

Waitematā District Health Board

A Report by the Health and Disability Commissioner

(Case 16HDC01642)

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Executive summary

1. On Month1¹ 2015, Mrs B (83 years old at the time of events) was admitted to a general medical ward at Hospital 1 for a relapse of Crohn's disease.² An inpatient colonoscopy was planned for 28 Month1, but her condition improved over the next couple of days and it was thought that an outpatient colonoscopy within two weeks would be appropriate. However, on 28 Month1, Mrs B developed further gastrointestinal symptoms, so an inpatient colonoscopy was rebooked for 31 Month1. Owing to a miscommunication about Mrs B's intolerance to the standard bowel preparation, the colonoscopy did not occur until 2 Month2.
2. On the evening of 6 Month2, Mrs B had an episode of per rectum³ bleeding. At 3.15pm on 7 Month2, Mrs B collapsed and was unconscious for approximately 30 seconds. The collapse was attributed to a vasovagal episode.⁴ Over the course of the day, Mrs B had nine episodes of per rectum bleeding, and lost approximately 50–100ml on each occasion. Attempts to transfuse red blood cells were made, but Mrs B's anaphylactic reactions⁵ prevented adequate replacement of her blood loss.
3. After 11.30pm on 7 Month2, the house officer and surgical registrar spoke with an interventional radiologist from another district health board (DHB2), to query the possibility of embolisation.⁶ Both the house officer and surgical registrar understood from their discussion with the interventional radiologist that Mrs B was not a suitable candidate for embolisation in view of her Crohn's colitis. The interventional radiologist stated that she did not exclude embolisation, but suggested that the surgical registrar assess Mrs B, and for there to be a discussion with the relevant medical and surgical consultants about all possible treatment strategies.
4. At 1.50am on 8 Month2 it was decided to continue with conservative measures and to proceed with surgery if Mrs B became more unwell. Mrs B became increasingly drowsy, and an emergency bell was activated at 3.20am. Following involvement of the consultant intensivist and consultant surgeon at approximately 4am, Mrs B underwent emergency surgery to control her bleeding.
5. Following the operation, Mrs B was transferred to the Intensive Care Unit (ICU). On 11 Month2, after consultation with Mrs B and her family, she was given palliative treatment, and she died on 15 Month2.

¹ Relevant months are referred to as Months 1–2 to protect privacy.

² A condition that causes swelling, thickening, and inflammation of the digestive system.

³ Passed through the rectum.

⁴ A fainting spell caused by a sudden drop in heart rate and blood pressure.

⁵ Severe, potentially life-threatening allergic reactions.

⁶ A procedure that stops bleeding by blocking a blood vessel.

Findings

6. The Commissioner was critical of the care provided by a number of Waitematā District Health Board (WDHB) staff. There was a preventable 48-hour delay in carrying out a colonoscopy, and an inadequate response to Mrs B's ongoing bleeding and transfusion reactions. Junior staff failed to escalate her condition to a consultant level, she was not admitted to ICU following the first emergency call, and poor decision-making led to delayed surgical intervention. For these reasons, the Commissioner found that WDHB did not provide services to Mrs B with reasonable care and skill and, accordingly, breached Right 4(1) of the Code.⁷
7. The Commissioner considered that the discussion with the interventional radiologist regarding the possibility of embolisation should have occurred at a consultant level, given the complexity of Mrs B's case. No finding was made on the advice imparted by the interventional radiologist.

Recommendations

8. It was recommended that WDHB (a) report back to HDC on its consideration of the expert advisor's suggestion that there should be a policy whereby all patients with gastrointestinal bleeding are made known to the surgical services; (b) conduct a random audit of documentation within the general medicine ward to ensure that treatment plans and discussions with other specialties are documented adequately; (c) provide a further update on the progress of the recommendations arising from its serious adverse event review, and in particular, its escalation pathways for deteriorating patients; and (d) provide Mrs B's family with a formal apology for the deficiencies in Mrs B's care.

Complaint and investigation

9. The Commissioner received a complaint from Mrs B's daughter about the services provided to her mother, Mrs B, by Waitematā District Health Board (WDHB). The following issue was identified for investigation:
 - *Whether Waitematā District Health Board provided Mrs B with an appropriate standard of care in 2015.*
10. The parties directly involved in the investigation were:

Mrs B's daughter	Complainant
Mrs B's second daughter	
Waitematā District Health Board	Provider

⁷ Right 4(1) of the Code states: "Every consumer has the right to have services provided with reasonable care and skill."

11. Further information was received from:

DHB2	Provider
Dr A	Interventional radiologist
Dr C	Consultant gastroenterologist
Dr D	Consultant surgeon
Dr E	Medical registrar
Dr F	House officer
Dr G	Senior general surgical registrar
Dr H	Medical registrar
Dr I	Haematologist
Dr J	Intensive Care Unit (ICU) consultant
Dr K	Medical registrar
Dr L	ICU registrar
Dr M	Surgical registrar

Also mentioned in this report:

Dr N	House officer
Dr O	External reviewer

12. Independent expert advice was obtained from Associate Professor Alan Fraser, a gastroenterologist, and is included as Appendix A. Independent expert advice was also obtained from Dr Gabriel Lau, a diagnostic and interventional radiologist, and is included as Appendix B.

Information gathered during investigation

Admission to hospital

13. On Month1, Mrs B (83 years old at the time of these events) was admitted to Hospital 1 with a three-week history of abdominal pain and diarrhoea 8–10 times a day. Mrs B was known to have Crohn's disease,⁸ and to have had a right hemicolectomy⁹ in 2012. She was on medication for hypertension and high cholesterol but had ceased taking immunosuppressant medication after a normal surveillance colonoscopy in December 2014.
14. On the basis of Mrs B's history, clinical findings, and blood tests, it was thought that she had had a relapse of Crohn's disease. She was admitted to a general medical ward and

⁸ A condition that causes swelling, thickening, and inflammation of the digestive system.

⁹ Removal of the ascending colon.

treated with intravenous (IV) hydrocortisone, IV fluids, analgesia, and prophylactic enoxaparin.¹⁰

Scheduling changes to inpatient colonoscopy

15. On 25 Month1, consultant gastroenterologist Dr C assessed Mrs B and made a plan to perform an inpatient colonoscopy on 28 Month1. Dr C stated that although it would have been ideal to perform a colonoscopy within 48 hours of admission, this was the earliest appointment available, given that Mrs B was admitted during a very busy winter.
16. By 27 Month1, Mrs B was feeling better and she reported that her bowels had opened only once the previous day. Her C-reactive protein had dropped to 34 (indicating that the inflammation was resolving), and tests for various microorganisms had been negative. The IV hydrocortisone was changed to oral prednisone 40mg, and it was decided that she would be reviewed the following morning with a view to discharge. The initial plan for an inpatient colonoscopy was changed to an outpatient colonoscopy within two weeks, as it was expected that Mrs B would be discharged.
17. On the afternoon of 28 Month1, Mrs B reported that she had had loose, watery diarrhoea, and had passed four bowel motions the previous day, and four so far that day. She also had abdominal pain requiring regular analgesia. Consequently, Mrs B was not discharged, and the colonoscopy was rebooked for 31 Month1. It was documented that previously Mrs B had experienced nausea and vomiting with the standard colonoscopy preparation (Glyco-prep).
18. Mrs B's intolerance of Glyco-prep was communicated to the Gastroenterology Department by the medical team's house officer. The Gastroenterology Department advised that Glyco-prep should be charted, and that this would be changed over the weekend. The medical team's registrar, Dr E, told HDC:

"I am unclear as to whom it was who gave this set of instructions to my house officer. Looking back, I should have sought clarification on the instructions or raised this with [Dr C], but due to my workload and time pressures, I did not do so."

19. A nursing entry on 29 Month1 indicates an attempt to follow up on the need for an alternative preparation. The nurse documented that nobody answered the telephone, and that staff were to continue to follow up. Subsequent entries in Mrs B's notes repeatedly refer to the need to follow up, but there is no record of any further attempts to arrange an alternative bowel preparation. Without the alternative bowel preparation, Mrs B was not able to undergo the colonoscopy on 31 Month1 as planned, and it was rescheduled for 2 Month2. WDHB stated:

"[The delay] should not have occurred. The staff involved acknowledge that if a patient has a history of intolerance to bowel preparation, instructions for alternative

¹⁰ An anti-clotting agent.

preparation need to be specific at the time of booking for the procedure and clarified if there is any confusion or uncertainty.”

