appropriate investigation. However [Dr A] should have considered alternative diagnoses as the presentation was atypical. A lateral chest x-ray, CT chest and urgent surgical review might all have been considered appropriate.
7. I am uncertain as to the nature of the consultation with the Surgical Registrar. If he believed this patient had an abdominal aortic aneurysm he should have seen the patient urgently, however that diagnosis would have been very unusual (see 2 above). If the Medical House Officer requests a surgical review the Surgical Registrar must see the patient. However it may be that the Medical House Officer merely asked for a gastroscopy and was following the usual referral lines without asking for a clinical opinion or other advice.
8. When [Dr A] asked for an 'acute gastroscopy' on [Sunday] he intended that this be the following day as he instructed that the patient be 'NBM from 0200 tonight'. [Mr B's] observations were stable although he was persistently vomiting. This was the first assessment by a Consultant Physician about 34 hours after [Mr B's] admission to the hospital. The notes do not record [Dr A] examining [Mr B]. If [Dr A] believed that the underlying problem was gastrointestinal haemorrhage then deferring the gastroscopy for a further 24 hours was reasonable as there were no high risk signs.

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9. The recorded observations on [Mr B] on [Sunday] are stable and satisfactory. However the nursing comments of continued severe back pain and intractable vomiting despite standard management should have alerted the medical and nursing staff to other potential diagnoses.
10. By [Monday] [Mr B] was clearly in an unstable condition and gastroscopy was no longer appropriate.
11. By 1355 hours on [Monday] [Mr B's] observations were clearly deteriorating. This was attributed to an aspiration pneumonia despite the chest x-ray not confirming this and the signs in the chest being minimal. There seems to have been no consideration of alternative diagnoses at that stage.
12. Had the radiologist report been available to the medical team on the day of admission they may have performed a lateral chest x-ray and other differential diagnoses may have been considered. I have not seen the x-ray and I cannot comment on the appropriateness of the interpretation of the x-ray by [Dr A] as an hiatus hernia. The radiologist did not think this was definitely the case.
13. It is clear that the medical team continued to believe that [Mr B] had an upper gastrointestinal bleed despite the absence of major haematemesis, a fall in haemoglobin or melena. Altered gastric blood does not smell foul or feculent. Such cognitive errors are common, in one study contributing to 32% of all diagnostic errors (Schiff, *Arch Intern Med* 2009; 169: 1881–1887). Premature Closure, which is the failure to consider other possibilities once an initial diagnosis has been made, is probably the commonest type of cognitive diagnostic error (Graber, *Arch Intern Med.* 2005;165:1493—1499). It may also be that the clinical team's diagnostic reasoning had become fixed by the blood tinged vomit on the morning of 11th. This 'Anchoring Heuristic' is a common source of diagnostic error (Scott, *BMJ* 2009;338:b1860).
14. It is very likely that the presumed diagnosis of GI bleeding influenced the interpretation of the vomit and all the subsequent care of [Mr B] (see 13 above).
15. By [Monday] [Mr B's] observations were clearly deteriorating and it would have been appropriate to seek surgical and ICU advice at that stage.
16. By 1355 hours on [Monday] [Mr B] was clearly deteriorating. At that stage he was discussed with [Dr A]. By 1910 hrs things had deteriorated further and the house officer discussed the plan with the Medical registrar who did not review him. No other senior doctor reviewed [Mr B]. At that stage there should have been a discussion with [Dr A] and a senior clinical review and consideration of ICU input. The HDC has made previous recommendations about the apparent reluctance of junior doctors to call their seniors.
17. The calculation of the early warning scores is inaccurate. However I do not think that this influenced the outcome as [Mr B] was being frequently reviewed by Junior Doctors.
18. For reasons stated above (2 and 12) further radiology of the chest either lateral chest x-ray or CT scan was indicated. The abdomen was clinically soft with normal bowel sounds. A plain abdominal film may not have been clinically indicated.

