Ambulance Service
Paramedic, Mr B

A Report by the
Deputy Health and Disability Commissioner

(Case 19HDC02285)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Contents

Executive summary

1. This report concerns the care provided to a man by a paramedic and an emergency medical technician (EMT), and highlights the importance of effective communication and teamwork, and of addressing cognitive bias.

2. On 25 October 2019, the man had been working underneath a van for a few hours when his left leg became painful and numb. He rang for an ambulance, and after a clinical telephone assessment, the paramedic attended the scene along with the EMT.

3. The paramedic and the EMT assessed the man's leg, but did not remove his sock during the assessment. The paramedic and the EMT considered that the man's pain was musculoskeletal, and decided not to transfer him to hospital.

4. The following day, the man awoke with severe pain and a blue foot. He was admitted to hospital with an ischaemic left lower limb and required two amputations.

Findings

5. The Deputy Commissioner considered that the paramedic's assessment of the man was incomplete and resulted in the decision not to transfer him to hospital. In addition, the paramedic's documentation fell below accepted standards and did not adhere to the ambulance service's guidelines. Accordingly, the Deputy Commissioner found the paramedic in breach of Right 4(1) of the Code.

6. The Deputy Commissioner accepted that the EMT was not the most senior clinician responsible for the care provided to the man. However, the Deputy Commissioner, accepting his expert's advice, was critical of the lack of reflection and responsibility shown by the EMT in response to these events, and reminded him of the importance of reflection as a tool to improve one's practice.

7. The Deputy Commissioner considered that the learnings from this case — the need for effective communication, collaborative working, and collective ownership of the challenges — are evident, and he reminded the ambulance service of the importance of having strategies in place to promote these aspects in its organisation.

Recommendations

8. The Deputy Commissioner acknowledged that the paramedic has since retired as a paramedic, and that he has provided the man with a written apology for these events. Considering this, the Deputy Commissioner recommended that should the paramedic return to practice, he arrange for further training on clinical procedures and guidelines, challenging assumptions, and managing inter-professional relationships.

9. The Deputy Commissioner recommended that the ambulance service report to HDC on the outcome of the EMT's competency review and subsequent training, and provide HDC with evidence of training to its staff on conflict and communication breakdowns, once completed.

10. The Deputy Commissioner recommended that the EMT undertake further training on team work and communication, specifically in the clinical or health setting, and provide the man with a written apology for the aspects of the care he provided that fell below accepted standards.

Complaint and investigation

11. The Health and Disability Commissioner (HDC) received a complaint from Mrs C about the services provided to her father, Mr A, by the ambulance service. The following issues were identified for investigation:

- *Whether the ambulance service provided Mr A with an appropriate standard of care in October 2019.*
- *Whether Mr B provided Mr A with an appropriate standard of care in October 2019.*

12. This report is the opinion of Deputy Commissioner Kevin Allan, and is made in accordance with the power delegated to him by the Commissioner.

13. The parties directly involved in the investigation were:

Mr B	Provider/paramedic
Mrs C	Complainant
Provider/ambulance service	

14. Further information was received from:

Mr D	Consumer's son-in-law
Mr E	Consumer's grandson
Mr F	Provider/emergency medical technician
Two district health boards	

15. Independent expert advice was obtained from paramedic Mr Don Banks (Appendix A).

Information gathered during investigation

Background

16. Mr A, aged in his late eighties years at the time of events, had a medical history that included gout and aortic stenosis.[1] He was described by his family as being an active and independent person who lived on his own and ran 10 kilometres every week.

17. This report concerns the care provided to Mr A when he telephoned emergency services on 25 October 2019 requesting an ambulance.

25 October 2019

18. On the afternoon of 25 October 2019, Mr A had been working underneath a van for a few hours when his left leg became painful and numb. He rang his daughter, Mrs C, who advised him to call an ambulance. Mrs C told HDC: "As I knew he wouldn't be calling unless something really serious was up, I told him to call an ambulance immediately, and I would call my husband to go up to his house."

First 111 call

19. Mr A telephoned 111 at approximately 2.42pm, stating that he thought he had lost the circulation in his left leg. He told the ambulance service call handler:

> "I've been lying on my side, underneath a car, for over two hours. And when I got up, I could hardly walk, and my leg is cold, and I have no feeling in my toe. It's very painful. My leg itself is painful."

20. The call handler obtained information from Mr A about his age, his breathing ("normal"), and whether he had had any vomiting or bleeding ("no"), and told Mr A:

> "[F]rom what you've just told me, suggests you're not in immediate danger. So, I'm arranging a nurse or paramedic to phone you back to do a further assessment … At the moment, it'll take around 10 to 30 minutes to call you back … An ambulance is not being sent at this time. Please keep the line free and call us back on 111 if anything changes. Okay?"

21. In the absence of life-threatening symptoms, Mr A's call was prioritised in the ambulance service's medical priority dispatch system as "GREY" (non-urgent). Accordingly, a clinical telephone assessment was arranged.

22. The ambulance service stated that with medical emergencies, there are four basic priority symptoms that underpin the prioritisation of ambulances (chest pain, difficulty breathing, level of consciousness, and serious haemorrhage). Where these symptoms are not present to support the immediate dispatch of an ambulance, but there is an urgent need for an incident to be reviewed, a clinical telephone assessment is instead utilised to support secondary triage.

[1] Narrowing of the aortic valve in the heart.

23. The ambulance service stated that in a clinical telephone assessment, a registered nurse trained in telehealth will undertake further assessments to determine the most appropriate clinical care pathways for patients, and that this may include a face-to-face assessment by ambulance personnel.

Second 111 call

24. At approximately 3pm, Mr A's son-in-law, Mr D, and grandson, Mr E, arrived at the house. Mr D stated that Mr A was in great pain when he and Mr E arrived, and that Mr A told them that he had rung 111 and was waiting for a nurse to call back within 30 minutes. Mr D told HDC that he was not happy to wait for a nurse to call back, as he believed Mr A needed to be taken to the hospital immediately, so he telephoned 111 again requesting an ambulance.

25. During this call, Mr D told the call handler that Mr A's leg had been sore for three hours and had no circulation, and that Mr A could not "wait for another phone call". The call handler asked if there had been a change in Mr A's condition since he had spoken to Mr A, and Mr D confirmed that there had not. The call handler told Mr D:

> "All right. Now … I just need to confirm with you that help has been arranged. We do have that underway at the moment … If his condition worsens in any way, please call us back immediately on one, one, one … thank you very much for your patience … we are experiencing very high demand at the moment."

