Registered Nurse, RN B

Auckland District Health Board
(now Te Whatu Ora Te Toka Tumai Auckland)

A Report by the

Deputy Health and Disability Commissioner

(Case 19HDC01065)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. This report concerns the care provided to a man by Auckland District Health Board (ADHB) (now Te Whatu Ora Te Toka Tumai Auckland) from 12 February 2019 to 29 April 2019, and by a registered nurse on 14 and 15 February 2019. The man was receiving radiation treatment for throat cancer and was admitted to Auckland City Hospital with severe inflammation and ulceration of the lining of his digestive tract. He required pain management and hydration. The man was given an overdose of morphine and suffered a significant brain injury.

2. The report highlights the importance of having in place adequate policies to support safe practices.

Findings

3. The Deputy Commissioner found ADHB in breach of Right 4(1) and Right 4(4) of the Code. The Deputy Commissioner was critical that system failures at ADHB contributed to the administration of an overdose of morphine to the man and a lack of adequate monitoring. The Deputy Commissioner considered that the care provided fell considerably below the appropriate standard, and referred Te Whatu Ora Te Toka Tumai Auckland to the Director of Proceedings.

4. The Deputy Commissioner found the nurse in breach of Rights 4(1) and 4(2) of the Code. The Deputy Commissioner was critical of the nurse's lack of monitoring and documentation (in particular, the failure to record the Code Red event), and that she left the man on his own while she sought assistance, instead of undertaking an immediate assessment and raising the alarm.

Recommendations

5. The Deputy Commissioner made a number of recommendations, including that Te Whatu Ora Te Toka Tumai Auckland provide a written apology to the man; provide HDC with an update on its revised education module for nursing staff around early warning scores; provide staff education and training on the expected standard of documentation; provide further education and training for oncology and bone marrow transplant clinicians; consider the implementation of a quick reference guide for the assessment and management of suspected opioid overdose, and of making the administration of naloxone more readily available on all wards that administer opioids; where possible, ensure that patients on syringe drivers are allocated to nurses trained in syringe driver management; and provide HDC with an update on Te Whatu Ora Te Toka Tumai's revised policies.

6. The Deputy Commissioner recommended that the nurse provide a formal written apology to the man and undertake further training on emergency procedures, local policy on observations, and documentation.

Names have been removed (except ADHB/Te Whatu Ora Te Toka Tumai Auckland, Auckland City Hospital, and the experts who advised on this case) to protect privacy. Identifying letters are assigned in alphabetical order and bear no relationship to the person's actual name.

Complaint and investigation

7. The Health and Disability Commissioner (HDC) received a complaint from Mrs A about the services provided to her husband, Mr A, by Auckland District Health Board (ADHB) (now Te Whatu Ora Te Toka Tumai Auckland)[1] and Registered Nurse (RN) B. The following issues were identified for investigation:

- *The appropriateness of the care provided to Mr A by Auckland District Health Board from 12 February 2019 to 29 April 2019.*
- *The appropriateness of the care provided to Mr A by RN B from 14 February 2019 to 15 February 2019 (inclusive).*

8. This report is the opinion of Deputy Commissioner Dr Vanessa Caldwell, and is made in accordance with the power delegated to her by the Commissioner.

9. The parties directly involved in the investigation were:

Mr A	Consumer
Mrs A	Complainant/consumer's wife
ADHB	Provider
RN B	Provider

10. Further information was received from:

Dr C	Radiation oncologist
Dr D	Radiation oncology registrar
RN E	Charge nurse
Dr F	Neurologist

11. Also mentioned in this report:

Dr G	Radiation oncology registrar
Dr H	Radiation oncology registrar
RN I	Clinical nurse specialist

12. Independent advice was obtained from a nurse practitioner, Sarah Ellery (Appendix A) and a consultant radiation oncologist, Dr Claire Hardie (Appendix B).

[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 to ADHB in this report now refer to Te Whatu Ora Te Toka Tumai Auckland.

Information gathered during investigation

Background

13. In January and February 2019, Mr A was receiving radiation treatment[2] at Auckland City Hospital for throat cancer.[3] This report concerns the care provided between February and April 2019 when Mr A was given an overdose of morphine and suffered a brain injury.

Admission for pain management — 12 to 14 February 2019

12 February 2019

14. On 12 February 2019, Mr A presented to Auckland City Hospital with painful swallowing[4] and poor oral intake due to severe inflammation and ulceration of the lining of the digestive tract (mucositis) caused by his radiation treatment. He was assessed by radiation oncology registrar Dr G and admitted to the oncology ward for pain and hydration management.

15. Mr A's pain was scored as 9/10, and he was prescribed paracetamol liquid 1mg and morphine in tablet form (Sevredol). However, Mr A was unable to swallow the tablets, and Dr G changed the medication to subcutaneous (injectable under the skin) morphine (2.5–5mg hourly as required). Dr G documented that if Mr A's pain could not be managed adequately, morphine should be administered through a syringe driver (a pump that administers subcutaneous morphine continuously over a set period of time at a controlled rate). On 12 February 2019, Mr A's observations were taken at 3.30pm, 5pm, and 7.30pm.

13 February 2019 — first syringe driver

16. On 13 February 2019, Dr D, a radiation oncology medical officer of special scale (MOSS), assessed Mr A on the morning ward round. Mr A was fully alert and showed no signs of drowsiness from the injected morphine, but reported still experiencing a lot of pain, and the decision was made to change to a syringe driver. Te Whatu Ora Te Toka Tumai Auckland stated that "this was chosen as a more effective and continuous method of delivering pain relief", and that a calculation system to guide safe prescribing of morphine had been adopted from the palliative care team. Te Whatu Ora said that in 2019 it was not routine practice for the Radiation Oncology Service to refer patients to the Acute Pain Service. Instead, a syringe driver "was routinely used by the Radiation Oncology Service for pain management, including management of acute pain". Te Whatu Ora stated:

> "This was a practice the Radiation Oncology Service adopted from the Palliative Care team, who had used this practice for management of pain crisis in curable and incurable cancer patients."

17. Dr D calculated that Mr A had required the equivalent of 67.5mg subcutaneous morphine[5] in around 18 hours (i.e., less than 24 hours) to manage his acute pain. Dr D increased the

[2] Curative intent radical radiation therapy.
[3] Oropharyngeal cancer.
[4] Odynophagia.
[5] This is a dose Dr D would commonly prescribe on the oncology ward.

injected morphine dose from 2.5–5mg (hourly as required) to 5–7.5mg, calculated the morphine to be administered through the pump, and started Mr A on a medication for nerve pain (gabapentin). The medication chart shows that from 12 to 14 February 2019, only three of the twenty doses of morphine administered were co-signed by a second nurse.

18. Mr A's first syringe driver was started at 7.35pm on 13 February 2019, with 40mg of morphine to be delivered over 24 hours.

19. Te Whatu Ora Te Toka Tumai Auckland's clinical resource for the use of syringe drivers (see Appendix C) covered how to manage the syringe driver, including four-hourly checks of the pump. However, there was no reference to patient management, such as expected frequency of monitoring vital signs or management of morphine overdose (opioid toxicity). On 13 February 2019, Mr A's observations were taken at 10.35am and 8pm.

14 February 2019 — second syringe driver

20. Mr A still had severe pain, and was unable to tolerate anything orally. He had received 85mg of morphine subcutaneously in less than 24 hours (40mg through the syringe driver and an additional 45mg for breakthrough pain), but he showed no sign of drowsiness to suggest early opioid toxicity.

21. At 3.10pm on 14 February, Dr D charted the second syringe driver to administer 70mg of morphine over 24 hours, and increased the injected morphine dose from 5–7.5mg to 10–15mg (hourly as required). Te Whatu Ora noted that the doses prescribed were doses Dr D would commonly prescribe on the oncology ward, and there is no recommended maximum total morphine dose to be given over a 24-hour period. The appropriate dose for an individual is that which is effective to manage their pain with minimal side effects.

22. Te Whatu Ora said that Mr A required injected morphine before his radiation treatment, and had requested a stronger dose so that he could sleep through the night. Mr A received radiation treatment at 3.58pm. He returned in less pain, and there was no sign of drowsiness. Mr A's vital signs were checked at 9pm and there were no concerns. The monitoring requirements related to morphine prescriptions were not documented in the notes, but verbal standing orders were in place.[6] On 14 February 2019, Mr A's observations were taken at 9.30am, 12.45pm, 5pm, and 9pm.

Night shift

23. At about 10.45pm on 14 February, RN B[7] received handover for an eight-hour shift. She told HDC that handover included that Mr A was receiving morphine by syringe driver, had mucositis due to radiation treatment, and was stable and "sleeping soundly". She described the shift as very busy, as there were nine patients, which she said was a lot of work for three nurses. A new patient was also admitted around midnight.

[6] If a patient was drowsy, had a respiratory rate of less than 10, or was hypotensive (low blood pressure), the prn (as required) subcutaneous morphine was not to be administered, and medical staff were to be notified.
[7] RN B registered as a nurse in 2008.

Monitoring

24. RN B was working as a resource nurse (a nurse who works on different wards when a ward is short-staffed). She said that "[i]n [her] experience as a Resource Nurse, the timing of night shift observations depends on the ward", and that she followed the advice given at handover and what she could see in the notes. On reviewing the vital signs chart, she noted that Mr A's vital signs had been checked at 9pm. RN B first checked Mr A at 12am and noted that he was asleep and breathing normally. She did not take his vital signs.

25. At 2am, RN B checked and documented Mr A's vital signs. She said that Mr A was snoring slightly, and she recalled waking him to take his observations. She stated: "[H]e opened his eyes and acknowledged me but we did not talk." RN B told HDC that she took full observations only at this time as she could see from the chart that "on the last two nights he did not receive overnight observations". She added that he was stable, and she knew that "some patients are not happy to be woken up for observations and because this [was] not [her] ward [she] followed what [she] could see on the chart".

26. RN B performed and documented hourly checks (intentional rounding) for Mr A, but did not take his vital signs. RN B commented: "[I]f Mr A was breathing differently or snoring loudly during one of these checks I would have noticed and responded."

Syringe driver checks

27. RN B saw in the clinical notes that Mr A's syringe driver was last checked at 9pm. She told HDC that she was aware of the requirement to check the pump and update the chart 30 minutes after commencement, on handover, and every four hours (the instructions on the syringe driver management form). She did not check the pump on handover, and acknowledged that she should have done so. RN B explained that she knew that the pump had been checked two hours previously, and she became busy settling a new patient and responding to another patient's call for pain relief.

28. RN B said that when she checked on Mr A at 12am, she "checked [that the syringe driver] was working", but did not do the full check. She recalled that she became busy providing pain relief to other patients. RN B checked the pump at 1.30am and 6am and documented this.

Hypoxic event — 15 February 2019

29. At 6.55am, RN B checked on Mr A before handover to the next shift. She noticed that he was snoring loudly. She was concerned, and left the room to check with the day shift and alert the Charge Nurse, RN E.

30. RN B initially told HDC that Mr A was "not responsive to voice", but later clarified that she meant that he was "not immediately responsive to voice", and added that she recalls that he opened his eyes, looked at her, and then returned to sleep. She said that his breathing and colour were normal, and there were no signs of distress. RN B did not check Mr A's level of consciousness, airway, breathing, or circulation.

31. RN B said that she returned with RN E and another nurse "about a minute" after she had noticed the loud snoring. RN E recalled that RN B told her that Mr A's breathing "was not looking good", and that he was "not really" rousable. However, RN B told HDC that she does not remember commenting on Mr A's breathing.

32. RN B said that on reflection, she could have tried to wake Mr A, but did not do so as she was "not sure if this was a normal sound for him". She told HDC that if she had noticed any sign of distress, or if Mr A had not responded to her voice at all, she would have assessed him further and called the alarm. She said that she had been a nurse for 11 years, and had called a Code Red[8] a number of times. Her last CPR training was in January 2017.

33. RN B stated:

> "I understand that these assessments [checking Mr A's level of consciousness, airway, breathing, and circulation] would be appropriate for an unresponsive patient, [but Mr A] was not showing any sign of distress and he was responsive (though sleepy/drowsy)."

34. After reflecting further, RN B acknowledged:

> "I know now that I should have assessed [Mr A] further and called the code myself. I did not know that at the time, but I understand on reflection what I could have done differently."

35. In response to my provisional opinion, RN B stated that when she left the room, she was unaware that Mr A was in distress, and she sought a colleague's advice after noting that his snoring was louder than it had been overnight. With the benefit of hindsight, RN B accepted that she should have assessed Mr A herself, but maintained that she was not aware that Mr A was unresponsive at the time she left the room.

36. Mr A had very low oxygen levels in his blood,[9] a low respiratory rate,[10] and a low Glasgow Coma Score[11] of 7/15. The Charge Nurse called a Code Red and stopped the syringe driver. Mr A was given oxygen, and his levels quickly returned to normal. The Code Team arrived and attended to Mr A.

Documentation

37. RN B wrote her clinical notes at 4am for the whole shift (which ended around 7am). She documented that Mr A was "easily rousable to voice" and "slept well overnight". She told HDC that she wrote the notes instead of taking a break as the shift was busy. RN B did not document the hypoxic event that happened three hours later, towards the end of her shift.

38. RN B told HDC: "I know that I should have documented this event." She said that after the event, the Charge Nurse told her to hand over her other patients. She finished her shift at

[8] A serious or life-threatening emergency.
[9] Hypoxia.
[10] Six breaths per minute. The normal respiration rate for an adult at rest is 12 to 20 breaths per minute.
[11] A measure of consciousness.

7.30am, and the Code Team still had Mr A's notes. She said that she "did not write any notes about this incident because it was morning shift and the day nurses were already attending to Mr A". She told HDC that she "was then told to go home and that the morning nurses would take over", and she could not stay late as she needed to return home to her children. RN B said that she did not work on the oncology ward for a while after this incident, so was not reminded to make a retrospective note.

Transfer to ICU

39. Mr A was given intravenous naloxone, and then a naloxone infusion[12] to reverse the effects of the morphine. He was transferred to the Intensive Care Unit (ICU), where he was diagnosed with opioid narcosis (reduced consciousness or respiratory depression from opioid (morphine) administration).

40. Mr A was reviewed by the Acute Pain Service in ICU. He was started on a patient controlled analgesia (PCA) pump with intravenous fentanyl.[13] Te Whatu Ora said that fentanyl is safe at all levels of kidney function, and the PCA has a programmed set dose that is given only if the patient demands it by pressing a button. The Acute Pain Team noted that the opioid effects were resolving but that the subcutaneous accumulation of morphine would remain for a period and would be absorbed and excreted over time. Te Whatu Ora told HDC: "This was likely to take longer than usual as [Mr A] had a short episode of reduced kidney function (morphine is removed from the body by the kidneys)." He was transferred back to the oncology ward at 8.10pm with a diagnosis of "opioid narcosis — resolved".[14]

16 to 25 February 2019

41. Mr A continued to suffer from painful swallowing, and a percutaneous endoscopic gastrostomy (PEG) feeding tube was inserted on 21 February 2019 to assist with his nutrition. A dietician also provided input. Mr A remained in Auckland City Hospital until his discharge on 25 February 2019. Te Whatu Ora told HDC: "Over that time no concerns were noted about [Mr A's] neurological status."

42. Mr A's radiation therapy was completed as an outpatient, and he returned home on 1 March 2019. Te Whatu Ora said that there were no complications, and Mr A was "fully independent" so "did not require any district nurse referral or input from any other services".

Follow-up care March–April 2019

43. On 12 March 2019, Mr A's wife telephoned the Oncology Service at Auckland City Hospital as Mr A was confused and had reduced co-ordination and altered speech. The advice given was for Mr A to present to the local Emergency Department or his GP. On 13 March 2019,

[12] The infusion was halved after three hours and stopped after six hours.
[13] A synthetic opiate.
[14] Mr A was conscious and orientated, had full limb power, his oxygen saturations were normal (94%), and his Glasgow Coma Score was normal (15/15).

Mr A's GP referred him to Hospital 2, where he was treated for dehydration and discharged home the next day.

44. On 18 March 2019, Mr A was referred again by his GP and re-admitted to Hospital 2 for acute confusion. An MRI scan was undertaken on 19 March 2019.

Opioid narcosis first identified as possible cause — 20 March 2019

45. On 20 March 2019, Mr A's MRI scan was reviewed by a general physician at Hospital 2 and discussed with a doctor from the Radiation Oncology Service at Auckland City Hospital. Te Whatu Ora said that the radiation oncologist thought that the findings on the MRI were unlikely to be related to the radiation therapy but could possibly be a side effect from the opioid narcosis. He suggested that Mr A see his radiation oncologist, Dr C, in Auckland for further discussion. Mr A was discharged from Hospital 2 that day, and a review of the MRI scan by Auckland City Hospital was requested.

21 March 2019 — radiation oncology consultation

46. Mr A had a follow-up appointment with radiation oncologist Dr C and radiation oncology registrar Dr H at Auckland City Hospital on 21 March 2019. At this time, Mr A was experiencing acute confusion. Mrs A told HDC that she had started to notice that he was struggling to do basic things like using his phone or changing the TV channel.

47. Dr H documented a history of confusion developing since the radiation treatment, and noted that there were no focal neurological signs.[15] An MRI scan showed changes to the brain typically seen with chronic hypoxia or toxic injury. Dr C told HDC that he had not seen this complication previously, and "realised this needed further assessment, referral to Neurology, discussions with the neuroradiologist and medical oncologist, review of his radiotherapy plans and likely admission to the oncology ward".

48. The neuroradiologist reviewed the MRI and thought that the injury could be from past carbon monoxide poisoning. The medical oncologist did not think the cancer medication (cetuximab) was the cause. Dr H also consulted the on-call neurology registrar, who could see no obvious cause for Mr A's acute confusion and did not recommend further tests, management, or a formal referral to Neurology.

49. Mrs A recalled being told that the changes were often seen in someone who was either a high cocaine/opiate user or someone with carbon monoxide poisoning, neither of which applied to her husband.

50. Mrs A preferred to return home with Mr A, and they were advised to seek medical attention from their GP or the hospital near their home if there was no improvement in Mr A's cognitive function. They were given the contact number for the oncology specialist nurse

[15] A problem with nerve, spinal cord, or brain function affecting a specific part of the body, or speech, vision, and hearing problems.

and the head and neck specialist nurse for their home region. The plan was for Dr C to see Mr A for a follow-up appointment in two and a half months' time.

2 April 2019 — formal referral to Neurology

51. On 2 April 2019, Mr A was seen by an orthopaedic surgeon at Hospital 3 (DHB2) for follow-up of a fractured femur (an issue that had pre-dated his cancer diagnosis). The surgeon referred Mr A to the Neurology Service at Hospital 3 because of "significant cognitive changes and memory loss". On 24 April, Mr A was unable to consent to surgery due to significant confusion.

29 April 2019 — Neurology review

52. Consultant neurologist Dr F reviewed Mr A at Hospital 3 on 29 April 2019. Mr A had significant cognitive impairment, scoring 5/30 on a cognitive screening test. He had a resting tremor, increased muscle rigidity (cogwheeling), and some limb weakness. Dr F documented that Mr A had experienced a serious brain insult (injury). Dr F then consulted with a neuroradiologist at Auckland City Hospital, who diagnosed Mr A with delayed post-hypoxic leukoencephalopthy — a rare condition where damage to the protective covering of the nerves causes symptoms days to weeks after hypoxia.

