Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

A Decision by the Deputy Health and Disability Commissioner

(Case 21HDC00696)

Introduction

1. This report is the opinion of Carolyn Cooper, Deputy Health and Disability Commissioner, and is made in accordance with the power delegated to her by the Commissioner.

2. The report discusses the postoperative care provided to Mr A by Te Whatu Ora Tairāwhiti (formerly Tairāwhiti District Health Board[1]) (Te Whatu Ora), following emergency surgery for a small bowel obstruction.[2]

3. Mr A was in a stable condition immediately following the surgery, but his condition deteriorated overnight and, sadly, he died from a cardiopulmonary arrest[3] due to atrial fibrillation[4] on the day following the surgery.

[1] On 1 July 2022, the Pae Ora (Healthy Futures) Act 2022 came into force, which disestablished all district health boards. Their functions and liabilities were merged into Te Whatu Ora|Health New Zealand. All references in this report to Tairāwhiti District Health Board now refer to Te Whatu Ora Tairāwhiti.
[2] A blockage in the small intestine.
[3] The cessation of adequate heart function and respiration.
[4] An irregular and often very rapid heart rhythm that increases the risk of heart failure and other heart-related complications.

Names have been removed (except Te Whatu Ora Tairāwhiti, Gisborne Hospital and the advisors) to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

4. The matter was referred to the Health and Disability Commissioner by the Coroner.

5. The following issues were identified for investigation:

- *Whether Te Whatu Ora|Health New Zealand provided Mr A with an appropriate standard of care in 2020.*
- *Whether Registered Nurse (RN) B provided Mr A with an appropriate standard of care in 2020.*

6. The parties directly involved in the investigation were:

Mr A	Consumer
RN B	Registered nurse
Dr C	House officer

7. Further information was provided by:

RN E	Registered nurse
RN G	Registered nurse

8. Parties also mentioned in this report:

Dr D	General surgeon
Dr F	House officer

How matter arose

Medical history

9. Mr A's medical history included high blood pressure, a STEMI[5] heart attack, high cholesterol, and a stroke. Mr A also had right subclavian artery stenosis (a form of peripheral arterial disease that can result in different blood pressure measurements in each arm).

10. Mr A had a history of recurrent small bowel obstruction secondary to radiation for prostate cancer and he underwent bowel surgery (a laparotomy[6] and adhesiolysis[7]).

11. Some of Mr A's regular medications included metoprolol,[8] cilaprazil,[9] and simvastatin.[10]

[5] An ST-elevation myocardial infarction — a type of heart attack that has a high risk of serious complications and death.
[6] A surgical incision into the abdominal cavity.
[7] Removal of bands of scar tissue, which is the body's repair mechanism in response to tissue disturbance caused by surgery, infection, injury, or radiation.
[8] Used to treat many conditions including after a heart attack (to prevent heart damage), and for heart failure, high blood pressure, and irregular heartbeat.
[9] Used in the treatment of high blood pressure and heart failure.
[10] Used to lower raised cholesterol.

Arrival at Emergency Department (ED)

12. In 2020, on Day 1,[11] Mr A had a sudden onset of abdominal pain with associated nausea and vomiting. He was taken to the ED at Gisborne Hospital by ambulance and arrived at approximately 8.00pm.

13. Upon arrival, Mr A had no chest pain but there was a significant difference between the blood pressure measurement in his right and his left arm.[12]

14. Mr A was reviewed by an Emergency Medicine specialist, whose impression was one of small bowel obstruction. The Emergency Medicine specialist arranged blood tests and a CT[13] scan, which confirmed the diagnosis of small bowel obstruction. The Emergency Medicine specialist referred Mr A to the surgical team.

15. At 10.10pm on Day 1, Mr A was admitted to the surgical ward by the on-call house officer, Dr C.

16. Several of Mr A's regular medications were withheld, including metoprolol.

17. On the ward, Mr A's abdominal pain and vomiting persisted. Mr A's Early Warning Score[14] (EWS) was 4[15] but his condition continued to deteriorate and his EWS increased to 6.[16] Te Whatu Ora said that there is no evidence that Dr C, who was the on-call house officer, responded promptly when Mr A's condition deteriorated and, as a result, the staff nurse made a rapid response call for Mr A to be reviewed.

18. Mr A was seen by the rapid response team and by Dr D, a general surgeon, and a decision was made for Mr A to undergo surgery the following morning.

Surgery

19. At 9.00am on Day 2, Mr A underwent an emergency laparotomy and a small bowel resection.[17] The surgery was performed by Dr D. The surgery was uneventful and immediately following the surgery Mr A was in a stable condition.

[11] Relevant dates are referred to as Days 1–3 to protect privacy.
[12] The blood pressure in his right arm was 169/86mmHg, and the blood pressure in his left arm was 244/86mmHg. The normal range is a systolic pressure (the top number) that is above 90mmHg and less than 120mmHg, and a diastolic pressure (the bottom number) that is between 60mmHg and less than 80mmHg.
[13] Computerised tomography.
[14] A clinical 'track and trigger' decision support tool used to quickly assess the severity of illness in a patient. A score is allocated to a full set of routinely recorded vital signs. A mandatory escalation pathway applies depending on the score calculated, with the urgency increasing the higher the EWS.
[15] For an EWS of 1 to 5, the actions to be taken are to consider increasing vital sign frequency, discuss with a senior nurse, and to manage pain, fever, and distress.
[16] For an EWS of 6 to 7, the actions to be taken are a house officer review within 30 minutes, to inform the nurse in charge, monitor vital signs every 30 minutes until the EWS is below 6, and/or to document an ongoing monitoring plan and consider involving the SMO.
[17] Surgery to remove a part of the small bowel.

Transfer to ICU

Day 2

20. During and following the surgery, Mr A's blood pressure was monitored with an arterial line.[18] At 1.15pm on Day 2, following the surgery, Mr A was transferred to the Intensive Care Unit (ICU), in accordance with the postoperative instructions. The postoperative instructions included a plan for monitoring Mr A's average arterial blood pressure [19] and a recommendation for management of low blood pressure with a noradrenaline infusion,[20] if required. Care of Mr A was handed over from the recovery nurse to RN E.

21. RN E said that she completed a 'head to toe' assessment of Mr A, and she 'checked and zeroed' Mr A's arterial line. RN E completed two full sets of EWS calculations. RN E documented in the clinical records that there were '[n]il concerns'. RN E told HDC:

> 'After ascertaining the condition of [Mr A] I was able to document his observations and condition, while outlining his management plan and confirming the acceptable parameters for his observations. As is gold standard and common practice within ICU/CCU I noted his blood pressure measurements from his arterial line as it was transducing well and had an acceptable waveform, and documented this in his clinical progress notes. [Mr A] was only in my care for around two hours, and during this time he was stable and there was no indication that he was deteriorating in any way, or that he needed any type of urgent review by a Doctor.'

22. At approximately 3.00pm, care of Mr A was handed over to RN G.

23. Between 3.30pm and 4.00pm, Mr A was reported to be comfortable, and his abdominal pain was 'almost gone'. Mr A's blood pressure[21] and heart rate[22] were stable, and he had an EWS of 2[23] due to supplemental oxygen.

24. At 9.40pm on Day 2, RN G noted a T-wave inversion [24] on Mr A's telemetry.[25] RN G performed an electrocardiogram [26] (ECG), which showed signs of possible myocardial ischaemia.[27]

[18] A thin, hollow tube that is placed into an artery to measure blood pressure.
[19] A key reading doctors use to assess blood flow through the body. It is related to the systolic and diastolic blood pressure readings but accounts for flow and resistance.
[20] Used to improve blood pressure and cardiac function.
[21] 154/44mmHg to 156/44mmHg.
[22] 80 to 90 beats per minute (bpm). The normal resting heart rhythm is regular, with a rate usually between 60 to 100 bpm.
[23] An EWS of 2 is low. At that stage, trends are to be observed to determine what is driving the score, care is to be escalated if there are any concerns or a rapid/significant change of EWS, and an increase in the frequency of the observations is to be considered.
[24] Considered abnormal.
[25] A portable device that continuously monitors ECG, respiratory rate and oxygen saturations while automatically transmitting information to a central monitor.
[26] A test to record the electrical activity in the heart.
[27] Reduced blood flow to the heart, preventing the heart muscle from receiving enough oxygen.

25. RN G notified the on-call house officer, who at that time was Dr F.

26. Dr F reviewed Mr A at 9.45pm. Dr F noted that Mr A had ongoing abdominal pain, but no chest pain or shortness of breath. Dr F noted that Mr A appeared euvolaemic.[28]

27. Dr F's plan was for Mr A's troponin[29] levels to be reviewed within two hours (at 11.45pm). Dr F documented, 'not for any intervention at this stage', and to monitor Mr A's blood pressure, heart rate, oxygen saturation, and chest pain. Dr F directed the nursing staff to page the on-call house officer if there was any change in Mr A's condition.

28. RN G said that Mr A remained stable throughout her shift, and she used the arterial line to measure Mr A's blood pressure. RN G stated: '[Mr A's] blood pressure did not drop on my shift. Nor did I have any issues with the A-Line, or with blood pressure generally, on this shift.'

29. Dr C was the on-call house officer on the evening of Day 2, and his shift started at 10.00pm. Dr C stated that upon commencing his duty, he received a handover from Dr F in the ICU office at approximately 10.15pm.

30. Dr C said that Dr F informed him of Mr A's surgery, 'and reported that there were no active issues with [Mr A]'. Dr C stated that he recalls asking one of the two ICU nurses (he cannot recall which nurse) whether they had any concerns about Mr A and was told that they had none.

31. At 11.15pm, RN G paged the on-call house officer to ask whether Mr A could be administered metoprolol orally, as Mr A was Nil by Mouth and his other oral medications had been withheld. There is nothing in the clinical records to indicate what instructions were provided by the house officer, if any, in relation to whether Mr A could be administered metoprolol. RN G did not administer Mr A with metoprolol as her shift ended at 11.15pm, and care of Mr A was handed over to RN B for the night shift. RN G said that she would have covered this in her handover to RN B at the end of the shift.

32. RN B did not make any entries in the clinical records from the time she took over care of Mr A at approximately 11pm until 3.55am on Day 3. RN B documented the care retrospectively at 3.55am on Day 3. From 3.55am to 7.00am on Day 3, there are no nursing entries in relation to the administration of metoprolol, the assessment of its effect on Mr A, or Mr A's condition.

33. RN B documented that at 11.00pm, Mr A had 'confused verbalisation' and 'doesn't follow commands'. RN B noted: '[On-call house officer] knows [patient] from admission [and reviewed patient] = [no new orders].'

34. RN B and Dr C presented differing accounts of the events that followed.

[28] Having the normal volume of blood or fluids in the body.
[29] A type of protein found in cells in the heart muscles. When these cells are injured, they can be released into the blood.

35. RN B stated that at the time of her assessment of Mr A at 11.00pm, she noted a disparity between the arterial line blood pressure and the non-invasive[30] blood pressure.[31] Initially, RN B said that she discussed this with Dr C, but subsequently, she said that she discussed this with Dr F, and not with Dr C. Initially, RN B stated that she recalls asking Dr C 'what could be going on?' in relation to Mr A's blood pressure. RN B said that 'a discussion ensued whereby Dr C drew a diagram to explain the findings, a diagnosis of R) subclavian stenosis known for [Mr A]'. In response to the provisional opinion, RN B said that this discussion was with Dr F, and that it was Dr F who had drawn the diagram, not Dr C. RN B said:

> 'I absolutely went into the office and asked the House Surgeon — [Dr F] who was on the unit making decisions regarding the infarction — why is there this discrepancy? [Dr F] drew a picture for me on the office notepad in front of the computer explaining the mechanisms in effect. I specifically asked — well which blood pressure measurement is the relevant one to use in determining his vascular pressure? The reply was to use Left arm pressures — which is exactly what I did. The comments made by the surgical team that I "ignored" [Mr A's] arterial [blood pressure] measurement is pejorative and untrue. I was trying to do the best for my patient guided by medical advice … On reflection I could have recorded both, but I would still have been left with the impression that the left blood pressure was the more accurate/influential pressure to be mindful of.'

36. Dr C said that RN B did not discuss a disparity between the arterial blood pressure and the non-invasive blood pressure with him at around 11.00pm. Dr C also said that he did not receive a page from RN G at 11.15pm, and he was not informed of Mr A's 'confused verbalisation', or inability to follow commands. Dr C said that he was not made aware of any concerns in relation to Mr A on Day 2. Dr C said that the first time he was made aware of any concerns was shortly after 3.00am on Day 3, when Mr A had gone into atrial fibrillation (discussed further below).

37. At 11.40pm, in accordance with Dr F's plan, RN B reviewed Mr A's troponin levels, which were elevated.[32] It is unclear from the clinical records what actions, if any, RN B took in response to Mr A's elevated troponin levels at this stage. Dr C said that he received no handover regarding following up on Mr A's troponin levels.

Day 3

38. From around midnight, Mr A's blood pressure started to drop progressively,[33] and his heart rate increased.[34] At this point, Mr A's urine output decreased,[35] and his GCS[36] score decreased from 15/15 to 13/15. RN B documented that Mr A's respiratory rate was 24

[30] Uses a pressurised cuff around the arm or leg to measure blood pressure.
[31] 84/34mmHg (arterial line) and 112/54mmHg (cuff).
[32] 49ng/l. Troponin levels are typically considered elevated if they are above 40ng/l.
[33] 117/44mmHg (arterial line) and 135/61mmHg (cuff).
[34] 84bpm.
[35] From 50ml/hour at 11.00pm to 25ml/hour at 12.00am.
[36] Glasgow Coma Scale — a tool to help assess a patient's level of consciousness, with 15 being the best score, and 3 being the worst score.

breaths per minute, but she incorrectly documented this in the row on the EWS that scored 0 points, when it should have scored 2 points.

39. Dr C said that at approximately 12.30am, he was asked to review another patient in ICU. Dr C stated:

> 'As I was passing through ICU, I asked [RN B] whether there were any changes or concerns with [Mr A]. I was told there were no concerns or changes to report. I recall being quite rushed at this stage, and so did not follow up with any more specific questions than that.'

40. At 1.00am, Mr A's heart rate was elevated,[37] and his blood pressure remained low.[38] RN B documented that Mr A's respiratory rate was 26 breaths per minute, but again, she incorrectly documented this in the row on the EWS that scored 0 points, when it should have scored 3 points.

41. At 2.00am, Mr A's heart rate had improved,[39] but his blood pressure remained low.[40] RN B documented that Mr A's respiratory rate was 25 breaths per minute. This was also incorrectly documented on the EWS row that scored 0 points, when it should have scored 3 points.

