Paramedic, Ms C

Ambulance Service

A Report by the

Deputy Health and Disability Commissioner

(Case 19HDC02249)

Health and Disability Commissioner

Te Toihau Hauora, Hauātanga

Contents

Executive summary

1. This report highlights the importance of health providers remaining alert and focussed when they are administering medication in highly stressful situations, and of ensuring that the correct procedures are followed to mitigate the risk of mistakes being made. This case emphasises the significance of health providers representing information accurately and disclosing errors when they occur.

2. A woman had an aggressive brain tumour. A decision was made to transfer her to hospice for end-of-life care. An ambulance was dispatched to transfer her to the hospice. During the transfer, a paramedic administered ondansetron via an intravenous (IV) line. She then unintentionally flushed the IV line with morphine, instead of saline.

3. The paramedic documented the times and amounts of morphine administered during the transfer incorrectly, and did not document a subsequent administration of ondansetron.

Findings

4. The Deputy Health and Disability Commissioner considered that the paramedic failed to check the contents of a syringe and administered morphine in error; that she attempted to conceal the administration error by documenting the morphine dosage inaccurately; and that she failed to document the administration of a dose of ondansetron. The Deputy Health and Disability Commissioner found the paramedic in breach of Right 4(1) of the Code.

5. The Deputy Health and Disability Commissioner did not find the ambulance service in breach of the Code.

Recommendations

6. The Deputy Health and Disability Commissioner noted that the paramedic and the ambulance service had apologised to the family. The Deputy Health and Disability Commissioner recommended that the paramedic provide evidence to HDC of training on medication administration and documentation. Additionally, the Deputy Health and Disability Commissioner recommended that the ambulance service consider whether training on medication errors is appropriate, and provide an update on the progress of its implementation of the "Always Report and Review" policy.

Complaint and investigation

7. The Health and Disability Commissioner (HDC) received a complaint from Ms B about the services provided to her sister, Ms A.[1] The following issues were identified for investigation:

- *Whether Ms C provided Ms A with an appropriate standard of care in 2019.*
- *Whether the ambulance service provided Ms A with an appropriate standard of care in 2019.*

8. This report is the opinion of Deputy Health and Disability Commissioner Rose Wall, and is made in accordance with the power delegated to her by the Commissioner.

9. The parties directly involved in the investigation were:

Ms B	Complainant
Ms C	Paramedic
Ambulance service	Provider

10. Also mentioned in this report:

Ms D	Ambulance driver

11. Independent expert advice was obtained from paramedic Ken MacIver (Appendix A).

Information gathered during investigation

12. In 2016, Ms A was diagnosed with an aggressive brain tumour. In 2019, she was admitted to a residential facility for palliative care. She was then aged in her forties.

13. Ms A's condition deteriorated, and a decision was made to transfer her to a hospice for end-of-life care. This report concerns the care that was provided to Ms A during the journey by ambulance to the hospice.

Care provided by ambulance staff at the residential facility

14. The ambulance service dispatched an ambulance to transport Ms A to the hospice. The ambulance was staffed with a paramedic, Ms C,[2] and another staff member, Ms D.[3]

[1] Initially, the complaint was made to the Nationwide Health & Disability Advocacy Service. On 26 November 2019, the Nationwide Health & Disability Advocacy Service referred the complaint to HDC.
[2] Ms C gained her paramedic authority to practise through a clinical internship programme. She is registered with the newly established Paramedic Council.
[3] Ms D is a casual employee.

15. A paramedic has completed further education and training on top of a base ambulance qualification, and can administer some medications.

16. The ambulance arrived at the residential facility at 12.45pm. Ms C told HDC that Ms A appeared distressed and was finding it difficult to communicate. Ms C said that the plan was to make Ms A comfortable and to transport her to the hospice.

17. At 12.50pm, Ms C documented Ms A's vital signs[4] and discussed the administration of ondansetron for Ms A's nausea.

18. At 12.55pm, 4mg of ondansetron was checked, drawn up, and administered intramuscularly.[5]

19. Ms C told HDC that she then rang the ambulance service's clinical support desk to discuss the options for treating Ms A's pain and distress. Ms C said that she was advised to administer 3mg of morphine intravenously[6] or 7mg of morphine intramuscularly. Ms A's family agreed to the administration of morphine intramuscularly.

20. At 1pm, 10mg of morphine was checked and drawn up, and 7mg was administered intramuscularly. The remaining 3mg was discarded into the sharps bin.

21. A stretcher was prepared for Ms A's transfer. Ms C told HDC that the morphine had had no discernible effect on Ms A, so they were particularly careful when they moved her to the ambulance.

22. Ms A's mother and daughter asked to sit in the back of the ambulance with Ms A. Ms C agreed to this, and she stood at the back of the ambulance.