26. Mr D and the call handler said goodbye, and the call ended.

27. In response to the provisional opinion, Mrs C stated that Mr D was under the impression that when the call handler had said that help had been arranged, this meant that they were dispatching an ambulance, not that they still had to wait for a nurse to call back.

Clinical telephone assessment

28. At 3.11pm, an emergency nurse rang Mr A for a clinical telephone assessment. The nurse asked Mr A for more information about his leg, and ascertained that it was cold, white, and painful, and that he could not feel his toes.

29. The nurse told Mr A that she was going to increase his priority for the ambulance in light of his symptoms. An ambulance was dispatched at 3.16pm and arrived on scene at 3.27pm.

Ambulance review

30. The attending personnel consisted of Mr B, a paramedic and lead clinician who had been with the ambulance service for many years, and Mr F, an emergency medical technician[2] (EMT) who had been with the ambulance service since 2005. Mr B had the higher level of authority to practise, and was mainly responsible for the decision-making in Mr A's case.

[2] The base ambulance officer qualification.

31. On arrival, Mr B noted that Mr A was sitting in a chair, complaining of left leg pain in his calf and numbness in his toes. The incident history was obtained and documented on the ambulance care summary as:

> "Lying under a van on cold concrete for 2 [hours]. On getting up found he had pain in left leg and could not feel his toes. Has had his feet elevated most of the time since but has been able to walk around."

Assessment

32. Mr B told HDC that after obtaining the history of events, he then checked both legs and observed the following:

- They were both warm;
- They were both the same colour;
- Pain did not increase on palpation;
- Neither had any swelling or marks on them; and
- Mr A did not have any back or sciatic pain.

33. Mr B could not recall whether he took off Mr A's socks and felt for a pedal pulse; however, he believes that he felt Mr A's feet and noted that they were warm (discussed further below).

34. Mr F stated that when he viewed Mr A's legs, he noted that visually the colour was good and that both legs looked similar. He also noted that both legs were warm to the touch and both feet had good pedal pulses, and stated that he advised Mr B of this.

35. Mr B then asked Mr A to stand and walk around, and noted that he did this well and fast; however, he was favouring his sore leg and rubbing it.

36. Mr A's vital signs were then taken and documented as follows: Glasgow coma score=15,[3] heart rate 60 beats per minute, respiratory rate 16, oxygen saturation 98%, pain score of 3,[4] skin "normal", a capillary refill of 2 seconds,[5] and a blood pressure reading of 210/100mmHg.[6] There are differences in Mr F's and Mr B's recollection as to who took and documented Mr A's vital signs.[7]

37. Mr B noted that Mr A's blood pressure was raised. Mrs C told HDC that this reading was much higher than normal, and that Mr A stated this at the time. However, Mrs C said that neither of the officers were concerned about this. Mr B stated that approximately two years

[3] The Glasgow coma score is the summation of scores for eye, verbal, and motor responses. A score of 15 indicates a fully awake patient.
[4] On a pain scale of 0–10, 0 means "no pain" and 10 means "the worst possible pain".
[5] A test to measure the time taken for colour to return to an external capillary bed after pressure is applied, typically by pressing the end of a finger with the thumb and forefinger. Normal capillary refill time is usually 2 seconds or less.
[6] A blood pressure reading of 210/100mHg indicates Stage 3 hypertension (high blood pressure), and usually needs immediate attention.
[7] Mr F stated that *he* took and documented Mr A's vital signs, but Mr B stated that *he* did this.

prior to these events, ambulance service staff had been told that hypertension was not a criterion for automatic transport to hospital, and that they should instead be encouraging patients like this to see their general practitioner within 24 to 48 hours.

38. It was noted that Mr A was still experiencing pain, and he was administered paracetamol and ibuprofen at approximately 3.45pm. There are differences in Mr F's and Mr B's recollection as to who administered the medication.[8]

39. The assessment was documented in the ambulance care summary as:

> "Conscious and alert
> Skin warm and dry
> On arrival patient walking about, [complaining of] pain in right calf muscle.
> Limbs warm and normal colour.
> No [shortness of breath], nausea or any other pain."

Removal of socks and pedal pulse

40. Conflicting accounts were provided to HDC regarding the removal of Mr A's sock during the paramedic's assessment.

41. Mr F told HDC that he remembers Mr B performing a good assessment and removing Mr A's footwear and socks so that a comparison could be carried out on both feet and lower legs. Mr F stated that Mr A had a pedal pulse on both feet.

42. In contrast, Mr D, Mr A, and Mrs C told HDC that ambulance service staff did not take off Mr A's socks during the assessment. Mr D stated: "They touched his foot through his sock. They did not as they said take his pulse in his foot as that would have been impossible as they didn't remove his sock at any stage."

43. Mr E told HDC: "They took his shoe off and felt the bottom of his foot. At no time did the[y] take his sock off, make a visual assessment, or feel for a pulse in his foot."

44. As noted above, Mr B stated that he cannot recall whether he took off Mr A's socks and felt for a pedal pulse.

45. The ambulance care summary contains no documentation of a sock having been removed or a pedal pulse having been taken.

Consultation and decision

46. Once the assessment of Mr A's leg had been completed, Mr B and Mr F discussed the findings and potential courses of action.

47. In a statement to the ambulance service, Mr F said:

> "[Mr B] stated that he thought the [patient] was able to stay at home as there were no obvious or visual issues with the [patient], so no need to go into hospital at this stage.

[8] Mr F stated that Mr B administered the medication, whilst Mr B stated that Mr F performed this action.

> [Mr B] asked for my opinion and I confirmed there were no obvious differences in either leg apart from mild discomfort in one. [Mr B] totally agreed. So, at this point, it was advised that [the local medical centre] was an option if family wanted a second opinion."

48. In contrast, Mr B stated:

> "I then consulted with [Mr F] about his thoughts on what we were seeing and the history. He was of the VERY STRONG[9] opinion that the patient needed to be kept mobile, did not need to go to hospital and at that stage did not need to go to [the local medical centre]. We talked about the possibility of a DVT [deep vein thrombosis[10]] but again [Mr F] convinced me that the issue was: cold concrete — [aged late eighties] — lying for 2 [hours] — numbness that he needed to get his circulation back again — and the pain was getting better now he was moving — that he had seen this before!"

49. Mr B said that Mr F was very convincing about what they were treating, and this may have persuaded him to deviate from his normal course of action. Mr B stated:

> "I do know as the Officer with the highest ATP [authority to practise], I have the final say and have to take full responsibility if things have gone wrong on a job. Again, I think I let a very experienced EMT get in my head."