42. At 3.00am, RN B noted that Mr A's heart rhythm[41] had changed to atrial fibrillation[42] (120–155bpm), with abnormalities on his ECG. RN B also documented that the arterial blood pressure was inconsistent with the non-invasive blood pressure. At this point, Mr A's GCS score remained at 13/15. Mr A's respiratory rate remained at 25 breaths per minute, which was again incorrectly documented on the EWS that scored 0 points, when it should have scored 3 points.

43. RN B stated that it was not Mr A's blood pressure in itself that was of concern, as it remained within acceptable parameters, but it was the clinical presentation in its totality, 'noting the subtle changes in trends with [a decreasing] level of consciousness, [an increasing] heart rate, change in rhythm and fluid imbalances which [led] to concern'.

44. RN B said that she recalls paging Dr C for assistance and discussing the situation with him over the phone, but that Dr C was in ED at the time and unable to review Mr A in person. RN B stated that 'having the on-call [house officer] prioritise care elsewhere in the hospital was a regular occurrence on night duty'.

45. Dr C confirmed that he was paged by ICU just after 3.00am. He stated:

---

[37] 106bpm at 1.00am.
[38] 126/60mmHg.
[39] 92bpm.
[40] 86/36mmHg (arterial line) and 113/55mmHg (cuff).
[41] The heart rhythm is the pattern of electrical impulses that make the heart muscle squeeze and pump. This differs from the heart rate, which is the number of heartbeats per minute.
[42] An irregular and often rapid heart rate.

> 'At the time I was in the Emergency Department having a family meeting with a large family about end of life care for a patient. In addition I had four other patients waiting to be seen on four different wards, as well as four others waiting to be admitted in the ED.'

46. Dr C said that he responded to the page shortly after 3.00am by calling RN B. Dr C stated:

> '[RN B] told me [Mr A] had gone into Atrial Fibrillation at 140–150 beats per minute. I asked what his blood pressure was and I was told it was 130/[70]. I was informed also that he had good urine output and had intravenous fluids running. I asked if he had received his usual Metoprolol (a beta-blocker which slows the heart rate) for his pre-existing Atrial Fibrillation. I was told that he had not. I suggested that his oral Metoprolol be resumed, but was told he had been unable to swallow since his operation. We discussed IV Metoprolol as an alternative. [RN B] thought IV Metoprolol was a reasonable plan. I was aware of her background working in a cardiac unit where Metoprolol is used frequently, and so I was reassured by her confidence. Accordingly, I gave a verbal order for a slow push of IV Metoprolol, 5mg.'

47. Dr C said that the only information he received about Mr A's low blood pressure and deteriorating condition during the night shift was shortly after 3.00am, when he responded to the ICU page, as discussed above.

48. Dr C undertook no physical examination of Mr A during his night shift. Dr C stated that, apart from the atrial fibrillation, RN B did not report any other concerns about Mr A's condition to him, and she did not ask him to review Mr A.

49. Dr C said that after having spoken to RN B shortly after 3.00am, he did not consider that a physical review of Mr A was indicated, nor did he consider that the on-call surgical senior medical officer (SMO) needed to be called to discuss the case. Dr C stated:

> 'At no stage was I asked to review [Mr A], and my workload was such that unless I had been told he had been deteriorating or asked to review him, I simply did not have the time to do so. Had I known more, in particular the steady deterioration of his blood pressure which the A-line demonstrated since 2300, I would have gone to review him in any event. However none of that information was conveyed to me.'

50. Dr C said that he would have preferred to review Mr A before he prescribed metoprolol but said that he was aware that Mr A had previously been on metoprolol for his pre-existing atrial fibrillation. Dr C stated that he was reassured by the confidence expressed by RN B, as a senior ICU nurse, that the medication was appropriate. Dr C said that in the circumstances, he considered that his priority was to attend to the four other patients who were awaiting his review. Dr C said:

> '[RN B] did not ask me to review [Mr A] in person. Other than the atrial fibrillation, she raised no concerns, and made no mention of a deteriorating EWS. I felt reassured that [Mr A] was sufficiently stable, so that an immediate review was not indicated. In retrospect, I accept that this was a missed opportunity, and that given we were

considering the administration of IV metoprolol, I should have undertaken a review or alternatively contacted the on-call SMO.'

51. At 4.10am, Dr C confirmed his verbal order for Mr A to be administered intravenous (IV) metoprolol by initialling the medication chart, and the metoprolol was given at 4.10am.

52. It is documented on the medication chart that metoprolol was to be administered 'stat'. Dr C stated that this was not his instruction, and that he had asked for the metoprolol to be administered in a 'slow push', which meant 'small increments of about 1mg with a minute between each push'. RN B said that the word 'stat' on the medication chart was intended to mean 'give it now' and was not intended to mean 'just push in the drug/dosage'.

53. Shortly after the metoprolol was administered, Mr A's clinical condition deteriorated, and his blood pressure dropped further. A rapid response call was made, and Mr A was given adrenaline[43] and three cycles of CPR.[44]

54. Dr C stated:

> 'I heard nothing further until approximately 0430, when there was a rapid response call for ICU. When I got there shortly afterwards, the nursing staff were already performing CPR on [Mr A]. While CPR was going on, I called the on-call Surgical SMO. I got through on the second attempt, informed him of the situation, but was told that there was nothing he could do and I should call the on-call anaesthetic SMO. I got through to the anaesthetic SMO on the fifth attempt, and he came into the Hospital. [Mr A] was then intubated[45] and ventilated.[46]'

55. The anaesthetist reviewed Mr A at 4.30am (during the rapid response call), noted that Mr A's blood pressure had dropped and there was no carotid pulse,[47] and intubated and ventilated Mr A. At this point, Mr A's whānau was contacted and informed of his condition.

56. At 6.15am, following discussions with Mr A's family, Dr C completed and signed a Medically Initiated 'Not For Resuscitation' Authorisation form, noting that he believed that resuscitation was not in Mr A's best interests. The form notes that this was not discussed with Mr A, but that it was discussed with Mr A's relatives. Care was withdrawn and Mr A died in the presence of his family at 7.00am.

57. Te Whatu Ora told HDC:

> 'It is unclear why [Dr C] did not respond in a timely manner when [Mr A's] condition deteriorated. There were several calls made to [Dr C] on both night shifts. There was no bedside review of [Mr A] to ascertain the cause of his clinical deterioration and therefore prescribe appropriate treatment. [Dr C] also did not alert or seek assistance

[43] A medication that may facilitate defibrillation by improving myocardial blood flow during CPR.
[44] Cardiopulmonary resuscitation.
[45] A technique to keep the airway open by placing a tube into the windpipe, either through the mouth or nose.
[46] A form of life support to help a person breathe.
[47] The pulse from the carotid arteries (found on either side of the neck).

> of [Dr D] or the Anaesthetist on call to help manage [Mr A], when his condition deteriorated. This only occurred once [Mr A] went into cardiac arrest. This is in contrast to [Dr F] who reviewed [Mr A] promptly when his clinical condition deteriorated.'

58. Dr C told HDC:

> 'It is not true that several calls about [Mr A] were made to me that night. I received the one page just after 0300, and at approximately 0430 I responded to the rapid response call. As I have said, when I spoke to [RN B] shortly after receiving the page, I was not asked to review [Mr A]. I accept that I should have done so anyway, or alternatively contacted the on-call SMO.'

EWS chart

59. RN G calculated and documented the total scores on the EWS chart at 3.00pm, 4.00pm, 8.00pm, and 9.00pm on Day 2 (when Mr A's EWS was 2), but she did not calculate and document the scores at 5.00pm, 6.00pm, or 7.00pm on Day 2.[48]

60. RN G told HDC that she did not document these total scores because she did not check Mr A's temperature at those times as he was not feverish. RN G said that if she had been concerned, she would have checked the EWS every hour as a matter of practice. RN G explained that to have an accurate EWS, all the observations on the EWS chart needed to be checked. RN G told HDC:

> 'The HDU EWS charts were fairly new to ICU at this time. We had some in-service training in the ward about the EWS charts … In terms of escalating care, I follow the EWS chart or if I am concerned about a patient [I] will call text or page the appropriate medical officer to review depending on the situation.'

61. RN B did not calculate and document any of the total scores on the EWS chart for her entire shift on Day 2 and Day 3.

62. RN B said that she does not believe that the failure to total the scores on the EWS chart contributed to any delay in the escalation process 'as concerns in the patient's condition had been raised from the beginning of the shift'. She accepts that she did not calculate and document the total scores on the EWS chart. RN B stated:

> '[T]he EWS chart was a relatively new tool and having many years of critical care experience overlooked the practice of totalling, as having critical inquiry and thinking to determine actions is an inherent default.'

63. The Director of Nursing told HDC:

> 'Upon interview of the RNs involved, various other ICU RNs from the period in question and the Clinical Coach [who] held the portfolio for EWS rollout, the EWS chart is said to

[48] The EWS chart states that for an EWS of 1–5, to 'manage pain, fever or distress. Repeat vitals within 2 hours.'

> have been in its infancy as a newly introduced tool to ICU practice (approx 6-months old).'

64. RN B stated: '[W]e are all adapted and used to EWS charts now, but certainly [we were] not during 2020.'

Staffing levels

65. Dr C told HDC that as the house officer on the night shift, he was covering all the wards in the hospital, which included medicine, surgery, orthopaedics, maternity, paediatrics, and psychiatry.

66. Dr C said that there was one Emergency Medicine SMO on duty, but the SMO's duties were confined to the ED. Dr C told HDC: 'I do not know how many in-patients we had that night, but I would guess it was more than fifty. I do know I was frantically busy, all night long.'

67. Dr C said that prior to these events, there had been email communications between both the junior and senior doctors in the medical department about 'how the workload at night was unmanageable and unsafe for just the one junior doctor'.

68. Dr C said that in the year prior to the events, an audit had been undertaken, and it was his understanding that the audit had confirmed that 'the workload at night was unmanageable'. Dr C stated: 'Almost invariably whenever I was on night duty, I found myself virtually running from patient to patient all night long. I felt that the workload was unsafe.'

69. Te Whatu Ora told HDC:

> '[RMOs[49]] have excellent access to their [SMOs] and are encouraged to contact them early if there are any concerns. The recent MCNZ review confirmed that junior doctors had good access to [SMOs] and felt confident that they could escalate concerns to them. There were a number of SMOs available to provide advice, including the Emergency Medicine Specialist, Physician on call, General Surgeon on call and the Anaesthetist on call.'

70. Dr C disagrees with Te Whatu Ora's assertion that RMOs had 'excellent access' to SMOs at the time of the events. Dr C said that on 'many occasions' when he contacted the on-call SMO after hours, either the phone would not be picked up, or the response would be 'short and abrupt on account of the SMO having been awoken from sleep'. Dr C said that while it is true that the RMOs were encouraged to contact the SMOs early in the event of any concerns, in his experience, the reality was otherwise.

[49] Resident medical officers.

Guidelines, policies, and procedures

Admission and Patient Management in the ICU/HDU/CCU

71. Te Whatu Ora's guideline on Admission and Patient Management in the ICU/HDU[50]/CCU[51] (dated February 2018) (ICU Guideline) specifies the admission of patients to, and management in, the ICU, HDU and CCU, so that patients can be monitored more closely and receive appropriate treatment in a timely manner. The ICU Guideline provides clarity on the responsibilities for medical staff regarding the admission and management of patients within the ICU/HDU/CCU.

72. The ICU Guideline states that the primary team consists of the consultant under which the patient is admitted to the ICU/HDU/CCU and the medical staff for whom the consultant is responsible.

73. The ICU Guideline states that clinical care on a day-to-day basis is the responsibility of the primary team, but that most patients will benefit from a multidisciplinary team approach (anaesthetists, physicians, surgeons) of joint bedside management in a collegial supportive manner to deliver optimal care and outcomes. It states that this is the overarching principle of good ICU/HDU/CCU care.

74. The ICU Guideline states that a primary team, requesting admission of a patient to ICU/HDC/CCU, accepts the following management principles:

> '• Clinical management of the ICU/HDU/CCU patient should include two bedside patient reviews per day, conducted by the SMO team (Minimum Standards for Intensive Care Units, 2011) …
>
> • A request to review a patient at the bedside in ICU/HDU/CCU must be met by a member of the primary team (or the covering on-call team) promptly (<15 minutes) …'

75. In relation to the role of different care teams, the ICU Guideline states:

> '• Deteriorating patients need to be discussed with the SMO.
>
> • These patients will be identified to the RMO by the senior nurses on duty. The RMO will contact the SMO to discuss the patient.
>
> • In some circumstances the senior nurse on duty might escalate the process and contact the SMO directly …'

Adult vital signs and EWS

76. Te Whatu Ora's policy on Adult Vital Signs and EWS; Measurement, Recording and Escalation Pathway (dated January 2018) (EWS Policy) states that the policy does not include patients during their stay in ICU/CCU but that EWS will be documented on admission and discharge to ICU.

[50] High Dependency Unit.
[51] Coronary Care Unit.

Prescribing of medication

77. Te Whatu Ora's Prescribing Policy states that controlled drugs[52] should not be ordered over the telephone, unless in exceptional circumstances. The Prescribing Policy states that only a single dose of a medicine, or enough to cover the 24-hour period until it can be signed by a prescriber, can be administered via a telephone call or verbal order.

78. Te Whatu Ora told HDC that Dr C followed the Prescribing Policy. Te Whatu Ora said that RMOs are provided guidance on prescribing medications and that they are made aware of organisational policies.

79. Te Whatu Ora stated:

> 'It would not be usual practice for a clinician to give verbal orders for IV Metoprolol, without reviewing the patient. All [RMOs] are required to undertake the ACLS[53] course that provides a framework for managing cardiac arrhythmias. In a post-operative patient, it would be prudent to understand the aetiology of atrial fibrillation, as these need to be addressed along with the management of arrhythmia. [Dr C] would also have been aware that a number of [Mr A's] antihypertensive and anticoagulants were withheld on admission the previous day.'

80. Dr C told HDC that as far as he was aware, he received no training or education about verbal medication orders.

Dr D's statement

81. Following the events, Dr D provided a statement to the New Zealand Police[54] outlining his concerns about the care provided to Mr A.

82. Dr D stated that following the surgery, Mr A was admitted to the ICU, but given Mr A's age, 'the recovery from surgery comes with some heightened complication factors'.

83. Dr D said that on Day 3, the morning following the surgery, he was advised that Mr A's condition had deteriorated, and that Mr A had died. Dr D stated that neither he nor his senior colleague had been contacted in relation to Mr A, since Mr A was in the care of the ICU.