31 Month1 to 6 Month2

20. An abdominal CT scan on 31 Month1 and biopsies from the colonoscopy on 2 Month2 were consistent with severe recurrent Crohn’s disease. IV hydrocortisone was restarted, and Mrs B was also given IV antibiotics. On 3 Month2, it was noted that Mrs B had ongoing diarrhoea and that she had had blood in her stool the previous day.
21. On 4 Month2, Mrs B was commenced on infliximab¹¹ treatment. Dr C explained that infliximab treatment was not started sooner because of the scheduling changes to the planned colonoscopy and the communication breakdown between the ward and the Gastroenterology Department, as detailed above.
22. Mrs B’s symptoms appeared to be abating with the administration of infliximab, and on 6 Month2 it was thought that she could be discharged the following day if she continued to improve. However, at 7.30pm that same day it is documented that Mrs B had passed dark stool and that there was bright red blood on her toilet paper.
23. Mrs B’s observations from 6 Month2 onwards are attached as **Appendix C**.

7 Month2

24. On the morning of 7 Month2, Mrs B informed Dr E that she had felt “giddy” the previous day, and that she had passed blood into the toilet on one or two occasions. Blood results showed that she had a haemoglobin¹² level of 123g/L.¹³ Dr C said that he was not able to review Mrs B in person, but thought that the bleeding was minor, and was possibly caused by the biopsies taken during the colonoscopy.
25. At approximately 3pm, Mrs B had another per rectum¹⁴ bleed, and it was noted that an incontinence pad was soiled with fresh blood. Mrs B’s medical team were informed of this new development. At 3.15pm, Mrs B collapsed in the bathroom and was reportedly unconscious for around 30 seconds. A healthcare assistant reported that Mrs B had had two further episodes of per rectum bleeding, and had lost approximately 250ml of blood. An emergency “Code Red” call was made, and Mrs B was transferred back to her bed. The resuscitation team, including the ICU registrar, the on-call medical registrar, and the duty manager attended, along with Dr E. It is documented that Mrs B had a heart rate of 50 beats per minute and blood pressure of 210/110, which decreased to 170/90. At this time

¹¹ Used to treat chronic inflammatory diseases.

¹² An iron-containing protein in red blood cells. Haemoglobin is necessary for transporting oxygen to tissues and organs in the body. Oxygen starvation can lead to major organ damage.

¹³ The normal haemoglobin range for a woman is between 115–160g/L.

¹⁴ Passed through the rectum.

she was alert and responsive, and the team considered that her collapse might have been caused by a vasovagal episode.¹⁵

26. Dr E contacted Dr C to discuss the event, and was instructed to check Mrs B's haemoglobin, withhold anticoagulation, administer blood if necessary, and arrange for a CT angiogram if there was persistent bleeding. At 116g/L, Mrs B's haemoglobin was within the normal range. Dr C stated:

“[W]ith the benefit of hindsight ... if we had identified this as a more significant bleeding episode, then action could have been taken to intervene at an earlier stage that day. This includes informing the surgical team which would have led to earlier intervention, by either surgery or interventional radiology.”

27. Dr E stated that he had not appreciated the significance of Mrs B's blood loss because her condition had improved steadily after the administration of infliximab, her vital signs had remained at baseline, and the bleeding on 6 Month2 was relatively minor.

28. WDHB told HDC that Mrs B's observations from the time of her first small bleed on 6 Month2 up to her collapse on 7 Month2 were stable and within normal parameters, and did not trigger an early warning score¹⁶ (see **Appendix C**).

29. It is documented that Mrs B had further episodes of per rectum bleeding between 6pm and 7.30pm. At 7.30pm, a registered nurse (RN) paged the on-call house officer, Dr N, and the ICU outreach team. Although Mrs B's vital signs were stable, the RN thought that Mrs B appeared drowsy, and considered that Mrs B's overall presentation and level of consciousness were deteriorating. Dr N attended and documented that Mrs B had lost approximately 100–150ml of dark red blood without stool, approximately seven times since 4pm. Dr N also recorded that Mrs B's haemoglobin level was 98g/L (indicative of moderate anaemia¹⁷).

30. Dr N discussed Mrs B's care with the on-call medical registrar, Dr K, and a plan was made to administer two units of red blood cells (each to be run over three hours), to continue IV fluids, and to book a computed tomography (CT) angiogram.¹⁸ Dr N left instructions to be called if Mrs B's heart rate increased to over 100 beats per minute or if her systolic blood pressure dropped below 100.

31. Dr K told HDC:

“From the information provided I concluded that [Mrs B] was stable, a CT angiogram was imminent. Given there was a clear plan (implemented by a medical consultant) in place that was being followed, there was no need to seek senior medical staff input at

¹⁵ A fainting spell caused by a sudden drop in heart rate and blood pressure.

¹⁶ A tool used to assist with the identification and management of a deteriorating patient.

¹⁷ A condition in which the blood does not contain sufficient red blood cells.

¹⁸ A test that uses X-rays to provide detailed pictures of the heart and the blood vessels that go to the heart, lungs, brain, kidneys, head, neck, legs and arms.

this time. To confirm I would have sought senior staff input if it was necessary, for example if [Mrs B] was unstable, or upon receipt of the CT angiogram had there been concerns.”

32. Dr N also informed the surgical registrar and the ICU registrar, Dr L, of Mrs B’s case. The surgical registrar consulted with the senior surgical registrar, Dr G, and they reviewed Mrs B at approximately 9pm. Dr G was of the view that Mrs B had severe colitis with per rectum bleeding, and considered it appropriate to continue medical management.
33. At 9.12pm, the blood bank issued one unit of red blood cells. On reviewing Mrs B, Dr K noted that she was comfortable and mildly drowsy, but alert. At approximately 9.45pm, Mrs B was transferred to Radiology for her CT angiogram. While undergoing the CT scan, Mrs B reported that she had facial numbness and difficulty breathing. The blood transfusion was stopped, but as Mrs B’s observations were stable (see **Appendix C**) it was decided that the transfusion could continue at a slower rate.
34. At approximately 11pm, the on-call medical registrar, Dr H, was informed that the CT angiogram showed changes consistent with Crohn’s colitis, and that Mrs B was possibly bleeding from the ileocolic region of the bowel. Dr H discussed this with the on-call surgical registrar, Dr M.
35. At 11.30pm, Mrs B had a blood pressure of 70/50mmHg, and an early warning score of 3.¹⁹ The on-call house officer, Dr F, reviewed Mrs B and recorded an impression that Mrs B had active per rectum bleeding secondary to a bleeding vessel in the proximal ascending colon, low blood pressure secondary to per rectum bleeding, and a possible blood transfusion reaction. Dr F stopped the blood transfusion again, and reported back to Dr H and Dr M. Dr M instructed Dr F to contact the on-call interventional radiologist at DHB2 to enquire whether Mrs B would be suitable for embolisation.²⁰
36. WDHB told HDC:

“It is the DHB’s view that ideally a discussion about potential intervention and transfer occurs consultant to consultant (senior doctor to senior doctor). However ... this is not always practicable and safe; it can lead to unnecessary delays and requires both consultants to access and review all relevant clinical information, including in this case viewing the CT angiography films.”

Interventional radiologist’s advice

37. Dr F said that she understood from her discussion with Dr A, the on-call interventional radiologist, that Mrs B was not a suitable candidate for embolisation as she had Crohn’s colitis. Dr F recorded in the notes that Mrs B was “not suitable for embolisation overnight”.

¹⁹ Statistically, a score of five or more is linked to an increased likelihood of death.

²⁰ A procedure that stops bleeding by blocking a blood vessel.