23. Inside the ambulance, Ms A was distressed and in pain. Ms A and her mother agreed to the administration of intravenous medication.

24. Ms C inserted an intravenous (IV) line,[7] and 10mg of morphine was checked by Ms A's mother.[8] Ms C said that she cannot recall whether or not the syringe was labelled.

25. At 1.20pm, Ms C administered 3mg of the morphine intravenously. The syringe with the remaining 7mg of morphine was placed on the stretcher.

[4] Heart rate of 160 beats per minute (bpm), respiratory rate of 36 breaths per minute, blood pressure of 137/95mmHg, oxygen saturation level of 76%, and capillary refill time of three seconds with pale skin colour. Ms A was responsive to voice.
[5] Into a muscle.
[6] Into a vein.
[7] A soft flexible tube placed inside a vein.
[8] Ms A's mother is a health professional.

26. Ms C did not document the administration of morphine contemporaneously. After she handed over Ms A's care to the hospice, she documented that 5mg of morphine had been administered intravenously.

Ambulance journey

27. The ambulance left shortly after the intramuscular morphine had been administered. Ms C told HDC that the morphine did not appear to be effective.

28. Ms A's mother stood up to be beside her daughter, and remained standing for the rest of the journey.

29. Ms D, who was driving the ambulance, was unfamiliar with the area, and initially drove in the wrong direction. After 15 minutes, Ms A's mother realised the mistake and advised the ambulance staff accordingly.

30. Ms C said that as a result, the journey to the hospice took longer than planned, and this created stress for her and for the family.

31. At 1.22pm, Ms C assessed Ms A's vital signs[9] and continued to provide care in the ambulance, as outlined below.

Administration of morphine at 1.25pm

32. At 1.25pm, after consulting with Ms A and her family, Ms C administered a second dose of 4mg of ondansetron intravenously to treat Ms A's nausea. The syringe with 7mg of leftover morphine was situated on the stretcher next to a syringe filled with saline. Ms C then mistakenly used the syringe with 7mg of morphine to flush the IV line instead of using the syringe filled with saline.

33. Ms C said that she recognised her mistake immediately, told Ms A's mother, and said that she would report the error.

34. Ms C did not document that an additional 4mg of ondansetron had been administered, or that 7mg of morphine had been administered in error.

Subsequent care

35. Ms C said that she then pushed the error to the back of her mind. She stated:

> "I then solely focussed on monitoring the patient closely and considered if I would need naloxone[10] and to call the [clinical support desk] again. There appeared to be no deterioration in [Ms A], yet she still needed help with her breathing and discomfort.
>
> From my tertiary training (Bachelor in Paramedicine), I knew the reason for the morphine not working was most likely due to [Ms A] already having a high tolerance for

[9] Heart rate of 176bpm, respiratory rate of 32 breaths per minute, blood pressure of 127/89mmHg, oxygen saturation level of 88% (on oxygen). Ms B remained responsive to voice.
[10] To reverse the effects of the morphine.

morphine due to the medications she was already on. Then I called the clinical desk back to discuss the option of midazolam[11] administration.

Following the advice provided by the clinical desk, I administered Fentanyl[12] and was advised if this did not help then to administer midazolam."

36. At 1.44pm, 100mcg of fentanyl was checked by Ms A's mother and drawn up by Ms C. Ms C administered 30mcg of fentanyl then flushed the line with saline. She documented that 30mcg of fentanyl had been administered intravenously.

37. At 1.50pm, Ms C administered another 30mcg of fentanyl and flushed the line with saline. She documented that 30mcg of fentanyl had been administered intravenously.

38. Ms C told HDC that she and Ms A's mother noticed a slight improvement in Ms A's condition, but that she was still distressed and struggling to breathe.

39. Ms C discussed administering midazolam, and Ms A's mother agreed to this.

40. At 1.57pm, 5mg of midazolam was checked by Ms A's mother, and drawn up and administered intramuscularly. Ms C told HDC that Ms A's breathing improved, and that she became more responsive as a result.

41. At 2pm, Ms C documented Ms A's vital signs.[13]

42. At 2.07pm, the ambulance arrived at the hospice and Ms A was transferred to her room. Ms C said that she felt that there had been some improvement in Ms B's breathing and distress.

43. Ms C stated that she handed over Ms A's care to the hospice staff. She told the staff about the medications she had administered, and that fentanyl and midazolam had been more effective than morphine. She said that she told the staff about the total amount of morphine that had been administered, but she did not admit her error with the morphine.

44. Ms A passed away a few hours later at the hospice.

Documentation

45. Ms C said that she completed the documentation of the medications administered when handing over Ms A's care to the hospice just after 2pm.