84. Dr D stated that a review of the events was undertaken by a clinician who 'immediately had some concerns about the practices observed and documented' in relation to Mr A's postoperative care. Dr D's statement to the Police included the following:

> 'The first concern we had was in relation to blood pressure checks. There are two ways to ordinarily measure for blood pressure. The first is an indirect non-invasive measure using a blood pressure cuff. This is recognized as not a perfect system of measurement and there are variables to be considered such as the size of the actual cuff and other

[52] Including medicines available on prescription from a health professional.
[53] Advanced Cardiovascular Life Support.
[54] Dr D reported the case to the Coroner and provided a statement to the Police in relation to Mr A's death.

factors like any obstructions such as whether it's over clothing, cords, arterial disease, etc.

The other way to measure blood pressure is via an invasive arterial line (A-line) which goes into a blood vessel on the wrist and gives a continuous up to date measurement of blood pressure. This method of testing blood pressure is considered a "Gold standard" measurement and is the most accurate in most incidences. We observed in the case summary that the nurse had adopted both ways to measure blood pressure.

The recordings documented show the A-line blood pressure measure dropping over a timeframe of several hours. However there was no action taken in response to this measurement reading dropping. The reading that they have based their ongoing treatment on is the reading on the blood pressure cuff which is typically less accurate than the A-line measurement. The cuff measurement was reading a higher blood pressure.

We also noted that they had not been using the EWS score which is an assessment tool used to tally up the patient's vital signs and based on score it [instructs] actions to take when things are outside a normal range … This chart was not used accurately and the tallies were not added up so there was no prompt to consult with anyone.

Around the same time it was also noted that the patient's electrocardiogram (ECG) was showing changes of lateral [ischaemia]. These are changes on the pattern of the heart's pacing system that suggest the heart is straining and not receiving enough blood supply.

I also observed that there was no physical medical review completed for the patient by the House Officer (Junior Doctor on-duty).

Later on; and while the blood pressure continued dropping; the patient's condition deteriorated further with him going into atrial fibrillation. This is a type of cardiac arrhythmia [where] the heart starts beating quite fast and can further affect the blood pressure. It also increases the amount of blood supply the heart requires.

The House Officer was once again contacted and despite no physical review a verbal prescription for a medicine (Metoprolol) was given over the phone. This medication would slow down the heart and also decrease the blood pressure.

My concern is that the medicine prescribed is not one that you can typically prescribe over the phone and certainly is not ordinarily prescribed without a physical review of the patient.

Based on all of these contributing factors I have concerns that the standard of care offered was not to the standard expected and should it have been at the standard expected and in line with the trained practices it may have prevented such a rapid deterioration of the patient's status while he was in the hospital's care and potentially even prevented the death of the patient …'

Te Whatu Ora's review

85. Following the events, the surgical team reviewed the care provided to Mr A at a Mortality and Morbidity meeting, and noted the following issues:

> '• Nurse ignored A-line [blood pressure] despite good trace because [non-invasive blood pressure] higher.
>
> • No EWS score recorded.
>
> • No escalation of care or medical review over 12h until arrest.
>
> • IV metoprolol given as verbal order by [house officer] when patient went into [atrial fibrillation].
>
> • Tachycardia[55] and hypotension[56] post op = hypovolemia[57] until proven otherwise. No fluid bolus given or bloods repeated.'

86. Te Whatu Ora held a rapid review meeting. Minutes of the meeting noted the following:

- Mr A was high risk preoperatively due to his cardiac history and stroke in 2019. The minutes state that the 'outcome of death may have been the same, however there was a lack of escalation which may have prevented [Mr A's] death'.
- The house officer was informed that Mr A was haemodynamically stable, and 'was not given the full picture of the patient e.g the [blood pressure] dropping; and difference between the [A-line blood pressure] and cuff'.
- The EWS chart score was not totalled 'and if it was escalation would have resulted earlier'.
- The decision-making did not involve the whole team, ie, nursing and medical.

87. The minutes state: '[The] [e]scalation process needs to be looked at. Surgical team is more than happy to be phoned out of hours.'

Further information

Te Whatu Ora

88. Te Whatu Ora expressed its sincere condolences to Mr A's family on the passing of Mr A.

RN B

89. RN B expressed her deepest condolences to Mr A's family and said that she can understand their distress and concerns.

Dr C

90. Dr C expressed his sincere condolences to Mr A's family for their sad loss.

[55] Fast heart rate.
[56] Low blood pressure.
[57] A decreased volume of circulating blood in the body.

91. Dr C told HDC:

> 'On the basis of the clinical information conveyed to me at the time, and given the clinical workload and pressure I was under, I consider that the care I provided was to an appropriate standard, (recognising that, save for the Emergency Department, I was the sole medical practitioner covering the Hospital that night).'

92. Dr C said that he is deeply regretful that he did not review Mr A, but said that he considers that in the circumstances, it was reasonable for him not to do so.

Responses to provisional opinion

Mr A's family

93. Mr A's family was given an opportunity to respond to the 'Introduction', 'How matter arose', and 'Changes made since events' sections of the provisional opinion.

94. Mr A's family said that they do not believe that the care provided to Mr A by Te Whatu Ora and RN B was to an acceptable standard. Mr A's family said that, while they believe that Dr C had made mistakes, it is the family's view that Dr C relied on RN B, who he believed to be an experienced nurse, and that he had been placed in an unenviable position by Te Whatu Ora. Mr A's family said:

> 'While accepting that [Mr A] had underlying health issues it is the family's view that he may well have still been alive today had [RN B] and Te Whatu Ora provided an acceptable level of care.'

95. Mr A's family told HDC that they do not consider that Dr C should be held responsible for the events that occurred.

RN B

96. RN B was given an opportunity to respond to the sections of the provisional opinion that relate to the care she provided.

97. RN B's comments have been incorporated into this opinion where relevant and appropriate.

98. RN B said that she remained at Mr A's bedside constantly due to Mr A's increasing confusion but given that there were only two registered nurses on duty overnight, they were required to leave patients' bedsides to complete unit-specific tasks, such as fetching equipment and fetching medications from the treatment room. RN B said that post-anaesthetic confusion in elderly persons is not unusual but requires nursing management and care.

99. RN B said that in 2009, when she first started working in the ICU at Te Whatu Ora Tairāwhiti, it was common practice for the nursing staff to call the consultants directly, but in 2020 this was no longer the case. RN B said:

> 'By 2020 this practice was long gone, we nurses had to consult with the house officers and then if the house officer considered it necessary, then they would call the consultant. This has been an ongoing issue for years, including anaesthetists who won't

> speak to nurses unless the consultant calls them (the anaesthetist) directly when issues arise. In essence the consultants themselves initiated their "chain of command" and it didn't involve nurses (except for calling the house surgeon first — there are now registrars too, but in 2020 I don't think we had any). It Is quite disingenuous of the surgeons to say they are happy to be called anytime, when in practice they themselves dissuaded nurses from doing so … I certainly have a lot of sympathy for the pressures [Dr C] was under, however, it was his call to get help from his seniors or not — I was involved with caring for [Mr A] and was not [cognisant] of the impossible workload he had that night.'

100. RN B apologised to Mr A's family for her comment on the family's arrival at the ICU when she stated that Mr A 'had caused us a few issues last night'. RN B said:

> 'I can't apologise enough for my inappropriate comment. I can [realise] the circumstances of how and why I said that but that is meaningless to a distressed family. I've tried to think of how I would phrase my words if I could re-do that time and the best I can think of right now is "I'm sorry you've received the sudden news of your husband/dad's condition. Is there anyone or anything you'd like right now to help" … Once again I apologise and recognise my insensitivity here.'

Dr C

101. Dr C was given an opportunity to respond to the sections of the provisional opinion that relate to the care he provided.

102. Dr C's comments have been incorporated into this opinion where relevant and appropriate.

103. Dr C said that he accepts the following criticisms of his care, which are mitigated by the circumstances discussed in the provisional opinion:

- That he did not escalate care of Mr A to the on-call SMO when he was unable to review Mr A at around 3.00am on Day 3;
- That he did not undertake a bedside review of Mr A or ask the on-call SMO to review Mr A, if he was unable to do so, at around 3.00am on Day 3; and
- That he prescribed IV metoprolol verbally without first having reviewed Mr A and that he initialled the medication chart without correcting the error that it be administered 'stat'.

Te Whatu Ora

104. Te Whatu Ora acknowledged that at the time of the events there was an increasing demand for acute services with limited capacity to manage the volume. Te Whatu Ora said that several measures were implemented to reduce the risk to patients, including staff education, implementation of the EWS system, and a process of escalation of deteriorating patients to the appropriate specialists.

105. Te Whatu Ora said that it is aware that its staff faced challenges at the time of the events and that some of the issues identified in the provisional opinion are due to systemic issues, rather than the fault of the individual clinicians.

Opinion: Te Whatu Ora — breach

Introduction

106. First, I express my sincere condolences to Mr A's family for their loss.

107. To consider whether the care provided to Mr A was reasonable, I was guided by the independent advice from Dr Kenneth Clark, who is vocationally registered with the Medical Council of New Zealand in Medical Administration,[58] and a fellow of the Royal Australasian College of Medical Administrators. Dr Clark was the Chief Medical Officer of MidCentral District Health Board from 2002 until 2019.

108. As a healthcare provider, Te Whatu Ora is responsible for providing services in accordance with the Code of Health and Disability Services Consumers' Rights (the Code). It had a responsibility to ensure that the hospital was sufficiently resourced, and that Mr A received services of an appropriate standard from experienced, suitably trained, and supported staff. While there is certainly individual accountability and obligations on individual providers to provide care within accepted standards, Te Whatu Ora has an organisational responsibility to provide a reasonable standard of care to its patients. I consider that a combination of inadequate staffing and support affected the care provided to Mr A. I find that Te Whatu Ora breached Right 4(1)[59] of the Code. The reasons for my decision are set out below.

Staffing and staff training

109. On Days 2 and 3, Dr C, a doctor at junior level, was the only house officer on the night shift. Dr C told HDC that the 'workload at night was unmanageable and unsafe for just the one junior doctor'.

110. Dr Clark advised that the key issues in relation to the staffing levels were Dr C's workload in respect to bed and patient numbers, the patient acuity mix, the other duties for which Dr C was responsible, and the support and escalation mechanisms available to Dr C.

111. Dr Clark advised that the RMO/intern staffing at night at the time of Mr A's admission was inadequate and not in the best interests of the patients, their whānau, or the clinical staff. Dr Clark considers this to be a moderate departure from the accepted standard. Dr Clark advised:

> 'Realities of high patient demand, with increasing complexity and acuity, are seen across the entire health sector. Equally resource constraints are recognised, however in this situation the provider has not ensured adequate staffing levels at night — and has

[58] Administration or management utilising the medical and clinical knowledge, skill, and judgement of a registered medical practitioner. This may include administering or managing a hospital or other health service, developing health operational policy, or planning or purchasing health services.
[59] 'Every consumer has the right to have services provided with reasonable care and skill.'

> placed excessive clinical responsibility on an Intern, both on this particular shift and it appears on a number of other shifts over time.'

112. I accept Dr Clark's advice. I am aware of the pressure hospitals are under at a national level due to an increase in demand, workforce shortages and recruitment challenges. However, fundamentally, healthcare consumers have the right to expect hospitals to be sufficiently resourced with the appropriate mix of skilled and experienced staff to provide safe and competent care. In my view, Dr C was not provided with adequate supervision, given his level of experience, and the support available to Dr C was inadequate.

113. The acuity, staffing levels, and the lack of staff training on the Prescribing Policy and verbal medication orders suggests that this was a service delivery failure on the part of Te Whatu Ora.

114. I note that since the events, Te Whatu Ora has reviewed its safe staffing levels on night shifts and has added medical registrars to the RMO workforce.

Communication with whānau

115. To consider whether the communication with Mr A's whānau was appropriate, I was guided by the independent advice from RN Julia Braid.

116. Mr A's condition started to deteriorate from 12.00am on Day 2 but Mr A's whānau was not contacted until the rapid response call was made at approximately 4.30am on Day 3.

117. RN Braid advised:

> 'In my opinion, the family were not communicated with in an empathetic or timely manner after 11pm as [Mr A's] condition continued to decline. Therefore, denying them an opportunity to decide if they wanted to be at his bedside during the night, and denying [Mr A] possible comfort of their presence in his confused state. This is a serious departure from standards.'

118. I accept RN Braid's advice. Given that Mr A's condition was deteriorating, I would have expected Mr A's family to have been contacted earlier, and I am critical that this did not occur.

Conclusion

119. In my view, Te Whatu Ora failed to provide services to Mr A with reasonable care and skill for the following reasons:

- The staffing levels, supervision, and support provided to the medical staff at the time of the events were inadequate;
- There was a lack of training for medical staff on the Prescribing Policy, resulting in IV metoprolol being prescribed over the telephone without a review of Mr A; and
- The communication with Mr A's whānau was inadequate.

120. Accordingly, I find that Te Whatu Ora breached Right 4(1) of the Code.

Opinion: RN B — breach

121. To consider whether the care provided by the nursing staff was reasonable, I was guided by the independent advice from RN Julia Braid.

122. Having undertaken a thorough assessment of the information gathered, I find that RN B breached Rights 4(1)[60] and 4(2)[61] of the Code. The reasons for my decision are set out below.

Care provided

Escalation of care

123. Mr A was in a stable condition immediately following his surgery on Day 2. He was transferred to ICU at 1.15pm on Day 2, and by approximately 4.00pm he was reported to be comfortable, and his abdominal pain had improved.

124. Later that evening, at 9.45pm, Mr A was reviewed by Dr F for signs of possible myocardial ischaemia. Dr F did not consider that any intervention was necessary at that stage but directed the nursing staff to monitor Mr A's blood pressure, heart rate, oxygen saturation, and chest pain.

125. Care of Mr A was handed over to RN B at 11.15pm on Day 2.

126. Initially, RN B said that she discussed with Dr C the difference between Mr A's arterial line blood pressure and non-invasive blood pressure at the beginning of the shift. Subsequently, however, RN B said that this discussion was with Dr F, and not Dr C. This is not documented in RN B's clinical records, which she documented retrospectively. Dr C said that he was not made aware of any concerns about Mr A's condition until around 3.00am on Day 3, when Mr A had gone into atrial fibrillation.

127. Due to the differing statements presented by Dr C and RN B and the lack of detail in the clinical documentation, I am unable to determine when RN B first informed Dr C of her concerns about Mr A's condition.