50. In response to the provisional opinion, Mr F strongly refuted Mr B's version of events. Mr F stated: "[A]t no time did I try to pressure [Mr B] to leave the patient at home."

51. Mr B and Mr F told Mr A and his family that it would be best if he stayed at home, and to present to the local medical centre if any concerns arose, such as if the pain did not reduce, or if Mr A became short of breath. Mr F stated that the family seemed happy at this time.

52. Mrs C told HDC that as Mr A was in so much pain, she did not think the diagnosis of poor circulation was likely. She stated:

> "I told them that he has varicose veins and that it could be a clot that is causing the pain and numbness, and the high blood pressure. I also told them if it was a circulation issue he would be getting pins and needles as it had been some time. They chose to ignore this."

53. Mr F stated that he does recall Mrs C saying this, but he cannot recall the reply given.

54. Mr F said that after the assessment, Mr A noted that the pain had gone from his leg. Mr F stated that he then witnessed Mr A walk pain free with "haste and independence", and this "further reduced his thoughts of a DVT".

55. In response to the provisional opinion, Mrs C stated that this is incorrect.

[9] Emphasis in original.
[10] When a blood clot forms in a vein.

56. Mr B completed the documentation, and noted in the ambulance care summary that the final patient status was "no threat to life, now mobilising well and pain reducing". The primary clinical impression was documented as "musculoskeletal pain".

Safety-netting advice

57. Mr F completed the "advice to patient" form for Mr A as follows:

> "Clinical presentation: Muscular pain [left] leg.
>
> Advice/instructions/plan:
>
> - Keep mobile;
> - Monitor pain levels, next pain relief due 8pm;
> - If any concerns see [the local medical centre] or if [patient] complains of shortness of breath call 111."

58. The ambulance service told HDC that this safety-netting advice was poor and inappropriate "considering the attending personnel did not complete a full and appropriate assessment of Mr A's leg".

59. Mr B stated that he again raised the possibility of a DVT as he and Mr F left Mr A's house, but Mr F had "no doubt" about the clinical impression and that all Mr A needed was to mobilise to free up his leg.

60. The ambulance departed the scene, without Mr A, at 4.12pm.

Subsequent events

61. Mr A awoke early the following morning with severe pain and a blue foot, and immediately was taken by family to the nearest medical centre. At the medical centre, Mr A's leg was assessed and he was advised to go straight to hospital.

62. On admission to the Emergency Department, Mr A's left leg had no clinically detectable distal pulse, and his foot was pale white with slow capillary refill. He was transferred to the vascular unit at another district health board that day with a diagnosis of an acute ischaemic[11] left lower limb due to an occlusion[12] of the superficial femoral artery.[13]

63. Mr A underwent a left below-knee amputation on 27 October 2019, and subsequently had to undergo a further amputation above the knee owing to the extent of the non-viable tissue.

[11] A restriction in blood supply to tissues.
[12] A lack of blood flow caused by a blockage.
[13] An artery that runs the length of the thigh.

Further information

The family

64. Mrs C told HDC that her father was almost 90 years old, but prior to these events he was not like any other man his age. She stated:

> "He lived alone while maintaining his own home. He worked on his van each day which he built. He would walk down the hill and back up every other day to get groceries etc. He would regularly walk … some distance once a week. He still did 50 sit ups and press ups each morning … He is now a man in need of constant care …"

65. Mrs C felt that it "was obvious" that both paramedics had preconceived ideas about Mr A and his condition prior to arrival, based on his age, and that they couldn't be convinced otherwise. She said that she made this complaint to HDC as her father did not want what happened to him to happen to anyone else.

Ambulance service internal investigation and family meeting

66. On receipt of a complaint from Mr A's family, the ambulance service commenced an internal investigation into the events. The primary finding of the internal investigation highlighted the inappropriate decision not to transport Mr A to hospital for further assessment. On 14 September 2020, the ambulance service facilitated an "open disclosure" meeting with the family, to apologise for the failings in service provision identified in its internal investigation.

67. The ambulance service told HDC that the family acknowledged the findings and accepted an apology on behalf of the attending personnel for the errors that occurred.

Personnel communication

68. The ambulance service told HDC that sub-optimal communication occurred between the personnel, contributing to a failure of the senior clinician — Mr B — to take charge of the situation and oversee the assessment of Mr A.

69. The ambulance service also acknowledged that the clinical decision-making in this incident was adversely affected because of "challenges in the inter-professional relationship" between Mr B and Mr F. The ambulance service believes that Mr B's long-standing and well-regarded high standard of clinical oversight were negatively impacted by the communication between the ambulance crew. The ambulance service stated:

> "As such, crew resource management and the negative effects of poor communication and impaired inter-professional relationships are now actively reviewed with all healthcare complaints and adverse events to enable an organisational approach to address these barrier[s] to safe clinical decision-making."

Clinical procedures and guidelines (CPGs)

70. At the time of these events, the ambulance service had a CPG for documentation, which stated:

"**General principles**

- Documentation must be accurate and complete.
- Comprehensive documentation is particularly important when a patient is not transported to a medical facility.
- A third party should be able to read the documentation and understand what happened and why.

When a patient is not transported to a medical facility

When a single patient is assessed following dispatch of an ambulance and not transported to a medical facility, the documentation must include all the following:

- The patient and incident details, the assessment, all treatment administered, all interventions performed and at least one set of vital signs.
- A clear description of the recommendation made to the patient and/or family … including why the recommendation was made."

71. The ambulance service told HDC that there are no sections within the CPGs that are specific to limb ischaemia. However, the standard for assessment of extremities is detailed in "The primary and secondary survey" section of the CPGs, which states:

"**Extremities**:

A) Look and feel for wounds and fractures.

B) Look and feel for abnormality such as signs of infection or oedema.

C) Look at colour and feel warmth.

D) Re-examine peripheral capillary refill time."

72. The ambulance service told HDC that it provides regular training for all frontline personnel, including training on the CPGs, and provided evidence of Mr B's and Mr F's training record. Their training records show that they had both attended recent training on the CPGs, in September 2019.

Mr B

73. Mr B said that he feels sickened that this has happened to Mr A, with the resulting loss of his leg. Mr B stated: "I always take my job and what is happening to my patients very seriously and this has hit me very hard."