38. Dr A told HDC that she did not state that Mrs B was not suitable for embolisation. Her recollection was that on questioning Dr F, she ascertained that the case had not been discussed with the admitting consultant, and that she was being contacted on the instruction of the surgical registrar, who had not assessed Mrs B. Dr A further explained that she was concerned about the risk of causing significant ischaemia,²¹ and said that she suggested that the surgical registrar assess Mrs B and for there to be a discussion with the relevant medical and surgical consultants about all possible treatment strategies, including embolisation. Dr A stated that she advised the house surgeon to contact her again if it was deemed appropriate, but said that she did not hear anything further.
39. Dr F stated that she did not recall this aspect of the conversation with Dr A, and said that she would have documented it if she had received such instructions. Dr F stated that when Dr M arrived on the ward, she passed the telephone to him so that he could speak directly with Dr A (as detailed in the notes). Dr F surmised that Dr A may have been recalling the discussion she had with Dr M.
40. Dr M told HDC:
- “I cannot recollect the exact words used in the conversation but my understanding after the conversation with [Dr A] was that due to [Mrs B’s] Crohn’s colitis, not much by way of an intervention could be offered. As embolisation was the only intervention that could be offered, I interpreted [Dr A’s] advice to mean that [Mrs B] would not be a suitable candidate for embolisation. [Dr A] mentioned that if [Dr D] who was the Surgeon on-call or the Medical Consultant in charge of the care of [Mrs B] wished to discuss the case further, then she could be called again.”
41. Dr M did not document his conversation with Dr A, but Dr H recorded his understanding (from speaking with Dr M) that Mrs B was not suitable for embolisation overnight.
42. Dr A’s notes of the conversation detail Mrs B’s history, but nothing of the possibility of embolisation. Dr A documented that the case had not yet been discussed with the surgeon, and to call her back if appropriate.

Further review of Mrs B in early hours of 8 Month2

43. Nursing notes at 12am state that Mrs B had had nine episodes of per rectum bleeding over the preceding 12 hours, and had lost 50–100ml on each occasion. It was also noted that she had received only 100ml of blood. Dr H noted that although Mrs B had lost a significant amount of blood (she had a haemoglobin level of 79g/L — down from 98g/L at 7.20pm), her blood pressure (110/60mmHg) had improved with IV fluids. However, by 12.30am, Mrs B’s blood pressure had dropped to 70/40mmHg. Dr M was present at this time, and requested that the medical team urgently administer three units of red blood cells. The blood bank issued a second unit of red blood cells at 12.48am.

²¹ Inadequate blood supply to an organ or part of the body.

44. At approximately 1am, following receipt of the CT angiogram report, Dr M discussed Mrs B's care with Dr D. Dr D advised Dr M that Mrs B required blood, that she should be reviewed by the ICU team, and that tranexamic acid²² should be administered if Mrs B was still bleeding actively. Dr D also advised Dr M to speak with the Radiology registrar to clarify the location of the bleed. Dr D told HDC:
- "I suggested this because [Mrs B's] ascending colon may have to be removed, and if we were to take her to theatre I needed to be sure where the bleeding was from (about 40% of lower [gastrointestinal] bleeding can be from more than one source). My impression at the time was that the only option may be theatre (for surgery) if she didn't stop bleeding, and I asked to be called back with an update on [Mrs B's] condition."
45. Dr M stated that he discussed with Dr D his earlier conversation with Dr A, although this was not documented. In contrast, Dr D told HDC that he was not informed that Dr A had been consulted, and thus he thought that embolisation was possible, although his preference was for surgical intervention.
46. Dr H, Dr M, and ICU registrar Dr L collectively decided that the immediate priority was continued resuscitation with fluids and blood transfusion, and that an emergency laparotomy and colectomy²³ would be the next step if Mrs B's blood pressure continued to drop. Dr F told HDC: "I was informed by both the medical and ICU registrar that [Mrs B] was not an ICU candidate at that time, so she would remain on our ward."
47. Dr L explained: "At that stage, the patient remained haemodynamically stable and it appeared that her [per rectum] bleeding had stopped after that episode of bleeding at [approximately] 12am."
48. Dr H contacted the on-call haematologist, Dr I, for advice. Dr I recommended the administration of IV hydrocortisone and IV antihistamine, and for the blood transfusion to be continued at a slower rate. Dr H stated that he asked the nursing staff and Dr F to contact him if there was any change in Mrs B's condition.
49. At 2.10am, after receiving half of the first unit of red blood cells, Mrs B had an increased respiratory rate (26 breaths per minute).²⁴ Dr F noted that Mrs B had developed a red, macular rash over her chest, and that she had complained of having difficulty swallowing. The transfusion was stopped, with a plan to restart it in half an hour.
50. At approximately 3.20am, nursing staff activated an emergency bell in response to Mrs B's increasing drowsiness. Dr H attended, along with a second medical registrar, Dr L, and the duty nurse manager. A chest X-ray at 3.21am excluded transfusion-related lung injury and

²² Reduces heavy bleeding by slowing the breakdown of clots.

²³ Removal of the bleeding part of the bowel.

²⁴ The normal respiration rate for an adult is 12 to 20 breaths per minute.

pulmonary oedema.²⁵ An urgent blood test at 3.30am showed that Mrs B's haemoglobin had dropped to 60g/L. The nurse recorded in Mrs B's notes that the "[t]eam refused to transfer [Mrs B] to the ICU but asked for close monitoring".

51. Dr M stated that at around 4am Dr H informed him about the emergency call and told him that the bloods had been stopped sometime after 2.15am, in response to Mrs B's anaphylactic reaction.²⁶ Dr M said that this was the first time he was made aware of this, and that he went to review Mrs B immediately.
52. A nursing entry at 5.10am states that Mrs B had had six per rectum bleeds from 11.30pm to 4.55am.
53. Dr L discussed Mrs B's care with Dr J, the intensivist on call, and Dr M spoke to Dr D regarding surgery. On review, it was identified that an urgent operation was required to control the bleeding, and Mrs B was taken to the operating theatre at 4.50am for an emergency laparotomy, ileocolic resection, and formation of an end ileostomy.
54. Following the operation, Mrs B was transferred to the ICU. On 11 Month2, after consultation with Mrs B and her family, she was given palliative treatment, and she died on 15 Month2.

Serious adverse event report

55. WDHB's serious adverse event review into Mrs B's care found that there was a "failure to rescue" Mrs B when she had a major lower gastrointestinal bleed. In particular, the review noted:
 - a) The seriousness of Mrs B's condition was not appreciated by junior staff, which led to a failure to escalate to senior staff appropriately. The surgical team should have been involved when:
 - i. Mrs B failed to respond to steroid treatment;
 - ii. Mrs B had two significant hypotensive episodes on 7 Month2, secondary to lower gastrointestinal bleeding; and
 - iii. Mrs B had further recurrent episodes of hypotension secondary to lower gastrointestinal bleeding with repeated assessment by junior medical staff describing her deterioration.
 - b) Mrs B's condition was not escalated to consultant level appropriately. Although there was some escalation to the on-call consultant surgeon, on-call haematologist, and on-call gastroenterologist, there was no escalation to the on-call general medicine consultant and the ICU consultant after the review on 8 Month2. Other missed opportunities for escalation included:

²⁵ Excess fluid in the lungs.

²⁶ A severe, potentially life-threatening allergic reaction.

- i. Escalation by the house surgeon to the medical, surgical and/or ICU senior medical officers (SMOs) between 1.50am and 3.30am, if the medical, surgical and ICU registrars were unable to attend; and
 - ii. Escalation by the nurses to medical, surgical, and/or ICU registrars between 1.50am and 3.30am, and, if the registrars were not able to attend, then escalation to the SMOs.
 - c) There was inadequate fluid resuscitation. If this had been recognised, there could have been further discussion with the on-call haematologist and the blood transfusion service about options, a decision for surgery could have been made earlier, transfer to ICU or the High Dependency Unit (HDU) could have been considered, and more senior medical resuscitation support could have been sought, rather than relying on a house surgeon to implement a management plan.
 - d) Inadequate escalation from junior staff caused a lack of SMO-to-SMO consultation about Mrs B's management plan.
 - e) It is not the case that a patient with Crohn's disease who is bleeding from a specific point is unsuitable for embolisation.
 - f) The management plan arising from Mrs B's review after midnight was not specific enough. It needed to specify:
 - i. Who would take primary responsibility for Mrs B, so that there could be a single point of contact for the nurses or house surgeon to call;
 - ii. Who would next review Mrs B and when; and
 - iii. The frequency of observations required, and parameters with instructions on what actions to take if the observations were outside those parameters.
 - g) There is no evidence that there was a discussion about the possibility of transferring Mrs B to the HDU, or any documentation from ICU following the review of Mrs B after midnight.
 - h) It is not possible to determine how much blood was given to Mrs B over how long a period, given the lack of clear documentation.
 - i) There was no ward for complex gastrointestinal patients, including patients with gastrointestinal bleeding who require multidisciplinary team input supported by specialist nursing staff.
56. The serious adverse event report recommended that WDHB:
- a) Form a working party to review the protocols for the management of gastrointestinal bleeding and transfusion reactions.
 - b) Investigate adapting and implementing Alfred Health's Escalation Pathways and Safer Patient Care Programme.