128. Mr A's condition deteriorated from 12.00am on Day 2. At 12.00am, Mr A's heart rate started to increase, and his urine output and GCS score started to decrease. Mr A's blood pressure also started to decrease gradually. RN B stated that it was not Mr A's blood pressure in itself that was of concern, but the clinical presentation in its totality, 'noting the subtle changes in trends with [a decreasing] level of consciousness, [an increasing] heart rate, change in rhythm and fluid imbalances which [led] to concern'. Given the overall clinical picture, at this point, RN B should have escalated care of Mr A to the relevant senior medical staff, and

[60] 'Every consumer has the right to have services provided with reasonable care and skill.'
[61] 'Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards.'

I am critical that this did not occur. This was a missed opportunity to recognise Mr A's deteriorating condition, and to provide treatment.

129. There was a period of three hours (from 12.00am until 3.00am) during which Mr A's blood pressure continued to drop, and his condition continued to deteriorate. As set out above, I am unable to determine when RN B first informed Dr C about the concerns with Mr A's condition. In any event, regardless of whether RN B informed Dr C of any concerns at the beginning of the shift, I am critical that RN B took no action until approximately 3.00am, when Mr A went into atrial fibrillation, and she paged Dr C for assistance.

130. Upon receiving the page from RN B at around 3.00am, Dr C was unable to attend Mr A because other patients required review. In my view, this was another missed opportunity for RN B to escalate the care of Mr A to the on-call senior medical staff.

131. RN Braid advised that the escalation of care was inappropriately delayed until the rapid response team was called at 4.25am on Day 3. RN Braid referred to Te Whatu Ora's ICU Guideline, which states that deteriorating patients will be identified to the RMO by the senior nurses on duty. The ICU Guideline also states that the RMO will contact the SMO to discuss the patient, and that in some circumstances, the senior nurse on duty may escalate the process and contact the SMO directly. RN Braid advised:

> 'In my opinion, nursing staff missed opportunities to act on this principle to seek advice and obtain a senior medical officer review of [Mr A] and is a severe departure from standards.'

132. I accept RN Braid's advice. Regardless of whether RN B informed Dr C or Dr F of her concerns at 11.00pm on Day 2, the lack of action taken by RN B when Mr A's condition started to deteriorate from 12.00am to 3.00am on Day 2 is a significant departure from the accepted standard of care.

133. In my view, Mr A's deteriorating clinical condition and the lack of medical review warranted escalation by RN B to the senior medical staff.

134. I note RN B's statement that 'having the on-call [house officer] prioritise care elsewhere in the hospital was a regular occurrence on night duty'. As commented on by Dr Clark, this in itself is not a reason for nursing staff to fail to escalate care of a patient, and it is not in line with the ICU Guideline.

135. Dr Clark similarly advised that there was a lack of communication and escalation of care between 11.00pm on Day 2 and 4.30am on Day 3. Dr Clark stated:

> 'There was a lack of communication by nursing staff with medical staff — firstly communication with [Dr C] in the hours between 2300 and 0300. In this context, it is possible that [Dr C] was either not responding to calls made to him, or was not available because of various other patients and duties for which he was responsible. If this were so, the nursing staff should have considered communicating directly with the relevant senior medical officers, whether that be surgical or anaesthetic, according to the

> relevant policies and procedures applying to patient management in the ICU … Equally, [Dr C] should have considered contacting the on-call senior medical staff himself, given that he was unable to respond in full to the requests of the ICU nursing staff …
>
> I do not believe that appropriate escalation of care occurred between 2300 and 0430. This is in respect to nursing staff not making earlier formal communication with [Dr C], whether that be by the paging system or telephone — and in respect to [Dr C's] failure to escalate to senior medical staff when he was contacted at 0300 but did not attend [Mr A] in person.'

Blood pressure monitoring

136. RN B stated that at the time of her assessment of Mr A at 11.00pm, she noted a disparity between the arterial line blood pressure and the non-invasive blood pressure. Initially, RN B said that she recalls having a discussion with Dr C in relation to Mr A's blood pressure, and that Dr C drew a diagram to explain the findings, and Mr A's diagnosis with right subclavian stenosis. Subsequently, however, in response to the provisional opinion, RN B said that her discussion about Mr A's blood pressure was with Dr F, and not Dr C. RN Braid advised:

> 'In my opinion when best practice for the management of arterial pressure lines is followed … the arterial line is the most accurate method to measure blood pressure and mean arterial blood pressure trends. During her shift [RN B] believed the blood pressure change she was seeing was explained by the arterial line not accurately measuring blood pressure, in the context of R) subclavian stenosis. She stated that she was given an explanation and a diagram by [Dr C] which she accepted, and she chose to use manual L) arm [blood] pressure measurements as the basis of blood pressure assessment … She continued to believe the significant difference in blood pressure measurements was that the manual cuff provided accuracy rather than [Mr A's] condition was acutely deteriorating. She appears to have lost situational awareness as she maintained this stance throughout the shift.
>
> In my opinion, after troubleshooting any issues, and if in doubt regarding the patency of accuracy of the arterial line a phone call to the On-Call Anaesthetist for advice is the favoured option.'

137. RN Braid advised that in a haemodynamically[62] unstable patient, non-invasive measures will be more inaccurate, making the invasive measurement more reliable, even if it were taken from a more distal artery. RN Braid advised that the dismissal of invasive arterial pressure monitoring in favour of non-invasive blood pressure monitoring in the context of a high acuity patient with bowel perforation, peritonitis,[63] new cardiac changes, and worsening multi-organ function, is a severe departure from accepted practice.

[62] Refers to blood pressure and heart rate.
[63] Inflammation of the lining of the abdomen.

138. I accept RN Braid's advice. I am critical that RN B failed to recognise the significance of the invasive arterial blood pressure measurement trend, particularly given the other clinical signs that Mr A's condition was deteriorating.

139. I acknowledge RN B's recollection that she discussed her concerns about Mr A's blood pressure with either Dr C or Dr F at 11.00pm but due to the lack of documentation, I am unable to make a finding that this occurred.

EWS

140. From 11pm on Day 2 to 5.00am on Day 3, RN B did not total and document the EWS each time she measured the vital signs. In addition, from midnight to 3.00am on Day 3, RN B documented Mr A's respiratory rates in the incorrect rows of the EWS chart. RN Braid advised that if the respiratory rates had been recorded in the correct rows, it would have resulted in additional points and a total EWS of 4 to 6.

141. RN Braid advised that due to reduced medical staffing after hours, nurses manage patients in the ICU/HDC/CCU with reduced levels of medical officer support. RN Braid said that the reliance on nursing staff to manage unwell patients within the system of reduced medical staff involvement, particularly on night shifts, depends on trusted communication processes (such as SBARR[64] and the EWS pathway). RN Braid advised that the registered nurse is accountable for providing accurate assessment and to escalate care appropriately, which is 'how many comparable ICU/HDU/CCUs have historically run in New Zealand'.

142. RN Braid said that the capacity to detect early deterioration is reduced when the EWS is incomplete. RN Braid advised:

> 'In my opinion, hourly or more frequent assessment of [Mr A] using the "head to toe" approach and accurately completing the EWS chart should have triggered hourly escalations or updates to [Dr C]. As even in the absence of accurate blood pressure and a temperature recording his EWS scores were elevated, if calculated correctly …
>
> To summarise it is my opinion, the EWS chart was inappropriately used during the period [Mr A] was deteriorating. The failure to undertake full observations, to chart and calculate them correctly in a patient with this condition is a severe departure from accepted practice.'

143. I accept RN Braid's advice. I am critical that RN B failed to complete the EWS chart accurately, and that she failed to total and document the scores. The purpose of the EWS escalation and response pathway is to assist staff to make reasoned decisions where there is evidence of deterioration, and to ensure an appropriate level of escalation and response.

[64] Situation, background, assessment, recommendation, and response — a structured method for communicating critical information that requires immediate attention and action, contributing to effective escalation and increased patient safety.

144. As commented on by RN Braid, the significance of RN B recording the respiratory rates in the incorrect rows is that the total EWS was 'falsely low', which failed to prompt further escalation, response, or investigations into the causes.

145. In my view, the inaccurate and incomplete EWS by RN B contributed to the failure to recognise Mr A's deteriorating clinical condition, and in care of Mr A not being escalated appropriately.

Conclusion

146. In my view, RN B failed to provide services to Mr A with reasonable care and skill for the following reasons:

- Mr A's care was not escalated appropriately;
- Mr A's blood pressure was not monitored adequately; and
- The EWS was not used appropriately (the chart was not completed fully and accurately).

147. Accordingly, I find that RN B breached Right 4(1) of the Code.

Documentation

148. RN B took over the care of Mr A from 11.15pm on Day 2, but she documented the care retrospectively at 3.55am on Day 3.

149. Given the acuity of the night shift, it was not unreasonable for RN B to have completed her clinical records retrospectively at 3.55am on Day 3. The clinical records are still contemporaneous and in line with the Nursing Council of New Zealand's standards. I am therefore not critical that RN B did not document her entries in the clinical records earlier.

150. I am, however, critical that RN B did not document her care of Mr A for the period from 3.55am to 7.00am on Day 3. RN B did not document the administration of metoprolol, her assessment of its effect on Mr A, or Mr A's condition during this period. RN Braid advised that she considers this failure to be a severe departure from acceptable practice.

151. I accept RN Braid's advice. The Nursing Council of New Zealand Code of Conduct for Nurses states: 'Keep clear and accurate records of the discussions you have, the assessments you make, the care and medicines you give, and how effective these have been.'

152. I acknowledge the acuity of the night shift and the challenging circumstances that RN B was working under at the time of the events. However, I am critical that RN B did not document her assessments and discussions with staff adequately.

153. RN Braid also advised that if Dr C's verbal order was for metoprolol to be administered in a 'slow push' and not 'stat', as documented by RN B, this 'miswording' represents a moderate departure from the accepted standard.

154. RN B said that the word 'stat' on the medication chart was intended to mean 'give it now' and was not intended to mean 'just push in the drug/dosage'.

155. Due to the lack of documentation, I am unable to determine what Dr C's verbal instructions were in relation to the administration of metoprolol and whether it was to be administered 'stat', or in a 'slow push'. I am critical that RN B did not document her discussion with Dr C in relation to the verbal prescription of metoprolol. If RN B had done so, this would have clarified how metoprolol should have been administered, and the intention behind the word 'stat' that is written on the medication chart. Further, RN B could have requested Dr C review Mr A, rather than rely on a verbal order for this medication.

156. In my view, RN B's documentation was not up to the standard required by the Nursing Council of New Zealand and, accordingly, I consider that RN B breached Right 4(2) of the Code.

Opinion: Dr C — adverse comment

Escalation of care

157. RN B and Dr C presented differing versions of the events. RN B said that she discussed with Dr C the difference between Mr A's arterial line blood pressure and non-invasive blood pressure at the beginning of the shift (at around 11pm). This is not documented in RN B's clinical records, which she documented retrospectively. On the other hand, Dr C said that he was not made aware of any concerns about Mr A's condition until around 3.00am on Day 3, when Mr A had gone into atrial fibrillation.

158. Due to the differing statements presented by Dr C and RN B and the lack of detail in the clinical documentation, I am unable to make a finding of fact as to whether RN B informed Dr C about the concerns with Mr A's blood pressure at the beginning of the shift (at around 11.00pm), or whether she informed him about the concerns only at around 3.00am, when Mr A had gone into atrial fibrillation.

159. Upon receiving the page from RN B at around 3.00am, Dr C was unable to attend Mr A because other patients required review. I am critical that Dr C did not escalate care of Mr A to the on-call senior medical staff when he was unable to review Mr A at around 3.00am. In my view, this was another missed opportunity for the care of Mr A to be escalated to the on-call senior medical staff.

160. As advised by Dr Clark, I acknowledge that there were multiple contributory factors at an organisational level that affected the care provided to Mr A. There was inadequate medical staffing during the night shift on Day 2, which placed excessive clinical responsibility on Dr C. Dr C was also not provided with adequate supervision, given his level of experience, and the support available to Dr C was inadequate. In my view, however, these factors did not absolve Dr C from his responsibility to escalate the care of Mr A when he was unable to review him at around 3.00am.

Medical review

161. The ICU Guideline states that clinical management of the ICU patient should include two bedside patient reviews per day, conducted by the SMO team, and that a request to review

a patient at the bedside in ICU must be met by a member of the primary team, or the covering on-call team, in less than 15 minutes.

162. Mr A was reviewed by Dr F at 9.45pm on Day 2.

163. At around 3.00am on Day 3, RN B paged Dr C for assistance, but Dr C was unable to review Mr A because other patients required review at that time. Dr C stated that he was not asked to review Mr A, and that had he been made aware that Mr A's blood pressure had been deteriorating steadily since 11.00pm, he would have done so.

164. Dr Clark advised that the lack of attendance by Dr C was not in keeping with the ICU Guideline. However, Dr Clark said that there were multiple mitigating factors (such as the staffing levels and acuity) and given the circumstances under which Dr C was working at the time, Dr Clark considers this to be a mild departure from accepted practice.

165. I accept Dr Clark's advice. Dr C should have undertaken a bedside review of Mr A, and he should have reviewed Mr A within 15 minutes from the time when he received the call/page for assistance at around 3.00am. I am critical that this did not occur. If Dr C was unable to review Mr A, he should have asked the on-call SMO to review Mr A.

166. There was no medical review of Mr A for approximately seven hours (from 9.45pm on Day 2, until approximately 4.30am on Day 3, when Mr A was reviewed by the rapid response team). This was not appropriate care.

167. In my view, the key issue is that there were critical missed opportunities to escalate care when it became evident that Mr A's condition was deteriorating, and, as a result, Mr A was not reviewed by medical staff.

168. I acknowledge, however, that largely this can be attributed to the challenging environment and pressure under which Dr C was working at the time of events. Dr C was a junior doctor and the only house officer on the night shift.

Verbal prescription

169. At some time between 3.00am and 4.00am on Day 3, Dr C gave a verbal order for Mr A to be administered IV metoprolol, without having reviewed Mr A.

170. Dr Clark considers this to be a moderate departure from the accepted standard of care. Dr Clark advised:

> '[I]n the Intensive Care Unit circumstance any significant clinical change should result in a bedside review by the responsible medical team — in this case, by [Dr C], or if he was simply not able to attend because of other clinical commitments, by escalation to the relevant senior medical staff. Verbal prescription has a small but definite place in health care, but in the context of patients in an intensive care or high dependency facility, it is my opinion that it should only be done in exceptional circumstances.'