74. Mr B provided Mr A with a written apology for the "failings in the clinical assessment that resulted in [Mr A] not being transported to hospital", and told HDC that he resigned from his employment with the ambulance service in 2020, and has not worked in the heath sector in any capacity since then.

Mr F

75. The ambulance service told HDC that it is "disappointed" by the level of Mr F's engagement with this complaint review. It stated:

> "Regrettably, in my view [Mr F's] engagement with this complaint and the investigation has lacked reflection and active participation. [Mr F] maintains the viewpoint that full responsibility for the decision-making associated with this incident lies with the co-attending paramedic and he accepts no liability."

76. The ambulance service stated that Mr F is still an employee, and has been required to undergo a formal competency review and currently is working through a performance improvement plan to maintain his current practice level.

77. In response to the provisional opinion, Mr F stated that he thought he could trust a senior paramedic with many more years of service than himself to be able to complete a very detailed report and complete the required non-transport checklist prior to submitting the electronic document. He stated:

> "In hindsight [I] should have asked to see the tablet and check what clinical findings and vital signs he had entered, also making sure he correctly updated the checklists we are required to complete before leaving a patient at home."

78. Mr F told HDC that he has now begun to ask for his crew partner's paperwork for every job, and that they encourage each other to make relevant changes and discuss these before entering them into the system.

Responses to provisional opinion

79. Mrs C was provided with an opportunity to comment on the "Information gathered" section of the provisional opinion, and her comments have been added to this report where relevant.

80. The ambulance service was provided with an opportunity to comment on the provisional opinion, and largely accepted the proposed recommendations.

81. Mr F was provided with an opportunity to comment on the relevant parts of the provisional opinion. He told HDC that he has had moments of despair and sorrow for what Mr A has been through, and that it has affected him deeply. He stated:

> "Each and every day we come to work, we attempt to do the utmost for the patients we attend and when an adverse event happens such as this, we question ourselves and feel great pain and grief."

82. Mr B was provided with an opportunity to comment on the relevant parts of the provisional opinion and accepted the findings. He reiterated how deeply remorseful he is about this incident, and again expressed his apologies and wished Mr A well with his ongoing recovery.

Opinion: Mr B — breach

Introduction

83. On 25 October 2019, Mr A had been working underneath his van for a few hours when his left leg became painful and numb. He rang for an ambulance and, after a clinical telephone assessment, paramedic Mr B attended the scene along with EMT Mr F.

84. Mr B and Mr F assessed Mr A's leg, and their primary clinical impression was of musculoskeletal pain. They made the decision not to transfer Mr A to hospital. The following day, Mr A awoke with severe pain and a blue foot, and was admitted to hospital with an ischaemic left lower limb, and required two amputations.

85. Whilst I acknowledge Mr F's contribution to these events (discussed further below), Mr B had the higher authority to practise, and was the lead clinician in this case, with many years' experience at the ambulance service at the time of events. Overall, he was primarily responsible for the care of Mr A.

Care provided to Mr A

Assessment and clinical impression

86. My independent paramedic advisor, Mr Don Banks, advised:

> "The standard for assessment is detailed in [the] Clinical Procedures and Guidelines ([the ambulance service]) (CPGs). To meet the expectations of this assessment the ambulance crew would have needed to have completed a visual inspection of the limb to exclude physical abnormalities such as wounds, fractures, swelling, oedema and colour in the limb. Additionally, pulses, skin temperature and capillary refill time (CRT) should be assessed. A common practice in the ambulance setting is to make bilateral comparisons to help differentiate between global and regional findings, that is to say, a difference in findings between the left and right foot would indicate a circulation issue specific to the limb as opposed to a more widespread problem."

87. When the ambulance arrived, Mr A's primary concerns were of left leg pain in his calf and numbness in his toes. Mr Banks advised that based on the initial information available, the probability of an ischaemic limb should have been recognised. He stated:

> "My colleagues would expect that [Mr A's] primary complaint would have resulted in a provisional diagnosis of an ischaemic limb and thus attention paid to these aspects of the assessment."

88. During the assessment of Mr A, vital signs were taken, and Mr B stated that he checked both legs and noted the following:

- They were both warm;
- They were both the same colour;
- Pain did not increase on palpation;
- Neither had any swelling or marks on them;

- Mr A did not have any back or sciatic pain.

89. I note that there are differences in recollections regarding the removal of Mr A's socks during the officer's assessment, and whether a pedal pulse was taken. Mr F stated that Mr B removed Mr A's socks to assess his pedal pulse; however, Mr B himself cannot recall whether or not this was done. Mr E and Mr D both told HDC that the ambulance crew touched Mr A's foot, but did not take off his socks at any stage during the assessment. The ambulance care summary contains no information about the removal of Mr A's socks or an assessment of his pedal pulses, and neither of the officers' statements nor the documentation mention that a pulse in Mr A's foot was taken during the assessment.

90. In light of the above evidence, I find it more likely than not that Mr A's sock was not removed. Given that the parties do recall the ambulance officers touching Mr A's foot, I leave open the possibility that an attempt was made to take a pedal pulse. However, the fact that this was done without removing Mr A's sock negates the effectiveness of the assessment, as noted by Mr Banks. In any case, in my opinion an attempt to take a pedal pulse should be documented.

91. Mr Banks advised:

> "Had the ambulance crew recognised the probability of limb ischaemia and not removed [Mr A's] footwear and fully assessed the distal circulation of the affected limb, it would be considered a severe breach of the standard in assessment. Had this association not been made, and instead a provisional diagnosis of musculoskeletal pain established, my colleagues would still expect the distal circulation to have been assessed but, deem it a moderate breach of this standard."

92. While apparently the possibility of limb ischaemia was considered by Mr B, on discussion with Mr F this was abandoned in favour of a provisional diagnosis of musculoskeletal pain. Regardless of the provisional diagnosis reached, the assessment undertaken did not meet accepted standards. The failure of Mr B to fully appreciate Mr A's symptoms as a possible ischaemic limb was then compounded by the deficient assessment performed.

93. Mr Banks noted that warning signs indicated that the impression of musculoskeletal pain needed to be reviewed, such as Mr A's family's expression of concern about his circulation, and the fact that the nurse who spoke with Mr A upgraded the ambulance response based on the finding that his leg was white and cold. Mr Banks stated:

> "[M]y colleagues would find it difficult to accept that the ongoing pain, alterations in sensation and pallor of the limb could continue to be explained by this diagnostic explanation. Without considering alternatives, through overconfidence in their initial decision (Berner & Graber, 2008) or confirmation bias (Pines, 2006), the gravity of [Mr A's] presentation was not recognised."