Further information

Mrs A

53. Mrs A told HDC:

> "[Mr A] has been left with a brain injury and a broken femur which can't be operated on due to the brain injury. He will never be able to go back to work and he is really relying on me which makes it hard for me to do my job. [Mr A] currently has a PEG feeding tube in and I have to come home and do his feeds as he can't remember how to do them.
>
> …
>
> We have seen a Neurologist who has looked at the same MRI the Auckland Neurologist saw [on 21 March 2019] and he has said it was caused by the Morphine overdose. I really feel like Auckland hospital just dropped us and wasn't really wanting to help us."

Te Whatu Ora Te Toka Tumai Auckland

54. Te Whatu Ora told HDC that the Director, General Medicine contacted Mrs A on 24 June 2019 to apologise, acknowledge her complaint, and enquire about Mr A's ongoing care, and to advise that Te Whatu Ora Te Toka Tumai Auckland would conduct a formal investigation and then offer her a meeting with staff.

55. Te Whatu Ora Te Toka Tumai Auckland's Adverse Event Review (AER) made a number of findings:

- Following the palliative care model for the management of pain rather than requesting input from the Acute Pain Service led to the inappropriate use of a continuous

subcutaneous infusion for an acute pain episode, increasing the likelihood of respiratory depression.

- Using an intravenous patient-controlled pump (patient-controlled analgesia (PCA)) to administer the morphine may have offered a safer alternative (prescribed by the Acute Pain Service).
- It is documented in the literature that adding a background continuous infusion of morphine in patients receiving as-required doses of morphine is associated with an increased risk of respiratory depression (slow and ineffective breathing). This risk is high if the respiratory rate and level of consciousness are not monitored.
- For acute pain that is difficult to manage, there is an expectation that clinical staff would consider referring to the Acute Pain Service.
- Lack of policy on administration and monitoring of opioids by continuous subcutaneous infusion, and lack of clarity in existing monitoring policies for opioids contributed to the inappropriate use and ineffective monitoring of a continuous subcutaneous infusion.
- Whilst there were policies on oral, intravenous, and PCA opioid use, there was no policy on the use of subcutaneous infusion of opioid analgesia. Of the existing opioid policies, guidelines for monitoring were present only in the PCA document.
- There was no Te Whatu Ora Te Toka Tumai Auckland wide policy on when and how to use continuous subcutaneous infusions, frequency of medical reviews, and patient monitoring.
- The oncology ward nursing model of care and the high patient acuity of this ward meant that insufficient nursing capacity was available to manage demand and nursing care delivery. The Trendcare[16] report showed that the ward was understaffed on 14 February 2019.
- The frequency of vital sign monitoring (respiratory rate, oxygen saturation, heart rate, blood pressure, temperature, and level of consciousness) was not optimal. These are to be recorded four-hourly, and on 15 February 2019, respiratory rate was recorded only at 2am.
- The rarity and complexity of delayed post-hypoxic leukoencephalopathy and the incomplete information sharing about the severity of the hypoxic event may have delayed definitive diagnosis.

56. On 18 February 2020, Te Whatu Ora met with Mr and Mrs A to discuss the AER. In September 2020, the Chief Medical Officer of Auckland Hospital apologised for the shortcomings in Mr A's care identified in the AER. Te Whatu Ora told HDC that it took this matter "extremely seriously and is committed to making improvements to minimise the risk of an adverse incident such as occurred in [Mr A's] case happening again in the future".

[16] A workforce planning and workload management system.

RN B

57. RN B said that she has thought about what she could have done differently in this case, and it has reminded her that when working as a resource nurse, she needs to apply her own critical thinking.

58. She reflected that it was an overtime shift, and she did not take a break and was exhausted by the time the shift ended. She said that this has reminded her to be prepared mentally and physically at work and to think about this before agreeing to work overtime.

Responses to provisional opinion

Mrs A

59. Mrs A was given an opportunity to respond to the "information gathered" section of the provisional opinion. She had no further comments to make, but stated that reading the report brought up feelings of sadness and anger, particularly as Mr A has deteriorated so much in the time since the events.

Te Whatu Ora Te Toka Tumai Auckland

60. Te Whatu Ora Te Toka Tumai Auckland was given an opportunity to respond to the provisional opinion. Te Whatu Ora acknowledged that while there is evidence of suboptimal patient observations and documentation of pain medication administration at the time of these events — as evidenced by this case — there is regular auditing and a mature recognition and response to patient deterioration at Auckland City Hospital. Te Whatu Ora noted that the February 2019 controlled drug registers from four wards were reviewed, and it was found that the correct process for checking out medication had been used, and only one entry was missing a signature.

61. Te Whatu Ora submitted that based on this, while there is room for improvement, it does not suggest that there are serious systemic problems with patient observations, pain medication administration, and associated documentation. Te Whatu Ora accepted several of the recommendations made by the Deputy Commissioner, and suggested changes to a number of others, which have been incorporated into this report.

RN B

62. RN B was given an opportunity to respond to the relevant sections of the provisional opinion. She accepted that aspects of the care provided to Mr A were inadequate, but submitted that her actions were reasonable given the circumstances under which she was working. RN B stated that with the benefit of hindsight, things should have been done differently in Mr A's care, and she should have made her own assessment. She said that she has reflected carefully on this incident and made changes to her practice (see paragraph 108).

63. RN B accepted that her documentation, monitoring and observation were inadequate, but maintained that this was because the ward was understaffed and it was an unusually busy shift. RN B submitted that in these circumstances it was reasonable for her to have completed hourly rounding and one set of observations, and she believed she was following

the pattern of observations by the permanent ward staff. RN B further submitted that the issues with documentation highlighted by this case are systemic in nature, rather than individually attributable to her, and that she was unable to stay after her shift to document the event. She said that she was unable to complete a retrospective note because she was a resource nurse, and was not working on the oncology ward after the events.

Opinion: ADHB (Te Whatu Ora Te Toka Tumai Auckland) — breach

Introduction

64. ADHB had a duty to provide services to Mr A with reasonable care and skill. This included responsibility for the actions of its staff on the oncology ward.

65. Mr A was receiving radiation treatment for throat cancer and was admitted to Auckland City Hospital with severe inflammation and ulceration of the lining of his digestive tract. This report concerns the care provided between February and April 2019 when Mr A was given an overdose of morphine and suffered a brain injury.

66. My clinical advisor, consultant radiation oncologist Dr Claire Hardie, advised that aspects of the care provided to Mr A were appropriate. Dr Hardie considered that a referral to Neurology was made at the earliest opportunity, and there was adequate discharge planning, coordination of care, and information sharing about the severity of the hypoxic event between Te Whatu Ora Te Toka Tumai Auckland and Te Whatu Ora 2 (previously DHB2). However, Dr Hardie advised that aspects of the care provided were not of an appropriate standard and did not minimise the potential harm to Mr A. These are discussed in more detail below.

Adequacy of policies

67. Dr Hardie and Nurse Practitioner (NP) Sarah Ellery both advised that the policies and guidelines in place in 2019 were inadequate. Dr Hardie advised that there were systemic issues due to a lack of clear policies and guidelines. She noted:

> "They did not cover the administration or monitoring of subcutaneous morphine outside palliative care and whilst there was information on general opioid prescribing and monitoring, this information was spread across 2 guidelines and 1 policy and may not have been considered relevant as the names of the policy/guidelines related to oral and intravenous opioids."

68. In its AER, ADHB acknowledged that there was no ADHB-wide policy on when and how to use continuous subcutaneous infusions, or the frequency of medical reviews and patient monitoring. The only guidelines for monitoring morphine were in the patient-controlled pump policy, and information on morphine prescribing and monitoring was present in separate policies and guidelines related to oral and intravenous opiates. Dr Hardie advised:

> "[Staff] may not have been easily able to identify how to appropriately manage patients with poor pain control that could not take opiates orally, as the preference of the team at the time was to use subcutaneous morphine in this situation and it does not appear to have been standard practice to contact the Acute Pain Service."

69. NP Ellery advised that the clinical resource on the use of syringe drivers covers only how to manage the pump, and not how to manage the patient (such as the expected frequency of vital signs monitoring or management of any adverse event such as opiate toxicity). I am critical of the lack of policy/procedure in the event of an overdose, and the lack of sufficient information for staff on the assessment and management of the patient.

70. I commend ADHB for having developed and updated its policies (see "Changes made since events" section below), including issue of the policy "Opioid Use in Palliative Care — Adult", which specifically states:

> "A continuous subcutaneous infusion (CSCI) is not … indicated in acute self-limiting conditions such as radiation mucositis. For acute and self-limiting pain conditions contact the Acute Pain Service."

71. However, in 2019 there was no policy on the use of morphine by syringe driver (outside of palliative care), and therefore no direction for staff on administration and monitoring requirements. I accept the clinical advice of Dr Hardie and NP Ellery, and I am critical of the lack of policies in place at ADHB at the time of events. As a result, staff inappropriately used a syringe driver for Mr A, and the level of monitoring was inadequate (see discussion below).

Use of syringe driver

72. Dr Hardie advised that the use of a syringe driver to deliver continuous morphine is not appropriate for managing acute pain in a patient not already established on a stable dose of morphine (such as Mr A). She advised that although this appears to have been the standard practice at the time in the Radiation Oncology Service at ADHB (see "Adequacy of policies" section), it is not recommended practice. Dr Hardie considered this a moderate departure from standard practice in the management of acute pain.

73. I note ADHB's AER finding that the use of a continuous syringe driver infusion of morphine for acute pain was inappropriate, and I acknowledge that this practice has now changed. However, I am critical that the standard practice in the Radiation Oncology Service at the time did not reflect recommended practice, which I agree with Dr Hardie points to a systemic issue rather than individual practice.

Consulting Acute Pain Service

74. In Dr Hardie's view, the Radiation Oncology Team should have liaised or consulted with the Acute Pain Service on 13 or 14 February 2019 regarding Mr A's acute pain management. Dr Hardie acknowledged that Dr D was following the standard practice of the Radiation Oncology Service at that time. However, Dr Hardie was critical of the system in place at the time.

Monitoring and observations

75. As stated by Dr Hardie: "When opiates [morphine] are prescribed, guidelines support regular observation of the patient." I have commented above on the issues with policies at ADHB at the time. In addition, I note that observations should be four hourly, as per Ministry of Health guidelines.[17] ADHB's guidelines on observations[18] indicated that the standard of care was a full set of vital signs within 30 minutes of admission, and "[t]he minimum standard ongoing frequency of vital sign measurement [was] every four hours" for adult inpatient wards. The document also states: "Vital sign measurement should not be withheld or delayed in an attempt to avoid disturbing the sleeping patient."

76. Mr A did not receive this level of monitoring, with observations often eight hours apart and less frequent during the night (see paragraphs 15, 19, 22, 24, and 25). NP Ellery commented that there was no care plan documenting frequency of observations for Mr A. Dr Hardie was mildly critical that medical staff did not document monitoring requirements in the morphine prescription, although she acknowledged that there was a verbal standing order in place (see paragraph 22). NP Ellery advised that the frequency of monitoring of Mr A from 12 to 15 February 2019 by nursing staff (including RN B) did not meet the requirements of the policies and guidelines. NP Ellery identified the lack of observations as a moderate departure from expected practice. Dr Hardie has similarly identified a moderate departure for the infrequency of observations. I note that respiratory depression is a side effect of morphine, and I am concerned that Mr A was not monitored adequately by a number of nursing staff during this period.

77. In addition to basic observations, Dr Hardie commented that there was "no documentation in the medical or nursing notes prior to the code red that Mr A had good urine output that would match his fluid intake or if there were any concerns regarding his fluid balance or if his renal function was being assessed". This is relevant as morphine is excreted through the kidneys and, if there is kidney impairment, morphine can accumulate, increasing the risk of overdose.

78. Following the events in 2019, ADHB issued a new clinical guideline, "Opioid Use in Palliative Care — Adult", which outlines the choice of opioids, guidance on prescribing, monitoring requirements, and the detection and management of suspected opioid overdose. I note that it specifically states that a continuous subcutaneous morphine infusion is not recommended in acute, self-limiting conditions such as radiation mucositis, and, in these circumstances, the Acute Pain Service should be contacted. I commend this change.

Nursing ratio

79. ADHB's AER acknowledged that the oncology ward was understaffed on 14 February 2019 (as shown by the Trendcare report — see paragraph 55). NP Ellery advised that the night-shift ratio of 1 nurse to 9 patients was not appropriate. She referred to RN B's comment that

[17] "Guidelines for Syringe Driver Management in Palliative Care", Ministry of Health (Appendix C).
[18] The "Adult Vital Sign Monitoring, Early Warning Score Measurement and Clinical Escalation" document, and also "Pain — Patient Controlled Intravenous Analgesia (PCIA) — Adult" (see Appendix C).

she did not take a meal break, which can be an indicator of a busy shift. NP Ellery also noted that the lack of co-signatures on double checking opiates possibly may have related to this. I acknowledge this criticism and commend Te Whatu Ora for improving the nurse-to-patient ratio and for using the Trendcare tool. I note that the AER identified that the ward had "insufficient nursing capacity … to manage demand and nursing care delivery".

Controlled drug administration

80. There were numerous instances across multiple individuals where morphine administration was not co-signed (see paragraph 17). NP Ellery advised that "[t]he lack of co-signatures on the opioid prescriptions is a deviation from the expected standard". ADHB's Medication Administration Clinical Practice Manual (see Appendix C) and the New Zealand Nurses Organisation guideline on Administration of Medicines section 7.1 (see Appendix D) required controlled drug administration to be checked independently by a second nurse, and this included both nurses signing the prescription. I note NP Ellery's comment that "[i]t may be that the lack of co-signatures also signals staff are too busy to attend to the bedside when double checking opiates", which, considering my comments on the understaffing of the ward in the section above, again suggests a systemic issue at ADHB.

Documentation

81. NP Ellery advised that the standard of nursing documentation in some instances does not meet expected standards.[19] She stated that this was not attributable to any one individual and appears to be systemic. In this she includes multiple incomplete entries (such as the intentional rounding document, vital signs documentation, medication charts), blank pages in the Assessment to Discharge document, and clinical content that does not always provide a thorough overview of Mr A's condition in an objective manner, such as use of a pain score. There was no comprehensive nursing care plan for Mr A outlining the expected frequency of vital signs monitoring and any changes in management over a 24-hour period.

82. Overall, there are numerous examples of documentation from nursing staff that do not meet the required nursing standards. I agree with NP Ellery that this pattern of poor documentation appears to have been a systemic issue, and I reiterate that good clinical documentation is important for patient safety.

Conclusion

83. Dr Hardie and NP Ellery both advised that there were systemic issues at ADHB due to a lack of clear policies and guidelines. Mr A had acute pain that was difficult to manage, and an intravenous patient-controlled pump should have been used to administer his morphine, rather than a syringe driver, which was more appropriate for chronic pain management in the palliative care setting. I note that a referral to the Acute Pain Service should have been made to arrange access to a patient-controlled pump.

[19] The Nursing Council of New Zealand (NCNZ) Code of Conduct Standard 4.8 and NCNZ Registered Nurse Scope of Practice Competency 2.3 (see Appendix D).

84. On the night shift of 14 February 2019, the ward was understaffed and there was a lack of co-signing for opioid administration. There was a lack of adequate documentation by a number of staff (including no one recording the Code Red event in the clinical notes). There was also a pattern of inadequate monitoring and observation of Mr A from 12 to 15 February 2019 (see paragraphs 76 and 77). This is concerning, as opiates are known to suppress breathing and to affect renal function, and the risk for Mr A was not monitored adequately.

85. ADHB stated in its AER:

> "[A]dding a background continuous infusion of morphine in patients receiving as required doses of morphine is associated with an increased risk of respiratory depression (slow and ineffective breathing). This risk is high if respiratory rate and the level of consciousness is not monitored."

86. I am critical that ADHB did not have in place sufficient, clear policies to support safe practices — this is evident in practices followed by staff that were not in line with the expected standard of care. Accordingly, I find that ADHB breached Right 4(1)[20] and Right 4(4)[21] of the Code of Health and Disability Services Consumers' Rights (the Code).

21 March 2019 Radiation Oncology consultation — no breach

87. Mr A was seen by the oncology consultant and registrar at this appointment, and his acute confusion and an MRI scan showing changes to the brain typically seen with chronic hypoxia or toxic injury were noted. Mr A's case was discussed with the neurology registrar on call, a neuroradiologist, and a medical oncologist, and Mr A was offered admission to the oncology ward for further assessment (see paragraphs 47 to 48). However, Mr and Mrs A preferred to return home, and safety-netting advice was provided (see paragraph 50). Dr Hardie advised that there was no deviation from the expected standard of care, and I agree with this advice.

Referral to Neurology — no breach

88. Dr Hardie advised that a referral to Neurology was made at the earliest opportunity when Dr H consulted the on-call neurology registrar on 21 March 2019. Conservative management was recommended, and no further referral to Neurology was advised. The next consultation with Mr A was with an orthopaedic surgeon (on 2 April 2019), and a formal referral to Neurology was made on that day. As there were no other appointments in between these dates, or record of Mr and Mrs A making contact with the Radiation Oncology Service, there was no earlier opportunity for Mr A to be referred to Neurology formally. I agree with this advice, and also note the rarity of delayed post-hypoxic leukoencephalopathy as a diagnosis.

89. I acknowledge that at this point, Mr A and his family expressed how upset they felt when other possible causes were being suggested for the changes seen on Mr A's MRI scan, such

[20] Right 4(1) states: "Every consumer has the right to have services provided with reasonable care and skill."
[21] Right 4(4) states: "Every consumer has the right to have services provided in a manner that minimises the potential harm to, and optimises the quality of life of, that consumer."

as carbon monoxide poisoning, or cocaine or other opioid use. I note that ADHB reflected on this point in the AER, which was appropriate.

Coordination of care — no breach

90. Dr Hardie advised that "there was communication and coordination of care between [DHB2] and Auckland DHB, and the discharge summary for the February admission clearly documented the hypoxic event and its severity, i.e. that an admission to [ICU] was required and this information was available to the GP". I accept Dr Hardie's advice.

Opinion: RN B — breach

Introduction

91. At the time of events, RN B was an experienced nurse who was working as a resource nurse. She worked on the cancer ward on the night shift of 14 to 15 February 2019. While I recognise the difficulty in maintaining professional development relevant to areas of practice when working as a resource nurse, it is important that nurses maintain their professional development, use critical thinking, and follow nursing professional standards. I have a number of concerns about the care provided by RN B to Mr A, which I discuss below.

Monitoring and observations

92. I received clinical advice from NP Sarah Ellery, who reviewed the clinical notes and statements from RN B. It is clear that RN B completed hourly checks (intentional rounding) of Mr A. RN B commented that "if [Mr A] [had been] breathing differently or snoring loudly during one of these checks [she] would have noticed and responded". However, I note that this type of check does not include measuring a patient's respiratory rate or other vital signs.

93. ADHB's guideline on observations[22] and the Ministry of Health guidelines[23] required vital signs measurement within 30 minutes of arrival in the ward, and then at least every four hours. Vital sign measurement should not be withheld or delayed in an attempt to avoid disturbing the sleeping patient. RN B took only one set of vital sign observations for Mr A during her shift, at 2am. ADHB acknowledged in the AER that "[a]lthough Mr [A] was observed during the night, the frequency of vital sign monitoring was not optimal".