46. Ms C documented that she had administered 4mg of ondansetron at 12.55pm and 7mg of morphine at 1pm.

[11] A benzodiazepine medication used for sedation and agitation.
[12] Medication to treat pain.
[13] Heart rate of 170bpm, respiratory rate of 28 breaths per minute, blood pressure of 126/89mmHg, oxygen saturation level of 90% (on oxygen). Ms B remained responsive to voice.

47. Ms C did not document that she had administered the second dose of ondansetron at 1.25pm, but she made the following notation on the ePRF[14]: "Nausea improve[d] after second dose ondans[etron]."

48. Ms C documented that 5mg of morphine had been administered at 1.20pm and again at 1.25pm. The morphine had in fact been administered as one dose of 3mg at 1.20pm, with the remaining 7mg administered in error at 1.25pm. Ms C said that she made the documentation error because she was not thinking straight and she panicked.

49. Ms C did not disclose the error in respect of the accidental administration of morphine, or of the documentation, to her crew partner or the clinical desk.

Further information — Ms C

50. Ms C said that at the time of these events she had had only one year's experience as a paramedic. She stated that she was crewed with a lesser experienced casual staff member who was not familiar with the area and was not able to offer much clinical assistance.

51. Ms C said that the situation at the rest home and in the ambulance was highly emotional, and that Ms A was very unwell. Ms C stated that there were a lot of clinical decisions to make, and she had felt overwhelmed. She said that the clinical desk offered helpful advice, but she was so focussed on delivering clinical care to Ms A that she did not think to call for back-up. Ms C said that by the time she handed over Ms A's care to the hospice, her thoughts were jumbled and she was feeling panicked and stressed. Ms C stated:

> "There is no excuse for this mistake, and my only explanation is that the combination and entirety of a highly emotional, stressful situation, inexperience, fatigue, no meal break and my own personal experiences have led me to act out of character and make a poor decision."

52. Ms C told HDC that at 1.25pm she did not follow the correct procedures when she administered 7mg of morphine instead of flushing the IV line with saline. She said that she exercised poor judgement when she failed to report the administration error, and that her actions were "not in line with [her] usual honest and safe actions as a person and a Paramedic".

53. Ms C stated that she made a genuine mistake when she documented that she had administered 5mg of morphine at 1.20pm and 5mg of morphine at 1.25pm. She said that her thoughts were confused when she was making the entry onto the ePRF. She stated:

> "I just wrote it, without thinking of the consequences. That evening, once home and recapping, I recall briefly thinking that I had recorded the doses incorrectly, but instead of reporting, I spent sleepless nights catastrophising my whole life. I continued to justify my actions with thoughts of its too late now, fear of losing my job and all I had worked for clouded my judgement further."

[14] Electronic Patient Report Form.

54. Ms C said that she forgot to record the second dose of ondansetron in the ePRF and that this was a simple omission. She noted that she did document the effectiveness of the second dose of ondansetron in the disposition section of the ePRF.

55. Ms C stated:

> "I have met with [the family] to apologise, hoping this would provide some healing for the family and also myself. I am genuinely sorry for my errors and mistakes, and I have portrayed this to the family and others involved."

Ambulance service internal review

56. On 8 August 2019, Ms B lodged a complaint with the ambulance service, and an internal review was undertaken. The ambulance service said that Ms C had a record of high performance, that she immediately accepted her failings, and that she engaged with the review process in an open and non-defensive manner. The ambulance service also said that Ms C expressed genuine remorse for her actions.

57. The review concluded that 7mg of morphine was accidentally flushed through the IV line, and that this was "falsely" documented as two doses of 5mg. The review stated that the medication error did not contribute to Ms A's death. Staff from the ambulance service, including Ms C, met with the family to share the findings of the review and to apologise.

58. As a result of the review, Ms C had restrictions placed on her clinical practice, and a disciplinary process was also enacted, resulting in a disciplinary outcome.

59. On 26 November 2019, Ms B made a complaint to HDC, and a second review was undertaken by the ambulance service. The review found that Ms C accidentally omitted to document the administration of the second dose of ondansetron at 1.25pm, and that she did not notify the hospice or the ambulance service of the medication error or document it.

60. The second internal review stated:

> "On this occasion a junior paramedic was being supported by [another crew member] and both were immediately unfamiliar with the area they were currently working in. This contributed to the driving officer … taking the wrong route to the hospice initially — further contributing to an already stressful situation for [Ms A] and her family."

Further information — the ambulance service

61. The ambulance service stated that staff complete an ambulance driving course, which includes classroom time, online learning, and practical road experience.[15] The following tools are available to assist staff with navigation:

[15] The course aligns with the New Zealand Qualification Standard (NZQA) unit standards (26017, 26018) for ambulance driving.