94. I accept this advice. I acknowledge the apparent inter-professional issues faced by the ambulance officers (discussed further below), but consider that these factors do not

mitigate Mr B's responsibility to take ownership of the situation, and perform an adequate assessment and think critically about the clinical impression.

95. Whilst overall the ambulance team considered the provisional diagnosis to be musculoskeletal pain as opposed to limb ischaemia, an adequate assessment was needed to assist them in their decision-making. Mr A's footwear needed to be removed to complete a sufficient visual inspection of his limbs, and his distal circulation needed to be assessed. In this case, Mr B failed to provide Mr A with an assessment that met accepted standards as well as the CPGs, and ultimately this resulted in the delayed diagnosis of Mr A's ischaemic limb.

Communication between officers

96. Mr B stated that initially he did consider the cause of Mr A's symptoms to be impaired circulation, and that he raised this with Mr F on two occasions, but Mr F did not agree with this opinion. Mr B believes that in this case he let "a very experienced EMT get in [his] head" and that he may have been persuaded differently from his normal course of action.

97. The ambulance service also identified that sub-optimal communication occurred between Mr B and Mr F and contributed to Mr B failing to take charge of the situation and oversee the assessment of Mr A.

98. Mr Banks noted that whilst the statements from the ambulance service and the ambulance officers do not offer detailed insight into the nature of the inter-professional relationship between the two members of the crew, the relationship appears to have influenced the care of Mr A, and highlights the need for effective strategies to address this.

99. Providers have an obligation to co-operate with one another to ensure quality of services, and effective communication is essential to facilitate this co-operation. I acknowledge that the teamwork in this case was hindered by the inter-personal relationship between Mr F and Mr B, as noted by the ambulance service and my expert, and that this impacted on the care provided to Mr A. However, Mr B was the senior clinician responsible for Mr A's care. In my view, he should have taken charge of the situation in his role as the ambulance officer with the higher authority to practise.

Decision not to transfer Mr A to hospital

100. Once the assessment had been completed, Mr B and Mr F discussed the findings and potential courses of action. As noted above, Mr F and Mr B had differing opinions as to the findings and best course of action. Ultimately, the primary clinical impression was documented as "musculoskeletal pain", and the decision was made not to transfer Mr A to hospital.

101. Mr Banks stated:

> "My colleagues would interpret [the] CPGs ([of the ambulance service]) to mean that the presence of limb ischaemia meets the criteria for immediate referral to a medical facility. In order to make a recommendation to the contrary, the ambulance crew must 'reasonably exclude serious illness or injury' (p […]). In this situation, the failure in

> diagnosis, assessment or its interpretation has prevented the recognition of this exclusion."

102. I concur. Whilst the decision not to transfer Mr A to hospital was inappropriate in light of Mr A's clinical condition, I consider that the more leading issues in this case were the inadequate assessment and communication between the ambulance officers, causing the seriousness of Mr A's condition to be underestimated.

Documentation

103. On arrival at the scene, Mr B obtained a history of the incident, including Mr A's symptoms, and documented in the ambulance care summary:

> "Lying under a van on cold concrete for 2 [hours]. On getting up found he had pain in left leg and could not feel his toes. Has had his feet elevated most of the time since but has been able to walk around."

104. Mr A's vital signs were recorded, and the assessment performed by Mr B was documented as follows:

> "Conscious and alert
> Skin warm and dry
> On arrival patient walking about, [complaining of] pain in right calf muscle.
> Limbs warm and normal colour.
> No [shortness of breath], nausea or any other pain."

105. Mr B stated that his assessment also included checking that Mr A did not have any back or sciatic pain, that his legs did not have any swelling or marks on them, and that the pain did not increase on palpation. However, none of these assessments or findings were documented in the ambulance care summary.

106. Mr Banks advised that the history recorded was brief, and does not meet the accepted approach to record features of the pain, in particular the nature of the pain, alleviating factors, its timing, and the progress of its severity, as well as the presence of limb pallor and the loss of temperature. He stated that the assessment notes were also brief, and his colleagues would agree that the notes in the ambulance care summary do not meet the specific requirements for when a recommendation is made for non-transport.

107. I agree, and note that ambulance service documentation guidelines state that a third party should be able to read the documentation and understand what happened and why. More specifically, the guidelines state that comprehensive documentation is particularly important when a patient is not transported to a medical facility. I consider that in this case the documentation did not meet this standard.

108. In addition, the guidelines state that when a patient is not transported to a medical facility, a clear description of the recommendation made to the patient and/or family must be documented, including why the recommendation was made. Whilst the advice to Mr A was documented, the reasons for this advice, as per the guidelines, were not.

109. Mr Banks advised that overall, the documentation in this case has "resulted in an incomplete picture of the presenting complaint and clinical findings required for this assessment". He stated:

> "My colleagues would deem the failure to provide comprehensive information describing the presenting complaint and its historical features as a breach of the standard. Although some of the historical details are described, my colleagues would deem this a moderate breach of standard especially in the setting of the ambulance crew's recommendation against transport to an ED. Likewise, the lack of a systematic approach in recording the findings from the clinical assessment would be viewed as a moderate breach of this standard when seen in the light of the recommendation for non-transport."

110. I am guided by this advice and the ambulance service's guidelines on documentation, and consider that Mr B's documentation of Mr A's incident history and assessment were sub-standard, particularly in light of the decision not to transfer Mr A to hospital.

Conclusion

111. Overall, Mr B performed an incomplete assessment of Mr A, which resulted in the decision not to transfer him to hospital. Had Mr B's assessment been more thorough, and had he taken charge of the situation as the lead clinician, it is more likely that the severity of Mr A's condition would have been realised.

112. The lack of action taken by Mr B in this case denied Mr A the opportunity of an earlier intervention for his superficial femoral artery occlusion. In addition, Mr B's documentation fell below accepted standards and did not adhere to the ambulance service's guidelines. Accordingly, I find that Mr B breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[14]

Opinion: Mr F — adverse comment

113. Mr F was the EMT on the afternoon of 25 October 2019, and attended with Mr B as the paramedic in response to Mr A's 111 call. Whilst both officers in this case were very experienced, I note that Mr B was the senior clinician, with many years' experience at the ambulance service at the time of events, as opposed to Mr F's experience. Mr B also had the higher authority to practise. Mr Banks advised:

> "The ambulance crew was comprised of an Emergency Medical Technician (EMT) and a Paramedic. In this setting, my colleagues would view the Paramedic as the senior clinician and having the responsibility for the oversight of this process and the ensuing decision."