94. RN B said that she looked at the clinical notes and followed the pattern of no vital signs checks having been done for Mr A over the previous two nights, and noted also that some patients do not like to be disturbed while they sleep. NP Ellery advised that the lack of monitoring and observations taken by RN B was a moderate to major departure from the expected standard of care.

[22] "Adult Vital Sign Monitoring, Early Warning Score Measurement and Clinical Escalation" document (see Appendix C).
[23] "Guidelines for Syringe Driver Management in Palliative Care", Ministry of Health (Appendix C).

95. I accept this advice and I am concerned at the lack of observation of Mr A, considering that respiratory depression is a side effect of opioid administration. RN B has acknowledged, with the benefit of hindsight, that when working as a resource nurse she needs to apply her own critical thinking. This includes not just following the patterns of observations by other staff, but following policy. I acknowledge the unsafe custom and practice that had developed on the ward, which saw RN B making decisions based on previous ward practice rather than on policy. However, I consider that she is accountable for her own practice. Fundamental to nursing practice is the safeguarding of patients through the application of nursing knowledge and critical thinking. In this context, and with reference to NP Ellery's advice, this would include undertaking observations and assessing and monitoring a patient who is receiving a drug that can cause respiratory depression.

96. I take this opportunity to remind clinicians that observations are a key safety measure. Whilst it may appear to be intrusive, disruptive, or annoying to patients, it is a critical safety mechanism that must be reinforced regularly and, as such, ward leaders should remain alert to lapses in good observation practices.

97. I acknowledge RN B's submission, in response to the provisional decision, that her actions were reasonable in the circumstances, given that the ward was understaffed and the shift was unusually busy. I accept that the ward was busy that night, and that RN B reported having her attention diverted by other priorities a number of times, and did not take a meal break. I also acknowledge that following these events ADHB increased the number of nurses on the ward at night, and I am mindful of the systems issues at ADHB at the time. I also acknowledge that RN B changed her practice, and now completes observations at least four hourly on her shifts.

98. However, in my view, appropriate observations, nursing assessments and monitoring are basic nursing requirements that should have been completed by RN B. While one missed set of observations may be explicable when a shift is particularly busy, RN B undertook only one set of vital signs in the whole shift. I do not accept that more frequent observations and monitoring could not have been achieved in the circumstances, or that a busy shift negates the responsibility to provide basic nursing care, particularly following administration of medication that is known to require such observation. I am critical that RN B did not follow ADHB's guideline on observations, and I have made a recommendation regarding this (see paragraph 111).

99. I also note that RN B did not check Mr A's syringe driver on handover, although she acknowledges that she should have done so and was aware of the policy. She checked the syringe driver at around midnight but did not undertake a full check (although she did undertake two further checks that shift). Her explanation for these omissions was that she knew that the syringe driver had been checked at 9pm, and she became busy with other patients. I have discussed the contributing factors in paragraph 97, but I am concerned that the checks were not done.

Leaving Mr A's room

100. Towards the end of her shift on 15 February 2019, RN B noticed that Mr A's snoring had become louder. She told HDC that she attempted to rouse him by voice, and then left the room to seek assistance. NP Ellery is critical that "[RN B] did not raise the alarm while staying with the patient", and that "she did not undertake the expected immediate assessment of [Mr A]", such as assessing his level of consciousness, airway, breathing, and circulation. NP Ellery describes this as a severe departure from the expected standard of care.[24]

101. NP Ellery acknowledged that "the systemic understaffing that existed at the time was a contributing factor to [RN B] having insufficient time to provide basic nursing care". However, she remained critical that "[RN B] chose to leave the patient rather than use the emergency call bell system to raise help and she did not wake the patient during the night having done a respiratory rate at [2am] only". In NP Ellery's opinion, the "action of leaving an unresponsive patient without more comprehensive assessment identifies a lack of confidence in [RN B's] skill".

102. In response to the provisional opinion, RN B submitted that she did not realise that Mr A was in distress or unresponsive when she left the room. While I accept that RN B may not have known that Mr A was in distress at this time, I note that her evidence indicates that she tried but failed to rouse him, and that she was sufficiently concerned to leave the room and seek further advice from a colleague after attempting to rouse him by voice. RN B has also acknowledged, with the benefit of hindsight, that she should have assessed Mr A herself and called a Code Red. I therefore reject her submission that she did not know that Mr A was unresponsive, as this is inconsistent with both her evidence and her actions at the time.

103. I accept NP Ellery's advice and consider that RN B should have stayed with Mr A, assessed him, and raised the alarm. I have included a recommendation that RN B undertake emergency procedure training.

Documentation

104. RN B did not document the adverse event for Mr A on 15 February 2019. I note that she wrote her clinical notes at 4am, and did not add to them when the event occurred around 7am. RN B has described being told to hand over the other patients, and that when her shift ended, the Code Team still had Mr A's notes, and she was told to go home as the morning shift "would take over". Being a resource nurse, she did not work on the oncology ward for some time, and did not enter a retrospective note. RN B has acknowledged that she should have documented the event.

105. NP Ellery advised that the failure to document the adverse event was a moderate departure from expected standards (the Nursing Council of New Zealand (NCNZ) Code of Conduct Standard 4.8 and NCNZ Registered Nurse Scope of Practice Competency 2.3 (see Appendix D)). I accept this advice and am critical that RN B did not document an adverse event, either at the time (which is preferred) or as a retrospective note. While I note the widespread poor

[24] Competency 2.5 of the NCNZ Registered Nurse Scope of Practice (see Appendix D).

documentation by many of the nurses involved in Mr A's care, in my view, RN B's failure to document the adverse event can be distinguished from the overall issues with documentation on the ward. The systemic issues with documentation, as referred to at paragraph 81, do not detract from RN B's own obligation as a nursing clinician to keep clear and accurate records. Nursing documentation should reflect assessments, monitoring, actions taken, and any adverse events to ensure continuity of care. I have made a recommendation on documentation standards for RN B.

Conclusion

106. As a resource nurse, RN B worked across a number of different areas in the hospital, and appears to have relied on the previous patterns of observations taken by other staff in an area rather than following DHB policy and relying on her own judgement. I acknowledge that she was working in a system where other staff were not meeting the required standards of observations and documentation for Mr A (I have commented on this in paragraphs 76–77 and 81 above), and that the nurse-to-patient ratio was insufficient. I note that RN B was an experienced nurse, and I am particularly critical of her management of the incident on 15 February when she was concerned about Mr A's snoring and left him to seek assistance instead of staying with him and undertaking an immediate assessment of his consciousness, breathing, and circulation, and raising the alarm. Accordingly, I find RN B in breach of Right 4(1)[25] of the Code. I am also critical that she did not document the event, and find RN B in breach of Right 4(2)[26] of the Code.

Changes made since events

107. Te Whatu Ora Te Toka Tumai Auckland advised that the following changes have been made:

a) Support for nurses:

- The number of nurses on the oncology ward night shift was increased from three to four. The patient acuity tool Trendcare is being used to identify staffing deficits.
- Staff from the Employee Assistance Programme are available on the oncology ward fortnightly to meet and debrief with staff. A buddy system was introduced so that nurses work closely and support each other for breaks.

b) For non-palliative patients:

- A new guideline was developed on the use of continuous subcutaneous infusions for opioids outside the palliative care setting, and includes the identification of, and monitoring for, suspected overdose.

[25] Right 4(1) states: "Every consumer has the right to have services provided with reasonable care and skill."
[26] Right 4(2) states: "Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards."

- A PCA pump is now used for opioids (morphine).
- A pump/syringe driver is used occasionally for treatment to prevent nausea.

c) Palliative patients who are receiving medication via a pump/syringe driver have observations taken four hourly, and this is audited.

d) Regarding access to the Acute Pain Service:

- A new Mucositis Policy was developed, which includes a referral pathway to the Acute Pain Service.
- An audit on the oncology ward showed that patients with uncontrollable acute pain are discussed with the Acute Pain Service.
- The Te Toka Tumai Auckland RMO[27] handbook App was updated to indicate that a referral to the Acute Pain Service should be requested if there are on-going issues with pain management.

e) Training:

- All oncology SMOs[28] and registrars were provided with training on the indications for, and management of, patients on a continuous subcutaneous infusion of analgesics. An audit showed full adherence to the policy.
- Training and management of continuous subcutaneous infusion of analgesics is now a focus for orientation of new nursing staff to the oncology ward, and the nurse orientation books were updated.

f) Policies developed:

- A new clinical guideline — "Opioid Use in Palliative Care — Adult" was issued. In particular, it states that a continuous subcutaneous morphine infusion is not recommended in acute, self-limiting conditions such as radiation mucositis, and in these circumstances the Acute Pain Service should be contacted.
- A new clinical guideline — the "Index Opioid Guideline" — was developed to group pre-existing guidelines into one main guideline applicable across the organisation.

g) A care plan is now being utilised, and an SMO escalation pathway has been developed to support staff.

h) Audits:

- A weekly audit is in place on the oncology ward to ensure that four-hourly observations are undertaken for patients with syringe drivers.
- Monthly early warning score (EWS)[29] audits are done.
- Regular auditing of practice and education of staff around documentation standards is undertaken.

[27] Resident medical officers (house officers and registrars).
[28] Senior medical officers.
[29] A tool to detect and respond to clinical deterioration in patients.

RN B

108. RN B told HDC that she now takes observations at least every four hours on a night shift, and in similar circumstances she would immediately check the patient's airway, circulation, and breathing, and, if appropriate, check the Glasgow Coma Score and call a Code Red. She has also undertaken basic life support training.

109. RN B also said that in a similar situation, she would ensure that she made a report of any adverse event.

Recommendations

110. In light of the changes already made (as noted above), I recommend that Te Whatu Ora Te Toka Tumai Auckland:

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

b) Provide an update on the revised education module for nursing staff around EWS that is due for completion in February 2023. This update should be provided within three months of the date of this report.

c) Provide education and training on the expected standard of documentation, including ensuring that the plan for vital signs is clear. Evidence that this training has been provided should be sent to HDC within three months of the date of this report.

d) Provide education and training for oncology and bone marrow transplant clinicians on the management of mucositis, and the indications for, and management of, mucositis. Evidence that this training has been provided should be sent to HDC within three months of the date of this report.

e) Consider having a quick reference guide for the assessment and management of suspected opioid overdose, and making the administration of naloxone more readily available on all wards that administer opioids.

f) Where possible, allocate patients on syringe drivers to nurses trained in syringe driver management.

g) Ensure regular auditing of the practice and education of Te Whatu Ora Te Toka Tumai Auckland staff around documentation standards.

h) Consider auditing all areas involved in syringe driver use to be consistent with the improvements on the oncology ward, noting that the frequency of audit may need to decrease over time if being undertaken by nursing staff.

i) Provide an update to HDC on whether Care Capacity Demand Management (CCDM) has been implemented at Te Whatu Ora Te Toka Tumai Auckland.

j) Provide final versions of the new "Index Opioid Guideline" and "Best Practice Guideline: Patients with Oral Mucositis (OM)" policies to HDC.

k) Report back to HDC on points (e) to (j) above within three months of the date of this opinion.

111. I recommend that RN B:

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

b) Undertake the following training and provide evidence of this to HDC within six months of the date of this opinion:

- Emergency procedure training, including a CPR refresher course and consideration of a CORE Immediate course (for resuscitation skills).
- Refresher training on local policy on observations.
- Refresher training on documentation standards for registered nurses.

Follow-up actions

112. Te Whatu Ora Te Toka Tumai Auckland will be referred to the Director of Proceedings in accordance with section 45(2)(f) of the Health and Disability Commissioner Act 1994 for the purpose of deciding whether any proceedings should be taken. In making this referral, I have had regard to the serious systemic issues that did not reflect recommended practice and fell well below the appropriate standard, as demonstrated by the absence of regular observations and monitoring, and the public interest in holding providers to account.

113. A copy of this report with details identifying the parties removed, except ADHB/Te Whatu Ora Te Toka Tumai Auckland, Auckland City Hospital, and the experts who advised on this case, will be sent to the Nursing Council of New Zealand, and it will be advised of RN B's name.

114. A copy of this report with details identifying the parties removed, except ADHB/Te Whatu Ora Te Toka Tumai Auckland, Auckland City Hospital, and the experts who advised on this case, will be sent to the Health, Quality, and Safety Commission, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Addendum

115. The Director of Proceedings decided to take proceedings in the Human Rights Review Tribunal.

Appendix A: Independent clinical advice to Commissioner

The following expert advice was obtained from NP Sarah Ellery:

"I, Sarah Ellery, have been asked to provide an opinion to the Commissioner on case number 19HDC01065, and I have read and agree to follow the Commissioner's Guidelines for Independent Advisors, and I am not aware of any conflicts of interest.

I have been a Registered Nurse since 1992 (NCNZ 129807) and a Nurse Practitioner working in adult Medical Oncology since 2015. I have 20 years of oncology nursing experience as a Registered Nurse, Clinical Nurse Specialist and Nurse Practitioner and have worked across the inpatient and outpatient areas of Oncology. I have nursed patients under the care of both medical and radiation oncology.

My qualifications include:

Diploma of Nursing (Comprehensive), 1989–1991, Christchurch Polytechnic

Bachelor of Nursing, 1999–2001, Christchurch Polytechnic Institute of Technology

Postgraduate Certificate in Advanced Nursing (Palliative Care), 2003, Victoria University of Wellington

Postgraduate Diploma in Health Science (Nursing), 2006, University of Otago

Master of Health Sciences (Nursing Clinical), 2013, University of Otago

Request for advice

I have been requested to advise on whether I consider the care provided to [Mr A] by Auckland DHB was reasonable in the circumstances, and why. My advice is limited to the nursing care provided.

In particular, I have been requested to comment on:

1. The adequacy of nursing care from 12 to 15 February 2019 provided to [Mr A] by Auckland DHB, including adequacy of observation and monitoring while being administered analgesia.
2. The reasonableness of the care provided by [RN B].
3. The appropriateness of Auckland DHB's nursing staffing level and capacity available at the time of these events.
4. The adequacy of policies in place at the time of the incident regarding narcotic analgesia administration, monitoring, and detection and management of suspected overdose, and the adequacy of any revised policies.
5. Whether issues identified by you (if any) were due to systemic issues at Auckland DHB or whether it was more attributable to an individual or both. If there are any

systemic issues, please elaborate on this, including recommendations for improvement.

6. The adequacy of any remedial actions/further changes being implemented by Auckland DHB.
7. Any other matters that you consider warrant comment.

For each question, I have been requested to 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 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.

Documents provided

Documents provided to me included:

1. Letter of complaint dated 11 June 2019
2. Clinical records from Auckland DHB
3. Response from Auckland DHB dated 8 September 2020
4. Recommendations: Adverse Event Report
5. Statement of [RN B] dated 4 September 2020
6. Statement of [RN E] dated 28 August 2020
7. Statement of [Dr D] dated 8 September 2020
8. Statement of [Dr F] dated 3 September 2020
9. Clinical resource for the use of syringe drivers dated 3 June 2011
10. Medication administration clinical practice manual updated February 2020
11. Pain — Patient Controlled Intravenous Analgesia (PCIA) for an Adult clinical guideline updated February 2020
12. Opioids (Short-acting) — Oral for Adults policy updated March 2020
13. Pain — Opioids — Intravenous in adults clinical guideline dated 14 March 2019.

Document provided on request

ADHB Adult Vital Sign Monitoring, Early Warning Score Measurement and Clinical Escalation.

Document not provided on request

Policy on documentation standards for ADHB.

Background

[Mr A] was undergoing curative radiation therapy for throat cancer and was halfway through his outpatient course. He was admitted to Auckland Hospital on 12 February 2019 for painful swallowing and severe mucositis caused by the radiation therapy.

[Mr A] received increasing amounts of morphine for pain (60mg oral, 27.5mg subcutaneously in the first 24 hours). On 13 February, a syringe driver (Niki T pump) was set up to deliver 40mg over 24 hours. On 14 February, this was increased to 70mg over 24 hours. Subcutaneous doses continued to be administered as required in addition to the syringe driver.

Hypoxic event

At 7.10am on 15 February, [Mr A] was noted to be breathing differently, his Glasgow Coma Score was low, he had very low oxygen levels in his blood and was not responding to voice. The total morphine dose received in the 24 hours prior to the event is believed to be 140mg.

[Mr A] was admitted to the Department of Critical Care Medicine (DCCM) for intravenous infusion of naloxone for the residual effects of opioid excess. He was reviewed by the Acute Pain Service, administered fentanyl via a Patient Controlled Analgesia (PCA) pump, and transferred back to the ward.

Concerns about [Mr A's] confusion

On 21 February [Mr A] had a PEG feeding tube inserted and on 25 February [Mr A] was discharged to [accommodation outside the hospital]. On 12 March [Mrs A] contacted the Oncology Medical Service at Auckland Hospital to say [Mr A] was confused, had reduced coordination and alteration in speech. He was advised to go to the Emergency Department (ED) in [Hospital 2] or visit his GP. On 13 March, [Mr A's] GP referred him to the ED and he was admitted to Hospital 2 and treated for dehydration and discharged home.

[Mr A's] GP referred him to [Hospital 2] on 18 March for ongoing confusion and he was admitted for acute confusion of unknown cause. An MRI was requested and discussed with a doctor from the radiation oncology service at Auckland. On 20 March [Mr A] was discharged from [Hospital 2] and a review of the scan by Auckland City Hospital was requested.

Outpatient follow-up

On 21 March [Mr A] was seen as an outpatient at Auckland DHB and no obvious cause for the acute confusion was found. The MRI showed changes typically seen with hypoxic or carbon monoxide poisoning.

Referral to neurologist

On 2 April [Mr A] was seen by an orthopaedic surgeon at [Hospital 3] for follow up of a femur fracture and was urgently referred to the neurology service at [Hospital 3] because of 'significant cognitive changes and memory loss but no care with regard to coordination of diagnosis or management.'

[Mr A] was reviewed on 29 April 2019 at [Hospital 3] by a visiting neurologist from Auckland City Hospital and diagnosed with delayed post-hypoxic leukoencephalopathy. The timing of the onset of symptoms strongly suggests the hypoxic event was the event that occurred on 15 February which resulted in admission to the DCCM.

Response to request

1. Adequacy of nursing care from 12 to 15 February 2019 provided to [Mr A] by Auckland DHB, including adequacy of observation and monitoring while being administered analgesia.

Overall, the nursing care provided to [Mr A] appears to have been adequate between 12–15 February 2019. This is evident from nursing documentation contained in clinical notes, intentional rounding forms, vital signs, fluid balance and medication charts during this time.

Nursing Documentation

I note the presence of an Assessment to Discharge document for this admission which appears to contain incomplete sections of nursing documentation. Additionally, I have not seen clear evidence of a comprehensive nursing care plan for [Mr A's] admission during this time which outlines expected frequency of vital signs and any changes in management over a 24 hour period.

The standard of nursing documentation in some instances does not meet expected standards for clinical documentation.

Some examples include:

- Multiple entries lacking aspects of the expected standard of clinical documentation which includes date and time of entry, legible handwriting and a signature, staff member name and designation.
- The first four pages of the Assessment to Discharge document for this admission are blank.
- The intentional rounding document has not been fully completed each shift (13/2/19 PM shift missing) and the key has not been followed e.g. and 's' for sleeping overnight — instead a ✓ has been used.
- Vital signs documentation has not always been fully completed with EWS scores not always documented when vital signs done.

- Medication charts are incomplete as the opioid prescriptions do not have co-signatures.