- A map book
- A GPS-based mapping system — software installed on the vehicle's mobile data terminal
- Cell phone applications — Google maps

62. The ambulance service told HDC that regular continuous clinical education on a range of clinical and procedural matters had been provided to Ms C since her employment.[16]

HDC investigation

63. Ms B made a complaint to HDC because she was concerned about the care that was provided to her sister at the rest home and the hospice, and by the ambulance service. Ms B's concerns regarding the rest home and the hospice are not the subject of this investigation, and have been addressed separately.

64. In respect of her complaint about the ambulance service, Ms B advised that she had had a meeting with the ambulance service, that Ms C had completed further training, and that she was satisfied with the outcome of the internal reviews. Ms B stated that she would like the Health and Disability Commissioner to look into safety checks for administering medication in ambulances.

65. On 28 October 2020, HDC provided Ms B with a copy of the information gathered during the investigation, and asked the Nationwide Health & Disability Advocacy Service to contact Ms B to ascertain whether she felt that her complaint had been resolved. Ms B advised the advocate that she was happy with the response from the ambulance service.

Response to provisional opinion

Ms B

66. Ms B was given an opportunity to comment on the "information gathered during investigation" section of the provisional opinion. She advised that she had no comments to make.

Ambulance service

67. The ambulance service was given an opportunity to comment on the provisional opinion. It advised that it accepted the findings and recommendations made. It told HDC that it acknowledged that Ms C made a serious mistake by unintentionally administering morphine, and that she failed to accurately document the dosing and timing of the medication administered. The ambulance service said that when the complaint was received, Ms C promptly admitted the error.

68. The ambulance service said that following the review of this event, Ms C underwent a lengthy clinical monitoring programme to ensure that her practice was safe. The ambulance service said that during the programme, Ms C demonstrated considerable reflection and positive role-modelling to other personnel, and that Ms C has shown genuine and

[16] The ambulance service provided details of Ms C's training sessions.

commendable engagement with her team in relation to her clinical decision-making and related clinical competencies.

69. The ambulance service acknowledged the impact of this incident on Ms A's family.

Ms C

70. Ms C was given an opportunity to respond to the relevant sections of the provisional report, as they relate to her. She advised that she accepts the findings and recommendations made. She said that she did not intend to misreport the error deliberately, but after the job was completed, she thought irrationally, and once the electronic records had been completed and submitted, she could not amend the documentation.

71. Ms C said that this incident has been difficult for her, and she was challenged by attempting to relieve Ms A's distress during the transfer.

72. Ms C said that she has fully admitted her errors and engaged in the lengthy clinical development and disciplinary processes openly and with humility. She stated that since this incident, she has continued to reflect, and she uses this experience in her leadership role, so that junior staff may learn from her error. She said that her clinical practice is safe and honest.

73. Ms C stated that she has remained vigilant in her administration and recording of medications, and is now more likely to request back-up support, as she should have done with Ms A. Ms C said that she has learned to report mistakes at the time they occur.

74. Ms C stated that she hopes Ms A's family can forgive her actions. She said that she wanted to provide the best care possible and make Ms A more comfortable. Ms C said that she is genuinely remorseful and regrets her decisions on that day. She acknowledged that her errors caused distress to Ms A's family, during an already difficult time.

Relevant standards

75. The ambulance service's clinical guidelines[17] state:

> "c) The syringe must be labelled with name of the medicine unless the medicine is being drawn up and administered in one uninterrupted manoeuvre. The concentration must be included on the label if the medicine has been diluted and the label must not obscure the volume markings on the syringe.
>
> …

[17] In place at the time of these events.

h) The person administering the medicine should say the medicine name, dose and route as it is being administered."

76. The guidelines also state:

> "The patient and incident details, the assessment of the patient, any treatment administered, any procedure performed and any advice given to the patient and/or caregivers must be documented on the patient report form (PRF)."

Opinion: Ms C — breach

77. Notwithstanding the circumstances surrounding these events, and accepting that Ms C's intention was to relieve Ms A's distress, this report highlights the importance of health providers remaining alert and focussed when they are administering medication in highly stressful situations, and of ensuring that the correct procedures are followed to mitigate the risk of mistakes being made. This case emphasises the significance of health providers representing information accurately and disclosing errors when they occur.

Flushing IV line with morphine

78. At 1.25pm, Ms C administered ondansetron to Ms A intravenously. Ms C then intended to flush the IV line with saline. A syringe with saline, and a syringe with morphine left over from an earlier dose, were positioned next to each other on the stretcher. Ms C mistakenly flushed the IV line with 7mg of morphine instead of saline.