171. I accept Dr Clark's advice. I am concerned that Dr C prescribed IV metoprolol verbally and without having reviewed Mr A. I note, however, that Dr C confirmed his verbal order for Mr A to be administered IV metoprolol by initialling the medication chart at 4.10am, in accordance with the Prescribing Policy. Te Whatu Ora also considers that Dr C followed the Prescribing Policy.

172. The IV metoprolol was administered stat, but Dr C stated that his instruction was for it to be administered as a slow push. It is documented on the medication chart that metoprolol was to be administered 'stat'. Dr C stated that this was not his instruction, and that he had asked for the metoprolol to be administered in a 'slow push', which meant 'small increments of about 1mg with a minute between each push'. This is indicative of the communication issues that can arise when giving verbal prescriptions. Due to the lack of documentation, I am unable to determine what Dr C's instruction was. If Dr C's instruction was for metoprolol to be administered in a 'slow push', then I am critical that he signed off on the medication chart, which stated that metoprolol was to be administered 'stat'.

173. I consider that it was Dr C's responsibility to ensure that the verbal prescription was correct. If the medication chart was not in accordance with his instruction, I am critical that he did not remedy this when he signed off on the medication chart.

174. I acknowledge, however, that there are numerous mitigating factors on the part of Dr C. Dr C was aware of Mr A's medical history and regular medications, as he admitted Mr A to the surgical ward on Day 1. Dr C was also reassured by the seniority and clinical experience of RN B. It is also possible that Dr C was not provided with all the relevant information about Mr A's condition at that time. In addition, Dr C told HDC that he received no training or education about verbal medication orders.

Changes made since events

RN B

175. RN B told HDC that she is no longer practising as a nurse.

Te Whatu Ora

176. Te Whatu Ora told HDC that significant changes have been made since the events, which are set out below.

<u>Quality and clinical governance</u>

177. Te Whatu Ora said that it is strengthening Clinical Governance activities, with additional staff recruited into the Quality Department. Te Whatu Ora anticipates that this will improve its capacity and capability to investigate serious incidents and ensure that any learnings are shared with the wider organisation. Te Whatu Ora said that the following changes have been made:

- The appointment of a Director and two Associate Directors of Quality;
- Weekly multidisciplinary Quality meetings;
- Monthly meetings of the Clinical Board;

- The implementation and appointment of second tier Nursing Leadership to support clinical nurse managers, which has a focus on education and quality; and
- An increase in the nursing workforce with an uplift of staff on night shifts.

Medical workforce

178. Te Whatu Ora said that it has reviewed safe staffing levels on night shifts, and it has added medical registrars to the RMO workforce, which has provided an additional layer of safety on night shifts. Te Whatu Ora said that the following changes have been made to the medical workforce:

- An increase in the number of medical staff working overnight. Te Whatu Ora stated that currently it has a medical registrar and a house officer working overnight, with specialists on call, and since February 2024, a physician has been working overnight on some of the overnight shifts; and
- An increase in the RMO workforce with the addition of registrars in General Medicine, ED, and Orthopaedics.

ICU

179. Te Whatu Ora stated that training for nursing staff has been increased, with staff having access to several courses, including the BASIC course.[65] Te Whatu Ora also said that the ICU has undergone an external review and that the following changes have been made:

- The employment of two intensivists to standardise ICU practices, provide clinical support to nurses, consult and advise the primary team on critically ill patients, provide leadership, nurture a collaborative and high-quality ICU team and provide surgical and medical teams with an accountable ICU leader;
- Appointment of a full-time ICU-specific clinical nurse manager with extensive ICU experience to help maintain standards, including nursing support, and foster a culture of safety and accountability;
- The institution of daily multidisciplinary rounding, which includes allied health professionals (pharmacy, physiotherapy, dietary), as well as palliative care and kaiatawhai[66] support;
- ICU clinical coaches to support nursing competency and education; and
- A crash simulation programme specific to ICU nursing staff to practise crash scenarios to improve teamwork and communication and provide regular practice for a high-stake low frequency event.

Implementation of Te Tāhū Hauora|Health Quality & Safety Commission deteriorating patient programme

- Implementation of EWS on wards and ICU;

[65] A training course designed to teach the practical management of critically ill patients.
[66] Māori healthcare staff whose role is to support the spiritual and/or cultural needs of Māori patients and their whānau.

- Regular auditing of EWS charts to ensure compliance and accuracy of EWS calculations and appropriate escalation; and
- Implementation of a simulation programme for house officers and nurses in acute deteriorating patient scenarios to build confidence, reinforce clinical decision-making, and develop teamwork skills.

180. In relation to the EWS system, the Director of Nursing told HDC:

> 'Many iterations have taken shape with the tool being adapted from Waikato DHB. Per Clinical Coach, the EWS component, utilisation and scenario based escalation drills were socialised with nursing staff through in-services until all ICU staff were captured. Blood pressure assessment specifically pertaining to the critical care setting occurs during induction/orientation to the ICU. My findings show that is adequate.'

181. Te Whatu Ora said that it is pleased with the significant progress made over the last few years. Te Whatu Ora stated:

> 'We are confident that the issues identified in the review have been addressed. We believe the work to strengthen the ICU, RMO educational programme, improve staffing at night and Clinical Governance in the organisation will go a long way in improving the quality of care we provide at Gisborne Hospital.'

Recommendations

182. Considering the changes made by Te Whatu Ora since the events, I recommend that Te Whatu Ora Tairāwhiti:

a) Provide a formal written apology to Mr A's family for the deficiencies in care identified in this report. The apology should be sent to HDC, for forwarding to Mr A's family, within three weeks of the date of this report.

b) Provide all current staff with training on the deteriorating patient, with an emphasis on the EWS system and escalation, including to whom care is to be escalated and by whom. Evidence of this is to be provided to HDC within six months of the date of this report. As suggested by Dr Clark, this should include multidisciplinary team simulation exercises to 'workshop' responses and, where required, escalation of care. Evidence of this is to be provided to HDC within six months of the date of this report.

c) Provide all medical staff with training on the practice of verbal prescriptions in the critical care setting. As recommended by RN Braid, Te Whatu Ora Tairāwhiti should also consider whether an advanced medications list, providing guidance on the roles and designations that can administer medications such as metoprolol, is warranted. Evidence of this is to be provided to HDC within six months of the date of this report.

d) Provide HDC with the updated ICU EWS chart that includes changes to the escalation pathway and improvements for documentation. The updated ICU EWS chart is to be provided to HDC within six months of the date of this report.

e) Review and update its EWS Policy and procedures to reflect the implementation and use of EWS in the ICU/CCU. The updated policies and/or procedures are to be provided to HDC within six months of the date of this report.

f) Review and update its ICU Guideline to strengthen the escalation and response system available, as recommended by RN Braid. The updated guideline is to be provided to HDC within six months of the date of this report.

g) Report on the effectiveness of the changes made in relation to staffing and the workloads of staff at night. Effectiveness should be measured via an audit of incidents occurring in relation to escalation of care. The audit's summary of findings, with corrective actions implemented/to be implemented should any incidents be reported, is to be provided to HDC within six months of the date of this report.

h) Ask senior clinical staff (including the Chief Medical Officer) to reflect on the systems in place for deployment of SMOs outside of hours, and on the current culture of availability and responsiveness of SMOs outside of hours, and report back to HDC on their reflections within six months of the date of this report.

i) Prepare and present an anonymised case study of this case for wider education of medical and nursing staff at Te Whatu Ora Tairāwhiti. The case study should detail the actions taken and decisions made by the staff, the results of these actions/decisions, and the appropriate course that should have been taken to arrive at a more desirable outcome. Evidence confirming the content and date of the presentation, and the staff to whom it has been presented, is to be provided to HDC within six months of the date of this report.

183. I recommend that RN B provide a formal written apology to Mr A's family for the deficiencies in care identified in this report. The apology should be sent to HDC, for forwarding to Mr A's family, within three weeks of the date of this report. Taking into account that RN B is no longer practising, I recommend that should RN B return to practice, she:

a) Undertake training on the deteriorating patient, with an emphasis on the EWS system and escalation, including to whom care is to be escalated and by whom.

b) Undertake training on documentation.

c) Undertake a competence review, with the assistance of the Nursing Council of New Zealand.

184. Considering the changes made and the significant training undertaken by Dr C since the events, I consider that no recommendations are necessary.

Follow-up actions

185. A copy of this report will be provided to the Coroner.

186. A copy of this report with details identifying the parties removed, except Te Whatu Ora Tairāwhiti, Gisborne Hospital, and the advisors on this case, will be sent to the College of

Intensive Care Medicine of Australia and New Zealand, and the College of Nurses Aotearoa (NZ).

187. A copy of this report with details identifying the parties removed, except Te Whatu Ora Tairāwhiti, Gisborne Hospital, and the advisors on this case, will be sent to the Nursing Council of New Zealand, and it will be advised of RN B's name.

188. A copy of this report with details identifying the parties removed, except Te Whatu Ora Tairāwhiti, Gisborne Hospital, and the advisors on this case, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Independent clinical advice to Commissioner

The following independent advice was obtained from Dr Kenneth Clark, an obstetrician and gynaecologist registered with the Medical Council of New Zealand in Medical Administration, and a fellow of the Royal Australasian College of Medical Administrators:

'9th June 2023

Re — Complaint: Tairāwhiti District Health Board, Ref: 21HDC00696

I have been asked to provide an opinion to the Commissioner on case number 21HDC00696. Specifically, I have been asked for my opinion on the care provided by Te Whatu Ora Tairāwhiti (formerly Tairāwhiti District Health Board) to [Mr A] at Gisborne Hospital in [2020]. I have read and agree to follow the Commissioner's guidelines for Independent Advisors. I do not have a personal or professional conflict in this case.

I am vocationally registered with the Medical Council of New Zealand in Medical Administration and I am a fellow of the Royal Australasian College of Medical Administrators. I was the Chief Medical Officer of MidCentral District Hospital Board from 2002 until 2019. I am currently a member of the Medical Council of New Zealand (MCNZ) and chair the Education Committee of the MCNZ.

In addition I work clinically as a specialist Gynaecologist. I am a vocationally registered specialist in Obstetrics and Gynaecology and I am a fellow of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists.

I have been asked to provide my opinion on the following issues:

Whether I consider the care provided to [Mr A] at Gisborne Hospital by Te Whatu Ora, from a systems perspective, was reasonable in the circumstances, and why.

In all aspects of my opinions that follow, I have carefully and determinedly, taken such a *systems perspective* in considering the various questions asked of me by the Commissioner. This includes care in terms of any comment in respect to clinical decisions where my personal clinical skill sets and qualifications do not extend. This is clearly so in the areas of Intensive Care Medicine and in General Medicine and I have therefore made no comment on these matters, unless the decision making was able to be considered from a broader systems perspective.

In particular, I have been asked to comment on:

1. The adequacy of the communication and coordination of care between the ICU and the on-call House Officer, [Dr C].
2. The appropriateness of the actions taken when [Mr A's] condition started to deteriorate, and whether any other actions should have been taken:

a) If [Dr C's] account of the events is accepted (being that he was only informed about [Mr A's] low blood pressure and deteriorating condition shortly after 3:00am on [Day 3], when [Mr A] had gone into atrial fibrillation).

b) If RN B's account of the events is accepted (being that [Dr C] was informed of her concerns and changes to [Mr A's] clinical condition).

3. Whether there was appropriate escalation of care.
4. Whether it was reasonable for a verbal prescription for medication (Metoprolol) to be given without [Dr C] physically reviewing [Mr A].
5. Whether staff complied with the policies and procedures that were in place at the time of events.
6. The adequacy of Te Whatu Ora's policies and procedures that were in place at the time of events.
7. The adequacy of staffing levels at the time of events. Please also comment on the appropriateness for [Dr C], the on-call House Officer, to be covering a number of different wards.
8. Any other matters in this case that you consider warrant comment.

For each question, I have been asked to advise:

1. What is the standard of care/accepted practice?
2. If there has been a departure from the standard of care or accepted practice, how significant a departure (mild, moderate, or severe) 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.

Where I have noted that there are different versions of events in the information provided, I have provided advice in the alternative. Specifically, whether the care was appropriate based on scenario (a) above, and whether it was appropriate based on scenario (b) above. **I have not, and can not, form any opinion as to the veracity or otherwise of various aspects of these accounts.**

In reaching my opinions, I have accessed the following sources of information:

1. Referral of complaint from the Coroner dated 26 March 2021
2. Te Whatu Ora's response dated 6 March 2022
3. Clinical records from Te Whatu Ora covering the period [Day 2] to [Day 3]
4. 2020 statements from staff
5. Relevant policies
6. Other relevant information provided to me by the Office of the HDC

Finally, my opinions have been given with consideration of the very particular context of Te Whatu Ora Tairāwhiti (formerly Tairāwhiti District Health Board) as a relatively small provincial health provider. According to the New Zealand Ministry of Health website, the hospital based in Gisborne has approximately 115 beds and there are a range of secondary services provided by the organisation, but certainly not a full range of secondary services. There are clear connotations in respect to the patient acuity mix — that is the range and degree of unwellness and complexity of the patients cared for — that can be managed in a safe and effective manner in such an environment. This context has true significance in respect to the roles, duties, and responsibilities of an intern/house officer working for this provider. Equally, the roles, duties, and responsibilities of senior medical officers.

1. The adequacy of the communication and coordination of care between the ICU and the on-call House Officer, [Dr C].

In the setting of Te Whatu Ora Tairāwhiti there are several factors noted that I believe would have contributed positively towards communication and coordination of care between staff, and specifically in this situation, between the ICU and the on call house officer [Dr C]. It is noted that the formal clinical handover between interns on the evening of [Day 2] ([Dr F] and [Dr C]) occurred in the ICU itself. Secondly, it is evident from the papers available to me, that the clinical staff were familiar with each other and clearly have worked together on multiple previous occasions. This appears to have been so across professions, that is between nursing and medical staff. Thirdly, the system for informing [Dr C] included well established paging processes and telephone calls.

However in considering the adequacy of communication and coordination of care, in respect to:

— Scenario (a) *as presented by [Dr C]*.

There was a lack of communication by nursing staff with medical staff — firstly communication with [Dr C] in the hours between 2300 and 0300. In this context, it is possible that [Dr C] was either not responding to calls made to him, or was not available because of various other patients and duties for which he was responsible. If this were so, the nursing staff should have considered communicating directly with the relevant senior medical officers, whether that be surgical or anaesthetic, according to the relevant policies and procedures applying to patient management in the ICU. I will comment more on escalation of care under question 3 later in this document.