- c) Continue to develop and implement the “Hospital at Night” model that includes dedicated clinical support from clinical nurse coordinators to nurses and doctors on the medical and surgical wards, additional medical support at night, and handover protocols.
- d) Ensure that the General Surgery Department has clear expectations about communication, documentation, and escalation within their teams.
- e) Ensure that the Gastroenterology Department has clear expectations about handover of appropriate patients to on-call colleagues.
- f) Ensure that the ICU has clear expectations about communication, documentation, and escalation.
- g) Run training sessions for house surgeons and registrars focusing on common clinical conditions, management of the deteriorating patient, and escalation.
- h) Incorporate blood transfusion documentation into e-prescribing.
- i) Develop a home ward for gastroenterology patients who require medical and surgical input.
- j) Continue to develop the organisation’s patient safety culture.

Further information

- 57. WDHB offered its condolences to Mrs B’s family for Mrs B’s death.
- 58. WDHB’s ICU department submitted that transfer to the ICU is not the definitive treatment and management for bleeding patients.
- 59. WDHB stated that Mrs B’s severe anaphylactic blood reaction could not have been anticipated and had a significant impact on the clinical management, as it meant that she could not tolerate more than 10–15ml from each unit of blood. WDHB said that the plans for fluid resuscitation were reasonable but very difficult to implement given the need to stop and slow the transfusions.
- 60. WDHB stated that Mrs B’s death was a primary driver for the introduction of its ISBAR policy. ISBAR (identification, situation, background, assessment, recommendation) is a communication tool to ensure that conversations are clear and concise and facilitate appropriate escalation and referral of care.
- 61. WDHB told HDC that its Patient Deterioration Programme has incorporated the recommendations from the adverse event investigation, including implementation of escalation pathways, a “hospital at night” model, and a safer patient care programme that is aligned with the Health Quality & Safety Commission’s Patient Deterioration Programme. Additionally, in 2017 an electronic vital signs monitoring system was rolled out for adult inpatients.
- 62. WDHB also stated that it has redesigned the medical model of care, including the introduction of home-based wards with consultant-led medical teams located on

particular wards, daily consultant-led multidisciplinary team review of patients with an extended length of stay, and themed wards with selected facilities and supplies aligned with nursing, medical, and allied health team expertise. The ward rounds provide the rapid assessment of progress of every ward patient, addressing any deterioration, delays to treatment, and delays to discharge. The specialty themed wards include a home ward for high-risk gastroenterology patients, including complex cases with Crohn's disease and other inflammatory bowel diseases. Consultant gastroenterologists will be based on this ward. WDHB told HDC that it anticipates that this will result in a number of improvements, including improved teamwork, a reduction in task burden for junior staff, and improved training.

Responses to provisional opinion

63. Mrs B's family was provided with an opportunity to respond to the "information gathered" section of the provisional opinion. Mrs B's other daughter, who responded on behalf of the family, stated that her sister verbalised concerns about Mrs B's health status throughout the admission, and that staff did not give these concerns sufficient weight. Mrs B's daughter also stated:

"From the early hours of 8 [Month2], I think the only outcome that was going to happen then was the death of [Mrs B]. Having been admitted to hospital [Month1], and the treatment of her condition not being addressed in a timely manner all contributed to her death."

64. Dr A was provided with an opportunity to comment on relevant parts of the provisional opinion. Careful consideration has been given to Dr A's response.
65. WDHB was provided with an opportunity to comment on the provisional opinion. Its response has been incorporated into this report, where appropriate.

Opinion: Waitematā DHB — breach

66. District health boards are responsible for the operation of the clinical services they provide, and can be held liable for any service-level failures. In addition, they have a responsibility for the actions of their staff, and an organisational duty to facilitate continuity of care. This includes ensuring that all staff work together and communicate effectively.
67. As detailed below, I consider that aspects of the care provided to Mrs B were suboptimal. In my view, WDHB holds primary responsibility for these failures.

Delay in colonoscopy

68. Mrs B was initially scheduled to undergo an inpatient colonoscopy on 28 Month1, but her condition improved and it was thought that an outpatient colonoscopy within two weeks would be appropriate. On 28 Month1, however, Mrs B developed further gastrointestinal symptoms and the colonoscopy was rebooked for 31 Month1.
69. Mrs B's intolerance of Glyco-prep was communicated to the Gastroenterology Department by the medical team's house officer, who was advised that the standard preparation should be charted and that this would be amended over the weekend. The registrar stated that he did not query these instructions because of his workload and time pressures, and a nurse recorded in the notes that no one answered the telephone when she tried to follow up. As an alternative bowel preparation had not been arranged, the colonoscopy could not go ahead on 31 Month1 and was deferred to 2 Month2.
70. My expert advisor, Associate Professor Alan Fraser, advised that the initial planned timing for the colonoscopy was adequate, but he considers that there was a significant delay before it was performed. Associate Professor Fraser commented that it is not the usual standard of care for a patient to remain on IV hydrocortisone or oral prednisone for 12 days without more definitive treatment, but that this is attributable to the delay in carrying out the colonoscopy.
71. I accept this advice. While I acknowledge that the procedure was originally rescheduled in response to apparent improvements in Mrs B's condition, I am concerned by the subsequent 48-hour delay caused by the failure to chart an alternative bowel preparation. This delay was completely avoidable, and is demonstrative of poor coordination between teams.

Events of 7–8 Month2

72. On the evening of 6 Month2, Mrs B had an episode of per rectum bleeding. She had passed blood into the toilet on one or two occasions, and had a further bleed at 3pm on 7 Month2. At 3.15pm, she collapsed and was unconscious for approximately 30 seconds. She also had two further episodes of per rectum bleeding. An emergency "Code Red" call was activated. It was noted that Mrs B had had continued per rectum bleeding, but that her haemoglobin remained within the normal range, and the collapse was attributed to a vasovagal episode. Dr C stated:
- "[W]ith the benefit of hindsight ... if we had identified this as a more significant bleeding episode, then action could have been taken to intervene at an earlier stage that day. This includes informing the surgical team which would have led to earlier intervention, by either surgery or interventional radiology."
73. Over the course of 7 Month2, Mrs B had nine episodes of per rectum bleeding, and lost approximately 50–100ml on each occasion. Attempts to transfuse red blood cells were made at 9.12pm and from 12.48am on 8 Month2, but Mrs B's anaphylactic reactions prevented adequate replacement of her blood loss. The plan at 1.50am was to continue

with conservative measures and to proceed with surgery if she became more unwell. Mrs B became increasingly drowsy in the early hours of 8 Month2, and an emergency bell was activated at 3.20am. Following involvement of the consultant intensivist and consultant surgeon at approximately 4am, Mrs B underwent emergency surgery to control her bleeding.

74. Associate Professor Fraser advised that the surgical team should have reviewed Mrs B following the ward round on 7 Month2, given that she had had lower gastrointestinal bleeding for over 12 hours. Associate Professor Fraser also advised that Mrs B ought to have been transferred to the ICU or the HDU following the emergency call at 3.15pm. He stated that medical staff, primarily junior medical staff, failed to appreciate that significant blood loss can occur even when haemoglobin, blood pressure, and pulse recordings appear to be within the normal range.
75. Associate Professor Fraser noted that there was still an opportunity to rescue Mrs B at 12am on 8 Month2, but this required an immediate decision for embolisation or surgery. He commented: “These decisions are always difficult and it is easy to be critical in hindsight but I consider that most of my colleagues would agree on this point.” He also stated that suspicion of a blood transfusion reaction ought to have prompted immediate transfer to ICU to attempt to manage Mrs B’s resuscitation more effectively, or to make a decision for surgery.
76. Associate Professor Fraser agreed with WDHB’s serious adverse event report finding that there was a “failure to rescue” Mrs B when she had a major lower gastrointestinal bleed. As WDHB’s report identified, junior staff failed to recognise the seriousness of Mrs B’s deterioration, which led to a failure to escalate her condition to consultant level. The report also identified that the inadequacy of the fluid resuscitation was not appreciated by staff.
77. Associate Professor Fraser opined:
- “The lessons to be learnt from the evening of [7 Month2] and the early hours of [8 Month2] are not specifically regarding management of Crohn’s disease but regard the effective interaction of after-hours general medical, specialist gastroenterology, surgical, radiological and ICU services. This is never easy or straightforward, particularly beyond 2400 hours. The opportunity for good decision making was lost from 3pm [7 Month2] onwards leading to an inappropriate decision to delay definitive action to control bleeding with surgery until the following morning.”
78. I am concerned about the care Mrs B received in response to her significant per rectum bleeding. In particular, there were several missed opportunities to involve the surgical team, including after the ward round on 7 Month2, after Mrs B’s collapse at 3.15pm, and following the conversation with Dr A. I accept Associate Professor Fraser’s advice that Mrs B ought to have been transferred to ICU or HDU following her collapse, and when a blood transfusion reaction was suspected.