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

114. I accept that Mr F was not the most senior clinician responsible for the care provided to Mr A. However, I am concerned that as an experienced EMT, he did not raise or consider the possibility of an ischaemic leg. In addition, I am concerned about the role he played in the communication issues between himself and Mr B, as well as his lack of reflection on these events and engagement in this complaint.

Care provided to Mr A

115. On arrival at the scene, Mr A's primary concerns were of pain in his left leg and numbness in his toes. Mr Banks advised that based on the initial information available, the probability of an ischaemic limb should have been recognised. He stated:

> "My colleagues would expect that [Mr A's] primary complaint would have resulted in a provisional diagnosis of an ischaemic limb and thus attention paid to these aspects of the assessment."

116. However, Mr F and Mr B considered that the provisional diagnosis was that of musculoskeletal pain, and therefore decided not to transfer Mr A to hospital. Mr Banks noted that warning signs indicated that the impression of musculoskeletal pain needed to be reviewed, such as Mr A's family's expression of concern about his circulation, and the fact that the nurse who spoke with Mr A upgraded the ambulance response based on the finding that his leg was white and cold. Mr Banks stated:

> "[M]y colleagues would find it difficult to accept that the ongoing pain, alterations in sensation and pallor of the limb could continue to be explained by this diagnostic explanation. Without considering alternatives, through overconfidence in their initial decision (Berner & Graber, 2008) or confirmation bias (Pines, 2006), the gravity of [Mr A's] presentation was not recognised."

117. I accept this advice. It is clear that both Mr F and Mr B failed to recognise the gravity of Mr A's symptoms and favoured an impression of musculoskeletal pain. Whilst I have noted that Mr F was not the most senior clinician responsible for the care provided to Mr A, he was a clinician with 14 years of experience and, in my view, should have thought more critically about Mr A's symptoms and recognised their seriousness.

Communication issues

118. The ambulance service identified that sub-optimal communication occurred between Mr B and Mr F and contributed to Mr B's failure to take charge of the situation and oversee the assessment of Mr A. My expert advisor, Mr Banks, noted that whilst the statements from the ambulance service and the ambulance officers do not offer detailed insight into the nature of the inter-professional relationship between the two members of the crew, the relationship appears to have influenced the care of Mr A, and highlights the need for effective strategies to address this.

119. Providers have an obligation to co-operate with one another to ensure quality of services, and effective communication is essential to facilitate this co-operation. I acknowledge that the teamwork in this case was hindered by the inter-personal relationship between Mr F

and Mr B, as noted by the ambulance service and my expert, and I am critical that this affected the care provided to Mr A. I consider that the responsibility for adequate communication was shared between both officers.

Engagement and reflection

120. The ambulance service told HDC that it is "disappointed" by the level of Mr F's engagement with this complaint review. The ambulance service stated:

> "Regrettably, in my view [Mr F's] engagement with this complaint and the investigation has lacked reflection and active participation. [Mr F] maintains the viewpoint that full responsibility for the decision-making associated with this incident lies with the co-attending paramedic and he accepts no liability."

121. Mr Banks echoed the ambulance service's concern, and stated that his colleagues view reflection as an integral part of maintaining contemporary knowledge, skill, and behaviour that is appropriate to meet the complexities in providing health care. Mr Banks further advised:

> "Using reflection to reduce diagnostic error and improve clinical reasoning is based on a review of the broader facts of the case in addition to the reasoning the practitioner applied at the time (Nendaz & Perrier, 2012). This process allows an opportunity to understand the nature of the problem and to propose or incorporate methods by which future occurrences can be dealt with more effectively (Brookfield, 2001). A structured reflection would appear to be an appropriate course of action to examine the complexities of a diagnostic error that was perpetuated in the presence of alternative diagnosis and, the interpersonal or communication issue between the crew members."

122. I agree. I am critical of the lack of reflection and responsibility that Mr F has shown in response to these events, and I remind him of the importance of reflection as a tool to improve one's practice.

Opinion: Ambulance service — other comment

123. As a healthcare provider, the ambulance service is responsible for providing services in accordance with the Code. In addition, the ambulance service has a responsibility to support its staff with systems that guide and support good decision-making and promote a culture of safety.

124. As discussed above, in my view there were individual failures in the care provided to Mr A. However, at the time of events, both Mr B and Mr F were experienced in their respective specialities. The ambulance service also had comprehensive CPGs regarding assessment, transfer to hospital, and documentation, and provided HDC with evidence of the training provided to Mr B and Mr F.

125. Accordingly, I do not consider that the errors in assessment and documentation in this case were a result of any broader systems or organisational issues at the ambulance service. However, I consider that inter-personnel communication issues between Mr B and Mr F had a negative impact on the care provided to Mr A, and that this may be indicative of a cultural issue at the ambulance service.

126. Mr Banks advised:

> "[The ambulance service's] response and the officers' statements do not offer detailed insight into the nature of the interprofessional relationship between the two members of the crew. However, it appears to have influenced the care of [Mr A] and highlights the need for effective strategies to address this."

127. I concur, and note that the ambulance service acknowledged that the clinical decision-making in this incident was adversely affected because of challenges in the inter-professional relationship of the personnel who attended Mr A. I am unable to determine whether the issue was confined to Mr B and Mr F, or whether this is a wider organisational issue. Regardless, the learnings from this case — the need for effective communication, collaborative working, and collective ownership of the challenges — are evident, and I remind the ambulance service of the importance of having strategies in place to promote these aspects in its organisation.

Recommendations

128. I acknowledge that Mr B has since retired as a paramedic, and that he has provided Mr A with a written apology for these events. Considering this, I recommend that should Mr B return to practice, he arrange for further training on CPGs, challenging assumptions, and managing inter-professional relationships.

129. I recommend that the ambulance service report to HDC on the outcome of Mr F's competency review and subsequent training he has undergone as a result of this complaint. This is to be provided to HDC within four months of the date of this report.

130. In response to the provisional opinion, the ambulance service told HDC that it is aware that there is a culture problem within the organisation, and that it plans to provide training on conflict and communication breakdowns, as well as cognitive bias, within the next financial year. As such, I recommend that the ambulance service provide HDC with evidence that this training has been completed, within 12 months of the date of this report.