79. My independent expert advisor, paramedic Mr Ken MacIver, stated that medication errors, such as the accidental flushing of the IV line with morphine instead of saline, are very easy to make. He advised:

> "However, because medication errors have such great potential to cause harm, clear processes have evolved around medication preparation and administration …
>
> Many of the safety processes around medication preparation are designed to catch this sort of error by forcing the clinician to be present and attentive. For example, reading aloud the medicine name, dose and route prior to administration. Even this strategy does not completely eliminate medication errors, and so a double check with a second person is now best practice."

80. Mr MacIver noted that the clinical guidelines clearly outline the process to be followed when administering medication. This includes labelling the medication with its name and concentration, and reading the medication name, dose, and route prior to administration.

81. Mr MacIver advised that the medication delivery error was a clear and serious breach of the accepted standard of practice.

82. Ms C stated that on almost every occasion she checked the medication with Ms A's mother before she administered it. However, Ms C did not follow the correct procedure at 1.25pm, when she administered the ondansetron intending to flush the IV line with saline afterwards. I am satisfied that Ms C did not check the syringes before she administered the medication and the flushing solution and, as a result, she administered 7mg of morphine to Ms A in error. I accept Mr MacIver's advice that this was a serious departure from the accepted standard of care.

Documentation of first and second dose of morphine

83. Ms C documented that she administered 5mg of morphine at 1.20pm when in fact she had administered 3mg of morphine. Ms C documented that she administered 5mg of morphine at 1.25pm when in fact she had administered 7mg of morphine. This information was not documented at the time it was administered, but was documented when Ms C handed over Ms A's care to the hospice.

84. Ms C described the inaccurate documentation as a genuine mistake that occurred because she was not thinking straight. Later, regarding the morphine documentation, she told HDC: "I just wrote it, without thinking of the consequences."

85. Mr MacIver advised:

> "Deliberate mis-recording would be considered a serious breach of standard, largely because it violates the professional industry expectation of honesty and accuracy. An accidental omission, while still serious, is an unintended error and not an attempt to mislead. It would therefore be considered a less serious breach of standard."

86. Documentation is the cornerstone of good clinical practice, and it must be accurate and complete. In this case, Ms C's documentation misrepresented the clinical picture because it did not record the dosages accurately.

87. In addition, Ms C's awareness of the medication error, the fact that her documentation of the morphine administration occurred after the error, her acknowledgement that she made the documentation "without thinking of the consequences", and her failure to report the morphine error to either the hospice or the ambulance service suggests that her inaccurate documentation was not a genuine mistake. For the above reasons, I consider it more likely than not that the inaccurate documentation was deliberate and an attempt to conceal the medication error.

88. Accordingly, I accept Mr MacIver's advice that the documentation error was a serious departure from the accepted standard of practice, as well as an act of dishonesty unbecoming of a health professional.

Documentation of second dose of ondansetron

89. At 1.25pm, Ms C administered ondansetron to treat Ms A's nausea and make her more comfortable. There is no suggestion that it was administered inappropriately. However, the amount of ondansetron that was administered, and the fact that it was administered, was

not documented. Ms C said that she forgot to document this administration of ondansetron. I note that Ms C refers to the effects of this dose later in the clinical notes, and that there had been some improvement in Ms A's condition. As such, I am satisfied that the omission to document the administration of ondansetron was not deliberate.

90. Mr MacIver advised that an accidental omission in documentation is still a departure from the accepted standard of practice.

91. Whilst I am satisfied that the failure to document in this instance was not deliberate, I agree that Ms C's documentation was still lacking in the circumstances.

Conclusion

92. I consider that Ms C failed to provide appropriate care to Ms A for the following reasons:

- She did not check the contents of a syringe and administered 7mg of morphine in error.
- She attempted to conceal the administration error by documenting the morphine dosage inaccurately.
- She failed to document the administration of the second dose of ondansetron.

93. These deficiencies in care meant that Ms A was given medication that was not intended, and that subsequent health providers were not provided with an accurate clinical picture of her care. The concealment of the morphine error also meant that there was a lost opportunity to consider whether treatment of the overdose was warranted in the circumstances. For the reasons outlined above, I consider that Ms C breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[18]

Opinion: Ambulance service — no breach

Medication administration policy

94. The clinical guidelines in place at the time of the events provided clear guidance for administering medication, including the labelling of medication and saying the name, dose, and route of the medication prior to administration. My expert advisor notes that these checks are appropriate, and that a double check with a second person is now best practice.

95. I note that the current clinical guidelines state: "The person administering the medicine should clearly say the medicine name, dose and route out loud as it is administered." While this falls short of my expert's advice to double check with another person, I accept that this may not always be possible, and that this guideline encourages the health provider to be alert and attentive.

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

96. I also note that the clinical guidelines in place at the time of these events required the details of any treatment administered to be documented in the patient report form.