Clinical content does not always provide a thorough overview of [Mr A's] condition in an objective manner. For example, an entry on 12/2/20 by a nurse notes pain 'seems controlled', with lack of objective information regarding pain scale scores to support this, no indication of how much morphine was required and by which route or any concern indicated on whether pain was being adequately controlled when both oral and subcutaneous morphine was prescribed. [Mr A] was noted to have a dark brown vomit with no further documentation by the nurse as to whether they had discussed it with anyone, that there was any plan of action such as to monitor or alert other health professionals.

A policy on clinical documentation standards has not been included from ADHB however the Nursing Council of New Zealand (NCNZ) Code of Conduct p20 Standard 4.8 notes nurses should 'keep clear and accurate records' and provides documentation guidance on p21.

The NCNZ guidance 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.

- Complete records as soon as possible after an event has occurred.
- Do not tamper with original records in any way.
- Ensure any entries you make in health consumers' records are clearly and legibly signed, dated and timed.
- Ensure any entries you make in health consumers' electronic records are clearly attributable to you.
- Ensure all records are kept securely.'

The Registered Nurse Scope of practice also outlines expectation regarding documentation:

> 'Competency 2.3 Ensures documentation is accurate and maintains confidentiality of information. Indicator: Maintains clear, concise, timely, accurate and current health consumer records within a legal and ethical framework'

Additionally, the New Zealand Nurses Organisation (NZNO) also provide a guideline on documentation standards for nurses — NZNO Practice Publication Label: Guideline: Documentation, 2017 New Zealand Nurses Organisation.

Opioid administration

The lack of co-signatures on the opioid prescriptions is a deviation from the expected standard as the ADHB policy on medication management clearly states controlled drugs

require an independent double check by two nurses which includes both nurses signing the prescription. Nursing Council of New Zealand (NCNZ) Code of Conduct section 4.9 states nurses should 'Administer medicines and health care interventions in accordance with legislation, your scope of practice and established standards or guidelines'. Additionally, NZNO also provide a guideline for nurses on Administration of Medicines in which section 7.1 on controlled drugs recommends 'controlled medicine administration be witnessed — this means seeing the medicines being administered and signing as a witness' (p26).

Observations and monitoring

An ADHB policy on observations has been mentioned in the statement provided by [the] Chief Medical Officer, and has been provided on request. Additionally, both nurses' statements mention frequency of observation which varies. Frequency of observations to be performed appears only once in the clinical notes between 12–15th February 2019 and this was when [Mr A] was being transferred back to the ward from DCCM. There is no care plan documenting frequency of observations specific to [Mr A].

Reviewing the Adult Vital Sign Monitoring, Early Warning Score Measurement and Clinical Escalation document provided on request from ADHB indicates the standard of care as a full set of vital signs within 30 minutes of admission and the minimum standard is a set of vital signs every 4 hours for adult inpatient wards. Additionally, the document notes vital sign measurement should not be withheld or delayed in an attempt to avoid disturbing the sleeping patient. It is clear from the documentation there has been a deviation from the expected standards during [Mr A's] admission on a number of occasions upon reviewing the vital signs chart between the 12–15th February 2019.

Monitoring of the syringe driver has not always followed the instructions on the form during the admission i.e. 2 signatures on commencement and at change of syringe, 30 minutes into infusion, at handover and every four hours. The syringe driver document provided by ADHB covers management of the syringe driver but lacks management of the patient receiving medication via the syringe driver including expected patient vital signs and observations when opioid analgesia is being used.

NZEWS is a tool designed to signal early deterioration in the patient and provides a plan based on the score to escalate patient management strategies in the event of deterioration. Vital signs are best performed regularly to monitor the trend. Changes in respiratory rate may be an early indicator of deterioration in a patient (New Zealand Early Warning Score Vital Sign Chart User Guide 2017). Given respiratory depression is a side effect of opioid administration this makes regular monitoring of respiratory rates on patients receiving opioids even more valuable and ideally if vital signs are being performed a full set including EWS is most desirable for the above reasons.

2. The reasonableness of the care provided by [RN B].

Nursing care provided over the night shift on 14/2/19 into 15/2/19 from [RN B] is difficult to determine from the clinical notes. It is evident she did one set of observations, which appears to be a deviation from the expected ADHB standard of every 4 hours as a minimum and completed intentional rounding. However, upon reading her statement she has, in my opinion, undertaken a moderate to major deviation from reasonable care.

While [RN B] sought early assistance from other health professionals upon finding [Mr A] unresponsive, she did this by leaving the room to raise the alarm when she heard [Mr A's] snoring had changed. She did not raise the alarm while staying with the patient [or make] a clinical emergency call to alert other staff to a clinical emergency which would be the expected standard of care in a hospital setting. My peers would also view this as a significant departure from expected practice.

Additionally, she did not undertake the expected immediate assessment of [Mr A]. While she states she did attempt to rouse him by voice she did not assess level of consciousness by applying painful stimuli or then assess airway, breathing and circulation as would have been appropriate in an unresponsive patient. And again, this is a significant departure from expected practice.

[RN B] did not appear to act in accordance with NCNZ Scope of Practice for Registered Nurses under *Competency 2.5 Acts appropriately to protect oneself and others when faced with unexpected health consumer responses, confrontation, personal threat or other crisis situations. Indicator: Understands emergency procedures and plans and lines of communication to maximise effectiveness in a crisis situation.*

[RN B] also failed to document this adverse event for [Mr A] which is a moderate departure from expected practice (as detailed above in documentation). She had written her notes at 0400 hours, 3 hours prior to the shift finishing.

Additionally, no other nurse who attended the adverse event documented the event in the clinical notes or documented the observations on the appropriate chart which is a failure of the expected standard of care.

While recognising the difficulty in maintaining professional development relevant to areas of practice when working in a 'resource' role such as [RN B] was, the listed cancer related professional development undertaken by [RN B] is dated. Her current competency in emergency procedures training was not stated. NCNZ Scope of Practice for Registered Nurses *Competency 2.9 Maintains professional development. Indicator: Contributes to the support, direction and teaching of colleagues to enhance professional development. Indicator: Updates knowledge related to administration of interventions, treatments, medications and best practice guidelines within area of practice. Indicator: Takes responsibility for one's own professional development and for sharing knowledge with others.*

And *Competency 4.3 Keep your professional knowledge and skills up to date.* It is unclear how relevant and current [RN B's] professional development is but her action of leaving an unresponsive patient without more comprehensive assessment identifies a lack of confidence in her skill in my opinion.

Overall, this competency — NCNZ Scope of Practice for Registered Nurses C*ompetency 4.1 Use appropriate care and skill when assessing the health needs of health consumers, planning, implementing and evaluating their care* — has not been consistently met in the care of [Mr A] by [RN B] or other staff caring for [Mr A] as evidenced by the inconsistency in documentation, plan for vital signs and following policy for controlled drug administration.

Recommendations

My recommendations for [RN B] include undertaking professional knowledge and skill development in the following areas:

- Emergency procedure training — CPR refresher and consideration of a CORE Immediate course
- Refresher on local policy on observations
- Refresher on documentation standards for Registered Nurses.

3. The appropriateness of Auckland DHB's nursing staffing level and capacity available at the time of these events.

The nursing staffing level for the night shift on which this event occurred was 1 nurse to 9 patients and there were three nurses on the shift along with a hospital aide who was monitoring a confused patient. [RN B] notes she relieved the hospital aide for a meal break but did not get one herself.

In my experience lack of meal breaks can be an indicator of how busy the shift was. It may be that the lack of co-signatures also signals staff are too busy to attend to the bedside when double checking opiates and this should be considered. Therefore, I consider the ratio of 1:9 on any shift is not appropriate.

An oncology inpatient ward when beds are occupied to the fullest, in my 13 years of inpatient oncology experience, are generally busy areas. Oncology admissions frequently involve managing symptoms of cancer e.g. pain, or side effects of treatment e.g. nausea and vomiting. The unpredictability of this work and high nurse to patient ratios make effective and safe management of these patients difficult to achieve.

I commend ADHB for adjusting the nurse to patient ratio of the night shift since this event and for their use of a tool such as Trendcare. It is unclear if ADHB have fully implemented Care Capacity Demand Management (CCDM) which all DHBs have committed to by June 2021. This is a collaborative project with the Safe Staffing Healthy Workplaces Unit.

4. The adequacy of policies in place at the time of the incident regarding narcotic analgesia administration, monitoring, and detection and management of suspected overdose, and the adequacy of any revised policies.

I note the document on subcutaneous infusion devices — Clinical resource for the use of syringe drivers dated 3 June 2011, covers only how to manage the pump. There is no reference to patient management while on a continuous subcutaneous infusion (CSI). For example, no expectation of those receiving opiate infusions on expected frequency of vital signs or management of any adverse event such as opiate toxicity. I cannot see a review date since 2011 on this document.

In my opinion none of the four supplied policies on medication management (listed below) cover management of the patient with a CSI. There is no explicit mention in any of these policies that they apply to CSI.

1. Medication administration clinical practice manual updated February 2020
2. Pain — Patient Controlled Intravenous Analgesia (PCIA) for an Adult clinical guideline updated February 2020
3. Opioids (Short-acting) — Oral for Adults policy updated March 2020
4. Pain — Opioids — Intravenous in adults clinical guideline dated 14 March 2019.

Additionally, the ADHB response also notes there is no specific reference to SCI of opiates outside palliative care at the time of the event and therefore I would consider the lack of a policy or guideline inadequate.

I commend ADHB on rectifying this with the development of a policy and guideline, in the final stages of document control, which will include identification and monitoring for suspected overdose for patients receiving analgesia via SCI.

I would recommend the need for vital signs for patients on SCIs for opiate analgesia also be considered. I have provided a link (in reference list) to an example of a policy which includes this — Adult Policy for Intermittent Oral Opioid Dosing, Canterbury District Health Board, 2018.

5. Whether issues identified by you (if any) were due to systemic issues at Auckland DHB or whether it was more attributable to an individual or both. If there are any systemic issues, please elaborate on this, including recommendations for improvement.

Vital signs

The expectation on the taking of vital signs on receipt of the requested vital sign document for ADHB is every 4 hours. There is no guidance in this document on vital signs for patients with CSI for opiate analgesia in place. At times vital signs documentation was incomplete. This appears systemic given both nurses' statements varied on vital sign requirement and an observation/vital sign policy does not appear to

be in place to cover this aspect of care in those receiving opiate analgesia via CSI. Additionally, I was unable to locate a plan for vital signs for [Mr A] in particular.

I would recommend ADHB consider clearer guidance and education for nurses on when vital signs should be undertaken and the value of a full set including EWS. Consideration be given to having respiratory rate as mandatory for those on opioid infusions during intentional rounding as it does not disturb the sleeping patient, and as previously stated alteration in respiratory rate can be an early indication of change in patient condition. Additionally, the plan for vital signs should also be made clearer in the documentation.

Documentation

As previously outlined the quality of documentation did not always meet the expected standard and this was not attributable to any one individual and appears to be systemic. The Assessment to Discharge document was incomplete. I was unable to locate a plan for vital signs for [Mr A]. There did not appear to be a regular review of the Assessment to Discharge document or any document which could be tailored to [Mr A's] specific needs daily during admission.

I would recommend education be provided to staff on the expected standard of documentation using the resources referenced in this report and a local ADHB policy if one is in place (not supplied on request). A plan should be implemented for vital signs in the existing documentation. Consideration should be given to a document which can be reviewed regularly which allows changes to the specific care requirements of the patient. This is supported by NCNZ Scope of Practice for Registered Nurses *Competency 2.2 Undertakes a comprehensive and accurate nursing assessment of health consumers in a variety of settings. Indicator: Undertakes assessment in an organised and systematic way. Indicator: Uses suitable assessment tools and methods to assist the collection of data.*

An audit of documentation standards could be considered for all clinical notes.

CSI education

CSIs are commonly used in the oncology and palliative care setting and therefore staff working in this area regularly should be trained and familiar with the device and understand why it is being used in this patient population and the implications of its use in relation to adverse events. It is standard practice for these to be managed by experienced oncology staff both medical and nursing and, in my experience, common in practice to involve the palliative care team for their expertise when symptoms such as pain are complex to manage.

My recommendations on CSI use have been previously stated in relation to patient management, however updating the resources would be recommended and I commend ADHB on the resources being developed to address the identified issues.

Nursing staff ratio

As stated previously oncology wards can be busy environments managing complex patient needs related to disease or treatment which is unpredictable in nature. Nurse to patient ratios are systemic issues within the constrained healthcare environment. I commend ADHB on addressing the patient to staff ratio on the oncology ward night shift and for the use of Trendcare. It is unclear if CCDM has been implemented in full or if it is partially implemented and aiming toward the June 2021 date for national implementation.

6. The adequacy of any remedial actions/further changes being implemented by Auckland DHB.

The remedial actions and changes overall summarised in the table provided by ADHB are all adequate and are to be commended.

Some recommendations in the provided table include training for medical staff, and I would recommend nursing staff also receive training on the following:

2 — Best practice (document) for the management of mucositis

3b — Education and training on the indications for and management of patients on a continuous subcutaneous infusion of analgesics

I commend ongoing education for nurses to ensure they are skilled to respond to the unique needs of patients with cancer and have the special and specific skills and knowledge required for nursing care of patients with cancer. The Knowledge and Skills Framework for Cancer Nurses may provide guidance on this.

I commend training from orientation for oncology ward nurses on management of CSIs and would additionally recommend where possible that patients on CSIs are allocated to oncology ward nurses trained in CSI management rather than nurses untrained in CSI use. If allocation to a CSI trained nurse is not possible then oversight from the nurse in charge of the shift should be provided.

Note previous comments on implementation of CCDM in relation to 4b. 'Ensure [the oncology ward] is thereafter appropriately staffed to match patient acuity. Trendcare which is our acuity system tracks [oncology ward] staff to patient acuity so that any staffing deficits are identified and promptly reviewed and rectified'. CCDM is multipronged, involving not only the use of Trendcare but use of a dataset and a variance response tool.

I strongly commend:

- The introduction of a buddy system 'so that on each shift nurses have another nurse to work closely with and support each other for meal breaks. This has fostered a culture of teamwork and workload sharing'

- further training to ward staff about recognising and responding to physiological deterioration including patients with coma, and the escalation policy linked to the early warning system (EWS) chart.
- Monthly EWS audits are done

References

NZNO Practice Publication Label: Guideline: Documentation, 2017 New Zealand Nurses Organisation PO Box 2128, Wellington 6140. www.nzno.org.nz https://www.nzno.org.nz/LinkClick.aspx?fileticket=GH84aNBNd64%3D&portalid=0

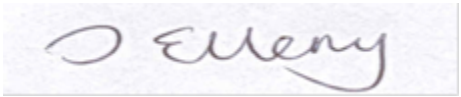
Adult Policy for Intermittent Oral Opioid Dosing, Canterbury District Health Board, 2018 https://edu.cdhb.health.nz/Hospitals-Services/Health-Professionals/CDHB-Policies/Fluid-Medication-Manual/Documents/Adult-Policy-for-Intermittent-Oral-Opioid-Dosing.pdf

New Zealand Nurses Organisation. (2018). Guidelines for nurses on the administration of medicines. Wellington: New Zealand Nurses Organisation. https://www.nzno.org.nz/Portals/0/publications/Guideline%20-%20Guidelines%20for%20Nurses%20on%20the%20Administration%20of%20Medicines%20(002).pdf?ver=72ENNovgJ9HlYkn-7-Fcjw%3d%3d

New Zealand Early Warning Score Vital Sign Chart User Guide 2017 https://www.hqsc.govt.nz/assets/Deteriorating-Patient/PR/Vital_sign_chart_user_guide_July_2017_.pdf

Nursing Council of New Zealand Registered Nurse Scope of Practice https://www.nursingcouncil.org.nz/Public/Nursing/Scopes_of_practice/Registered_Nurse/NCNZ/nursing-section/Registered_nurse.aspx) .

Knowledge and Skills Framework for Cancer Nurses https://www.nzno.org.nz/Portals/0/Files/Documents/Groups/Cancer%20Nurses/2015-01-28%20KSFCN_2014_FINAL5.pdf



Sarah Ellery
30 October 2020”

Further advice

The following advice was received from NP Ellery:

“I, Sarah Ellery, have been requested to review the responses provided for 19HDC01065 and to

1. Consider whether any information provided changes:

a) the original advice
b) any departures from the expected standard of care. If a change in the level of departure occurs explain why.

2. Consider if I have any further comments or recommendations to make.

Documents provided:

1 [RN B] statement
2 [RN B] training schedule
3 ADHB response
4 Adverse Event Review.

Additionally I have been asked to note in the Adverse Event Review finding 3 starting on page 13, and in the response from ADHB the response at point 2, starting on page 5.

[RN B] statement and training record

I have reviewed the second statement provided by [RN B] and her training schedule in response to the original report from October 30th 2020. On review of this information, [RN B] notes the patient was 'not immediately responsive to voice' but opened his eyes, looked at her and then returned to sleep. I do not have any changes to make to the original advice given. The level of departure documented in the report remains unchanged. [RN B] chose to leave the patient rather than use the emergency call bell system to raise help and she did not wake the patient during the night having done a respiratory rate at 0200 hours only. I acknowledge the systemic understaffing that existed at the time was a contributing factor to [RN B] having insufficient time to provide basic nursing care.

I commend [RN B] on the reflection she has undertaken since this event occurred and am encouraged to see she has taken learning from this regarding less responsive patients and the importance of documentation.

Additionally, I commend her on the education she has undertaken since 2019 and that it includes basic life support training. I would encourage her to continue her professional development in managing acutely unwell patients.

Adverse Event Review

The Adverse Event Review finding 3 on page 13, has identified the ward was understaffed on the night shift of 14/02/19. I note elsewhere this has been improved with a plan to further increase staffing numbers which is commendable and fully supports the intention of Care Capacity Demand Management (CCDM) in ensuring safe staffing. Safe staffing supports patient safety and clinical areas should continue to be staffed according to CCDM as a minimum.

It is to be commended changes have been made to provide clinical coaches to support staff. Preferably this would occur in a manner which captures all staff over a 24 hour period and is not limited to a morning shift only, it is not clear what hours this covers.

Additionally, ensuring staff undertake training on physiological deterioration of patients and the EWS escalation policy 2 yearly is sufficient.

ADHB response
Regarding the ADHB response point 2, page 5, regular auditing of practice and education of staff around documentation standards should remain ongoing. And it is commendable the EWS training is at 100%. An audit of observations including EWS should be standard practice across all settings, not just with the use of CSI.

It is a positive step forward that a care plan is now being utilized and there is development of an SMO escalation pathway to support staff.

The Mucositis Guideline is with Document Control awaiting sign off — this will guide nurses looking after patients with mucositis (in particular, head and neck cancer patients) and includes escalation to the pain team. This includes RMOs and will be updated in the RMO handbook.

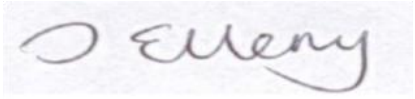
The effort, education and audit process outlined to ensure controlled drug management is improved is commendable. A register of signatures should also be maintained to identify staff, it is not clear if this is in place and should be included in the relevant policies.

It is commendable the staffing ratios have been addressed, it is clear from the CCDM figures the area was not insignificantly understaffed — see comment under Adverse Event Review regarding CCDM.