79. Throughout 7 Month² and the early hours of 8 Month², there was insufficient involvement of staff at a consultant level. I share the view that this stemmed from a lack of appreciation of the seriousness of Mrs B's condition and the inadequacy of the blood replacement. The failure to involve more senior staff resulted in poor decision-making across multiple specialties, culminating in a "failure to rescue" Mrs B.

Conclusion — breach

80. In my view, the care provided to Mrs B by a number of WDHB staff was suboptimal. There was a preventable 48-hour delay in carrying out a colonoscopy, caused by a failure to chart alternative bowel preparation when it was known that Mrs B had an intolerance to Glyco-prep. More significantly, WDHB staff failed to respond adequately to Mrs B's ongoing bleeding and transfusion reactions. As detailed above, junior staff failed to escalate her condition to a consultant level, she was not admitted to ICU following the first emergency call, and poor decision-making led to delayed surgical intervention.
81. For these reasons, I find that WDHB did not provide services to Mrs B with reasonable care and skill and, accordingly, breached Right 4(1) of the Code.²⁷

Communication with interventional radiologist — adverse comment

82. After 11.30pm on 7 Month², Dr F and Dr M spoke with Dr A to query the possibility of embolisation. Both Dr F and Dr M understood from their discussion with Dr A that Mrs B was not a suitable candidate for embolisation in view of her Crohn's colitis. Dr F documented that Mrs B was "not suitable for embolisation overnight".
83. In contrast, Dr A told HDC that she did not advise that Mrs B was not suitable for embolisation. Dr A stated that she was concerned about the risk of causing significant ischaemia by embolising an already inflamed segment of colon, and that she suggested that the surgical registrar assess Mrs B and for there to be a discussion with the relevant medical and surgical consultants about all possible treatment strategies, including embolisation. Dr A's notes of the conversation do not detail the possibility of embolisation. She documented that the case had not yet been discussed with the surgeon, and to call her back if appropriate. No further contact was made with Dr A, and there is no contemporaneous documentation to show that the conversation was discussed with Dr D.
84. My expert advisor, Dr Gabriel Lau, advised: "Based on the current literature, it is acceptable to treat acute large bowel gastrointestinal bleeding in the setting of Crohns disease with embolisation."
85. Dr Lau remarked:

"Whilst it is frequent practice to delegate referrals to another specialty team to junior staff, in complex situations, my peers would expect direct communication with peers of similar seniority and clear documentation of the decisions. Particularly in this case,

²⁷ Right 4(1) of the Code states: "Every consumer has the right to have services provided with reasonable care and skill."

where not only is it outside normal working hours with on call teams that do know the patient as well as the lead team, where the hospital in question does not provide an on call interventional radiology service, but also that there has to be a referral and transfer to another hospital in the city.”

86. WDHB told HDC:

“It is the DHB’s view that ideally a discussion about potential intervention and transfer occurs consultant to consultant (senior doctor to senior doctor). However ... this is not always practicable and safe; it can lead to unnecessary delays and requires both consultants to access and review all relevant clinical information, including in this case viewing the CT angiography films.”

87. Dr Lau also commented that the documentation was below the standard of care in that it did not adequately reflect who made the decisions, with whom the discussions took place, and the outcome of those discussions. In particular, Dr Lau noted that it was not clear whether Dr D had been involved in the decision to consider embolisation, or whether Dr D was told about the conversation with Dr A.

88. Based on Dr Lau’s advice, I would be critical if advice was given that Mrs B was an unsuitable candidate for embolisation. However, on the information available, I am unable to make a finding regarding what advice Dr A imparted, and whether the advice could have been conveyed in a clearer fashion. I agree that there is a lack of clarity in the documentation and, in particular, I note that it is unclear whether the conversation with Dr A was discussed with Dr D. It is important that doctors keep detailed notes of discussions about patients, and that the notes are an accurate reflection of the information imparted. I also consider that ideally the discussion with Dr A should have occurred at a consultant level, in view of the complexity of Mrs B’s case.

Recommendations

89. I recommend that WDHB:

- a) Report back to HDC on its consideration of Professor Fraser’s recommendation that there should be a policy that all patients with gastrointestinal bleeding are made known to the surgical services. Its feedback should be provided to HDC within three months of the date of this report.
- b) Conduct a random audit of documentation within the general medicine ward to ensure that treatment plans and discussions with other specialties are documented adequately. The results of the audit should be sent to HDC within three months of the date of this report.

- c) Provide a further update on the progress of the recommendations arising from its serious adverse event review, with particular emphasis on its escalation pathways for deteriorating patients, within three months of the date of this report.
 - d) Provide Mrs B's family with a formal apology for the deficiencies in Mrs B's care. The apology should be sent to HDC, for forwarding to Mrs B's family, within three weeks of the date of this report.
-

Follow-up actions

- 90. A copy of this report with details identifying the parties removed, except the experts who advised on this case and Waitematā District Health Board, will be sent to the Health Quality & Safety Commission and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Independent advice to the Commissioner

The following expert advice was obtained from Associate Professor Alan Fraser:

“I have been asked to provide an opinion to the Commissioner on case number C16HDC01642. Complaint: [Mrs B]

I have read and agree to follow the Commissioner’s Guidelines for Independent Advisors.

Qualifications and experience

I am a gastroenterologist qualified with MB, ChB 1980, FRACP 1990. I have an additional research qualification with MD 1994 following three years of research at the Royal Free Hospital, London, UK. I have been an academic gastroenterologist at the University of Auckland from 1992 to 2013. I had 12 months experience at the John Radcliffe Hospital, Oxford, UK completing research projects on inflammatory bowel disease during my sabbatical. I have written 130 research papers.

I am currently Honorary Associate Professor of Medicine, University of Auckland. I have been a consultant gastroenterologist at Middlemore and Auckland Hospitals from 1992–2007. I am currently working in private practice at the Auckland Gastroenterology, Mercy Specialist Centre and have a 1/10th position in the Gastroenterology Department, Auckland Hospital training nurses in endoscopy. I have been President of the NZ Society of Gastroenterology (2011–2013) and Chair of the RACP Training Committee on Gastroenterology (1998–2005). During this time I visited many gastroenterology departments in New Zealand advising on registrar training. I have been involved in training of gastroenterology registrars since 1992. I am currently a member of PTAC (Pharmacology and Therapeutics Advisory committee — advising to PHARMAC).

Sources

- Letter of complaint [date]
- Waitematā DHB response [date]
- Clinical records from Waitematā DHB covering period from [Month1] to [Month2] as well as gastroenterology department records from 2011
- Adverse event investigation report from Waitematā DHB Report on care from [Dr O] — June 2016

Specific requests for comment

- Timeliness of colonoscopy following admission to [Hospital 1]
- The overall standard of gastroenterology care provided to [Mrs B] by Waitematā DHB
- The adequacy of remedial actions

- Any other matters that warrant consideration

The timeline of events is accurately described in the Adverse Event investigation from the Waitematā DHB and in the report on care from [Dr O]. I will only refer to specific parts of the timeline and also describe care from the gastroenterology and surgical services leading up to her hospital admission on the 24th [Month1].

Description of care with comments on standard of care and peer review

She presented with abdominal pain in 2009 (aged 75 years). Colonoscopy 2009 showed diverticular disease only. There was no evidence of Crohn's disease. Initially the pain was considered to be due to recurrent diverticulitis and treated with anti-spasmodics and antibiotics. She was admitted to hospital with increasing abdominal pain and vomiting on 7th April 2011. AXR showed dilated loops of small bowel up to 4cms diameter. She was re-admitted on 1/5/2011. The diagnosis of terminal ileal Crohn's disease was made by CT enteroclysis and was confirmed by colonoscopy 17/6/11. She was treated with Prednisone and Pentasa.

Comment

A new diagnosis of Crohn's disease is an uncommon cause of abdominal pain at her age. The presentation with subacute (partial) small bowel obstruction was made following hospital admission and the cause found with CT and colonoscopy. The investigations were timely and appropriate.