97. I am aware that Ms B's primary concern was that there were not adequate checks in place for the administration of medication. I am satisfied that there were adequate systems in place to ensure that medication was administered safely and that it was documented accordingly. The error in this instance was an individual error by Ms C.

Ambulance driving

98. The ambulance service stated that staff were required to complete training in ambulance driving before they could drive an ambulance. This included classroom time, online learning, and practical experience. In addition, staff had access to a map, a GPS mapping system, and the Google maps app on their cell phones.

99. Mr MacIver advised: "No breach of standard occurred with regards to the navigation error." While it is unfortunate that the navigation error occurred, and I acknowledge that this would have added to the already distressing situation, I accept Mr MacIver's advice.

Staffing of ambulance

100. I note that both Ms C and Ms D were described in the internal investigation as relatively inexperienced. Ms C had been employed by the ambulance service for several years and qualified as a paramedic less than a year before these events. Ms D had been employed by the ambulance service for several years.

101. Mr MacIver advised:

> "Situations of increased cognitive load are more likely to result in an error of this nature as the clinician becomes overwhelmed with the number of novel factors they are attempting to deal with. Additionally, an initial error can cause people to become flustered to the point where further errors and/or poor decision-making become more likely."

102. It appears that this team was overwhelmed by a clinically complex and highly emotional situation, and that in part this may have been caused by the team's relative inexperience. However, the staff were appropriately qualified, protocols were in place to ensure that medication was administered safely, and I note that further assistance was available and sought from the clinical desk.

Conclusion

103. I am satisfied that the ambulance service had adequate policies in place for the administration of medication and had provided appropriate training and support for its crew. In addition, the ambulance service conducted a rigorous review of the events, and staff from the ambulance service, including Ms C, met with the family to share the findings of the review and to apologise. I therefore find that the ambulance service did not breach the Code.

Changes to practice

104. Ms C told HDC that she has made the following changes to her clinical practice:

- She has reflected on how she can use the ambulance service resources more effectively, including the clinical desk and her colleagues, and she has decreased her workload.
- She ensures that medication checks are completed and are in line with the ambulance service clinical procedures and guidelines.
- She has used her learnings from this case to mentor others.
- She has undertaken post-graduate study in management and leadership to help to manage people and scenes more efficiently.

105. The ambulance service told HDC that since the internal investigation, it has been considering the adoption of an "Always Report and Review" policy. This policy provides that it will be mandatory for all adverse events or near misses to be reported, so that weaknesses in the patient safety processes can be identified and improvements made.

Recommendations

106. I note that Ms C has apologised to Ms A's family, undergone a disciplinary process, reflected on the events, and has undertaken further education. I recommend that within three months of the date of this report, Ms C provide evidence to HDC of training on medication administration and the documentation of medication administration.

107. I note that the ambulance service has apologised to Ms A's family and has updated its clinical guidelines. I recommend that within three months of the date of this report, the ambulance service:

a) Consider whether training on medication errors, as outlined in the expert advisor's report, is appropriate, and advise HDC accordingly; and

b) Provide an update on the progress of the implementation of the "Always Report and Review" policy.

Follow-up actions

108. Ms C 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.

109. A copy of this report with details identifying the parties removed will be sent to the Paramedic Council, and it will be advised of Ms C's name.

110. A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to the New Zealand Ambulance Association and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Addendum

111. The Director of Proceedings decided not to issue proceedings.

Appendix A: Independent clinical advice to the Commissioner

The following expert advice was obtained from Mr Ken MacIver, a paramedic:

"I have been asked to provide an opinion to the Commissioner on case number 19HDC02249. I have read and agreed to follow the Commissioner's Guidelines for Independent Advisors. I am not aware of any conflicts of interest.

14/06/2020

Relevant experience of independent advisor

- 11 years' full-time road experience in an urban ambulance service
- 6 years' practice at Intensive Care Paramedic (ICP) level
- 11 years as a degree lecturer on the Paramedic degree programme
- Completion of a masters' thesis on Paramedic Decision-Making, with a focus on the diagnostic process
- Special interests: resuscitation, teamwork, leadership, critical incident communication, cognitive biases and Human Factors