A weekly audit is in place on [the oncology ward] to ensure 4 hourly observations are undertaken for patients with syringe drivers which is commendable. Audit of all areas involved in syringe driver use should be consistent. The frequency of audit may need to decrease over time if being undertaken by nursing staff as this may impact on resourcing to deliver clinical care if being undertaken by ward staff.

The new policy — 'Continuous subcutaneous infusion (Nikki T 34 syringe driver) in palliative care' and training is again to be commended as it is necessary given none of the other policies addressed this aspect of oncology care. This will address these issues and the need to liaise directly with the pain service is an essential practice. Incorporating the observations on to one Nikki T chart streamlines clinical nursing care.

I have no further comment or recommendations currently.



Sarah Ellery
27th July 2021"

Appendix B: Independent clinical advice to Commissioner

The following expert advice was obtained from consultant radiation oncologist Dr Claire Hardie:

"Dr Claire Hardie 10 November 2020

Independent Advisor's Report 19HDC01065

Independent Advisor's Credentials
I have been asked to provide expert advice to the Health and Disability Commissioner (the Commissioner) on the care provided by Auckland District Health Board to [Mr A] between 12 February 2019 to 29 April 2019, case reference 19HDC01065. I have read and agreed to follow the Commissioner's Guidelines for Independent Advisors.

I am a consultant radiation oncologist working in Palmerston North Hospital, New Zealand. I underwent medical training at University of Edinburgh, Scotland, graduating MBChB in 1998. I trained as a clinical oncologist at the Royal Marsden Hospital, London and Nottingham University Hospitals, Nottingham, obtaining Fellowship of the Royal College of Radiologists (FRCR, UK) in 2005. After completion of specialist training in 2007 I emigrated to New Zealand and have worked as a consultant radiation oncologist for the last 13 years in Palmerston North. I was granted Fellowship of the Royal Australian and New Zealand College of Radiologists (FRANZCR) in 2015.

Advice Requested
The Commissioner has requested I review the documentation referenced below and advise whether I consider the care provided to [Mr A] by Auckland DHB was reasonable in the circumstances, and why. As the Commissioner will be obtaining expert advice from an oncology nurse about the nursing care it has been requested I ensure my advice is limited to the clinical care provided.

In particular, I have been requested to comment on:

1. The appropriateness of the pain management from 12 to 15 February 2019, including: a. any pain assessments b. analgesia prescribing and administration, including the appropriateness of the morphine dosage c. the delivery method of the morphine (subcutaneous and syringe driver).

2. Whether the oncology radiation team should have liaised or consulted with the specialist pain service team following [Mr A's] admission on 12 February 2019.

3. The adequacy of observation and monitoring while being administered analgesia from 12 to 15 February 2019.

4. The adequacy of policies in place at the time of the incident regarding narcotic analgesia administration, monitoring, and detection and management of suspected overdose, and the adequacy of any revised policies.

5. On discharge from Auckland DHB (on 25 February 2019), the adequacy of discharge planning and support, safety-netting advice and follow-up for [Mr A].

6. The adequacy of the initial follow-up appointment at Auckland Hospital, including assessment undertaken, diagnoses considered and discussed, details of MRI interpretation and any discussion in this regard, follow-up arrangements and general management advice/support provided.

7. Whether [Mr A] should have been referred to a neurologist earlier and whether a diagnosis of neurological damage could have been made sooner. If so when?

8. The appropriateness of the coordination of care and information sharing about the severity of the hypoxic event between Auckland DHB and [DHB2].

9. The reasonableness of the care provided by [Dr D].

10. Whether issues identified by myself (if any) were due to systemic issues at Auckland DHB or whether it was more attributable to an individual or both. If there were any systemic issues, I have been asked to elaborate on this, including recommendations for improvement.

11. The adequacy of any remedial actions/further changes being implemented by Auckland DHB.

12. Any other matters that I might consider warrant comment.

Documents reviewed
The documents supplied for my review are listed below:

1. Letter of complaint dated 11 June 2019
2. Clinical records from Auckland DHB
3. Response from Auckland DHB dated 8 September 2020
4. Recommendations: Adverse Event Report
5. Statement of [RN B] dated 4 September 2020
6. Statement of [RN E] dated 28 August 2020
7. Statement of [Dr D] dated 8 September 2020
8. Statement of [Dr F] dated 3 September 2020
9. Clinical resource for the use of syringe drivers dated 3 June 2011

10. Medication administration clinical practice manual updated February 2020

11. Pain — Patient Controlled Intravenous Analgesia (PCIA) for an Adult — clinical guideline updated February 2020

12. Opioids (Short-acting) — Oral for Adults — policy updated March 2020

13. Pain — Opioids — Intravenous in Adults — clinical guideline dated 14 March 2019

14. Clinical records from [DHB2]

15. MRI request form

16. Discharge summary dated 13 March 2019

17. Discharge summary dated 20 March 2019

18. Visiting neurologist letter 29 April 2019

19. Timeline from [DHB2]

20. Times of [Mr A's] radiation treatment on 13 and 14 February 2019

21. Opioid use in Palliative Care — guidelines published 15 September 2020

22. Guidelines for Syringe Driver Management in Palliative Care, Ministry of Health, 2009

23. Clinical record management — policy updated 31 October 2019

24. Pain palliative care — Assessment — clinical guideline updated 09 August 2018

25. Pain in palliative care — Principles — clinical guideline updated November 2015

26. Good Medical Practice, Medical Council of New Zealand published December 2016

Summary of Events:

4.1 Cancer treatment plan

[Mr A] was diagnosed with a p16 positive squamous cell carcinoma of the right oropharynx, clinical stage T2N1M0, in December 2018. He had a past history of reduced hearing and tinnitus; a traumatic fracture of his right femur which had been treated with gamma fixation in September 2018 which was awaiting further surgery; and gastro-oesophageal reflux disease.

After discussion in the Auckland DHB Head and Neck Cancer MDM on 14 December 2018, it was recommended [Mr A] receive curative intent treatment for his oropharyngeal cancer using cetuximab chemoradiation therapy. After an episode of cetuximab induced cardiac vasospasm on 16 January 2019, experienced shortly after [Mr A's] first loading dose of cetuximab, cetuximab was discontinued. [Mr A] therefore proceeded with curative intent radical radiation therapy alone. Radiation treatment was delivered by a VMAT technique using 6 MV photons to a planned dose of 70 Gray in 33 fractions (treatments) over 6.5 weeks, treating at a dose of 2.12 Gray per fraction, once daily. Radiation treatment commenced on 21 January 2019.

4.2 Inpatient stay February 2019

[Mr A] was admitted to [the oncology ward] at Auckland City Hospital on 12 February 2019 by [Dr G], Radiation Oncology registrar. At that time [Mr A] had received 17 out of the planned 33 fractions of radiation therapy. In the days leading up to his admission, it was documented that [Mr A] had been experiencing increasing pain in his throat and he had increased his use of the oral painkiller tramadol. The admission clerking recorded [Mr A] had been taking minimal fluids and had a reduced oral intake at the time of admission. The admission clerking recorded that at the time of admission, [Mr A's] medication included tramadol, paracetamol, ibuprofen, loratidine, omeprazole and metoclopramide. The examination findings recorded a blood pressure of 117/85, a pulse of 97 beats per minute, dry mucus membranes, a grade 2–3 oral mucositis and a grade 1–2 radiation skin reaction on the neck. [Dr G] diagnosed radiation induced mucositis resulting in dysphagia and a poor oral intake. It was also clearly recorded that [Mr A's] cancer was highly curative. The recommended treatment plan included admission for pain relief which included regular paracetamol and a trial of oral sevredol (quick release morphine tablet) 20 mg immediately followed by 10–20 mg sevredol every 1 hour as needed (PRN). It was noted that if [Mr A] was not tolerant of sevredol tablets he was to be commenced on subcutaneous morphine (prescribed at a dose of 2.5–5 mg PRN, no more frequently than hourly). Mouthwashes, a humidifier and fortisips for nutrition were also recommended, IV fluids were commenced and an instruction to start a syringe driver for pain relief if [Mr A] was not managing.

[Mr A's] observations were recorded on the Adult Vital Signs Chart at 15.30 on 12 February 2019 noting oxygen saturations of 98% on room air, a respiratory rate of 16 breaths per minute, a pain score of 0/10 at rest but pain noted to be increased on movement and he was documented to be alert. At 17.00 when admitted to the ward [Mr A] was recorded to be alert with oxygen saturations of 99% on room air, a respiratory rate of 18 breaths per minute and pain was scored as 9/10 both at rest and on movement.

Blood results on 12 February 2019 at 14.45 recorded a sodium level of 140 mmol/l (normal range of 135–145), a potassium level of 4.1 mmol/l (normal range 3.5–5.2), a urea level of 6.4 mmol/l (normal range 3.2–7.7), a creatinine of 74 µmol/l (normal range 60–105), an AST of 18 U/l, an ALT of 20 U/l (normal range 0–45), a haemoglobin of 132 g/l (normal range 130–175) and prothrombin time of 1.0 seconds (normal range 0.8–1.2).

At 22.00 on 12 February 2019, [Mr A] commenced his 3rd litre of IV fluids since admission that afternoon. By midnight of 12 February 2019 [Mr A] had received the following analgesia:

> Oral sevredol 20 mg administered at 15.11, 17.00 and 19.30 (total 60 mg oral morphine).

Subcutaneous morphine 2.5 mg administered at 16.05, 17.45 and 18.00 + subcutaneous morphine 5 mg administered at 21.10 and 22.30 (total 17.5 mg subcutaneous morphine).

During the early morning of 13 February 2019 the nursing note, documented at 05.05, indicated [Mr A] had complained of pain overnight and had received subcutaneous morphine for pain relief with a good effect. This nursing note recorded an episode of vomiting by [Mr A] which he had stated was dark brown in colour.

The Adult Vital Signs Chart recorded that at 10.35 on 13 February 2019 [Mr A] was alert, had oxygen saturations of 95% on room air, a respiratory rate of 18 breaths per minute, pain score not recorded and an Early Warning Score of 1. A dietitian's note on the 13 February 2019 at 10.30, recorded [Mr A's] weight as 92.6 kg on 12 February 2019, compared to a weight of 99 kg on 14 December 2018. A puréed diet and fortisip were recommended and there was a discussion on the need to consider a nasogastric tube to support nutrition which it was recorded that [Mr A] was keen to try.

Between midnight on 12 February 2019 and midday 13 February 2019 [Mr A] had received the following analgesia:

Subcutaneous morphine 5 mg administered at 01.50, 04.40, 07.54 and 10.40 (total 20 mg subcutaneous morphine).

[Dr D], Radiation Oncology Medical Officer of Special Scale (MOSS), documented in her ward round note (time not stated in medical record) on 13 February 2019 that [Mr A] had received a total of 37.5 mg subcutaneous morphine and 60 mg oral sevredol since his admission to the ward on 12 February at 17.00. A conversion of subcutaneous morphine to oral morphine was calculated by [Dr D] as 37.5 mg x 2 = 75 mg, equating to a total dose of oral morphine of 135 mg in under 24 hours. [Dr D] noted [Mr A] had been taking ibuprofen and tramadol as pain relief prior to his admission to the oncology ward and noted he was experiencing neuropathic pain and pain on swallowing. [Dr D] noted [Mr A] had been spitting out saliva and his mouthwash was blood stained. [Dr D's] examination findings were that [Mr A] was alert, not in pain, that he was attempting to drink slowly and he had brown sputum. The skin of the neck was recorded as very red (severe skin erythema) and within the mouth there was severe inflammation of the palate (grade 3 mucositis) and blood was present in the mouth. A diagnosis of radiation induced oesophagitis and dysphagia was made. [Dr D's] plan was for radiation to continue, to start [Mr A] on continuous subcutaneous morphine through a syringe driver for pain relief, to start gabapentin at night for neuropathic pain relief, to continue intravenous fluids and intravenous antibiotics and for mouthwashes to be administered regularly.

[Mr A] received his radiation treatment at 15.08 on 13 February.

The subcutaneous syringe driver commenced on 13 February 2019 at 17.35. This syringe driver contained 40 mg morphine, 30 mg metoclopramide (a medication to treat nausea

and vomiting) and 1 mg haloperidol (a medication used to treat nausea and agitation) which would be delivered over a 24-hour period.

At 20.00 on 13 February 2019, [Mr A] was recorded to be alert with oxygen saturations of 96% on room air, a respiratory rate of 17 breaths per minute and a pain score of 3/10 at rest and on movement.

Between midday 13 February and midnight 13 February [Mr A] received the following analgesia PRN in addition to the continuous subcutaneous morphine infusion via the syringe driver:

> Subcutaneous morphine 7.5 mg administered at 12.20, 14.50 (this was prior to radiation treatment) and 17.35 (total 22.5 mg subcutaneous morphine).

Blood results on 14 February 2019 at 08.11 were a sodium level of 142 mmol/l, a potassium level of 4.0 mmol/l, a creatinine of 69 µ/l, no liver function tests were requested and a haemoglobin of 124 g/l.

On 14 February 2019 the Adult Vital Signs Chart recorded that at 09.30 [Mr A] was alert, had oxygen saturations of 95% on room air, a respiratory rate of 17 breaths per minute, pain of 7/10 at rest and on movement and an Early Warning Score of 1. At 12.45 [Mr A's] observations noted he was alert, had oxygen saturations of 96% on room air, a respiratory rate of 17 breaths per minute, pain scored as 7/10 at rest and on movement.

The nursing notes recorded during 14 February 2019 that [Mr A's] pain was not as well controlled as the previous day and that there were two attempts to insert a nasogastric tube to assist [Mr A's] oral nutrition but that these attempts were unsuccessful. The nurse caring for [Mr A] had discussed with [Dr D] the unsuccessful attempts to insert the nasogastric tube and [Dr D] recommended that assistance was sought from the clinical nurse specialist in otorhinolaryngology (ORL) to insert the nasogastric tube.

Between midnight 13 February 2019 and 12.30 14 February 2019 [Mr A] received the following analgesia PRN in addition to the continuous subcutaneous morphine infusion via the syringe driver:

> Subcutaneous morphine 7.5 mg administered at 09.20, 11.30, 12.30 (total 22.5 mg subcutaneous morphine).

[Dr D's] ward round note on 14 February 2019 (time not recorded) documented that [Mr A] had woken up in severe pain. He was noted to still be able to swallow saliva and he had stopped vomiting. It was recorded [Mr A] had not opened his bowels for 4 days and he was experiencing bleeding in his mouth. On examination it was noted that [Mr A] was alert and had a good voice and there was redness (erythema) over the palate and the palate was bloodstained. [Dr D] calculated that at the time of the ward round, a total of 45 mg of PRN subcutaneous morphine had been administered to [Mr A] for pain relief since her last ward round review in addition to the continuous infusion of 40

mg subcutaneous morphine via syringe driver equating to a total dose of 85 mg subcutaneous morphine (the equivalent of 170 mg of oral morphine). [Dr D] recorded a plan to increase the morphine dosage in the syringe driver and the PRN subcutaneous morphine prescription and to increase the dose of gabapentin. [Dr D] also noted that a percutaneous endoscopic gastrostomy (PEG) might need to be inserted for nutrition if the nasogastric tube could not be inserted.

On the 14 February 2019, the syringe driver prescription was changed to 70 mg morphine, 30 mg metoclopramide and 1.5 mg haloperidol to be delivered over a 24-hour period. This new prescription commenced at 15.10 on 14 February.

[Mr A] received his radiation treatment at 15.58 on 14 February 2019.

At 17.00 on 14 February 2019 [Mr A's] oxygen saturations were 94% on room air, respiratory rate of 16 breaths per minute, pain recorded as 0/10 at rest and increased on movement and an EWS of 1. Repeat observations at 21.00 (time was very difficult to read on chart) documented oxygen saturations 94% on room air, respiratory rate of 17 breaths per minute and pain scored 0/10 at rest and increased on movement with an EWS of 1.

Between 21.00 on 14 February and 07.00 on 15 February, the nursing notes recorded that [Mr A] was stable, had slept, but was easily rousable to voice and that pain relief was being delivered using the syringe driver which was effective.

Between 12.30 on 14 February 2019 and midnight 14 February 2019 [Mr A] received the following analgesia PRN in addition to the continuous morphine infusion via the syringe driver:

> Subcutaneous morphine PRN 10 mg administered at 15.30 and 18.40 + subcutaneous morphine PRN 15 mg administered at 22.05 + subcutaneous morphine pre-radiation 15 mg administered at 15.25 prior to radiation treatment at 15.58 (total 50 mg subcutaneous morphine).

At 02.00 the Adult Vital Signs Chart for [Mr A] documented oxygen saturations of 95% on room air, respiratory rate of 16 breaths per minute and pain score not done. At 05.00 on 15 February 2019 [Mr A] commenced his 8th litre of IV fluids since his admission on 12 February 2019. Between [Mr A's] admission on 12 February 2019 and 02.00 15 February 2019 there was no formal documentation of [Mr A's] urine output, but it was ticked on the Adult Vital Signs Chart that he had passed urine in the last 8 hours each time observations were recorded except 15.30 and 19.30 on 12 February, 17.00 on 14 February and 02.00 on 15 February.

A code red was called on 15 February 2019 (time not recorded on code red sheet) but was at approximately 07.00, when the nurse caring for [Mr A] overnight noted he was snoring and gasping loudly with a reduced Glasgow Coma Scale and not responsive. His pupils were recorded as size 1 bilaterally, oxygen saturations were 42% on room air,

blood pressure 90/60 and pulse rate of 107 beats per minute. The syringe driver was documented to have been stopped at 07.00 on 15 February 2019. A nasopharyngeal airway was placed, oxygen was administered at 15 litres per minute and a naloxone bolus was given (reverses the effect of morphine). The last recorded check of the syringe driver at 06.00 on 15 February 2019 indicated that 11.1 mls had already been infused with an infusion rate of 0.76 mls/hour and that 7.3 mls remained to be infused over the next 9.33 hours. Naloxone boluses continued to be administered to [Mr A] and a naloxone infusion was commenced. [Mr A] was transferred to the Department of Critical Care Medicine (DCCM) for observation whilst receiving the naloxone infusion as treatment for opioid narcosis. He was reviewed by the Acute Pain Service whilst in the DCCM and was commenced on IV fentanyl via a patient controlled analgesia pump (PCA) for pain control.

Bloods at 07.41 on 15 February 2019 recorded a haemoglobin of 125 g/l, a sodium of 144 mmol/l, a potassium of 6.0 mmol/l, a creatinine of 151 µmol/l, an ALT of 393 U/l, a bilirubin of 7 µmol/l (normal range 0–24), an alkaline phosphatase of 70 U/l (normal range 40–120), a prothrombin time of 1.2 seconds and the APTT was haemolysed. Blood gases at 07.46 showed a pH of 7.26 (normal range 7.36–7.44), a $pC0_2$ of 4.4 kPa (normal range 4.6–6.0), a pO_2 of 24.7 kPa (normal range of 10.6–13.3), a standard bicarbonate of 15 mmol/l (normal range 21–27) and a lactate of 8.9 mmol/l (normal range 0.5–2.2).

Repeat bloods at 10.55 on 15 February 2019 indicated a sodium of 141 mmol/l, a potassium of 4.1 mmol/l, a urea of 5.9 mmol/l (normal range 3.2–7.7), a creatinine of 114 µmol/l, a haemoglobin of 113 g/l, a prothrombin time of 1.3 seconds, an APTT of 35 seconds (normal range 25–37) and an AST of 1050 U/l. By 18.20 on 15 February 2019 the bloods had normalised with a creatinine of 101 µmol/l, a urea of 5.1 mmol/l and arterial blood gases confirmed a pH of 7.45, a pC02 of 4.6 kPa, a pO2 of 10.6 kPa, a standard bicarbonate of 25 mmol/l and a lactate of 1.2 mmol/l.