131. I recommend that Mr F:

a) Undertake further training on teamwork and communication, specifically in the clinical or health setting. Evidence of having attended this training is to be provided to HDC within eight months of the date of this report, along with a written personal reflection

on both the role he played in the care provided to Mr A, as well as his communication with Mr B.

b) Provide Mr A with a written apology for the aspects of the care he provided that fell below accepted standards. The apology letter is to be sent to HDC within three weeks of the date of this report, for forwarding.

Follow-up actions

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

Appendix A: Independent advice to the Commissioner

The following expert advice was obtained from paramedic Mr Don Banks:

"**Opinion on the care provided to [Mr A] by [the ambulance service] on 25 October 2019**.

I have been asked to provide an opinion to the Commissioner on case number C19HDC02285, and I have read and agree to follow the Commissioner's Guidelines for Independent Advisors. I am a practising Intensive Care Paramedic having qualified in the role in 1987. I have practised in metropolitan, rural and remote settings. I hold a Master of Health Science degree and teach on the BHSc — Paramedic programme at Whitireia New Zealand.

I have reviewed the letter of complaint, Ambulance Care Summary (ACS), transcripts from the Ambulance Communications Centre, [the ambulance service's] written responses, and the discharge summary from [the hospital].

The Commissioner's office has requested commentary on

1. The adequacy of care provided to [Mr A] including the adequacy of the assessments undertaken, the advice provided and the decision not to transfer [Mr A] to hospital
2. The adequacy of the documentation in the ambulance care summary
3. Any other matters in this case that warrant comment

[Mr A] requested help from the ambulance service after experiencing severe pain in his left leg. [Mr A's] opinion was that this was related to a loss of circulation (Audio Transcript, [ambulance service] notes). The call was referred for further triage resulting in the upgrade of the priority for ambulance dispatch. The audio transcript from this call reveals that pain, coldness and loss of sensation in [Mr A's] left leg were present. A synopsis of these symptoms was transmitted to the responding ambulance's mobile data terminal (MDT).

My colleagues would consider the presence of limb pain and an alteration in colour and sensation to be worrying symptoms. They would associate the neurological symptoms (sensation deficit) and the alteration in temperature and colour with an interruption of circulation. The worst-case scenario associated with this is an ischemic limb requiring immediate investigation and treatment.

My colleagues would interpret the presence of these symptoms in [Mr A's] presentation as requiring immediate investigation of the circulation of the limb and the strongest recommendation for transport to an emergency department.

ASSESSMENT

The standard for assessment is detailed in [the] Clinical Procedures and Guidelines ([of the ambulance service]) (CPGs). To meet the expectations of this assessment the ambulance crew would have needed to have completed a visual inspection of the limb to exclude physical abnormalities such as wounds, fractures, swelling, oedema and colour in the limb. Additionally, pulses, skin temperature and capillary refill time (CRT) should be assessed. A common practice in the ambulance setting is to make bilateral comparisons to help differentiate between global and regional findings, that is to say, a difference in findings between the left and right foot would indicate a circulation issue specific to the limb as opposed to a more widespread problem.

The commentary in this section underlines the importance of this examination in both trauma and medical settings. Much emphasis is placed on 'distal limb baseline' assessment in the trauma patient. Tertiary and in-service education provide adequate information to fulfil the requirements for this assessment. The absence of pulses, neurological deficit, severe pain, pallor and cooling are considered symptoms of a compromised limb. Assessment in a medical scenario is based on the same parameters and the presence of these signs is no less worrying.

My colleagues would expect that [Mr A's] primary complaint would have resulted in a provisional diagnosis of an ischaemic limb and thus attention paid to these aspects of the assessment.

The ambulance crew's recording of the examination outcomes is contained in the 'Clinical Impression Section' of the ACS. The ambulance crew have recorded a primary clinical Impression of 'musculoskeletal pain'. From this, it might be assumed that the crew have failed to recognise the severity of the symptoms or, failed to associate the nature of the primary complaint with a differential diagnosis of limb ischemia. Currently, there is no formalised process for differential diagnosis employed in the ambulance services in New Zealand. It is utilised in some 'priority' presentations but, relies on a heuristic approach such as 'all chest pain is cardiac till proved otherwise'. In this case, failure to consider alternative reasons for [Mr A's] presentation may have led to premature closure where a diagnosis is accepted before it is fully verified (Graber, Franklin, & Gordon, 2005).

With the benefit of hindsight, there were two other warning signals that the diagnosis needed to be reviewed. Firstly, [Mr A's] family expressed concern about his circulation and had indicated that 'it could be a clot that is causing the pain'. The other warning was that the Registered Nurse (RN) who spoke with [Mr A] upgraded the ambulance response based on the finding that his leg was white and cold.

The RN's subsequent message to the MDT appears to link [Mr A's] symptoms to '… 2 hours in awkward position ...' and may have led to an initial assumption that it could have been a musculoskeletal issue causing the pain. This may indicate a degree of diagnostic momentum where a diagnostic explanation, often associated with another clinician, is accepted without critical evaluation of the historical and physical findings

(Croskerry, 2002) and has contributed to the lack of alternative reasoning or assessment. This situation is often associated with the activation of further biases, such as the confirmation bias, where clinical findings are explained in terms of what the clinician believes to be true (Pines, 2006). At worst, the confirmation bias can lead to abnormal and/or concerning findings being explained away as not serious.

However, my colleagues would find it difficult to accept that the ongoing pain, alterations in sensation and pallor of the limb could continue to be explained by this diagnostic explanation. Without considering alternatives, through overconfidence in their initial decision (Berner & Graber, 2008) or confirmation bias (Pines, 2006), the gravity of [Mr A's] presentation was not recognised.

The 'Emergency Nurse Notes' transmitted to the MDT included the salient symptoms but did not include an explicit description of the concern associated with this. It seems the ambulance crew were required to link their existence to the presence of ischaemia. Referral and clinical communication tools utilised by Emergency Ambulance Services include the ISBAR tool ([the ambulance service]). Typically, this is used when crews contact the Clinical Desk but, its use (or amended use) could convey an identified concern to mitigate against circumstances when there is interprofessional communication or communication that relies on the recipient making sense of the information (Sutcliffe, Lewton, & Rosenthal, 2004). I am not qualified to offer an opinion on standards associated with telehealth provision but, my colleagues would agree that the transmission of the symptoms to the MDT and upgrade of the ambulance response as a result of the findings from Clinical Telephone Assessment was appropriate.

The ambulance crew have annotated calf pain and digital numbness on the body map of the ACS although, they mistakenly attributed these to the right leg. They note the limbs were 'warm and normal colour' but, offer no indication on the state of pulses, CRT, swelling or other symptoms of circulatory compromise.