— Scenario (b) *as presented by [RN B].*

[Dr C] was contacted between 2300 and 0300 by both pager and telephone. This was entirely appropriate, however given that [Dr C] was unable to attend [Mr A], the issue arises as to whether nursing staff should have then contacted relevant senior medical staff according to the relevant policies and procedures applying to patient management in the ICU. Equally, [Dr C] should have considered contacting the on-call senior medical staff himself, given that he was unable to respond in full to the requests of the ICU nursing staff.

For my opinions in respect to the following questions please refer to those offered under item 3 — I see these opinions as being largely the same for items 1, 2 and 3.

What is the standard of care/accepted practice?

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

How would it be viewed by my peers?

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

2. The appropriateness of the actions taken when [Mr A's] condition started to deteriorate, and whether any other actions should have been taken:

a) If [Dr C's] account of the events is accepted (being that he was only informed about [Mr A's] low blood pressure and deteriorating condition shortly after 3:00am on [Day 3], when [Mr A] had gone into atrial fibrillation).

b) If [RN B's] account of the events is accepted (being that [Dr C] was informed of her concerns and changes to [Mr A's] clinical condition).

Scenario (a) that is [Dr C's] account. Given [Mr A's] clinical circumstance (including clinical signs and monitoring results), [Dr C] should have been notified earlier than 0300 on [Day 3]. If this had occurred, and he had not been available due to other commitments, or if he had not responded, then escalation would have been appropriate to relevant senior medical staff — either by ICU nursing staff or by [Dr C] himself.

Scenario (b), that is [RN B's] account. [Dr C] should have attended the Intensive Care Unit to assess [Mr A] at some point between 2300 and 0300. On notification by [RN B], if he was not able to respond because of other commitments, then [Dr C] should have considered escalation by him to the relevant senior medical staff for their input into [Mr A's] care. In similar vein, [RN B] should have considered escalation to senior medical staff, after having contacted [Dr C] and noting he was unable to attend due to other clinical commitments. I note that in the statement by [RN B] recorded by the Director of Nursing, [RN B] notes "that having the on-call house officer prioritise care elsewhere in the hospital was a regular occurrence on night duty". However, in both the patient's interest and according to the relevant policies and procedures in place at the time, this is not in itself a reason for nursing staff to fail to escalate. Having said this, I make these comments highly cognisant of the possible reasons why this did not occur. Aspects of both the availability, and the attitudes and professionalism of senior medical officers when contacted in such circumstances, in this organisation, are unknown to me. The nature of interaction and meaningful communication between nursing and medical staff — the prevailing "culture" — is of great relevance and importance in reaching any judgement on such matters.

For my opinions in respect to the following questions please refer to those offered under item 3 — I see these opinions as being largely the same for items 1, 2 and 3.

What is the standard of care/accepted practice?

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

How would it be viewed by my peers?

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

3. Whether there was appropriate escalation of care.

I will confine my comments in respect to escalation of care to the time period between 2300 on [Day 2] and 0430 on [Day 3] when it appears that [Mr A] underwent cardiac arrest. The rapid response team was called at that point which was clearly appropriate, and I have no comment to make after that time.

Firstly, in respect to scenario (a), [Dr C's] account. I do not believe that appropriate escalation of care occurred between 2300 and 0430. This is in respect to nursing staff not making earlier formal communication with [Dr C], whether that be by the paging system or telephone — and in respect to [Dr C's] failure to escalate to senior medical staff when he was contacted at 0300 but did not attend [Mr A] in person.

In respect to scenario (b), [RN B's] account. Again I do not believe there was appropriate escalation of care. While [RN B] documents communication with [Dr C] by page and telephone, she also indicates that he was unable to attend given other duties. [RN B] and/or other nursing staff should have considered escalation to the relevant senior medical staff. Equally within this scenario, [Dr C] having been notified, but needing to prioritise and unable to attend [Mr A], should have considered escalation of care with direct contact by him with the relevant senior medical staff on call.

What is the standard of care/accepted practice?

Escalation of care should occur **whenever** it is (potentially or definitely) in the best interests of the patient.

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

Under either scenario (a) or scenario (b) there has been a significant departure from the standard of care one would expect in such circumstances. Under scenario (a) this would largely sit with the nursing staff in ICU at the time — under scenario (b) this would largely sit with [Dr C]. However, in both scenarios there are multiple contributory factors and I would see primary responsibility sitting at the organisational level.

How would it be viewed by my peers?

I believe these departures would be seen in similar fashion by my peers.

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

Multidisciplinary team simulation exercises to "workshop" responses, and where required escalation of care, may well be of utility. **Please also note my comments in other items (particular item 7)** of this document in respect to staffing, and to reflection by senior clinical leaders as to the working "culture" relating to escalation within Te Whatu Ora Tairāwhiti.

4. Whether it was reasonable for a verbal prescription for medication (Metoprolol) to be given without [Dr C] physically reviewing [Mr A].

Comment in respect to the choice of medication is not within my scope of practice and I confine my comments to the verbal prescription by [Dr C] of Metoprolol without physical review of [Mr A] before doing so.

I do note that [Dr C] had prior knowledge of [Mr A], having been party to his initial admission to hospital and being aware of his previous medications and past medical history. I also note that in making a verbal prescription, [Dr C] took into account the seniority and clinical experience of [RN B]. Finally, I note that [Dr C] in his account of events, does not feel that he received all relevant information in terms of the status of [Mr A] at the time of considering his atrial fibrillation at 0300 on [Day 3]. It appears that [Dr C] was under considerable work pressure at the time, with multiple other patients and clinical situations for which he was responsible. However, in the Intensive Care Unit circumstance any significant clinical change should result in a bedside review by the responsible medical team — in this case, by [Dr C], or if he was simply not able to attend because of other clinical commitments, by escalation to the relevant senior medical staff. Verbal prescription has a small but definite place in health care, but in the context of patients in an intensive care or high dependency facility, it is my opinion that it should only be done in exceptional circumstances.

What is the standard of care/accepted practice?

I have commented on this in the paragraph immediately above.

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

There has been a moderate departure from the standard of care, however given the circumstances under which [Dr C] was working at that time, I see the responsibility for this departure sitting largely at the organisational level rather than with the individual practitioner.

How would it be viewed by my peers?

I believe it would be viewed in similar fashion by my peers.

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

Greater clarity in respect to the practice of verbal prescription in the critical care setting within this provider. Considerations in respect to staffing levels and communication and responsibility chains are included within my comments under item 7 below.

5. Whether staff complied with the policies and procedures that were in place at the time of events.

It is not appropriate for me to comment in detail on the compliance of the nursing staff with the relevant policies and procedures of the organisation. Aspects of [RN B's] compliance with the "Adult Vital Signs and EWS Recording and Escalation Pathway" is commented upon by the Director of Nursing (in the statement from [RN B] recorded by the Director of Nursing) including comment as to the lack of totalling of scores. I do however note [RN B's] comment *"that having critical inquiry and thinking to determine actions is an inherent default"*, and as a general principle I would concur with this view. In fact this concept is integral to the philosophy that underpins all clinical early warning systems.

In terms of the compliance with policies and procedures by medical staff, firstly I note that in the organisation's guideline on "Admission and patient management in the ICU/HDU/CCU", that the primary medical team is to continue with clinical responsibility when a patient is transferred into such a critical care setting. I think this is entirely appropriate in an organisation of the size and configuration of Te Whatu Ora Tairāwhiti. However, within this guideline, it is noted that there should be two bedside reviews per day by an SMO from the primary medical team responsible for the patient. From the notes available to me, I have no evidence that this occurred in respect to [Mr A]. Secondly, and in respect to the same document, there is an expectation that a member of the primary medical team will attend a patient on request within a 15 minute time period. In Scenario (b), [RN B's] account, [Dr C] did not attend in such a fashion, or if he were unable to do so, he did not escalate to his senior medical officer to allow that doctor to attend [Mr A].

What is the standard of care/accepted practice?

Clinical staff having awareness of, and access to relevant policy and procedure documents — with general compliance with the standards and practice details included within such documents. Variance from such policies can occur when dictated by extraordinary clinical circumstances and where there is considered, reflective, clinical decision making. It is incumbent on the organisation to facilitate all aspects of the use and observance of these documents.

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

Particularly within scenario (b), and in respect to the guideline document "Admission and patient management in the ICU/HDU/CCU", there appears to have been departure from the standard. While this is a guideline document rather than a policy, the lack of

attendance by [Dr C] is not in keeping with the policy — however, multiple mitigations are present and given these I see any departure as mild. What is more the circumstances under which [Dr C] was working at that time, see the responsibility for this departure sitting largely at the organisational level rather than with the individual practitioner.

How would it be viewed by my peers?

I believe in similar fashion to my conclusions.

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

As for my comments under item 7 that follow.

6. The adequacy of Te Whatu Ora's policies and procedures that were in place at the time of events.

Given the organisational context of Te Whatu Ora Tairāwhiti, the policies and procedures that I have viewed appear largely adequate. There is however a possible exception in respect to the Prescribing Policy, where comments relating to telephone instructions and verbal orders are largely general in nature. There is note as to the exclusion of verbal prescription for Controlled Drugs (except in exceptional circumstances), but there is no comment as to the appropriateness of verbal prescription in clinical circumstances such as critical care (ICU/HDU/CCU).

Any assessment of the adequacy of policies and procedures must be considered in conjunction with the prevailing culture and attitudes within the organisation. In my opinion these aspects generally have greater impact on patient care and patient outcomes then the absolute specifics of policies and procedures. Having said this, a health service with a strong positive culture, and with high quality policies and procedures, generally functions at a very high level.

What is the standard of care/accepted practice?

Comprehensive but relevant, concise and legible documents to support health practitioners to achieve safe and effective care for patients.

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

No significant departure.

How would it be viewed by my peers?

I am unsure.

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

Programmed, regular reviews of the validity and relevance of all policy and procedure documents. I **assume** this already exists within the clinical governance framework of Te Whatu Ora Tairāwhiti.

7. The adequacy of staffing levels at the time of events. Please also comment on the appropriateness for [Dr C], the on-call House Officer, to be covering a number of different wards.

I will only make comment here in respect to medical staffing as I have seen no overt mention of concerns relating to the adequacy of nursing staff levels in the Intensive Care Unit on the night in question.

In terms of medical staffing levels, context is again extraordinarily important — the bed numbers, patient numbers and the patient acuity mix at Te Whatu Ora Tairāwhiti at the time. Secondly, the expectations, perceptions and actual behaviours relating to escalation of care within the organisation at this time. Thirdly, the level of House Officer/Intern training and experience. Finally, the prevailing professional culture in respect to the communication between Interns and Senior Medical Officers, including the reception of such communications and the demonstrable response, from senior doctors when more junior medical staff communicate with them.

Given the above, I note [Dr C's] comments. Firstly in terms of workload at night, both on this particular shift, but also over time. He notes the need to cover substantial patient numbers across a number of departments and wards in the hospital, and across multiple patient acuity levels. He notes that "— *almost invariably, whenever I was on night duty, I found myself virtually running from patient to patient all night long. I felt that the workload was unsafe*". [Dr C] also notes concerns raised prior to the date of [Mr A's] admission and eventual death. He notes emails between RMOs (Interns) and SMOs (Senior Medical Officers) in Medicine and he also notes a prior audit of Intern work load at night. I have no details of this audit, but it appears that management accepted the concerns that one assumes were evident, as in [2020 after these events] the organisation implemented an increase in medical cover with a 24 hour, on site, Medical Registrar roster being instituted.

The Commissioner asks my opinion as to whether [Dr C] covering multiple wards was of concern, but this in itself is not the particular issue. Rather, overall workload in respect to bed and patient numbers, patient acuity mix, other duties for which the intern was responsible, and the available support and escalation mechanisms available to him, are the key issues here.

It is my considered opinion that RMO/Intern staffing at night at the time of [Mr A's] admission was inadequate and not in the best interests of patients, their whānau, or in the best interests of clinical staff.

What is the standard of care/accepted practice?

An adequate number of staff, a satisfactory mix of health professionals — and a mix of seniority and experience of those health professionals (both on-duty and available to respond to patient needs) — in order to service the patient demand that could be reasonably expected by a secondary health provider of this size. Staffing levels should also be determined with due regard to potential peaks in patient demand and patient acuity mix, to the need for supervision and training of more junior health professionals, and to provision of reasonable workloads for health professionals in a sustainable manner over time.

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

A moderate departure. Realities of high patient demand, with increasing complexity and acuity, are seen across the entire health sector. Equally resource constraints are recognised, however in this situation the provider has not ensured adequate staffing levels at night — and has placed excessive clinical responsibility on an Intern, both on this particular shift and it appears on a number of other shifts over time.

How would it be viewed by my peers?

As a departure from expected standards, albeit with a significant degree of exasperation as to available resource limiting the ability to address such shortcomings.

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

The addition of an extra Medical Registrar, available 24 hours of each day, has been implemented and appears necessary to both address patient safety concerns, but also to address workload and supervision issues. If not already being done, further audits of workloads of staff at night should occur — and should be viewed by the Clinical Governance bodies within Tairāwhiti. Equally clinical governance oversight of incidents occurring in the provider should be viewed through a "time of day" lens, as well as the standard parameters for assessing severity and causality. Finally, there may be a place for reflection by senior clinical staff (including the Chief Medical Officer), on the models in place for deployment of SMOs out of hours, and on the current culture of availability and responsiveness of SMOs out of hours. These may in fact, be very sound, but consideration and reflection would be prudent.

Any other matters in this case I consider equate to a departure from the accepted standards of care or require comment:
I have no further matters that I wish to comment upon.

I am available to the Commissioner for further comment on, or clarification of, any aspects of this opinion.

Yours faithfully,

Dr Kenneth Clark'

Appendix B: Independent clinical advice to Commissioner

The following advice was provided by RN Julia Braid:

'Thank you for the opportunity to provide opinion to the Commissioner on this case, number **21HDC00696**. I confirm that I have read and agree to follow the Commissioner's Guidelines for Independent Advisors. By reviewing this case I confirm that I have identified no conflict of interest.

My name is Julia Marguerite Braid. I am a New Zealand trained Registered Nurse (NZRN reg 116528) and hold a Master's degree in health science. Since 1998 I worked as a full time Clinical Nurse Manager — Intensive Care Unit, High Dependency Unit and Coronary Care Unit, being a large secondary level combined Unit. I was responsible and accountable for the safe operational management and professional leadership of this critical care setting. From 2016 I was appointed as the Nurse Leader — Surgical and Anaesthesia Service, which includes responsibility for strategic and professional leadership of surgical specialist nurses, surgical wards, perioperative department, and the secondary level combined ICU/HDU/CCU. I was a member of Health Quality and Safety Commission — Patient Deterioration Programme national and regional leadership groups 2017–2020.