A chest x-ray performed on 15 February 2019 indicated the lungs were clear.

[Mr A] was transferred back to the oncology ward during the evening of 15 February 2019 once he had completed a period of observation after the naloxone infusion had finished and his pain was controlled on a fentanyl patient controlled analgesia (PCA) pump.

Radiation treatment resumed on 18 February 2019.

[Mr A's] analgesia was switched from the PCA to oxynorm (quick acting oral opiate) on 19 February as [Mr A's] pain was well controlled. A PEG tube was inserted on 21 February 2019 to maintain oral nutrition. On 26 February 2019 it was noted by the Radiation Oncology registrar in their ward round note that [Mr A's] pain was under control, he was able to use the PEG tube independently for his feeds, his oral mucositis was improving and he was well enough to transfer back to [an accommodation facility] for the remainder of his treatment ([a facility] for patients receiving radiation or other

cancer treatment who live a significant distance from Auckland City Hospital). At the time of discharge from the ward, [Mr A] was taking oxycodone (slow release opiate tablet) 5 milligrams twice daily, paracetamol liquid 1 gram four times a day and oxynorm 2.5 mg as needed up to 5 times per day (not more frequent than hourly).

4.3 Outpatient management March–April 2019

[Mr A] completed his radiation treatment on 1 March 2019.

On 12 March 2019, [RN I], Clinical Nurse Specialist Regional Blood and Cancer Service, recorded a telephone conversation she had with [Mr A's] wife. [Mrs A] had contacted [RN I] that day as [Mr A] was confused, with reduced co-ordination and altered speech. [Mrs A] had stated that [Mr A] had not been eating much and had not been able to have many PEG feeds. [RN I] advised [Mrs A] to take her husband to their local emergency department at [Hospital 2] or to see their GP that day.

On 13 March 2019 [Mr A] was referred by [a] GP to [Hospital 2]. [The GP] noted in her referral letter that [Mr A] was supposed to be receiving 8 PEG feeds per day and although he had been managing 6 feeds per day, at the time of referral he was only managing 3–4 feeds per day. [Mr A] had only managed 2 glasses of fluid the day prior to referral and in the days preceding referral [the GP] reported [Mr A] was experiencing increasing vagueness, confusion, fatigue and feeling lightheaded when standing. On examination, [the GP] recorded that [Mr A] had postural hypotension, with a blood pressure of 102/70 when sitting which dropped to 82/50 when standing. [Mr A] was spluttering when taking oral fluids and he was referred to the ward at [Hospital 2] for the administration of IV fluids for rehydration.

Bloods taken on 13 March indicated a potassium of 3.3 mmol/l, but a normal sodium of 136 mmol/l and normal creatinine of 82 µmol/l. A chest x-ray on 13 March 2019 was clear with no abnormal findings. [Mr A] received 2 litres of normal saline intravenously, each litre containing 20 mmol potassium chloride to treat the low potassium. [Mr A] was discharged from [Hospital 2] on 13 March 2019 at 20.00 when he was reported to be well hydrated and drinking well.

On 18 March 2019 [a] GP, discussed [Mr A] with [a] Medical Oncologist at [Hospital 3] as [Mr A] remained confused. [The medical oncologist] recommended [Mr A] have an MRI scan which could be facilitated by the medical team at [Hospital 2]. [Mr A] was admitted to [Hospital 2] on 18 March. The discharge summary from that admission notes that [Mr A] presented with acute confusion and had issues with short term recall. No signs of 'overopiation' were present and there were no signs of infection. On examination no focal neurological signs were elicited. [Mr A] attended for MRI scan at [Hospital 3] on 19 March which was reported by [a] Radiologist. The images were compared to a CT PET on 12 December 2018 and the report stated:

> 'There are bilateral symmetric approximately 7 mm diameter foci of fairly sharply marginated lobulated foci of non-enhancing high T2 and low T1 signal abnormality

with some rim susceptibility artefact within the globus pallidus without significant mass effect not perceptible on the CT.

There is moderately extensive cerebral deep white matter high T2/FLAIR signal abnormality with collocated and diffusion restriction bilaterally in the cerebral hemispheres without mass effect fairly symmetrically distributed, not perceptible on the CT emphasising MRI considerably more sensitive than CT for this particularly type of abnormality.

Conclusion: It is difficult to credit that the globus pallidus lesions are metastases given their symmetry, despite the fact they may be new since the CT 12/12/18. They are consistent with radionecrosis, though the likelihood of this is dependent on when the radiotherapy was and the treatment field. The diffuse cerebral deep white matter abnormality is likely radiation induced vascular injury of small and medium sized vessels, potentially contributed to or caused by chemotherapy instead'.

The medical team at [Hospital 2] contacted a Radiation Oncology registrar at Auckland Hospital with the results of the MRI. The Radiation Oncology registrar (name not stated) did not think the changes on MRI would be due to radiation as the radiation was targeted at the oropharynx. The registrar indicated it was possible that the changes could be a side effect from his narcosis whilst an inpatient at Auckland Hospital. The Radiation Oncology registrar suggested [Mr A] see his Radiation Oncologist on Thursday for a further discussion. The medical team noted that the patient had no history of carbon monoxide exposure and no recreational drug use. [Mr A] was discharged home from [Hospital 2] on 20 March for ongoing follow up with his Radiation Oncologist (appointment was booked for 21 March) and to see his GP in 1 week. [Mr A] was advised to not drive and to avoid using opiates.

On 21 March 2019, [Mr A] and his wife [Mrs A] were reviewed by [Dr H], Radiation Oncology Registrar, in the Acute Radiation Oncology Clinic at Auckland City Hospital. In his clinic letter, [Dr H] records [Mr A] had presented to [Hospital 3] with acute confusion and that investigations had not found a cause for the confusion. [Dr H] noted that the history of confusion was corroborated by [Mr A's] wife and it had started at least a week after the end of radiation therapy. He noted [Mr A] had only had minimal improvement in his condition in the week prior to the appointment on the 21 March. It was recorded [Mr A] had symptoms of fatigue, but no symptoms of headache, nausea or vomiting, there were no pain control issues and the PEG feeds were being tolerated.

[Dr H] noted in his clinic letter the report of the MRI on 19 March 2019 showed changes of bilateral symmetric 7 mm foci of non-enhancing T2 and low T1 signal abnormality in the basal ganglia. He recorded that [a] Neuroradiologist at Auckland City Hospital had reviewed the MRI images and thought the MRI changes were in keeping with a chronic hypoxic insult in the past such as carbon monoxide poisoning, with no evidence of infection or cerebritis. [Dr H] documented he called the Neurology registrar on-call on the 21 March and the Neurology registrar could not find a cause for [Mr A's] symptoms

and recommended a conservative approach to management. [Dr H] also noted he contacted [a] Medical Oncologist, who did not think [Mr A's] symptoms were related to the cetuximab treatment in January 2019. [Dr H] also discussed [Mr A's] symptoms with [Mr A's] Radiation Oncologist, [Dr C]. It was noted by [Dr H] that he did not feel [Mr A's] symptoms were related to the radiation treatment and [Dr H] indicated he discussed with [Mr A] and his wife the views of the Radiologist who reported the MRI and the opinion of [the] Neuroradiologist, on the MRI. He documented that [Mr A] and his wife were keen to return home, that they indicated they would manage and they were told to seek medical attention if [Mr A's] condition deteriorated. It is recorded by [Dr H] that [Dr C] agreed with this plan and a follow up appointment was to be arranged in 2.5 months with a repeat PET-CT scan prior to this appointment to assess the status of the oropharyngeal cancer.

The clinic letter on 21 March does not stipulate any clinical examination findings, however [Dr H's] hand written clinic notes from the clinic on 21 March record [Mr A] was orientated to place and person and date of birth but not to day and date. He recorded that [Mr A's] speech and affect were normal and there was no focal neurological deficit. The Adult Vital Signs Chart recorded [Mr A] had a blood pressure of 120/87, a pulse rate of 96 beats per minute, oxygen saturations of 96% on air and a temperature of 36°C. [Dr H] noted his impression as acute delirium query cause and that bloods taken were in the normal range. It was recorded the patient should seek medical attention if his condition deteriorated.

There was no reference to [Mr A's] hospital admission during his radiation treatment or his treatment for opioid toxicity in either the clinic letter or the handwritten clinic notes.

On 21 March 2019, [Mr A] was also assessed by an Auckland DHB Speech and Language Therapist (SLT). The SLT noted that [Mr A] had no overt signs of penetration or aspiration but as [Mr A] continued to throat clear during the assessment the aspiration risk was not clear. The SLT noted they had discussed with [Mr A] that ongoing SLT follow up would happen with the [DHB2] SLT service and that he should continue on a purée diet and thin fluids and continue with baking soda and salt rinses.

On 2 April, [an] Orthopaedic Surgeon, reviewed [Mr A] at [Hospital 3]. This was a scheduled follow up appointment to assess [Mr A's] non-union right femur fracture that was requiring surgery, but the surgery had been deferred until [Mr A's] oropharyngeal cancer had been treated. [The orthopaedic surgeon] noted in his clinic letter that [Mr A] had short term memory loss and a change in cognitive function that was not explained and that the change in function had developed since the radiation treatment. [The orthopaedic surgeon] noted that [Mr A] had undergone a brain MRI and been seen in Auckland and that the MRI findings were not thought to explain a change in cognitive function and memory loss. [The orthopaedic surgeon] recorded that [Mr A] has no history of carbon monoxide poisoning. [The orthopaedic surgeon] indicated in his clinic letter he would refer [Mr A] to a Neurologist for a review as [Mr A] had no one providing oversight of his condition from a neurological point of view.

On 24 April, [Mr A] attended a peri-operative assessment at [Hospital 3] for proposed surgery of exchange nailing and bone grafting of femur. This assessment was performed by [an] Anaesthetist and [a] Specialty Clinic Nurse. They noted [Mr A's] significant confusion which prevented informed consent to be obtained for surgery and they recommended surgery be deferred. They also noted the significant support [Mr A] required from his wife and initiated a social work referral so that [Mr and Mrs A] could be provided with additional help.

On 29 April, [Dr F], Consultant Neurologist, reviewed [Mr A] at [Hospital 3]. In his clinic letter [Dr F] summarised [Mr A's] cancer treatment, the events during his inpatient stay in February, the findings on the MRI scan and the recent deterioration in [Mr A's] neurological function. This included [Mr A] being unable to operate a TV remote control or his phone, getting lost in his home, urinating in rooms other than the toilet, and becoming quiet and subdued which was not normal for [Mr A]. [Dr F] recorded [Mr A] had a MOCA cognitive function score of 5/30 and that he had a rest tremor, worse on the right side compared to the left side with increased muscle tone and cog-wheeling. Gait was not able to be assessed due to his fractured femur, there was weakness of shoulder abduction and elbow flexion on the right and weakness of elbow extension on the left. Reflexes were brisk, plantars were downgoing and cranial nerves were intact.

[Dr F] documented that [Mr A] had experienced a major brain insult and that the timing of [Mr A's] symptoms indicated the brain insult occurred at the time of the admission to DCCM when he suffered opioid narcosis. [Dr F] stated in his letter the findings on the MRI scan were virtually pathognomonic of Delayed Hypoxic Leukoencephalopathy. [Dr F] noted he had significant concerns that [Mrs A] was trying to manage [Mr A] at home on her own, highlighting an example of [Mrs A] returning to the home and finding [Mr A] had turned on all the elements on the stove.

[Dr F] commenced [Mr A] on amantadine treatment to try and improve his condition and referred [Mr A] to [Hospital 3] for ongoing follow up.

Opinion of Independent Advisor

5.1. The appropriateness of the pain management from 12 to 15 February 2019, including: a. any pain assessments b. analgesia prescribing and administration, including the appropriateness of the morphine dosage c. the delivery method of the morphine (subcutaneous and syringe driver).

[Mr A] was admitted to [the oncology ward at] Auckland City Hospital with symptoms of increasing pain in his throat. At the time of his admission he was taking oral analgesia in the form of paracetamol, ibuprofen and tramadol.

At the time of his admission, [Dr G] did not score [Mr A's] pain in his admission clerking although noted [Mr A] felt comfortable. The triage sheet at admission circled the pain score as 0.

Pain assessments were scored on the Adult Vital Signs Chart during [Mr A's] admission. The pain was scored 0–10 (10 = worst pain) out of 10 and was scored both at rest and on movement. The pain score was recorded every time [Mr A's] vital signs were recorded except at 10.35 on 13 February 2019 and 02.00 on 15 February 2019.

[Dr D] recorded in her ward round notes on the 13 February and 14 February 2019 that [Mr A] had pain (she noted he woke in severe pain on 14 February 2019) but it was not scored in her ward round note. However, a pain score was available to [Dr D] by reviewing the Adult Vital Signs Chart.

When [Mr A] was admitted on 12 February 2019, oral sevredol was prescribed, but an alternative administration route of subcutaneous morphine was also prescribed as [Mr A] had difficulty swallowing. The PRN dose of subcutaneous morphine was increased due to the frequency [Mr A] was requiring pain relief and to ensure he could tolerate immobilisation for his daily radiation treatment. It was determined by [Dr D], due to the amount of morphine that [Mr A] had required by the time of her ward round on 13 February 2019, which was less than 24 hours after [Mr A's] admission, that [Mr A] should be commenced on a continuous subcutaneous morphine infusion via a syringe driver.

[Dr D's] calculations of the total dose of PRN morphine that had been administered to [Mr A] when she assessed him on her ward rounds on 13 February 2019 and 14 February 2019 were correct. At the time of [Dr D's] ward round on 13 February 2019, [Mr A] had received a total dose of PRN morphine equivalent to 135 mg oral morphine. At this point, [Dr D] prescribed a syringe driver which provided a continuous morphine infusion over a 24-hour period. Using the total dose of morphine [Mr A] had received since admission (a period less than 24 hours), which equated to a subcutaneous morphine dose of 67.5 mg, [Dr D] prescribed 40 mg morphine in the syringe driver for the next 24 hours. The PRN subcutaneous dosage prescribed was increased to 7.5 mg. When [Dr D] reviewed [Mr A] on 14 February (which appears to be in the middle of the day but no time was noted on the clinical note), [Dr D] calculated [Mr A] had received the 40 mg subcutaneous morphine via the syringe driver in addition to the 45 mg subcutaneous morphine given PRN (total of 85 mg) and therefore prescribed 70 mg morphine via the syringe driver for the next 24 hours, an increase of 30 mg compared to the previous syringe driver prescription. The PRN subcutaneous morphine dosage was increased to 10–15 mg. It should be noted at the time of [Dr D's] review on 14 February, [Mr A] had not received 40 mg morphine via the syringe driver as the syringe driver only commenced at 17.25 on 13 February 2019 and so 40 mg would have only been delivered by 17.25 on 14 February, although the dose received would have been at least 30 mg by the middle of the day on 14 February.

Reviewing the PRN doses of subcutaneous morphine administered, the total PRN dose of subcutaneous morphine administered to [Mr A] on 13 February 2019 (midnight to midnight) was 42.5 mg. The total PRN dose of subcutaneous morphine administered on 14 February 2019 (midnight to midnight) was 72.5 mg morphine.

In addition to subcutaneous morphine, oral gabapentin was commenced on 13 February 2019 with an increase in dose on 14 February and haloperidol was administered via the syringe driver, with a dose increase on 14 February.

Technically the conversions of oral to subcutaneous morphine were correct and the calculations of total PRN morphine administered at the time of each ward round were correct. The calculation of PRN subcutaneous morphine dosage based on the 24-hour dosage were correct (one sixth of the 24-hour total dose), except for the 15 mg PRN dosage on 14 February 2019 which was in excess of one sixth of 70 mg.

Subcutaneous PRN morphine was used as an alternative to the oral route as [Mr A] had pain and had difficulty swallowing which would have affected his ability to swallow oral morphine tablets which was a reasonable decision. A stepwise titration of dose is possible when subcutaneous morphine is delivered PRN.

Whilst the use of a continuous subcutaneous morphine syringe driver is used when it is felt a continuous delivery of medication will improve symptom management and alternative methods of administration are appropriate (Guidelines for Syringe Driver Management in Palliative Care, Ministry of Health), it is an administration method used for pain relief in palliative care when pain control is stable as the ability to rapidly adjust dose is limited due to its 24-hour delivery period and there is the potential for opiate accumulation.

When opiates are prescribed, guidelines support regular observation of the patient. Observations should be 4 hourly for a syringe driver (Guidelines for Syringe Driver Management in Palliative Care, Ministry of Health) and whilst there was no Auckland DHB guideline on subcutaneous morphine outside palliative care, the Auckland DHB clinical guideline, 'Pain — Patient Controlled Intravenous Analgesia (PCIA) — Adult', in existence in February 2019, stated that patients should be monitored at 30 minute intervals for the first 4 hours of starting PCIA and if stable, to be monitored 4 hourly thereafter.

In [Mr A's] case the observations were performed at:

12 February 2019 at 15.30. 17.00 and 19.30

13 February 2019 at 10.35 and 20.00

14 February 2019 at 09.30, 12.45, 17.00 and 21.00

15 February 2019 at 02.00 with next recorded observations at the time of the code red shortly after 07.00.

Whilst 4 hourly observations were done between 9 am and 9 pm on 14 February 2019, this was the only time that this frequency of observations was recorded between [Mr A's] admission and the time of the code red at 05.00 on 15 February 2019.

It is also noted that [Mr A] was recorded as being dehydrated at the time of his admission. Opiates are excreted through the kidney and if there is renal impairment there is a risk of opiate metabolites accumulating and this increases the risk of opiate overdose. [Mr A] was commenced on IV fluids at the time of his admission but there is no documentation in the medical or nursing notes prior to the code red that [Mr A] had good urine output that would match his fluid intake or if there were any concerns regarding his fluid balance or if his renal function was being assessed. There is only a tick in the Adult Vital Signs Chart each day that [Mr A] had passed urine in the preceding 8 hours, but no volume recorded and it was not recorded every time observations were done. Bloods on the 12 and 14 February did not indicate there was renal impairment as the potassium and creatinine were in the normal range on both these days, however the bloods on 15 February at 07.41 indicated renal impairment had developed with a potassium level of 6 mmol/l and a creatinine of 151 µmol/l which may have been a contributing factor to the opioid narcosis.

In my opinion, whilst it was reasonable to switch to an alternative method of morphine administration other than oral due to [Mr A's] difficulty in swallowing, a continuous subcutaneous morphine syringe driver was not an appropriate mode of administration as [Mr A's] pain control was not stable. Whilst I note in [Dr D's] statement that she reported it was standard practice for the Radiation Oncology service at Auckland DHB to use a continuous subcutaneous infusion of morphine using a syringe driver for management of acute pain and the Palliative Care Team similarly used continuous subcutaneous infusion of medication via syringe driver for patients who presented with pain crisis, I would view this as a moderate departure from standard practice in the management of acute pain. The syringe driver dosage increased from 40 mg on 13 February to 70 mg on 14 February; and in the 24 hours to midnight on 13 February an additional 42.5 mg morphine had been administered PRN and in the 24 hours to midnight on 14 February an additional 72.5 mg morphine had been administered PRN. Whilst technically the conversions and calculation of total PRN morphine were correct at each medical ward round review, it is not clear that the team appreciated the potential impact that could result from the increase in morphine dosage, particularly when there was a continuous infusion being administered. There was no reference to a review of pain scores in the medical notes; no parameters were stipulated in the ward round notes or in the morphine prescription for monitoring [Mr A] in view of the morphine being administered; it is not clear if blood results or urine output were assessed (although they could have been reviewed but there is no reference in the medical notes) and the frequency of observations were not as per guidelines. As such the monitoring of [Mr A] whilst receiving increasing doses of opiate analgesia was a moderate departure from standard practice.