She was started on azathioprine after outpatient review 6th Sept 2011. She was admitted with abdominal pain and vomiting on the 29th Oct 2011 and treated with hydrocortisone then oral Prednisone. There was a further admission with subacute small bowel obstruction on the 27th Feb 2012. CT abdomen showed dilatation of small bowel proximal to thickened terminal ileum. Her weight was reduced at 53kgs (BMI 19) and a referral to nutrition outpatient clinic was made. She continued to have problems with obstructive symptoms giving abdominal pain.

She had an elective ileo-colic resection in December 2012. The operative findings was of 30cms of thickened and fibrosed terminal ileum. The pre-op assessment included relatively normal echocardiogram for her age. There was mild aortic stenosis (common for her age) and good cardiac function with a good ejection fraction. She made an excellent recovery.

At outpatient review she was well. Bowel motions were 1–3 times daily. Azathioprine 125mg daily was continued. She was advised to stop smoking.

Colonoscopy was arranged for 17/11/2014. This showed normal colon to the ileo-colic anastomosis. At subsequent outpatient review ... it was decided to stop Azathioprine. She had completed almost three years of treatment. The plan was for review in 6 months and to consider discharge from clinic.

Comment

The care to this point has been excellent. The decision to stop azathioprine is a reasonable balance between the risk of relapse of Crohn's disease and the risk of immunosuppressive treatment in the elderly. There is a need for review at 6 monthly intervals given the increased risk of relapse. I am not sure if there was any further clinic review after [the final outpatient review]. The admission for severe colitis 24 [Month1] was [quite some time] after stopping azathioprine (25% will have relapse by 9 months and 50% by 18 months)¹.

She was admitted 24 [Month1] for relapse of Crohn's disease to a General medical ward under [Dr C]. It was noted that she was passing 8–10 bowel motions per day. Lower abdominal tenderness was noted. Intravenous hydrocortisone was commenced. She was assessed the following morning ... and transferred to [the ward] [the next day]. The plan was for inpatient colonoscopy ... On ... 27 [Month1] clinical assessment showed that that there was some improvement. The plan changed to outpatient colonoscopy in 2 weeks and she was changed to oral Prednisone hoping for discharge if improvement continued.

Comment

The initial planned timing for colonoscopy is adequate but in an ideal situation, with her bowel frequency and abdominal tenderness, colonoscopy or at least flexible sigmoidoscopy should be performed within 48 hours of admission. The alternative approach would have been CT abdomen within 48 hours to then assess the need for urgent colonoscopy.

There appears to have been some change in her condition on ... 28 [Month1]. Medical SHO review at 1420 states that she had watery diarrhoea and abdominal pain requiring regular analgesia. The case was discussed with the Gastro scheduler and the plan was to rebook colonoscopy for [the] 31st. She continued on oral Prednisone. The nursing notes show that there was a discussion regarding an alternative bowel prep to Glycoprep.

... 31 [Month1]. Medical registrar review. There was continuing diarrhoea and lower abdominal pain. She was febrile 37.8°C. There is a comment in the notes 'Daughter frustrated about lack of communication'. She was seen by gastroenterology nurse specialist and planned for colonoscopy ... 2 [Month2] using Picoprep and regular anti-emetics. That evening at 2045 she had urgent CXR/AXR and abdominal CT scan. The CT showed multi-focal Crohn's colitis. She was charted i.v. hydrocortisone, cefuroxime and metronidazole. This action is well documented in the nursing notes although the details of medical review are unclear.

Comment

The medical review 28 [Month1] and 31 [Month1] failed to appreciate severity of colitis. She may have had less complaints of abdominal pain because of her age. The urgent abdominal CT on the evening of 31 [Month1] and the subsequent restarting of

hydrocortisone and the commencing intravenous antibiotics was timely and appropriate. There was a failure to chart bowel prep because of a communication problem. There was a need to resolve the question of satisfactory bowel preparation. This omission seems to have caused the procedure to be cancelled ...

Consultant ward round on ... 1 [Month2]. The pain was settling. Planned for colonoscopy following day. She had severe abdominal pain and vomiting with Picoprep bowel preparation but the colonoscopy was tolerated well on 2 [Month2]. There was severe inflammation of colon and ileum.

Registrar review 1800 ? responding to blood test results. The serum K⁺ was 2.5 mmol/L, presumably related to bowel prep and vomiting. She was given i.v. fluids with potassium supplements and cardiac monitoring was started.

On ... 3 [Month2] she was assessed as having severe Crohn's colitis and planned for infliximab infusion once *C. difficile* results available and this infection was excluded; infliximab infusion was given on 4 [Month2] .

Comment

The response to the colonoscopy findings and review on 3 [Month2] was appropriate and meets standard of care. The patient had been in hospital on i.v. hydrocortisone or oral Prednisone for 12 days and there needed to be an urgent alternative approach. Intravenous infliximab is the usual treatment at this stage. However this decision was probably delayed by 1 week because of delays with the CT and colonoscopy. There may be some pressure on inpatient colonoscopy services but abdominal CT on admission would have given the diagnosis of severe colonic Crohn's disease.

... 6 [Month2]. Improving; CRP was 3 (normal inflammatory marker). Changed back to oral prednisone. ... 6 [Month2] 1930 Dark stool and bright red blood. Feels giddy. Plan to encourage oral fluids and stop Clexane.

... 7 [Month2]. Patient complained of giddiness. There was continued PR bleeding — 1–2 episodes overnight. Examination showed tenderness of the lower abdomen but no peritonism. BP 135/59 and pulse 71; Hb 123.

1550 Code red — collapse. BP 170/90 HR 50 ? vasovagal. Discussed CT angiogram.

Comment

This was the time for transfer to ICU. There was a failure to appreciate that significant blood loss can occur with a normal Hb and normal BP and pulse recordings. This is a common problem with interpretation of clinical data when assessing the severity of a GI bleed and could be addressed during education sessions for junior staff.

1945 150 mls of PR bleeding. Noted to be drowsy — nursing notes express concern about deteriorating overall appearance. Hb 98; WBC 30.3 (? infection response or

response to rapid blood loss). Surgical registrar and ICU registrar informed. Plan to give blood.

2100 Surgical registrar review. Urgent CT angiogram requested. BP 120/58 Pulse 59

2330 BP 70/50 but responded to fluid challenge.

2400 Nursing notes state that there had been 9 episodes of PR bleeding over last 12 hours — each 50–100mls; Hb 79 g/L. First unit blood transfusion started at 9pm — but only 100 mls given. Second unit of blood started at 2400.

Comment

This was the last chance for an appropriate response — an immediate decision for embolization or surgery. The delay for another 6 hours is likely to have influenced the outcome. These decisions are always difficult and it is easy to be critical in hindsight but I consider that most of my colleagues would agree on this point. There was a delay with starting blood replacement. Earlier commencement would have given more time to resolve the issue of a possible transfusion reaction and to seek expert and timely advice.

2400 CT angiogram result was available. The findings were clear with extravasation of contrast into proximal colon. There was a critical discussion between Radiologists, both registrar and consultant and the surgical registrar.

0105 BP 70/40

0140 Decided on surgery in the morning.

Comment

The identification of a bleeding site was very helpful. This is not always achieved — success in localisation ranging from 25–75% in the literature^{2–4}. There was an option for CT embolization but this involves a degree of expertise and experience that may not have been available. Success rates are reported from 81–93% with a mortality of 0–7%. Intestinal infarction is a significant risk — this risk is somewhat reduced with superselective embolisation. Once this option was clearly unavailable then there should have been a decision for urgent surgery. Is it not possible to have high level of expertise with interventional radiology on a 24hr basis. An earlier CT angiogram — within 4 hours after the first collapse at 1550 hours — would have helped with decision making occurring early evening rather than at 1am. There is a significant mortality with acute surgery in this situation reported in the literature. Overall mortality in 5 series published from 1991–2001 was 6.9%⁵.

0315 Resus call — unresponsive 0420. ICU consultant states that he was first aware of patient at 0420 hrs. On immediate review he realised that urgent operation was required to control bleeding. Hb 60 g/L. Arterial blood gas pH 7.39 HCO₃ 19 Lactate 4.6 0552 Assessed as ASA 5 by anaesthetist. Blood gas pH 6.84, HCO₃ 8.7, K 5.3,

Lactate 13.5; Hb 75g/L. BP at start of surgery 80/50 — stable within 15 mins at 125/60. Surgery performed by expert consultant.