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19. The Medical Team should have considered alternative diagnoses at least at the time of the first consultant review at 1145 hours on [Sunday] (see 13 above).
20. IV fluids were started at 0150 on [Sunday] in response to [Mr B] being unable to take in oral fluids. There was no indication for doing so earlier.
21. The indication for the NG tube was to relieve intractable vomiting secondary to gastric distension as described in the NDHB nursing guidelines. It is a very common intervention on surgical wards but is not frequently used in medicine, primarily because vomiting due to medical causes usually responds to other treatment. In [Mr B's] case, it would have been reasonable to consider such a tube on the morning of 12th (see 2 above). Had the doctors considered alternative diagnoses or the patient had been reviewed by a surgeon, it is likely that consideration would have been given to earlier NG tube placement.
22. The nursing observations were done appropriately. The description of the vomit varies however both nurses and doctors describe the vomit as foul smelling and faeculent at various stages. This important clue was noted but either ignored or misinterpreted.
23. The monitoring of [Mr B] was satisfactory.
24. There was a failure to communicate clearly with the Surgical Team. There should have been sufficient concern about [Mr B's] deterioration to request a surgical review as early as the afternoon of 12th. There was a failure to consult [Dr A] by the House Officer and Registrar when things deteriorated (see 16 above). The documented communication between the nurses and the medical staff is satisfactory although I could speculate that, if this had occurred during the week, there would have been more senior nursing staff and they may have felt empowered to call the senior medical staff earlier.
25. The provision of weekend medical care for acutely ill patients in New Zealand hospitals is problematic. Our hospitals run on a 5 day a week model. With the exception of Emergency Departments, Intensive Care Units, Obstetrics and some Anaesthetic Units, most departments consider weekend work as 'extra'. This inevitably means that the services are suboptimal. [Mr B] was admitted early on a Saturday morning and was not assessed by a Senior Physician for another 34 hours. He did not receive a gastroscopy within 24 hours of admission which would be a usual week day standard, he did not receive a surgical review, he received a PA Chest X-ray which was not reported for a further 48 hours and did not receive further radiologic imaging. All of these are likely to have occurred had he been admitted on a week day. This issue is certainly not unique to Whangarei Hospital. Other systemic issues include protocols for referral to surgery for gastroscopy and communication between the General Medical and Surgical Services generally. I consider the early warning system, although not working perfectly, to have been effective in identifying the severity of [Mr B's] illness.
26. The response from [the DHB CMO] is full. The following points need to be made:

HDC

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1) There are some errors in detail. The Clexane was started in the Emergency Department when the working diagnosis was acute coronary syndrome. This was stopped and replaced with Omeprazole when it was felt that [Mr B] was bleeding into his stomach. The x-ray which was repeated on [Monday] did not show more shadowing at the left base.
2) Many DHBs in New Zealand have, or are beginning to institute, Early Warning Scores. The issues facing Northland DHB are not unique and I believe that they are being addressed appropriately. It would be a mistake to think that Early Warning Scores in themselves are going to facilitate early referral to Intensive Care Units. The ‘failure to rescue’ [Mr B] should not be attributed to the failure of the Early Warning Score. I acknowledge that there is now ‘an evening “Ready Response” nurse and an additional night ICU Registrar’ both of which will help.
3) I agree with [the DHB CMO] that an earlier surgical review may have resulted in earlier placement of the NG tube.
4) I acknowledge that the accuracy of death certification is an issue, not only in New Zealand but elsewhere in the world. [Dr A] is clear that he discussed a post mortem with [Mrs B]. They jointly chose not to request one. The proposed cause of death, ‘exsanguination’ is not supported by the clinical data, and as stated by [the DHB CMO] the cause of death remains unclear.
5) While I acknowledge that providing co-ordinated care between departments is ‘a challenge’, there should be systems whereby surgeons and physicians can work jointly. I believe that senior medical and surgical staff need to be involved in such referrals. Leaving referrals to junior doctors over the phone will inevitably result in miscommunication. I am unclear at what stage [Dr A] became sufficiently concerned about [Mr B’s] progress that he felt surgical review was necessary. I believe that such a review could have been sought by [Sunday afternoon]. The proposed ‘acute surgeon of the week’ may improve such communication but this can only work if referrals are made appropriately. I hope that the newly formed Medical Executive Leadership Team will consider these issues.

27. Overall the response from Northland DHB is satisfactory.

My recommendations include:

a) The challenge of providing acute services including diagnostic imaging ‘out of hours’ needs to be addressed by each DHB.

b) There needs to be a protocol and process for ordering gastroscopy examinations. Such protocols need to ensure that the patients are appropriately risk stratified. It must distinguish between requesting an investigation and requesting a clinical opinion.