5.2. Whether the oncology radiation team should have liaised or consulted with the specialist pain service team following [Mr A's] admission on 12 February 2019.

[Mr A] had difficulty swallowing and so was not able to take regular or PRN oral opiates. [Mr A] was prescribed increasing doses of PRN and continuous infusion of subcutaneous

morphine due to difficulties in controlling his pain following his admission on 12 February 2019. It is my opinion that the radiation oncology team should have liaised or consulted with the Acute Pain Team on 13 or 14 February 2019 for advice on his pain management and to not have done so was a moderate departure from standard practice.

5.3. The adequacy of observation and monitoring while being administered analgesia from 12 to 15 February 2019.

[Mr A's] prescriptions for oral sevredol, subcutaneous morphine PRN and the continuous subcutaneous morphine infusion through a syringe driver between admission on 12 February 2019 and 07.00 on 15 February 2019 did not stipulate any parameters for the administration of morphine related to [Mr A's] level of consciousness, respiratory rate or oxygen saturations. There was a stipulation in the PRN prescription of subcutaneous morphine that it should not be administered more frequently than hourly. Whilst there was no Auckland DHB guideline for the use of subcutaneous morphine outside palliative care in February 2019, the Auckland DHB clinical guideline 'Pain — Opioids — Intravenous in Adults', was in existence in February 2019 and was updated in March 2019. This guideline clearly stipulates that prescription of opiates should include parameters of frequency of observations following administration of prescribed opioids.

In [Mr A's] case his observations were recorded on the Adult Vital Signs Chart at:

12 February 2019 at 15.30. 17.00 and 19.30

13 February 2019 at 10.35 and 20.00

14 February 2019 at 09.30, 12.45, 17.00 and 21.00

15 February 2019 at 02.00 with next recorded observations at the time of the code red shortly after 07.00.

Whilst 4 hourly observations were done between 9 am and 9 pm on 14 February 2019, this was the only time that this frequency of observations was recorded between [Mr A's] admission and the time of the code red.

Observations recorded on the Adult Vital Signs Chart included oxygen saturations, blood pressure, heart rate, respiratory rate, pain score and level of consciousness. [Mr A] was recorded as being alert each time observations were taken except at 02.00 on 15 February as [Mr A] was sleeping. Pain scores were recorded at every observation except at 10.35 on 13 February 2019 and 02.00 on 15 February 2019.

The Auckland DHB clinical guideline, 'Pain — Patient Controlled Intravenous Analgesia (PCIA) — Adult', was in existence in February 2019 and had since been updated in February 2020 and is a clinical guideline for the prescription, monitoring and detection and management of suspected overdose of opiates administered intravenously. This

guideline states that patients should be monitored at 30 minute intervals for the first 4 hours of starting PCIA and if stable, to be monitored 4 hourly thereafter. It notes that blood pressure, heart rate, respiratory rate, rousability, pain scores at rest, on activity and when deep breathing and presence of nausea should be recorded. At night it notes that if a patient is sleeping normally, respiratory rate and cumulative dose are all that is required.

In my opinion, the appropriate form of observations whilst a patient is receiving opiate analgesia were done as per the existing guidelines in February 2019. However, the frequency of monitoring was not meeting the requirements of these guidelines and was a moderate departure from standard practice.

5.4. The adequacy of policies in place at the time of the incident regarding narcotic analgesia administration, monitoring, and detection and management of suspected overdose, and the adequacy of any revised policies.

The Auckland DHB clinical guideline 'Pain — Patient Controlled Intravenous Analgesia (PCIA) — Adult', was in existence in February 2019 and has since been updated in February 2020 and is a clinical guideline for the prescription, monitoring, and detection and management of suspected overdose of opiates administered intravenously.

The Auckland DHB clinical guideline 'Pain — Opioids — Intravenous in Adults', was in existence in February 2019 and was updated in March 2019. It is a clinical guideline for pain management and prescription of intravenous opioids. This guideline clearly stipulates that prescription of opiates should include parameters of frequency of observations following administration of prescribed opioid. It states that referral to the Acute Pain Service is recommended if there is any doubt.

The Auckland DHB policy 'Opioids — Short Acting — Oral for Adults', was in existence in February 2019 and has since been updated in March 2020 and provides general guidance on pain management, and detection and management of suspected overdose of oral opioids.

There was no Auckland DHB guideline or policy for the administration or monitoring of subcutaneous opioid analgesia outside a palliative care setting in February 2019.

Two palliative care guidelines that related to pain assessment and management were in existence in February 2019. The Auckland DHB clinical guideline 'Pain in Palliative Care — Principles', was last updated in November 2015 and provides guidance on pain assessment, prescribing opiates, the signs of opiate toxicity and types and routes of pain medication. The Auckland DHB clinical guideline 'Pain in Palliative Care — Assessment' was last updated on 09 August 2018 and provides guidance on assessing patients in pain.

On 15 September 2020, a new Auckland DHB clinical guideline was issued 'Opioid Use in Palliative Care — Adult'. This particularly outlines the choice of opioids, guidance on

prescribing, monitoring requirements and the detection and management of suspected opioid overdose. In particular, it states that a continuous subcutaneous morphine infusion is not recommended in acute, self-limiting conditions such as radiation mucositis and in these circumstances the Acute Pain Service should be contacted. The recommendation for opioid monitoring in this guideline is as follows:

When opioids are used for acute pain the following need to be monitored and recorded half hourly:

pain scores

pulse

blood pressure

oxygen saturation

respiratory rate

sedation

The frequency of observation may be reduced to 4-hourly once opioid dosing is stable.

The Auckland DHB RMO handbook App has been updated and indicates that a referral to the Acute Pain Service should be requested if there are on-going issues with pain management.

An audit has been undertaken on the Oncology Ward, since March 2019 which confirms all patients with uncontrollable acute pain are discussed with the Acute Pain Service.

At the time of writing this report, two guidelines have been developed by Auckland DHB and are in the final stages of the document control process but were not available for me to review at the time of my report. These two guidelines are 'Index Opioid Guideline' and 'Best Practice Guideline: Patients with Oral Mucositis (OM)' which includes a referral pathway to the Acute Pain Service.

The policies and guidelines in existence in February 2019 did not cover the administration or monitoring of subcutaneous morphine outside palliative care and whilst there was information on general opioid prescribing and monitoring, this information was spread across 2 guidelines and 1 policy and may not have been considered relevant as the names of the policy/guidelines related to oral and intravenous opioids. Therefore, in my opinion, the policies and guidelines in place in 2019 were not adequate. The new policy that has been developed for opioid use in palliative care and the two guidelines that are due to be published shortly should address this issue.

5.5. On discharge from Auckland DHB (on 25 February 2019), the adequacy of discharge planning and support, safety-netting advice and follow-up for [Mr A].

At the time of [Mr A's] discharge from Auckland City Hospital on 25 February 2019, [Mr A] was still receiving radiation treatment. He therefore continued under the active assessment of the Radiation Oncology service on a daily basis until [Mr A] completed radiation treatment on 1 March 2019.

A follow up appointment was due to take place in approximately 2 weeks after radiation treatment completion and [Mr A] was seen 3 weeks later on 21 March 2019.

At the time of his discharge it was noted [Mr A] was managing his PEG feeds and his pain control was stable. On his discharge summary [Mr A] was advised to seek medical attention if he became unwell. [Mrs A] contacted [RN I], Clinical Nurse Specialist Regional Blood and Cancer Service when [Mr A] was unwell with confusion, and was provided with appropriate advice, indicating safety netting was in place.

In my opinion, there was adequate discharge planning and support.

5.6. The adequacy of the initial follow-up appointment at Auckland Hospital, including assessment undertaken, diagnoses considered and discussed, details of MRI interpretation and any discussion in this regard, follow-up arrangements and general management advice/support provided.

The initial follow-up appointment at Auckland City Hospital occurred on 21 March 2019, 3 weeks after [Mr A] completed radiation treatment. This appointment occurred in the Acute Radiation Oncology Clinic and [Mr A] was reviewed with his wife by [Dr H], Radiation Oncology registrar.

[Dr H] took a history from [Mr A] which was corroborated by [Mr A's] wife. It was noted [Mr A] had fatigue, but no symptoms of headache, nausea or vomiting, there were no pain control issues and the PEG feeds were being tolerated. The history of confusion developing since radiation treatment was noted. [Dr H's] examination findings were not fully recorded in his clinic letter but were documented in his handwritten clinic notes and indicated there were no focal neurological signs. The assessment of [Mr A's] cognitive assessment was limited as it only assessed the patient's orientation to the day, date, place and date of birth. There was no documentation related to assessing the supports [Mr A] was requiring at home apart from assistance with PEG feeding, nor any documentation as to whether [Mr and Mrs A's] ability to cope with their home situation had been explored.

[Dr H] records in his clinic letter the opinion of [the] Neuroradiologist, on the MRI appearances. [Dr H] documents that he discussed the MRI findings with [Mr and Mrs A] based on the Radiologist's and Neuroradiologist's opinions. It is not documented by [Dr H] as to whether [Mr A] was questioned on his previous exposure to carbon monoxide. There is no reference in the clinic letter or [Dr H's] handwritten notes to the events that occurred on the 15 February 2019 when [Mr A] was an inpatient and there is no

reference as to whether this hypoxic event was considered as a cause for [Mr A's] symptoms.

[Dr H] contacted the Neurology registrar on-call for advice based on [Mr A's] MRI report and his presentation in clinic. [Dr H] also contacted [Mr A's] Radiation Oncologist, [Dr C] for advice on management and [the medical oncologist] for advice on the role cetuximab might have had in [Mr A's] symptoms.

Based on the information [Dr H] provided and the MRI findings, the Neurology registrar on-call recommended a conservative approach. [Dr H] therefore advised [Mr A] that he would be seen again in the Radiation Oncology clinic in 2.5 months, with a reassessment PET-CT scan to determine the status of [Mr A's] oropharyngeal cancer. This approach was agreed to by [Dr C]. [Dr H] advised [Mr A] to seek medical attention if his situation deteriorated.

[Dr H's] clinic letter and handwritten notes indicate he considered a number of diagnoses in his assessment and excluded the possibility of [Mr A's] symptoms being radiation or chemotherapy related and were not thought to be as a result of cerebritis or infection. [Dr H] queried a diagnosis of acute delirium. He contacted 2 SMOs, (including [Mr A's] Radiation Oncologist), and a Neurology registrar for advice. It is noted that [Dr H] did not perform a complete cognitive assessment or explore the extent to which [Mr A] required assistance at home, however [Dr H] is a Radiation Oncology registrar and his focus in this clinic would have been [Mr A's] oropharyngeal cancer and his recent treatment.

[Dr H's] clinic letter and handwritten clinic note records that none of the doctors he contacted recommended any further intervention at that time. As a trainee in Radiation Oncology, in my view [Dr H] made very reasonable efforts to seek advice from senior colleagues on [Mr A's] condition and management and followed their recommendations.

[Dr H] advised [Mr and Mrs A] to seek medical attention if [Mr A's] condition deteriorated. It is not stipulated in the clinic letter what deterioration meant, in what time frame this was to be reviewed in or who [Mr and Mrs A] should specifically contact if [Mr A] did start to deteriorate. Whilst [Dr H] did advise [Mr and Mrs A] to seek help, in my opinion this could have been clearer, specifically informing [Mr and Mrs A] what signs and symptoms would indicate [Mr A] was deteriorating, over what time frame this risk of deterioration should be monitored for and who specifically [Mr A] should contact in this situation.

With a history of increasing confusion without a clear explanation, there was an opportunity at this outpatient appointment for further action to be taken. This could have been admission to a general medical ward for further assessment, referral to another specialist service, contact with the patient's GP to request further assessment and support, and consideration of whether additional supports were required in [Mr

and Mrs A's] home environment such as a social work assessment. In the Medical Council of New Zealand's 'Good Medical Practice' published in December 2016, it is expected that doctors should take 'suitable and prompt action when needed, … referring the patient to another practitioner or service when this is in the patient's best interests'. Although [Dr H] sought advice from 3 colleagues, there was no clear plan at this outpatient appointment to further assess or manage [Mr A's] confusion and the only management plan was related to the oropharyngeal cancer.

As such, in my opinion, to not put further plans in place to investigate or ensure appropriate support or management of [Mr A's] confusion at this appointment was a moderate deviation from standard of care. However, this was not the sole responsibility of [Dr H] who ultimately was in a training position, as he confirmed the outcome of the clinic assessment and plan with [Dr C], [Mr A's] Radiation Oncologist.

5.7. Whether [Mr A] should have been referred to a neurologist earlier and whether a diagnosis of neurological damage could have been made sooner. If so when?

[Mr A] had the following interactions with medical teams after completion of his radiation treatment:

12 March 2019 — [Mrs A] contacted [RN I], Clinical Nurse Specialist Regional Blood and Cancer Service, regarding [Mr A's] symptoms. [Mrs A] was advised to take [Mr A] to his GP that day or to attend the local Emergency Department.

13 March 2019 — [Mr A] was reviewed by his GP and admission was arranged to [Hospital 2] for rehydration. [Mr A] was discharged on the evening of 13 March 2019 as he was rehydrated.

18 March 2019 — [Mr A's] GP contacted [a medical oncologist] for advice due to [Mr A's] persisting confusion. Admission was arranged to [Hospital 2] to facilitate an urgent MRI scan which was performed on 19 March 2019. The result of the MRI was discussed with a radiation oncology registrar who advised review of [Mr A] with the MRI at the scheduled clinic appointment on 21 March 2019 and a review of the MRI by a Neuroradiologist was requested. [Mr A] was discharged from [Hospital 2] on 20 March 2019.

21 March 2019 — [Mr A] was reviewed by [Dr H], Radiation Oncology registrar in the Acute Radiation Oncology Clinic. [Dr H] had been informed of [the neuroradiologist's] opinion. [Dr H] sought advice from the Neurology registrar on-call on the 21 March 2019 (name not documented) due to the MRI findings and [Mr A's] symptoms. It is recorded by [Dr H] that the advice from the Neurology registrar was to observe [Mr A's] condition. It cannot be determined what information in relation to [Mr A's] symptoms was communicated to the Neurology registrar and [Dr H's] cognitive assessment of [Mr A] was very limited.

2 April 2019 — [Mr A] was reviewed by [the] Orthopaedic Surgeon, for a scheduled orthopaedic assessment. Due to [Mr A's] symptoms a referral to a Neurologist was made on that day.

Reviewing the timeline, it was noted by [Mr A's] GP on 18 March 2019 that [Mr A's] confusion was persisting and was unexplained, and they appropriately sought advice and arranged for a MRI scan. The MRI scan was performed on 19 March 2019. The initial MRI report suggested a possible aetiology for the MRI findings related to [Mr A's] radiation treatment or chemotherapy. The medical team at [Hospital 2] sought advice from a Radiation Oncology registrar at Auckland City Hospital and the recommendation was for [Mr A] to be reviewed in the Acute Radiation Oncology Clinic on 21 March 2019.

[Dr H] contacted Neurology when [Mr A] was seen as an outpatient on the 21 March 2019 when the MRI result was available and had been reviewed by a Neuroradiologist. [Dr H] spoke to the Neurology registrar on-call (name not documented). It is not possible to know what was discussed in the conversation between [Dr H] and the Neurology registrar on-call as this was not recorded, and there would have been limited information on [Mr A's] cognitive status based on [Dr H's] recorded assessment. However, it would appear at that time there was no recommendation for a formal referral to Neurology and neither was a referral to Neurology recommended by the 2 senior medical officers [Dr H] contacted for advice.

In my opinion, a referral to Neurology was made at the earliest opportunity when [Dr H] contacted the Neurology registrar on-call on the 21 March 2019, i.e. when a MRI had been performed, a neuroradiology opinion obtained and an assessment performed which excluded radiation therapy and chemotherapy as a cause for symptoms. Whilst the referral was in the form of a telephone discussion between [Dr H] and the Neurology registrar on-call, rather than a formal letter referral, the telephone referral provided [Dr H] with instant access to Neurology advice. The advice [Dr H] received was for conservative management and there is no record that a formal referral to Neurology was advised. As no further appointments were made in Radiation Oncology prior to the 2 April 2019 and there is no record of [Mr and Mrs A] making contact with the Radiation Oncology service between 21 March 2019 and 2 April 2019, there was no earlier opportunity for [Mr A] to be formally referred to neurology.

5.8. The appropriateness of the coordination of care and information sharing about the severity of the hypoxic event between Auckland DHB and [DHB2].

[Mr A's] discharge summary from Auckland City Hospital, related to the admission between 12 February 2019 and 25 February 2019, was sent to [Mr A's] GP. It noted [Mr A] had received large amounts of subcutaneous morphine to control his pain and had suffered reduced oxygen saturations and decreased Glasgow Coma Scale requiring a code red to be called, that a naloxone infusion was administered for narcosis and an admission to DCCM was required for observation. The advice to the GP on the discharge summary was to be cautious with opiates due to the narcosis episode.

[Mrs A] contacted [RN I], Clinical Nurse Specialist Regional Blood and Cancer Service at Auckland City Hospital, for advice on 12 March 2019.

The discharge summary from [Hospital 2] on 13 March 2019 makes no reference to the narcosis episode whilst [Mr A] was an inpatient at Auckland City Hospital in February, however there was no reference to this episode by the GP in their referral to [Hospital 2] for admission that day and the purpose of the referral was for [Mr A] to be rehydrated.

The discharge summary from [Hospital 2] on 20 March 2019 records advice sought from a Radiation Oncology registrar at Auckland City Hospital in which the narcosis episode in February 2019 is mentioned but not its severity.

The information provided to me does not indicate there was formal information sharing between Auckland DHB and [DHB2] about the severity of the hypoxic event [Mr A] experienced as an inpatient as the discharge summary relating to [Mr A's] admission in February was sent to the GP with a copy for the patient. However, a copy of the discharge summary relating to the admission between 12 and 25 February 2019 would be on the Auckland DHB clinical results portal and this portal may be accessible to staff from [DHB2], just as clinical portals are accessible across regional DHBs in other areas of New Zealand. The GP and the patient and his wife would also be able to provide this information to staff at [Hospital 2].

During [Mr A's] admission to [Hospital 2] between 18 to 20 March 2019, the medical team appropriately sought advice from the Radiation Oncology team at Auckland DHB and the hypoxic event was discussed at that time although the severity not recorded. The records provided to me also indicate that [Mr and Mrs A] had the contact details for [RN I], Clinical Nurse Specialist at Auckland DHB if required and sought her help on 12 March 2019.

In my opinion, there was communication and coordination of care between [DHB2] and Auckland DHB and the discharge summary for the February admission clearly documented the hypoxic event and its severity, i.e. that an admission to DCCM was required and this information was available to the GP.