Executive summary

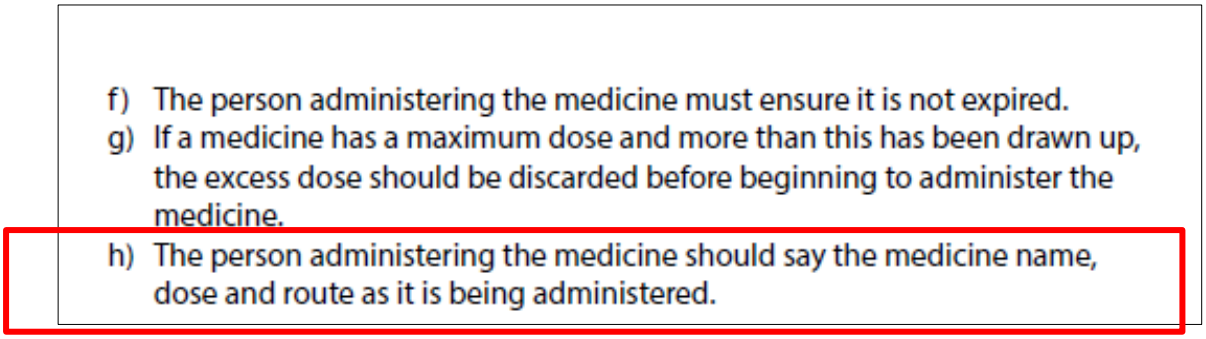
A clear and serious breach of standard occurred which resulted in a drug delivery error. This was followed by two documentation anomalies, both of which would be considered breaches of standard; a serious breach if this was a deliberate attempt to mislead, or a minor to moderate breach if it was a result of stress-related distraction.

No breach of standard occurred with regards to the navigation error. However, it was sub-optimal practice, particularly for an officer operating in a new area. It could have been avoided by using the satellite navigation system for guidance.

Accidental administration of 7 mg of morphine

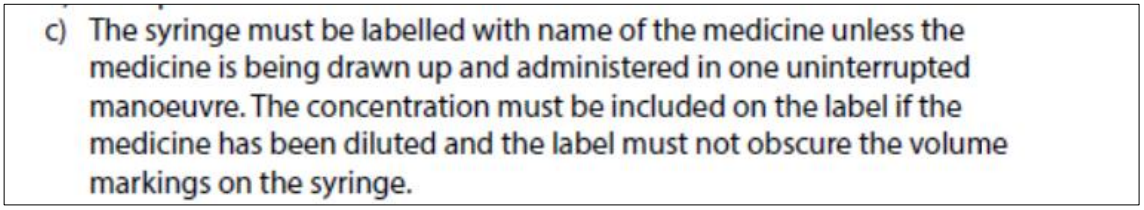
This is an obvious breach of the standard ambulance drug drawing process. Thankfully, the *consequence* of this error was minor, and the error itself easy to make (see commentary below), but within the context of drug administration, my colleagues would nonetheless consider this a serious breach of standard.

The commentary in the [clinical guidelines] clearly outlines the process to be followed when administering a medication (see figure 1). It seems unlikely that this process was followed when the drug error occurred. The preceding page (see figure 2) shows that a medicine should be labelled, unless the entire dose is being administered immediately by the same person who drew it up. Hence, the morphine syringe should have received a label, as the intention was almost certainly to deliver the dose in several boluses, not to deliver the entire dose at once.



f) The person administering the medicine must ensure it is not expired.
g) If a medicine has a maximum dose and more than this has been drawn up, the excess dose should be discarded before beginning to administer the medicine.
h) The person administering the medicine should say the medicine name, dose and route as it is being administered.

Figure 1: [Clinical guidelines]



c) The syringe must be labelled with name of the medicine unless the medicine is being drawn up and administered in one uninterrupted manoeuvre. The concentration must be included on the label if the medicine has been diluted and the label must not obscure the volume markings on the syringe.

Figure 2: [Clinical guidelines]

Therefore, if the advice from these two sections had been followed, the paramedic ([Ms C]), having picked up the incorrect syringe (the morphine, thinking it was the saline flush), would have then read aloud the medicine name, dose and route prior to administration. She would have ideally called this out to her crew partner ([Ms D]), but if this was not feasible, would at least have spoken it out loud to herself. At this point she would have verbalised 'morphine, 10 mg' and realised her error.

Medication documentation

Two documentation anomalies occurred: the 10 mg of intravenous (IV) morphine was recorded as two doses of 5 mg, one of 3 mg followed by one of 7 mg; and the failure to document the second dose of ondansetron, which was delivered by the IV route. Without being able to talk to [Ms C], I am left to speculate on how and why these anomalies happened. I can think of two likely scenarios: either she made a typo or had a mental blank, meaning that the wrong dose was recorded; or that she deliberately mis-recorded the details to give the impression that no administration error had been made. A combination of these may have occurred, with the first (the morphine) being a deliberate mis-recording, and the second (the ondansetron) an error of forgetfulness caused by the stress of the situation.

Table 1 presents the various alternatives, including the seriousness of the breach of standard:

	Morphine	Ondansetron
Deliberate mis-recording	Serious breach: deliberate attempt to mislead. Inaccurate documentation of a restricted medication with potentially serious interactions with other drugs. Consequences potentially serious.	Moderate breach: deliberate attempt to mislead. Inaccurate documentation of a less powerful medication, which has fewer serious interactions with other drugs. Less serious consequences.
Accidental omission	Moderate/minor breach: error of stress-related distraction.	Moderate/minor breach: error of stress-related distraction.