Comment

This patient had a high level of care after the intervention of ICU consultant and transfer to theatre for urgent operation. She had severe hypotension for several hours. The blood gas reflects severe metabolic (lactic) acidosis.

11 [Month2] Family meeting. Conclusion to withdrawal treatment 12–15 [Month2]. Palliative care. Patient died 15th [Month2]. The standard of care and liaison with the family appears to have been very good in ICU.

Improvements

- The diagnosis and treatment of Crohn's disease up until last admission has been at expected standard of care. There was some delay in diagnosis but this is typical for her age.
- Azathioprine was very effective treatment for reducing inflammation but advanced fibrosis led to several admissions with sub-acute small bowel obstruction. Laparoscopic ileo-colic resection was performed at the appropriate time and went well.
- Azathioprine was continued until follow-up colonoscopy which showed no recurrent disease. The decision to stop at this point is reasonable given the higher risks of immunosuppressive treatment in the elderly. Follow-up may have been inadequate [—] [s]he should have had review 6 months after stopping medication. There may be some pressure on outpatient services. She should have been monitored for relapse for over 2 years before discharge back to GP. There was failure to realise that withdrawal of azathioprine commonly leads to relapse within 12–18 months.
- There was a significant delay with colonoscopy. This delay was partly due to a long stay in acute assessment ward with minimal medical review. The decision to defer to outpatient procedure after apparent improvement reflects pressure on inpatient services rather than poor judgement.
- Two weeks of hydrocortisone (12 days) by 4 [Month2] without a definitive plan is not usual standard of care — this was mainly due to delay in diagnosis of severity of colitis.
- Infliximab treatment was appropriate. There may be a limited budget for this medication, particularly in an elderly patient. However, it appears that the main problem was delay in recognition of the severity of colitis.

- The main problem was failure to recognize severe bleeding in the elderly where BP and pulse may not change until there is critical loss of circulatory volume. The medical staff, primarily junior medical staff, were falsely reassured by the normal Hb initially but this fell significantly with i.v. fluid rehydration demonstrating that a significant bleed had occurred before the Code red at 1550 hours on the 7th [Month2].
- Transfer to ICU or HD unit should have occurred immediately after collapse in ward at 1550 hrs. There was an opportunity for rescue still possible at 2400 but indecision regarding choice of definitive treatment to control bleeding caused a crucial delay.
- The 2nd code red at 0400 prompted ICU intervention and rapid transfer to theatre but this was too late to prevent subsequent decline from multi-organ failure despite effective control of bleeding with operative treatment. The blood gas prior to surgery shows severe metabolic acidosis from profound and prolonged hypovolaemia.
- Lower GI bleed uncommon in IBD (1–2%)^{2–4}. The lessons to be learnt from the evening of 7 [Month2] and the early hours of 8 [Month2] are not specifically regarding management of Crohn's disease but regard the effective interaction of after-hours general medical, specialist gastroenterology, surgical, radiological and ICU services. This is never easy or straightforward, particularly beyond 2400 hours. The opportunity for good decision making was lost from 3pm onwards leading to an inappropriate decision to delay definitive action to control bleeding with surgery until the following morning. The outcome depends on the experience and personalities involved but more importantly depends on good hospital protocols and processes.

Areas for review and revision

- *Early review by experienced surgical team including consultant.* The surgical team should have reviewed the patient soon after the ward round 7 [Month2] once it was clear that there was significant lower GI bleeding (i.e. lasting longer than 12 hours). There should be a policy that all patients with GI bleeding are known to the surgical services.
- *Early involvement of intensive care service.* Both surgical and ICU registrars were informed after code red 1550 hours. Transfer to ICU at this stage would have prevented the sequence of events with appropriate resuscitation, including blood products, and earlier CT angiogram and decision to proceed to embolisation or surgery before 2400 hours. There may not have been an ICU bed available or a reluctance to transfer given age but the delay led to a futile, prolonged ICU stay. There is often a false economy in denying elderly patients access to ICU care. Death was primarily due to acute kidney failure (previous normal renal function)

and non-response to inotropes (previous good cardiac function — normal ejection fraction in 2012) as a direct consequence of prolonged hypovolaemia.

- *There is a need for a dedicated inpatient gastroenterology service.* This would have helped prevent delay with colonoscopy. There would have been rapid transfer to gastroenterology ward after admission for a patient who would have been known to the service. There would have been no delays with bowel preparation with experienced gastroenterology nursing staff. A dedicated gastroenterology service should have daily rounds with a gastroenterology registrar and usually a daily consultant round. This would have prevented delays with colonoscopy and led to an earlier start date for infliximab. This may have led to a better outcome, perhaps preventing the GI bleed, but this is speculative. A gastroenterology service needs at least 2 gastroenterology registrars to ensure continuity of care and to assist with after-hours call. Gastroenterology dedicated inpatient nursing staff would help with early recognition of emergency problems and assist junior staff to seek help at appropriate times.
- Urgent assessment by a Gastro registrar or phone consultation by IBD nurse can often prevent urgent admissions with IBD (Crohn's or ulcerative colitis). If required then semi-urgent admission to a dedicated gastroenterology service will lead to more rapid service delivery.

DHB response

- The family meeting ... appears to have been a full and frank discussion.
- The DHB report describes accurately the failure to rescue (page 16).
- The outlined responses are thorough. There should be confirmation that a lower GI bleeding protocol is in place and is being followed on a consistent basis.
- The Hospital at night working group is also an important discussion. The details of a dedicated gastroenterology inpatient service with adequate gastroenterology registrar staffing is not covered.

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Associate Professor Alan Fraser
Gastroenterologist

The following further advice was obtained from Associate Professor Fraser:

“Comments on additional documentation provided by Waitematā DHB — 3rd July 2018

The response from [the] Chief Medical Officer, is thorough and has detailed all relevant points.

All of the statements from the medical team are thoughtful and clearly show that this case has led to much reflection on the care of a patient with gastrointestinal bleeding.

There is a significant risk of mortality in this situation even with the best of care. High quality care requires the effective communication between many services and between many medical and nursing staff. Some hospitals have adopted gastrointestinal bleeding units to try to improve co-ordination of services. This intensive approach may help to a degree but unfortunately all deaths from gastrointestinal bleeding cannot be prevented.

The response from [Dr C] is well-considered. He has discussed all points relevant to his care. I do not have any more comments to add. [I accept that the delay in more definitive treatment after initiating iv hydrocortisone was due to systemic failures within the hospital and not due to failure of usual standard of care on the part of [Dr C]].¹

The response from [Dr D] gives more detail on the discussions from 0100 hrs. Given the events that occurred during the early hours of the 8th [Month2] I have previously stated that it would have been better to have proceeded to surgery as soon as possible once it was clear that embolization was not a realistic possibility. I have stated in my previous report that these decisions are difficult and it is much easier to be critical in retrospect.

The statement by [Dr E] clarifies the difficulty in assessing the severity of gastrointestinal bleeding during the day of the 7th [Month2]. This task requires vigilance and constant suspicion that the bleeding may be more severe than immediately apparent. The assistance of a surgical registrar in making these judgements on the ward is very important.

¹ Clarificatory advice provided on 24 February 2019.

The reports from various junior medical staff focus on the events from 1200 hrs to 0600 hours. I do not have any comments to make on this period of care. The main lesson is that decisions should have been made earlier in the day (before midnight) to prevent the urgent resuscitation that was required at 0315 hrs when she was found to be unresponsive.

[Dr I], Haematologist, rightly highlights that the suspected blood transfusion reaction has significantly influenced her care. This aspect of her care may not have been adequately reflected in my report. However, this problem once identified should have led to immediate transfer to ICU to attempt to manage her resuscitation more effectively. This would also have been a strong argument for immediate surgery given that adequate blood replacement was difficult.

The response from the ICU consultant [Dr J] at 0420 hours was immediate and led to appropriate decision-making. The intervention of ICU usually results in rapid decision making and should have occurred much earlier.

I appreciate the care taken by all medical staff to recall the events that led up to the death of [Mrs B]. Much expert care was given by many staff and it is unfortunate that there was not a better outcome.

The areas for review and revision are clearly outlined in my report. These recommendations are unchanged by these additional comments. I trust that these areas have been seriously considered for action.