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c) Clinical staff need to be reminded and educated about the importance of keeping an open mind when the clinical course does not fit the expected pattern of illness.

d) Junior doctors must be encouraged to seek advice of senior colleagues.

e) The importance of accurate death certification needs to be stressed as in the 'Guide to Certifying Causes of Death' from the Ministry of Health.

My considered opinion is that Northland DHB did not provide an appropriate standard of care and I believe that this is a moderately severe departure from the standard expected.

[Signed by Dr Spriggs]

David Spriggs, MBChB, MRCP(UK), FRACP, MD
General Physician and Geriatrician
General Medicine"

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Appendix B: Further expert advice

Dr Spriggs was provided with further information obtained during the course of the investigation and asked to provide any further comments.

> "Many thanks for asking me to review the responses from the doctors concerned following your enquiry into the care provided by Northland DHB into the death of [Mr B].
>
> [Documents reviewed were listed here. These have been omitted for the purpose of brevity.]
>
> In the light of these responses it is clear that the referral to the Surgical Registrar was not a request for a clinical opinion but a request to put [Mr B] on the early gastroscopy list for the following [Monday]. The surgical registrar offered a suggestion that the presentation might indicate abdominal aortic aneurysm but in no way was this offered as a formal clinical opinion.
>
> There is disagreement about the intentions of [Dr A] on his ward round at 1145 hours on [Saturday]. The clinical notes indicate that instruction was for a gastroscopy on the acute list and the patient was to be kept nil by mouth from 0200 hrs 'tonight'. This suggests to me that [Dr A] intended [Mr B] to be gastroscoped the following morning. In his response to your enquiry [Dr A] says that 'the gastroscopy should ideally have been performed early on [Sunday] and not booked for the next day!! The surgical registrar on call that day, who did not see the patient, postponed the gastroscopy without consulting me.' This suggests that [Dr A] believes that the gastroscopy should have been performed on the Sunday which is contradicted by the ward round notes. It is therefore uncertain what instructions were given on [Sunday morning]. It is certain that [Dr A] was not aware that the gastroscopy had not taken place on the Sunday.
>
> [Dr A] assures us that on his ward round, the history was checked, a physical examination was performed, the ECG, chest x-ray and lab results were reviewed and differential diagnosis was discussed with the patient and his wife. The only documentation is of a review of the history, [Mr B's] observations and 'Imp ?ulcer' as the diagnosis. This level of documentation is inadequate.
>
> In the light of the above information I do not think there is any need to change the recommendations I made in my [previous advice] and I believe that the standard of care given by Northland DHB to [Mr B] is inadequate and that this would be considered a moderately severe departure from the standard expected."

Dr Spriggs was asked his view on the practice of registrars and house officers taking notes for a consultant on ward rounds and where the responsibility for the accuracy of the documentation recorded lies.

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> "It is accepted practice that the HO does the writing on SMO ward rounds. The responsibility for the content of what is written is the SMO's … it would be unusual for the HO not to record any of the exam or discussion."

Dr Spriggs provided comment on the care provided by individual staff.

> "It seems that many of the problems that arose in the care of [Mr B] are 'systematic'. Some of the issues are difficult to attribute. For instance the 34 hour delay in getting a consultant Physician review may have been considered acceptable by the service or may have indicated a failure on the part of [Dr A] to see his patient in a timely manner. I can not make that judgement.
>
> Given the above caveats, I can make the following comments on the care delivered by the individual doctors concerned.
>
> [Dr A]. I consider that he holds primary responsibility for the care of [Mr B]. He did not see the patient for 34 hours. His documented assessment is inadequate and no differential diagnoses are given. He did not make clear that he wanted an acute gastroscopy on that day, indeed the indication in the notes are that he expected it to occur the following day. The diagnosis of Gastrointestinal bleeding was not reviewed even after [Mr B's] death when [Dr A] gave 'exsanguination' as the cause of death on the Death Certificate despite there being no clear evidence of on-going bleeding after the initial '1/2 cup of blood tinged vomitus' at 15.34 on [Saturday] approximately – many hours before [Mr B] died. For these reasons, I consider that [Dr A's] care of [Mr B] was significantly below the standard expected of a Consultant Physician and I believe that his colleagues would consider that departure as with moderate disapproval.
>
> [Dr C]. The record of the assessment by [Dr A] is inadequate but it is not clear how much reflects the failure of [Dr A] to communicate with [Dr C] or her failure to record the discussion. In my experience there is usually a contribution from both partners in this. I believe she was following the usual protocols in the referral for Gastroscopy. Her departure from expected practice was very mild if at all.
>
> [Dr D] was following the usual protocol and there is no reason to believe he behaved inappropriately."