Other training that I have completed that is relevant to the role of an independent adviser includes,

- IHI open school — completed 6 modules on quality improvement methodology.
- Critical Care Course — vocational training (12-month course).
- Post Graduate Certificate — Critical Care Nursing
- Health Quality and Safety Commission — Deteriorating Patient regional and national implementation workshops (2017 to 2020)

1.0 Background

[Mr A] had a history of recurrent small bowel obstruction, secondary to radiation for prostate cancer. He underwent bowel surgery (a laparotomy and adhesiolysis) [in] 2020.

[Mr A's] medical history also included right subclavian artery stenosis, high blood pressure, a STEMI heart attack (in 2014), high cholesterol, and a stroke (in 2019).

On [Day 1], [Mr A] arrived at the emergency department (ED) at Gisborne Hospital by ambulance due to abdominal pain. Following investigations, [Mr A] was diagnosed with small bowel obstruction.

On [Day 2], [Mr A] underwent an emergency laparotomy and small bowel resection.

[Mr A] was in a stable condition immediately following the surgery, but his condition deteriorated overnight and he, sadly, died from cardiopulmonary arrest due to atrial fibrillation on [Day 3] (the day after the surgery).

There are differing versions of events as to whether the nursing staff informed the on-call House Officer, [Dr C], of any concerns or changes to [Mr A's] clinical condition, (including changes to his blood pressure).

[RN B] stated that she recalls discussing the different blood pressure measures in [Mr A's] arms with [Dr C]. (Two different methods were used to measure [Mr A's] blood pressure and [Mr A] had right subclavian artery stenosis). [RN B] also stated that she paged [Dr C] for assistance and discussed the situation over the phone with him.

On the other hand, [Dr C] stated that the only information he received about [Mr A's] low blood pressure and deteriorating condition was shortly after 3:00am on [Day 3], when he responded to the ICU page, and was told that [Mr A] had gone into atrial fibrillation.

The Commissioner is seeking my advice on whether the nursing care provided to [Mr A] at Gisborne Hospital by Te Whatu Ora, was reasonable in the circumstances and why. In particular,

- The adequacy of the communication and coordination of care between the ICU nursing staff, [RN B], and the on-call House Officer, [Dr C].
- Whether the methods to measure [Mr A's] blood pressure was appropriate.
- The appropriateness of the actions taken by [RN B] when [Mr A's] condition started to deteriorate, and whether any other actions should have been taken:
    a) If [RN B's] account of the events is accepted (being that [Dr C] was informed of her concerns and changes to [Mr A's] clinical condition).
    b) If [Dr C's] account of the events is accepted (being that he was only informed about [Mr A's] low blood pressure and deteriorating condition shortly after 3:00am on [Day 3], when [Mr A] had gone into atrial fibrillation).
- Whether there was appropriate escalation of care.
- Whether the EWS chart was used appropriately by the nursing staff.
- The standard of nursing documentation.
- Whether the nursing staff complied with the policies and procedures that were in place at the time of events.
- The adequacy of Te Whatu Ora's policies and procedures that were in place at the time of events.
- The adequacy of staffing levels at the time of events.
- Any other matters in this case that you consider warrant comment.

For each question, I will consider and advise:

a. What is the standard of care/accepted practice?

b. If there has been a departure from the standard of care or accepted practice, how significant a departure (mild, moderate, or severe) do you consider this to be?

c. How would it be viewed by your peers?

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

In forming my opinion on the matters requested I have reviewed the following documents provided by the Commissioner,

- Referral from Coroner
- Te Whatu Ora's response dated 6 March 2022
- Minutes of Rapid review Meeting
- Patient Registration and Hospital Death Form
- Discharge Summary
- Ambulance notes
- ED notes
- House Officer notes
- Patient Control Analgesia
- Not for Resuscitation form
- Central Line Care Bundle
- Clinical notes
- ICU Adult 24-hour Chart
- Medication Chart
- EWS
- Statement [Dr C]
- Statement [RN E]
- Statement [RN G]
- Clinical notes [RN G]
- ICU 24 Hour Chart
- EWS Chart
- Statement [RN B]
- Policy admission and Patient Management in the ICU/HDU/CCU
- Policy Adult Vital Signs and EWS
- Policy on Medicine Administration
- Medicines Policy
- Prescribing Policy
- RMO Reporting and Responsibility

2.0 The adequacy of the communication and coordination of care between the ICU nursing staff, [RN B], and the on-call House Officer, [Dr C].

In my opinion the standard of handover of [Mr A's] Care between the ICU nurses occurred in accordance with standard practice, as they changed shifts. It is the nurses' responsibility to participate in handovers with a full review of patient progress using the patient's notes and charts, and a physical review of the patient and monitoring at the bedside.

I noted that the postoperative plan of care for admission of [Mr A] to ICU, was supported by instructions from the surgeon [Dr D] SMO on the Operation Record form, as well as a documented 'ICU Plan' (0 [Day 2]) written by [an] Anaesthetist. The ICU Plan set additional goals for [Mr A's] clinical status and management while in ICU which included the expectation that mean arterial blood pressure is to be monitored. There was also a recommendation for management of low blood pressure with a noradrenaline infusion should this be required.

On [Mr A's] arrival to ICU, [RN E] was the receiving ICU nurse at 13:19 hours. She documented the progress of [Mr A], including the arterial line was transducing well and that [Mr A's] physiological observations were within expected ranges during the shift. [RN E] completed two full sets of EWS calculations. In my opinion her documentation meets the standard expected.

Morning shift [RN E] handed over to [RN G].

At 21:40 hours [RN G] appropriately documents the escalation of new ECG changes to [Dr F], who attends [Mr A], and requests a series of two blood tests (Troponin T) for markers of a heart attack (myocardial infarction or ischaemia).

[Dr F] also documented the clinical plan and defines the parameters to observe and escalate.

Prior to leaving duty [RN G] pages the On-call House Officer (OCHO) with a message to review whether oral metoprolol should be recommenced as it had been withheld that day. Paging is an accepted method for notifying a doctor that assistance is required and the urgency of that assistance.

In my opinion [RN G] followed the policy for communication issues to be first notified to the On-Call House Officer, then senior medical officers as specified in *Policy — Admission and Management of a Patient at Hauora Tairāwhiti ICU/HDU/CCU (February 2018).*

[RN B] received handover of [Mr A's] care from [RN G] at approximately 23:00 hours.

The full detail covered in verbal nursing handover is not usually explicitly written as a separate report, rather it is standard nursing practice to hand over all relevant clinical documentation, including assessment and patient management plans. A physical handover of the patient at the bedside, review of monitoring and devices used to

support patient care promotes patient safety through continuity of care. For this case a bedside handover would prompt a handover to the oncoming nurse of [Mr A's] progress in terms of blood pressure monitoring and an assessment of a patent invasive arterial line.

It is not documented in the clinical notes or found in their statements that the nurses had any discussion between themselves regarding the method of monitoring blood pressure i.e. invasive arterial pressure versus, manual (cuff) blood pressure measurement. I would have reasonably expected that if they had conferred, it would have been disclosed.

In considering the adequacy of the communication and coordination of care between [RN B] and medical staff, I have reviewed the clinical progress notes and the Statement from [RN B] — [Day 2].

From [RN B's] statement she questioned the validity of measuring BP via L) arterial line with [Dr C]. The rationale for choosing to monitor BP via L) arm non-invasive blood pressure NiBP, instead of the L) wrist arterial pressure wave form and numeric has not been detailed in her documentation. She stated that during a conversation with [Dr C] a diagram was drawn and explanation of right subclavian stenosis which she at the time considered reasonable, and which she believes was a directive from [Dr C] to follow L) arm NiBP.

The nursing notes at 03:55hours state waiting for OCHO review, and the statement from [RN B] said she recalls paging for [Dr C's] assistance and discussing the situation over the phone however [Dr C] was in ED at the time and unable to come to [Mr A's] bedside to review in person. [RN B] stated her concerns for imminent assistance from [Dr C] were articulated however further explains that having the OCHO prioritise care elsewhere in the hospital was a regular occurrence.

[Dr C] stated this shift was busy in terms of having multiple competing priorities within the hospital.

Nurses manage patients in the ICU/HDU/CCU with reduced levels of medical officer support after hours due to reduced medical staffing overall.

In my opinion the reliance on nursing staff to manage unwell patients within the system of reduced medical staff involvement particularly on night shift depends on trusted communication processes (such as SBARR, and EWS pathway). The registered nurse is accountable for providing accurate assessment and to escalate appropriately, and this is how many comparable ICU/HDU/CCUs have historically run in New Zealand. The point of the EWS escalation and response pathway is to assist staff to make reasoned decisions when there is evidence of deterioration, and to ensure an appropriate level of escalation and response (Health Quality and Safety Commission — Deteriorating Patient Programme).

Regarding the conversation via phone call with [RN B] contained in [Dr C's] statement, he expressed his reassurance and confidence in [RN B] as an experienced ICU nurse, he trusted her assessment. The ECG rhythm change at 03:30 hours to atrial fibrillation and sustained fast heart rate should have triggered a rapid response team call and bedside review. [Dr C] stated he was informed of blood pressures of an acceptable range of 130/170. In the context of the information provided, this influenced his decision making and prioritising his workload (not to review [Mr A] at the bedside).

In my opinion, with the knowledge of the complexity of [Mr A's] changing condition [Dr C] should have opted to review [Mr A] in person at 03:30 hours.

In my opinion the communication to [Dr C] via phone call at 03:30 hours was delayed, and [Mr A's] change in condition should have been notified to him after the 24:00 hour observations revealed altered level of consciousness, drop in blood pressure with mean arterial Pressure below 70 mmHg, and reduced urine output (on the background of new ECG changes and raised Troponin T a few hours earlier.

[RN B's] communication via clinical notes:

[RN B] at 03:55 hours documents in the progress notes. Which is in the same hour that [Mr A] deteriorated further (rhythm change to atrial fibrillation and sustained fast heart rate).

Within the documentation provided to me I have located limited nursing documentation for the period [Day 3] 03:55 hours to 07:05 hours. What is provided is a list of the medications administered during the Rapid Response (resuscitation), but no other chronological commentary on the administration of IV metoprolol as signed on the medicines chart, and the subsequent assessment of the effect on [Mr A], or [Mr A's] general progress.

If [RN B] or other nurses providing care to [Mr A] did not appear to provide a full nursing account within the progress notes for this timeframe, I consider this to be a severe departure from acceptable practice.

New Zealand Standards for Critical Care Nursing Practice (2022)

1.5 provide documentation that meets legal requirements that is systematic, comprehensive, clear, accurate, timely and relevant.

Statement [Dr C] communication with ICU

[Dr C] received Handover on [Day 2] 22:15 hours from Dr F in the ICU office, he states that there were no active issues. In his statement [Dr C] recalled a discussion with one of the ICU nurses at which time there were no concerns reported.

If, as stated later at 00:30 hours — while in ICU, he incidentally checked with [RN B] and ascertained there were no concerns or changes to report, he recalled being rushed and did not follow up with any more specific questions. There had already been a

deterioration from 24:00 hours, and this was the first missed opportunity for a review of [Mr A].

In my opinion it is relevant that being the sole house officer on duty in a high trust model of collaboration with ICU nurses, and not being given any specific concerns regarding [Mr A], his decision to attend to other patients is understandable.

There is a significant difference in the recall in this interaction, as [Dr C's] version does not include any discussion regarding the method of obtaining [Mr A's] blood pressure or advising [RN B] to use the manual (cuff) method or drawing a diagram to explain right side subclavian stenosis. In his statement [Dr C] said that he had been unaware that [Mr A] had an arterial line in situ.

Both [RN B] and [Dr C] confirmed in their statements a phone call at 03:00 hours approximately that informed atrial fibrillation, urine output, vital signs including the raised heart rate, and the NIBP.

In [Dr C's] statement he was busy with workload elsewhere so had the discussion regarding IV Metoprolol on the phone, and he thought IV metoprolol was a reasonable plan. He stated he was confident in [RN B's] experience, so the verbal order to administer IV metoprolol by slow push was given. [Dr C] states he was not asked to review [Mr A] at the bedside during this call.

In my opinion [Dr C] appropriately responded to this Rapid Response Team call at 04:30 hours.

3.0 Whether the methods to measure [Mr A's] blood pressure was appropriate.

During and following surgery, [Mr A's] blood pressure had been taken via L) wrist arterial pressure line. There is no documented evidence that the question of the method of blood pressure measurement was discussed with the other ICU RNs. In my opinion when best practice for the management of arterial pressure lines is followed (the transducer is situated correctly, calibrated, and zeroed to the patient) the arterial line is the most accurate method to measure blood pressure and mean arterial blood pressure trends.

[RN B's] concern for which type of blood pressure device to use with [Mr A] demonstrated nursing assessment regarding his medical history. In some ICUs it is still standard practice to check a patient's BP manually once during a shift. Remembering that it is normal to have a manual BP that shows a 5mmHG difference between upper arms.

During her shift [RN B] believed the blood pressure change she was seeing was explained by the arterial line not accurately measuring blood pressure, in the context of R) subclavian stenosis. She stated that she was given an explanation and a diagram by [Dr C] which she accepted, and she chose to use manual L) arm manual blood pressure measurements as the basis of blood pressure assessment.

[RN B] was likely aware of the patient related factors that placed [Mr A] at risk of low blood pressure such as infection from the perforated bowel, reducing urine output, and the heart attack earlier that evening (T wave inversion — signs of myocardial ischaemia/infarction). She continued to believe the significant difference in blood pressure measurements was that the manual cuff provided accuracy rather than [Mr A's] condition was acutely deteriorating. She appears to have lost situational awareness as she maintained this stance throughout the shift.

In my opinion, after troubleshooting any issues, and if in doubt regarding the patency or accuracy of the arterial pressure line a phone call to the On-Call Anaesthetist for advice is the favoured option.

Policy — Admission and Patient Management in ICU/HDU/CCU (p4) states that senior nurses might escalate directly to senior medical officers.