Deliberate mis-recording would be considered a serious breach of standard, largely because it violates the professional industry expectation of honesty and accuracy. An accidental omission, while still serious, is an unintended error and not an attempt to mislead. It would therefore be considered a less serious breach of standard.

Whichever way it occurred, my impression is that [Ms C] is genuinely remorseful for the morphine error and for the documentation anomalies. Based on her willingness to engage with both [the ambulance service] and [Ms A's] family to apologise and put the situation to rights, I suspect that if any subterfuge did occur on the day, it is now deeply regretted, and may have been voluntarily reported during the internal investigation.

I agree with [the] view that the accidental administration of the 7 mg of morphine is unlikely to have resulted in any harm to [Ms A]. It is certainly extremely unlikely that it contributed to her death.

The nature of this type of drug error

Medication errors, such as the accidental flushing of the intravenous (IV) line with morphine instead of saline, are very easy to make. This type of error is what leading human error expert James Reason refers to as an 'absent-minded slip or lapse' (Reason, 2013). Many people would make several of these sorts of errors every day, but with little or no consequence. For example, while making tea, forgetting to put the leaves in the pot before pouring in the boiling water. An absent-minded slip is therefore a very understandable type of human error; it does not typically reflect a poor attitude, intention or application on the part of the clinician.

However, because medication errors have such great potential to cause harm, clear processes have evolved around medication preparation and administration. It is this potential for harm, coupled with the frequency and ease with which errors have

occurred in the past, which means that a breach of process would be considered serious, particularly for a powerful drug such as morphine.

It is helpful to understand that, unlike many other types of error, absent-minded slips/lapses do not become less likely with experience, but rather the opposite. The more times an action is performed, the more it becomes second nature (like driving a car) and therefore the more likely it is that the person performing the action will be on 'auto-pilot', without really paying attention to what they are doing. Many of the safety processes around medication preparation are designed to catch this sort of error by forcing the clinician to be present and attentive. For example, reading aloud the medicine name, dose and route prior to administration. Even this strategy does not completely eliminate medication errors, and so a double-check with a second person is now best practice.

Education on the nature of error is relatively new to healthcare and it is unlikely that [Ms C] would have received any teaching on this topic. Understanding their nature is a key step toward the avoidance of similar errors in the future. I therefore hope that this section of the report will provide [Ms C] with helpful learning.

Navigational error

I am not aware of any industry standard which stipulates that the driver must check the directions for their destination prior to commencing the journey to hospital. Most paramedics know their local areas well enough that this would be unnecessary, certainly for the majority of journeys. But for a paramedic driving in an unfamiliar area, it would be prudent to enter the details of the destination into the vehicle's satellite navigation system to gain the benefit of computer-aided navigation.

I do not believe that this error would be seen as a breach of standard. While unfortunate, it is an easy mistake to make, particularly when under pressure. I agree with [the view] that the delay is unlikely to have had any significant detrimental effects on [Ms A], who was already receiving treatment for her pain and breathing at the time. In other words, the navigational error does not appear to have delayed the receipt of critical treatment.

General observations

I agree with the observation from the [ambulance service] investigation that the crew combination of a relatively inexperienced … assistant … and a relatively inexperienced Paramedic contributed to the drug error. Situations of increased cognitive load are more likely to result in an error of this nature as the clinician becomes overwhelmed with the number of novel factors they are attempting to deal with. Additionally, an initial error can cause people to become flustered to the point where further errors and/or poor decision-making become more likely.

My impression is that [Ms C's] clinical intentions were good. The clinical paramedic advisor (CPA) was consulted and a complex out-of-scope plan developed. This suggests

[Ms C] was considering every possible avenue of management to do her best for [Ms A]. Had it not been for the medication error, I imagine a review of the case would have resulted in a compliment for her efforts to make [Ms A] as comfortable as possible.

Recommendations

That [Ms C] revises the sections in the [ambulance service's guidelines] relating to drug administration and develops strategies for applying this in stressful situations.

That [Ms C] learns about the nature of common errors relating to paramedicine. James Reason's categories of 'trips/fumbles', 'absent-minded slips/lapses' and 'mistakes' would be an excellent starting point (Reason, 2013). Because absent-minded slip/lapses are errors of the experienced, she will continue to be vulnerable to them in future. Awareness of this promotes vigilance, as does embracing drug safety procedures, which are designed to force a moment of mindfulness when preparing and administering medicines.

That [Ms C] employs similar mindful strategies when documenting drugs to avoid forgetful errors of omission.

Reference list

Reason, J. (2013). *A life in error: From little slips to big disasters*. Ashgate (Kindle version). "