In relation to the evening of the 12th, Dr Spriggs commented:

> "At that stage [Mr B] was clearly deteriorating and there should have been discussion with [Dr A] or some other senior doctor. I have discussed this failure to request senior support in my [previous report]. I feel that the individuals concerned must carry some responsibility. Their departure from standard practice is mild.
>
> [Dr I] reassessed [Mr B] overnight and felt that things were stable. He had received a handover at the start of the shift and there was, to the best of his

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recollection, no clear instructions to seek senior help. His plan was reasonable. His failure to escalate the issue was presumably because he felt that everything was under control, things remained stable [and] all was well. I do not think he can be criticised for that. However, his decision making is one of the examples of the systemic faults that allowed a man who was deteriorating to continue to decline without senior review."

Dr Spriggs provided further advice after reviewing [Dr A's] response to notification by the Commissioner.

"[Dr A] confirms the suggestion that I made in my [previous advice] that the delay in [Mr B] receiving a consultant physician review is at least in part due to problems within the system at Whangarei. [Dr A] states that the Emergency Department keeps patients 'for a period of observation and assessment of up to 24 hours'. Those patients remain under the responsibility of the Emergency Department until they are handed over to General Medicine. In [Mr B's] case he spent 10 hours in the Emergency Department under the care of the doctors there, he was then transferred in the early afternoon to the care of the physicians and was seen the following morning on the consultant ward round. This was within the expected time frame for medical review of acute patients at Whangarei.

[Dr A] acknowledges that the documentation of his ward round findings was substandard. I acknowledge that on a busy Sunday post acute round with a new house officer reviewing the ward round entries is not standard practice. There remains uncertainty about what instructions [Dr A] specifically gave about the timing of the gastroscopy. He states that '[Mr B] met the criteria for urgent (same day) endoscopy'. This did not occur and although it may have been delayed due to a failure by [Dr A] to state clearly that he expected a gastroscopy that day, I think it is likely that the Endoscopy Service did not provide this service at weekends and 'the pathway during the weekend or public holidays was that the endoscopy request was to be discussed with the surgical team on call'. In [Mr B's] case the house officer involved did discuss with the on call surgical registrar the need for the gastroscopy, however the surgical registrar appeared to consider that discussion a consultation rather than a request for the service. Once more this is more likely to reflect systemic problems rather than individual failings on behalf of the doctors concerned.

[Dr A] feels that he did think adequately and appropriately about differential diagnoses when he saw [Mr B], however these thoughts are not recorded in the clinical notes. [Dr A] also accepts that the accuracy of the Death Certificate is not sustainable. He did not review the Death Certificate and did not contact the Coroner and he acknowledges that 'perhaps with hindsight I might have done so'. He had talked to [Mrs B] who had already made plans for the transfer of the body to […] for cremation and he acknowledges that these plans which were already in place influenced his decision.

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[Dr A] has reflected appropriately on his part in the series of events leading to [Mr B's] death. He acknowledges that he has now 'improved my practice in the following ways:

(a) to ascertain that the right information is entered in the clinical notes when the documentation is made by a junior staff member;
(b) in cases where I am the responsible clinician and the patient is under my care dies, I review the death certificate wherever possible…;
(c) to discuss cases with my colleagues and the coroner in situations where no definite diagnosis has been made and there are issues that would likely be resolved by a post mortem'.

I continue to believe that [Dr A's] care of [Mr B] was significantly below the expected standard of a consultant physician. However, I now believe that his colleagues would consider that departure with only mild disapproval.

Once again I believe that the care provided by Northland DHB was below an appropriate standard of care. I believe that this is a moderately severe departure from the expected standard. In addition to my recommendations in my report of 6th September 2011, I believe the DHB needs to assess the processes when the patients admitted to ED need to be transferred to an inpatient service. It is not acceptable that patients stay under the care of the ED for up to 24 hours, are then referred to an inpatient department who might take a further 24 hours before they review the patient. I believe the new Ministry of Health Guidelines suggest a maximum of 6 hours in Emergency Department and it may be that since this event which is now 2½ years ago, these processes have been changed.

[Signed by Dr Spriggs]

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