In my opinion the action of dismissing the significance of invasive arterial blood pressure measurement trend was a severe departure from accepted practice in the context of other signs of deterioration.

https://derangedphysiology.com/main/cicm

- In a haemodynamically stable patient, non-invasive measurements will be more representative of aortic root pressure, as they are taken from a more proximal artery, and the agreement between them and invasive measurements is good within the normal range of blood pressures.
- **In a haemodynamically unstable patient, non-invasive measures will be more inaccurate, making the invasive measurement more reliable, even if it were taken from a more distal artery.**

In my opinion the failure to recognise the significance of arterial pressure line monitoring in the context of a high acuity patient with bowel perforation, peritonitis, new cardiac changes, worsening multi-organ function is a severe departure from accepted practice, and contributed to the failures to recognise and respond to [Mr A's] deterioration.

4.0 The appropriateness of the actions taken by [RN B] when [Mr A's] condition started to deteriorate, and whether any other actions should have been taken:

a) If [RN B's] account of the events is accepted (being that [Dr C] was informed of her concerns and changes to [Mr A's] clinical condition).

As per the progress notes [RN B] wrote she was managing [Mr A's] new confusion, this complication would have placed him at increased risk of harm.

In my opinion [RN B] appropriately recognised the potential for harm (such as a fall or dislodging medical devices) but did not appreciate the significance of the new confusion. It was appropriate that her assessment of cognition was included in [Mr A's] progress notes.

The inaccurate EWS scoring, was also contributed to in part by charting in the wrong rows of the graph i.e., the respiratory rates were written in the line that scored 0; had they been recorded in the correct rows the respiratory rates would have contributed an additional 2 to 3 points to the overall EWS Total. The significance of this is that the EWS score was falsely low, and this failed to prompt further escalation, response, or investigations into the causes.

Any Other Actions?

In my opinion, hourly or more frequent assessment of [Mr A] using the "head to toe" approach **and** accurately completing the EWS chart should have triggered hourly escalations or updates to [Dr C]. As even in the absence of accurate blood pressure and a temperature recording his EWS scores were elevated, if calculated correctly.

In my opinion, using the recommended SBARR or Activation of Early Warning Score pathway communication tools to disseminate information would have improved the opportunity for [Dr C] to critically think through the information provided and prompt a plan to see the patient in person.

In my opinion, there were multiple missed opportunities to request or insist on, a bedside review of [Mr A] — ideally the first opportunity occurred when [Dr C] was in the unit at 00:30.

From their statements neither [RN B] nor [Dr C] comment on the option of seeking advice from the On-Call Anaesthetist SMO or On-Call Surgeon SMO to review the use of the arterial pressure line or provide an update on [Mr A's] condition.

Also, if [RN B] didn't refer to the resources available such as guidelines to critically think through best practice for arterial pressure line management, or seek support and advice from another experienced RN, or the Duty Nurse Manager, I consider this a moderate departure from accepted standards.

b) If [Dr C's] account of the events is accepted (being that he was only informed about [Mr A's] low blood pressure and deteriorating condition shortly after 3:00am on [Day 3], when [Mr A] had gone into atrial fibrillation).

According to his statement [Dr C] responded by phone when it was reported [Mr A's] ECG was in Atrial Fibrillation (with fast heart rate) and this should have triggered concern for significant deterioration in the context of this patient's condition.

In my opinion, a review of [Mr A] at the bedside would likely have improved [Dr C's] understanding and response to [Mr A's] condition.

In my opinion, if [Dr C] was aware of the EWS system and was familiar with EWS charts it should form part of his enquiry in communication with nurses. A departure from enquiring about a patient's EWS score is a moderate departure from accepted standards.

5.0 Whether there was appropriate escalation of care.

As evidenced in the patient's clinical progress notes and the statement from [RN B], in my opinion, the escalation of care was inappropriately delayed (irrespective of the EWS score and pathway) until the Rapid Response Team was called at 04:25.

Of note, the EWS escalation and response prompts on the pilot high dependency EWS chart for escalation and response occur at higher EWS scores than the ward based EWS chart in the patient file. Meaning the patient in HDU will be sicker than a ward patient before prompting a medical review only based on EWS).

In my opinion, the tolerance for higher EWS scores before registered medical officer review should only be part of an assured and robust patient management system for high acuity patients, which may not have existed after hours. If this pilot chart has not been updated since 2020, I recommend a review of patient outcomes, and revision takes place.

6.0 Whether the EWS chart was used appropriately by the nursing staff.

In my opinion the EWS chart was completed appropriately by nursing staff on [Day 1] until 21:00 hours [Day 2].

The EWS chart was not used appropriately by nursing staff between 22:00 hours [Day 2] and 05:00 [Day 3].

There are recordings missing at 22:00 hours and 23:00. There was no documented temperature measurement between 22:00 hours and 0300 hours, the capacity to detect early deterioration is reduced when EWS scores are incomplete.

[Mr A] had a normal temperature post-operatively and at 21:00 hours. It was also normal at 03:00 hours. In my opinion, the temperature should have been performed as per protocol.

However, the absence of the temperature being recorded between 24:00 and 03:00 is not by itself the reason for delayed escalation and response, and in my opinion is a minor departure from standards.

As in section 4.0 above — Inaccurate EWS scoring also occurred by charting the respiratory rates in the wrong rows of the EWS graph i.e., the respiratory rates were written in the line that scored 0. Had they been recorded in the correct rows; respiratory rates would have scored an additional 2 or 3 points. Had the recordings been written in the correct rows and the scores calculated as per protocol this would have resulted in accurate total EWS scores of 4 to 6.

The fast heart rate (sustained) above 139 beats per minute should have triggered a rapid response team call as is indicated on the EWS chart.

To Summarise — it is my opinion, the EWS chart was inappropriately used during the period [Mr A] was deteriorating. The failure to undertake full observations, to chart and calculate them correctly in a patient with this condition is a severe departure from accepted practice.

7.0 The standard of nursing documentation.

The nursing entries in the clinical progress notes were written at least once per shift which meets the minimum standard for timely documentation.

The ICU night shift care plan was not updated, so did not reflect the change from arterial pressure line to the NiBP measurements — This is a minor departure in documentation standard as the afternoon shift care plan provided other valid guidance.

In my opinion, [RN B's] progress notes could have been written more systematically and clearly by writing the time of each distinct change or assessment at the beginning of the row, enabling the reader to follow a timeline, as opposed to a general summary at 03:55hours.

In my opinion, if the conversations and verbal orders were had with [Dr C], then the progress notes written by [RN B] lacked the detail of those conversations, such as the rationale for NiBP measurements and ignoring arterial pressure measurements, the IV metoprolol conversation, the administration of IV metoprolol, the signs and symptoms of deterioration and other relevant patient information 03:55 hours to 07:05hrs.

There are no progress notes for the period 03:55 to 07:55 which would be a severe departure from accepted documentation standards.

If as [Dr C] states, the Verbal order prescription for metoprolol was to be administered as a slow push — 1mg/min (as per medication guidelines) then the verbal order should have been written in those words not 'Stat'. This miswording in the prescription is a moderate departure from accepted medication prescription standards.

8.0 Whether the nursing staff complied with the policies and procedures that were in place at the time of events.

I have reviewed Organisational Guidelines (policies) provided, and my opinion as to whether nursing staff complied with these are as follows.

Admission and Patient Management in ICU/HDU/CCU (February 2018).

The relevant nursing principle is, *In some circumstances the senior nurse on duty might escalate the process and contact the SMO directly*.

In my opinion, nursing staff missed opportunities to act on this principle to seek advice and obtain a senior medical officer review of [Mr A] and is a severe departure from standards.

Adult Vital Signs and Early Warning Score (EWS); Measurement, Recording and Escalation Pathway (January 2018)

In my opinion compliance with the above policy was not demonstrated by the missed recordings, missed or inaccurate EWS scores, and failure to escalate the sustained heart rate for a Rapid Response call.

Also, non-compliant is the absence of timely documentation and communication using the "Activation of EWS Pathway" sticker or a "Rapid Response Activation" sticker as they are not in the patient's notes.

Medicine Administration

In my opinion nurses appear to have been complaint with this policy in relation to the documentation of verbal orders in [Mr A's] medicine chart.

In my opinion the use of staff identification stamps improves legibility and accountability as the handwritten names and signatures can be difficult to read. An area for improvement is legibility of the Name and Designation sections of medicines charts.

Medicine Policy

There are no nursing compliance issues detected from the patient's file related to this policy.

Prescribing Policy

It appears that the prescribing policy was mostly complied with in that [RN B] obtained a Telephone instruction/Verbal order and documented this in the verbal orders section of [Mr A's] chart. There is a concern raised in [Dr C's] statement that [RN B] documented "stat" instead of "slow push" in the dosing section.

In my opinion if the metoprolol had been given faster (stat) than the recommended rate it had the potential to seriously compromise [Mr A's] blood pressure further.

9.0 The adequacy of Te Whatu Ora's policies and procedures that were in place at the time of events.

Admission and Patient Management in ICU/HDU/CCU (February 2018).

This policy focuses on the duties of care by medical staff in pathways of care to patients admitted to ICU/HDU/CCU.

The relevant nursing principle is, *In some circumstances the senior nurse on duty might escalate the process and contact the SMO directly*.

In my opinion, nursing and medical staff missed opportunities to act on this principle to seek advice and obtain a senior medical officer review of [Mr A] and therefore is a severe departure from standards.

I recommend that if not already done so, this policy should be revised to welcome and strengthen the expectation that nursing staff escalate to a senior decision maker for deteriorating patients in certain circumstances.

Adult Vital Signs and Early Warning Score (EWS); Measurement, Recording and Escalation Pathway (January 2018)

This policy is consistent with the intent of the National EWS system implemented in New Zealand by the Health Quality & Safety Commission — Deteriorating Patient programme (2017 to present day). The policy states that ICU and CCU patients are excluded which is consistent with acceptable national standards.

Medicine Administration, Medicine Policy and Prescribing Policy

On review the policies, in the main, appeared adequate. The file provided did not include an ICU/HDU/CCU advanced-medication protocol that would have advised staff of specific intravenous medicines that are only given in this setting (such as IV metoprolol) and if they can be prescribed by verbal order, or if they are administered by medical staff only, or if administered by registered nurses. The Notes on Injectable Drugs Guide does not specify how the metoprolol is prescribed or the designation of the administrator.

In my opinion, an ICU/HDU/CCU specific advanced medicines prescription and administration protocol may be useful to guide staff in ICU/HDU/CCU if not already actioned.

10.0 The adequacy of staffing levels at the time of events.

[RN B] is described as an experienced RN and was allocated to [Mr A], a high acuity patient. Due to the limited information provided regarding staffing levels and the workload of the nurses at that time, I am unable to comment on whether the care of [Mr A] was affected by staffing levels, nurse education or skill mix.

In my opinion with [Mr A's] complex clinical condition (at high risk of deterioration/death), it should have been anticipated by senior medical staff that the house officers and nursing staff would likely need to seek further advice in the post-operative period.

In my opinion it would be reasonable to expect that the SMO Anaesthetist and SMO Surgeon would check in with the nursing staff prior to leaving the hospital and/or at least sometime before the night shift.

11.0 Any other matters in this case that you consider warrant comment.

The pilot HDU-EWS chart used at that time to document [Mr A's] progress had patient assessment, escalation and response advice that were different to the adult pathway policy at the time. However, the differences are substitutions for other assessments consistent with original assessments (such as GCS). The EWS scale on the pilot HDU-EWS raises the number of points scored before advising escalation and subsequent

response from medical staff (assuming greater tolerance for signs of acute illness in the HDU setting as the Unit has higher RN competency, staffing ratios, and are attached to electronic beside monitors). While the HDU-EWS chart was being piloted it is fair that alignment with other charts and policy would form part of the risk assessment for the pilot and inform quality improvement cycles.

In my opinion it is important that registered nurses use all assessments to inform their escalation and response to deteriorating patients; the Adult Vital Sign EWS Pathway is one of the assessment tools used.

I was unable to locate any preoperative documentation on [Mr A's] wishes should he deteriorate eg. Shared Goals of Care, Resuscitation Status, or ceiling of intervention guidance.

If this was not discussed with [Mr A] and documented, this would be a moderate departure from standards.

It is unfortunate that there appears to have been a missed opportunity to update Mrs A and family of [Mr A's] condition after 23:00 hours. Had they been phoned it may have allowed them an opportunity to be with [Mr A] if they wished. I view this as a moderate departure from a standard of partnership with family/Whānau, that contributed to their concerns.

Summary and Recommendations for improvement

As an outcome of this review, I have identified areas where a departure from accepted standards has occurred.

1) Dismissal of invasive arterial pressure monitoring in the presence of continued patient deterioration in favour of non-invasive blood pressure monitoring; this would be considered a severe departure from acceptable standards.
2) Ongoing communication of new symptoms of patient deterioration was delayed to medical staff due to inaccurate or incomplete nursing assessments and failure to recognise the significance in the decline of the patient's condition. This would be considered a severe departure from expected standards.
3) The patient documentation does not meet the expected standards of a complete and systematic record and would be considered a severe departure from expected standards.
4) In the presence of declining patient condition the absence of ongoing communication with family members would be considered a severe departure from accepted standards.

Recommendations

1) Referring to the pilot HDU-EWS chart if this has not been audited for patient safety or updated since 2020, I recommend a review of patient outcomes, and revision takes place.

2) Referring to policy Admission and Patient Management in ICU/HDU/CCU (February 2018). I recommend this policy is updated to strengthen the escalation and response system available.

3) Referring to the use of the pilot HDU-EWS chart I recommend ongoing education and support for competency development for all staff on deteriorating patient early warning systems.

4) Referring to medication prescription and administration policies, the unit should consider if an advanced medications list providing guidance on the roles and designations that can administer medications such as metoprolol is warranted.

5) Referring to legibility of staff, I recommend the implementation of Name Stamps (name, designation, registration) to improve compliance with documentation standards.

References

Health Quality and Safety Commission (2016) Deteriorating Adult Patient Evidence Summary. www.hqsc.govt.nz

New Zealand Nurses Organisation (2020) New Zealand Standards for Critical Care Nursing Practice.

Notes on Injectable Drugs: www.noids.nz

Yartsev A. Invasive and non-invasive measurement of blood pressure. *Deranged Physiology* (2013–2020) *https://derangedphysiology.com/main/cicm*

Julia Braid
Nurse Leader
Surgical and Anaesthesia Service
Te Whatu Ora Hauora a Toi Bay of Plenty'

Further advice

The following advice was received from RN Braid on 29 November 2023:

'In my opinion the family were not communicated with in an empathetic or timely manner after 11pm as [Mr A's] condition continued to decline. Therefore, denying them an opportunity to decide if they wanted to be at his bedside during the night, and denying [Mr A] possible comfort of their presence in his confused state. This is a serious departure from standards.

Thank you for asking for the clarification. Please let me know if I can assist further.

Kindest regards

Julia'