Alan Fraser
Associate Professor of Medicine

Appendix B: Independent advice to the Commissioner

The following expert advice was obtained from Dr Gabriel Lau, a diagnostic and interventional radiologist:

“Report on the care of [Mrs B] at [Hospital 1] in [Month1] and [Month2].

Dr Gabriel Lau MB ChB, FRANZCR, EBIR Director of Interventional Radiology, Dunedin Hospital, Dunedin.

TERMS OF REFERENCE

I have been asked to review [whether] the care provided to [Mrs B] by Waitematā DHB was reasonable in the circumstances and why.

In particular, I have been asked to comment on:

- 1) The reasonableness of the advice given by [Dr A] to [Dr M], that embolisation was not feasible in [Mrs B’s] case
- 2) Any other matters that I consider warrant comment in this case

For each question, I have been asked to advise

- 1) What is the standard of care/accepted practice?
- 2) If there has been departure from the standard of care or accepted practice, how significant a departure do I consider this to be?
- 3) How would it be viewed by my peers?
- 4) Recommendations for improvement that may help to prevent a similar occurrence in future.

INFORMATION PROVIDED

In order to do this I have been provided with the following information to assist with the review:

- 1) Letter of Complaint
- 2) Response from Waitematā DHB
- 3) Severe Adverse Report from Waitematā DHB
- 4) [Dr O’s] report
- 5) Response from [DHB2]
- 6) Clinical records from Waitematā DHB

WHO AM I

I am Gabriel Buong Hung LAU, MB ChB, FRANZCR, EBIR. I am employed as a Consultant Radiologist at Dunedin Hospital and Pacific Radiology Otago. I work at Dunedin Public Hospital as a diagnostic and interventional radiologist, where I am the Director of

Interventional Radiology. I also work in private practice as a diagnostic and interventional radiologist at Pacific Radiology Otago.

I trained in Diagnostic and Interventional Radiology in New Zealand, and worked as a Diagnostic and Interventional Radiologist at the National University Hospital in Singapore for just over 4 years, before returning to Dunedin, to work in the capacity as described above, in 2006. I have a Radiology Fellowship from the Royal Australian and New Zealand College of Radiology (FRANZCR) and also have attained the European Board of Interventional Radiology (EBIR). As well as this I am a member of the Interventional Radiological Society of Australasia (IRSA), a corresponding member of the Cardiovascular and Interventional Society of Europe (CIRSE), a corresponding member of the Society of Interventional Radiology (SIR) and a founding member of the Society of Interventional Oncology (SIO). I am a corresponding member of the European Society of Radiology (ESR), the European Society of Gastrointestinal and Abdominal Radiology (ESGAR), and the Radiological Society of North America (RSNA).

I have previously been the Chief Censor of the RANZCR. I am currently the Editor of Diagnostic and Interventional Radiology for the Journal of Medical Imaging and Oncology. I am the co-lead examiner for the Abdominal component of the Part 2 RANZCR examinations, an examiner for the Anatomy component of the Part 1 RANZCR examinations and an examiner for the European Board of Interventional Radiology. I currently have a position on the Board of the New Zealand branch of RANZCR, as the Treasurer of IRSA and also have a position on the Board of Directors of Pacific Radiology Otago.

RESPONSE

In response to the terms of reference as outlined above

- 1) The reasonableness of the advice given by [Dr A] to [Dr M], that embolisation was not feasible in [Mrs B's] case

Based on the current literature, it is acceptable to treat acute large bowel gastrointestinal bleeding in the setting of Crohn's disease with embolisation.

However from the information provided, it is not clear if [Dr D], the Consultant Surgeon on Call had made the decision to consider embolisation, or if [Dr M] had discussed with [Dr D] his 'alleged' discussion with [Dr A], or if [Dr M] had discussed directly with [Dr A] the option of embolisation.

- 2) Any other matters that I consider warrant comment in this case

It is not clear from the Clinical notes provided, if [Dr D] had been involved in the decision to consider embolisation as an option or if [Dr D] was informed of the 'alleged' discussion that [Dr M] had with [Dr A].

There is discordance with the handwritten note from [Dr A] where it appears she had discussed the case with [Dr M], yet her recollection was not of this.

Based on [Dr A's] notes, she had advised [Dr M] that the Surgeon on call be involved to discuss the options and to call her back if appropriate.

There is an entry at 01:50, 8 [Month2], where [Dr M] documents that [Dr D] advises discussion with Radiology, which appears to be regarding the CT Angiogram results and not the option of embolisation.

There is no documentation in the above entry that [Dr M] had discussed with [Dr D] the 'alleged' conversation with [Dr A] or that [Dr M] had discussed embolisation directly with [Dr A].

For each question, I have been asked to advise

1) What is the standard of care/accepted practice?

This is a complex case, not just with regard to the patient and her clinical course, but also with regard to the timing of the referral (after hours) and the location (referral between secondary and tertiary referral hospitals). In my opinion, the documentation of who had made decisions, with whom the discussions were with and the outcome of the discussions are below standard of care.

2) If there has been departure from the standard of care or accepted practice, how significant a departure do I consider this to be?

In my opinion, there has been a significant departure from the standard of care.

3) How would it be viewed by my peers?

Whilst it is frequent practice to delegate referrals to another specialty team to junior staff, in complex situations, my peers would expect direct communication with peers of similar seniority and clear documentation of the decisions. Particularly in this case, where not only is it outside normal working hours with on call teams that do not know the patient as well as the lead team, where the hospital in question does not provide an on call interventional radiology service, but also that there has to be a referral and transfer to another hospital in the city.

4) Recommendations for improvement that may help to prevent a similar occurrence in future.

My recommendations are two fold, that to prevent a similar occurrence in future

a) When referrals are required not just after hours, but also during working hours for complex cases, that there should be direct communication between Consultant Specialists.

b) Clear documentation of treatment plans, with whom discussions were with, and recommendations from the said discussions.



G. B. H. Lau

Appendix C: Mrs B's observations from 6–8 Month2

Time	Temperature	Blood Pressure (BP)	Heart Rate (beats per minute)	Respiratory Rate (breaths per minute)	Oxygen Saturations	NEWS
06 [Month2]						
7.40am	36.8°C	158/75	68	16	97% on air	0
11.15am	36.8°C	160/70	62	18	96% on air	0
4.10pm	36.6°C	174/68	64	18	96% on air	0
8.30pm	37.0°C	142/64	68	18	96% on air	0
07 [Month2]						
1.00am	36.4°C	130/50	66	16	97% on air	0
7.00am	36.8°C	170/77	68	16	97% on air	0
07.20am	36.5°C	170/77	49		97%	
11.05am	36.5°C	135/59	71		96%	
3.30pm	36.0°C	218/60 initially	50	20	100% on oxygen	0
3.35pm	36.0°C	171/77	50	20	99% on oxygen	0
3.40pm		129/67	57	20	100% on oxygen	0
4.00pm	36.3°C	113/60	59	12	92% on oxygen	0
4.30pm	36.0°C	113/56	56	12	95% on air	1
5.00pm	36.0°C	108/55	62	14	94% on air	1
5.30pm	36.0°C	130/60	58	14	95% on air	1
6.30pm	36.3°C	122/54	62	12	95% on air	1
7.30pm	36.0°C	121/60	64	12	94% on air	1
8.00pm		107/50	64	14	93% on air	1
8.30pm		96/55	65	14	93% on air	2
9.00pm		110/60	64	14	95% on air	1
9.30pm	35.8°C	130/54	60	16	96% on air	1
9.45pm	35.8°C	130/50	60	16	94% on air	
10.45pm		140/50	70	18	100% on air	0
11.00pm	36.4°C	150/62	75	18		
11.30pm	36.6°C	70/50	70	18	98% on air	3
11.55pm	36.5°C	110/70	84	18	96% on air	0
08 [Month2]						
00.30am	36.6°C	70/40	85	18	95% on air	3
1.05am	36.0°C	70/40	82	22	99% on air	4
1.25am	36.0°C	90/55	86	22	96% on air	3
2.10am	36.0°C	68/40	82	24	96% on air	7
2.30am	36.2°C	100/48	84	22	98% on air	4
3.15am	36.1°C	78/40	112	20	93% on 1 litre per minute (LPM)	5
3.45am	36.1°C	100/62	108	24	99% on 1 litre LPM	4
4.10am	36.2°C	88/50	112	26	95% on 10 LPM	4
4.30am	36.1°C	120/65	116	26	93% on 10 LPM	3
4.45am	36.1°C	110/65	114	26	95% on 10 LPM	3