5.9. The reasonableness of the care provided by [Dr D].

Between [Mr A's] admission on 12 February 2019 and 07.00 on 15 February 2019, [Dr D] formally reviewed [Mr A] on her ward round on 13 February 2019 and 14 February 2019. It is of note that [Dr D] did not record the time of her ward round assessments on either day, which is a deviation from the Auckland DHB policy, 'Clinical Record Management'.

On both the 13 and 14 February 2019 [Dr D] documented [Mr A's] symptoms, including pain although not a pain score. She accurately calculated the PRN morphine dosage [Mr A] had received in the time period prior to her ward round on each day, which is clearly

recorded in the ward round note and she correctly converted this dosage into an oral equivalent. There is no documentation of [Mr A's] blood results, observations (except for a note that [Mr A] was alert and had not opened his bowels for 4 days on the 14 February), his urine output or intravenous fluid intake, in [Dr D's] ward round notes on either 13 or 14 February. That does not mean they were not reviewed by [Dr D], however it means there is no record as to whether they were considered as part of [Dr D's] assessment and management plan.

During both ward round assessments, [Dr D] examined [Mr A] focusing on the neck and oropharynx which was the site of radiation treatment.

Management plans were instigated by [Dr D] to control [Mr A's] pain, manage his mucositis symptoms and to support his nutrition. [Dr D] did not stipulate any monitoring requirements for the subcutaneous morphine prescribed, either PRN or via the syringe driver. There is no record [Dr D] sought advice on the pain management plan for [Mr A] prior to 07.00 on 15 February 2019.

Prior to 07.00 15 February 2019 [Mr A's] blood results did not indicate impaired renal function and the observations recorded on the Adult Vital Signs Chart did not indicate any significant concerns. There is no record that [Dr D] received any support or advice from other members of the Radiation Oncology team in managing [Mr A's] symptoms although there is documentation of input by the speech and language therapy team and dietitian.

In my opinion [Dr D] focused her care of [Mr A] on his radiation treatment side effects and in that respect provided reasonable care by putting plans in place to optimise his mouth care, his pain control and his nutrition.

However, it is not clear from the information provided that [Dr D] appreciated what the result could be of rapidly increasing [Mr A's] morphine dosage over a short time period, particularly with a continuous subcutaneous morphine infusion and she did not stipulate any monitoring requirements that might have mitigated this risk. Whilst Auckland DHB had policies in place to guide oral and intravenous opiate administration which also contained guidance on monitoring, there was no guideline or policy in existence in February 2019 related to subcutaneous morphine outside the palliative care setting to guide [Dr D]. [Dr D] also has stated it was standard practice in Radiation Oncology at Auckland DHB to manage inpatients in acute pain with a continuous subcutaneous infusion of morphine through a syringe driver rather than contact the Acute Pain Service and therefore her management was consistent with this practice and so would have been seen as reasonable care by her colleagues in the department at that time. At the time of [Dr D's] ward round reviews there were no signs on the recorded observations on the Adult Vital Signs Chart or in the blood results that [Mr A] was becoming narcosed or accumulating opiate metabolites, (as there was no sign of renal impairment prior to 07.00 on 15 February 2019). As such, in my opinion, with the information available to her and with the standard practice at that time, [Dr D] did

provide reasonable care to [Mr A], but by not stipulating monitoring requirements in the morphine prescription this was a minor deviation from standard of care.

5.10. Whether issues identified by myself (if any) were due to systemic issues at Auckland DHB or whether it was more attributable to an individual or both. If there were any systemic issues, I have been asked to elaborate on this, including recommendations for improvement.

At the time of [Mr A's] hospital admission in February 2019, Auckland DHB did not have a policy on the use of subcutaneous opiates outside palliative care and whilst information on opiate prescribing and monitoring was available at that time, it was present in separate policies and guidelines related to oral and intravenous opiates. As such, the Radiation Oncology team may not have been easily able to identify how to appropriately manage patients with poor pain control that could not take opiates orally, as the preference of the team at the time was to use subcutaneous morphine in this situation and it does not appear to have been standard practice to contact the Acute Pain Service. In addition, it is not clear to what extent [Dr D] had the ability to obtain support or advice from other members of the Radiation Oncology team and as a Radiation Oncology MOSS her primary focus would have been on [Mr A's] oropharyngeal cancer and the side effects of treatment. During [Mr A's] inpatient stay in February 2019 there is no documentation of a Radiation Oncology consultant ward round review of [Mr A]. Equally, when [Dr H] reviewed [Mr A] on 21 March 2019 in the Acute Radiation Oncology Clinic, whilst he sought advice from 3 colleagues, one of whom was [Mr A's] Radiation Oncologist, no other doctor came to examine and assess [Mr A] despite the complexity of the case.

In my opinion there were systemic issues at Auckland DHB during February and March 2019, rather than individual issues. There appears to have been inadequate guidelines and policies to support acute pain management in Radiation Oncology inpatients or a clear understanding amongst the team on the ward as to how to appropriately monitor opiate analgesia or seek advice on patients having difficulty with pain control.

The recommendations I would make for improvement have in part already been actioned, as the serious adverse events review by Auckland DHB has instigated the development of appropriate policies for opiate analgesia, including subcutaneous morphine, a referral pathway to the Acute Pain Service and staff training and education on patients with pain control issues.

My other recommendation would be to ensure there is adequate support and supervision for the Radiation Oncology registrars and MOSS, both on the ward and in outpatient clinics, by their consultant Radiation Oncology colleagues. This support should be readily available and accessible, including the ability for a consultant to physically assess and examine a patient when a registrar or MOSS is reviewing a complex case.

5.11. The adequacy of any remedial actions/further changes being implemented by Auckland DHB.

Since April 2019, Auckland DHB have taken a number of actions including:

All [the oncology ward] senior medical officers and registrars, including the MOSS, have been educated on the need to contact the Acute Pain Service if a patient's acute pain is not effectively managed. An audit performed in the Cancer and Blood Service has confirmed the Acute Pain Service is now contacted in this situation.

The RMO handbook app will be modified in January 2021 after the app has changed platforms so that it is now clear that RMOs should request (rather than consider) referral to the Acute Pain Service if there are ongoing issues with pain management.

'Best Practice Guideline: Patients with Oral Mucositis (OM)' has been developed by the Cancer and Blood Service and is in the final stages of approval.

'Index Opioid Guideline' (a guideline to all types of opioids and their routes of administration, with information on how to identify and manage an overdose) is in the final stages of document control.

'Opioid use in Palliative Care — Guideline' was published 15 September 2020.

In my opinion these remedial actions are adequate in response to the events leading up to [Mr A's] opiate narcosis.

5.12. Any other matters that I might consider warrant comment.

No."

Further advice

The following further advice was received from Dr Hardie:

"Complaint: [Mr A]

Your ref: 19HDC01065 20 July 2021

Thank you for providing me with the opportunity to consider further information related to this case and your request for me to review whether this changes my original advice.

On reviewing this information, I would note at the time of providing my original report I only had access to written documentation and therefore any verbal discussion that was not documented could not be considered, nor could any clinic letters or reports that were not included in the original documentation that I received.

In relation to the ADHB response:

1.a. I agree that an alternative method of analgesia administration other than oral was required in [Mr A's] case as he had difficulty in swallowing and that an escalation of analgesia to opiates as per the WHO analgesic ladder was needed due to his poor pain control at the time of his hospital admission.

1.b. Whilst my original report noted this technicality, it was not the basis for my advice on the overarching question that I was asked, and I agree that it is only a 1 mg difference.

1.c. I maintain that the use of a continuous subcutaneous morphine syringe driver is not the appropriate method for acute pain management in a patient who has not been on a stable dose of opiate analgesia prior to commencing the syringe driver. Whilst this appears to have been the standard practice at the time within the Radiation Oncology service at Auckland DHB, it is not a recommended practice, as the Auckland DHB Adverse Event Review Report concurred, and this practice has now changed. It should be noted that intermittent subcutaneous administration of opiates and continuous subcutaneous administration of opiates are different, with the former enabling titration of dose within a 24-hour period which is not possible with a continuous infusion.

1.d. As per my comment above, whilst the team may have been cognisant of the respiratory depressant effects of morphine, there is nothing documented in the written medical record to confirm this, and my advice could only be based on the written record.

1.e. As per my original advice, whilst blood results were available, it was not documented whether they were reviewed or considered, nor any other physical parameters such as urine output, when the patient was being assessed in relation to their analgesia increase. The guidelines that Auckland DHB refer to in their response, that relate to patient monitoring, were not followed as they were not as frequent as their guideline stipulated, as per my original report.

1.f. As per my original report, [Mr A] had a rapid escalation in his analgesia within the first 48 hours of his inpatient stay. This would indicate he did have difficult pain control issues.

1.g. As per my comment above, if orders were verbal, they were not available for me to review as I could only provide advice on the written clinical records.

1.h. As per my original report, new policies and guidelines have been developed since this adverse event.

1.i. I acknowledge that my report should have had further clarity as to my concerns regarding this point. I also acknowledge that [Dr C's] statement provides further information on this issue and that his report that he references was not available to me

at the time of writing my original report and has not been included in the information sent to me that I am basing my current response on.

My concern was not related to a lack of diagnosing what was subsequently confirmed to be a very rare complication. As my report also noted there was no delay to referral to a neurologist and at that time the neurologist did not recommend any further management from a neurology perspective. My concern related to the fact that Mr A had acute confusion and how that was to be managed in the days and weeks after the 21 March 2019. As per my original report, several opinions were sought as to the cause of [Mr A's] confusion on the 21 March and [Mr A] was offered admission to the ward. However, given [Mrs A] wanted to take her husband home, this did not mean there was no further duty of care to ensure there was adequate support for her and him in the home, who was her point of contact if there was a change in [Mr A's] condition, what a change in condition meant and it was not clear from the written information that I received if a social work referral was discussed, given the next follow up appointment would not be for 2.5 months. This formed the basis for my opinion.

Both the Auckland DHB response and [Dr C's] statement indicate [Mr A] was told to attend [his local] Hospital if he deteriorated as [Mr A] lived close by and that [Mrs A] was provided with the contact details of the [DHB2] Head and Neck Nurse Specialist as additional safety netting. This information was not evident in the clinic letter that was provided to me that formed the basis of my original report and I did not receive a copy of [Dr C's] report either.

I also note from [Dr C's] statement that a number of verbal discussions took place between [Dr H] and [Dr C] on 21 March, that [Dr C] himself assessed [Mr A] on 21 March and that additional discussion was had between [Dr C] and [Mr and Mrs A] confirming a plan for [Mr A] to go to [his local] Hospital or the GP for further assessment of his confusion. None of this information was available to me at the time of me providing my original report.

I would also note that in point 1.c. of [Dr C's] statement he indicates that I stated [Mr A] was not referred to neurology. I did not state that in my report as I documented the referral to neurology on 21 March by [Dr H] and in answer to a further question from HDC I noted that [Mr A] could not have been referred earlier to neurology, as per my original report.

1.j. See subsequent comment below.

1.k. See subsequent comment below.

1.l. See subsequent comment below.

As to whether this changes my original advice, as per my original report I have noted the points I was asked to address as follows:

Point 1. As per my original advice, Auckland DHB were not following standard practice in using a continuous subcutaneous morphine syringe driver to manage acute pain in a patient that was not previously on a stable morphine dosage, and therefore my original advice on this point remains with no change. I note there has been a change in practice since the adverse event review.

As to the second question within this point, as per my original advice, there was a lack of written documentation in relation to [Mr A's] assessment during the period his opiate dose was increased and the frequency of observations were not as per the guideline at the time. I do note the Auckland DHB response that indicates there was a verbal standing order on the parameters to monitor with a morphine prescription, which was not evident to me from the written record. As such I would change my original advice from a moderate deviation to a mild deviation from standard practice as the monitoring undertaken did not follow the guideline in existence at the time in relation to the frequency of observations.

Point 2. On review of the Auckland DHB response and the additional statements of [Dr C] and [Dr D], I note that there was no standard practice to refer to either the Acute Pain team or the Palliative Care team when the ward guideline for the use of a continuous subcutaneous morphine syringe driver was being followed, it was only to be considered. As such, even though there were difficult pain control issues evidenced by the escalation of morphine dosage over a 48 hour period, as [Dr D] was following the standard practice of the Radiation Oncology department at that time, I withdraw my statement that this was a moderate departure from standard practice as this was the standard practice at Auckland DHB.

Point 3. No change to my advice.

Point 4. No change to my advice.

Point 5. No change to my advice.

Point 6. As per my comments above, further information has been provided to me regarding the assessment on the 21 March 2019, in particular, [Dr C's] statement clearly noting that he assessed [Mr A] himself and discussed with [Mr and Mrs A] a plan for [Mr A] to have his confusion further assessed at [his local] Hospital and by the GP, as well as being provided with the contact details of the [DHB2] Head and Neck Clinical Nurse Specialist as additional safety netting. In view of this additional information being provided, I now change my advice on this point and now state there was no deviation from standard of care.

Point 7. No change to advice.

Point 8. No change to advice.

Point 9. [Dr D's] statement acknowledges that she should have provided written documentation on parameters to monitor when prescribing morphine which would have been expected as a standard of care. However, I also note the significant workload pressures she was under, based on her statement, which impacted on her ability to write in the medical notes, and the indication from the Auckland DHB response that there were verbal standing orders in place for the monitoring requirements related to morphine prescriptions. In view of this, I withdraw my original advice and state there was no deviation from the standard of care at Auckland DHB at that time.

Point 10. As per my additional advice, there were systemic issues due to lack of clear policies and guidelines. This has now been addressed as evidenced by the Auckland DHB response and [Dr D's] and [Dr C's] statements. I also note that [Dr D's] and [Dr C's] statements are clear there is readily available advice and support to the Radiation Oncology MOSS and registrars.

Point 11. No change to advice.

Thank you for asking to take this additional information in to consideration.

With kind regards

Dr Claire Hardie"

Appendix C: Policies and standards

Guidelines for Syringe Driver Management in Palliative Care, Ministry of Health (MOH)

The MOH guidelines state:

> "These guidelines have been developed to assist in the development of local policies, clinical guidelines, education and training programmes for the use of portable subcutaneous infusion devices (syringe drivers) in palliative care in New Zealand.
>
> …
>
> *Patient assessment*
>
> Thorough patient assessment is important when caring for patients with a subcutaneous infusion. The patient and the syringe driver should be assessed at least four-hourly in care settings such as a hospital, hospice or residential aged care facility and at each nurse visit in primary care settings."

Clinical resource for the use of syringe drivers (dated 3 June 2011)

ADHB's policy states:

> "Checks in use — generally every 4 hours.
>
> The infusion needs to be checked regularly at least every 4 hours.
>
> Check:
>
> - Prescription against the medication added label on the syringe
> - The '<<<<<Pump delivering' is displayed on LCD screen
> - Check the battery — Press blue 'Info' key until battery level is displayed on LCD screen.
> - The needle site for inflammation
> - The tubing for colour change or precipitation"

Medication management (updated February 2020)

ADHB's clinical practice manual states:

> "Documentation
>
> Medications that have been administered must be documented on the drug chart or prescription form and signed immediately after administration using indelible ink, by the person administering the medication (in the cases where independent double-checking is required, both signatures must be documented).
>
> …

Controlled Drugs Definition

All **controlled drugs must be independently double-checked** by two competent persons who have appropriate knowledge and experience, one of whom must be a registered medical practitioner, registered nurse/midwife, or pharmacist who is an ADHB employee."

Pain — Patient Controlled Intravenous Analgesia (PCIA) — Adult (updated 26 February 2020)

ADHB's updated clinical guideline states:

"**Monitor and document vital signs on the adult observation chart form CR5826:**

30-minute intervals for the first 4 hours, if stable, 4-hourly thereafter:

- Blood pressure
- Heart rate
- Respiratory rate (taken for one whole minute)
- Rousability
- Pain scores at rest, on activity and when deep breathing (contact the pain registrar if pain is not manageable despite PCIA use)
- Nausea.

At night, if the patient is sleeping normally, respiratory rate and cumulative dose are all that is required."

Pain — Opioids — Intravenous in Adults (updated 14 March 2019)

ADHB's clinical guideline states:

"**Guideline management principles and goals**

…

- Prescription should include parameters of frequency of observations following administration of prescribed opioid.
- Referral to the Acute Pain Service (APS) is recommended if any doubt exists"

Medication Administration Clinical Practice Manual

ADHB's policy states:

"All **controlled drugs must be independently double-checked** by two competent persons who have appropriate knowledge and experience, one of whom must be a registered medical practitioner, registered nurse/midwife, or pharmacist who is an ADHB employee."

Adult Vital Sign Monitoring, Early Warning Score Measurement and Clinical Escalation (updated 14 April 2020)

ADHB's policy states:

"7. Frequency of vital signs measurement on adult inpatient wards

- On admission to an adult inpatient ward, a core set of vital signs must be obtained, and EWS calculated, within 30 minutes of arrival to the ward.
- The minimum standard ongoing frequency of vital sign measurement is every four hours.
  - For acutely unwell patients, more frequent vital sign measurement may be indicated …

…

  - Vital sign measurement should not be withheld or delayed in an attempt to avoid disturbing the sleeping patient."

Opioid Use in Palliative Care — Adult (first issued 15 September 2020)

ADHB's policy states:

"**6. Subcutaneous and continuous subcutaneous infusions of opioids**

A continuous subcutaneous infusion (CSCI) is not 'step 4' of the World Health Organisation (WHO) Pain Relief Ladder (see Supporting evidence). It is not indicated in acute self-limiting conditions such as radiation mucositis.

For acute and self-limiting pain conditions contact the Acute Pain Service."

Appendix D: Nursing standards

Nursing Council of New Zealand (NCNZ) Code of Conduct

Standard 4.8

"• 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.

- Complete records as soon as possible after an event has occurred.
- Do not tamper with original records in any way.
- Ensure any entries you make in health consumers' records are clearly and legibly signed, dated and timed.
- Ensure any entries you make in health consumers' electronic records are clearly attributable to you.
- Ensure all records are kept securely.

…

Standard 4.9

Administer medicines and health care interventions in accordance with legislation, your scope of practice and established standards or guidelines.[1]"

NCNZ Registered Nurse Scope of Practice, competencies for registered nurses

"Competency 2.3 Ensures documentation is accurate and maintains confidentiality of information. Indicator: Maintains clear, concise, timely, accurate and current health consumer records within a legal and ethical framework.

…

Competency 2.5 Acts appropriately to protect oneself and others when faced with unexpected health consumer responses, confrontation, personal threat or other crisis situations. Indicator: Understands emergency procedures and plans and lines of communication to maximise effectiveness in a crisis situation.

…

Competency 2.9 Maintains professional development. Indicator: Contributes to the support, direction and teaching of colleagues to enhance professional development. Indicator: Updates knowledge related to administration of interventions, treatments, medications and best practice guidelines within area of practice. Indicator: Takes responsibility for one's own professional development and for sharing knowledge with others.

[1] For example, Ministry of Health (2011), Medicines Care Guides for Residential Aged Care; New Zealand Nurses Organisation (2007), Guidelines for Nurses on the Administration of Medicines.

…

Competency 4.1 Use appropriate care and skill when assessing the health needs of health consumers, planning, implementing and evaluating their care.

…

Competency 4.3 Keep your professional knowledge and skills up to date."

New Zealand Nurses Organisation Guidelines for Nurses on the Administration of Medicines

"Section 7.1 Controlled drugs

It is recommended controlled medicine administration be witnessed — this means seeing the medicines being administered and signing as a witness."