There are discrepancies between [Mrs C's] account ('footwear not removed and pulses not assessed') and the findings recorded on the ACS. Failure to remove clothing before a visual examination negates the value of the assessment and the reliability of the findings are open to criticism. In addition to [Mrs C's] recollection, the discharge summary from [the] DHB notes that [Mr A's] left leg had no distal pulses when he arrived at [the hospital] the following day. When taking all these factors into account there is a strong possibility that the process of assessment or the interpretation of the findings was substandard.

Opinion

My colleagues would deem the failure to associate the primary complaint of leg pain and neurological deficit with a worrying compromise to the circulation in [Mr A's] leg a severe breach of practice.

Had the ambulance crew recognised the probability of limb ischaemia and not removed [Mr A's] footwear and fully assessed the distal circulation of the affected limb, it would

be considered a severe breach of the standard in assessment. Had this association not been made, and instead a provisional diagnosis of musculoskeletal pain established, my colleagues would still expect the distal circulation to have been assessed but, deem it a moderate breach of this standard.

Recommendations
That the ambulance crew review the requirements in assessment as described in [the] CPGs and receive further training or supervised practise in developing these skills.

That the ambulance crew review the historical and clinical features of an ischaemic limb presentation.

That the ambulance crew receive training about cognitive biases in clinical decision with a focus on strategies to improve safety when forming clinical impressions.

Emergency Ambulance services in New Zealand explore further formatting of clinical notes from Clinical Telephone Assessment to include a section communicating priority concerns that are identified during this process.

ADVICE & DECISION NOT TO TRANSFER [MR A] TO HOSPITAL
My colleagues would interpret [the] (Treatment and referral decisions) of the CPGs ([of the ambulance service]) to mean that the presence of limb ischaemia meets the criteria for immediate referral to a medical facility. In order to make a recommendation to the contrary, the ambulance crew must 'reasonably exclude serious illness or injury' (p 55). In this situation, the failure in diagnosis, assessment or its interpretation has prevented the recognition of this exclusion.

On deciding that transfer by ambulance was not indicated, the ambulance crew are required to complete a brief pause and complete a 'non-transport checklist' (p 55). My colleagues would interpret the brief pause as an opportunity to review the facts of the case, explore alternatives and seek indications that transport was the more appropriate choice. The commentary asks the crew members to agree that the decision is appropriate and where doubt exists to transfer the patient or seek clinical advice.

The ambulance crew was comprised of an Emergency Medical Technician (EMT) and a Paramedic. In this setting, my colleagues would view the Paramedic as the senior clinician and having the responsibility for the oversight of this process and the ensuing decision. The process is to complete a checklist that includes the following: To ensure the patient has been fully assessed (vital signs and appropriate investigations), that there is no significant deviation in the vital signs and, that serious illness or injury has been reasonably excluded.

The ACS indicates that [Mr A's] Glasgow Coma Score (GCS), heart rate, respiratory rate, blood pressure, and pain score were recorded. My colleagues would agree that recording blood glucose levels and cardiac rhythm was not appropriate in these circumstances, however, recording the patient's temperature would have been an appropriate action in excluding febrile illness. [Mr A's] blood pressure was elevated, and

[Mrs C's] letter indicates that the ambulance crew were made aware that this was a deviation from normal. [Mr A's] respiratory rate was also elevated, and his level of pain was recorded as 3/10. None of these findings would be considered alarming when considered singly but, if they had been considered in the light of the presenting complaint and the possibility of limb ischaemia, they should have been seen as further evidence that supported transport to an ED.

In the light of their overall clinical Impression, the ambulance crew were required to provide [Mr A] with advice that included written guidance on 'when to seek further assessment or treatment' ([the ambulance service]). The advice offered by the ambulance crew included ringing 111 if shortness of breath occurred. The reason for selecting this as a priority symptom is not clear. One assumption is that the ambulance crew had recognised the relationship between the symptoms and risk of deep vein thrombosis or other vascular pathology to the limb. If this was the case, it was inappropriate to offer any recommendation other than to transport [Mr A] to an ED.

Opinion
Had the ambulance crew interpreted the presenting complaint and results of the examination as evidence of limb ischaemia, it would be a severe breach of the standard not to have made a strong recommendation for ambulance transport to an Emergency Department.

When seen in the light of an incomplete examination or the misinterpretation of the findings, the breach of standards in the assessment is the more salient issue.

Recommendations
That the ambulance crew review the requirements in assessment as described in section 1:21 of the CPGs and receive further training or supervised practise in developing these skills.

That the ambulance crew receive training about cognitive biases with a focus on strategies to improve decision making and utilisation of risk mitigation strategies during the 'brief pause' recommended in clinical decision making and recommendation for transport.

DOCUMENTATION
The standards for documentation are outlined in Section […] of the CPGs ([of the ambulance service]). To fulfil the standards associated when a patient is not transported requires 'comprehensive documentation' (p […]). The ambulance crew have recorded a brief history including the presence of left leg pain and altered sensation in [Mr A's] toes. This is brief and does not meet the accepted approach to record features of the pain utilising the OPQRST approach. In particular, the nature of the pain, alleviating factors, its timing and the progress of its severity have not been recorded. Likewise, the presence of limb pallor and the loss of temperature was not recorded. They have recorded the absence of associated symptoms (shortness of breath, nausea and other pain).

The recording of the clinical impression includes brief statements regarding the patient's alertness, and general comment of the state of global perfusion and that his limbs appear normal. My colleagues would expect that a paramedic would utilise a systematic approach to record the findings of the physical examination. It is common for one of two systems to be utilised. The first is the 'ABC' of recording priority findings based on the airway, respiratory and circulatory status. The second is a body system approach to record relevant findings. The brief notes offered do not meet the expectations for comprehensive documentation nor the systematic approach that would offer information on [Mr A's] respiratory, circulatory and musculoskeletal status.

The standard asks that a third party reading the ACS could understand what happened and warns that failure to record details may be interpreted to mean that an assessment process did not occur. My colleagues would not agree that the notes in the ACS meet the specific requirements for when a recommendation is made for non-transport as it lacks the specific details noted above. Whether the ambulance crew did not address this during the examination or have failed to annotate their findings has resulted in an incomplete picture of the presenting complaint and clinical findings required for this assessment.

Opinion
My colleagues would deem the failure to provide comprehensive information describing the presenting complaint and its historical features as a breach of the standard. Although some of the historical details are described, my colleagues would deem this a moderate breach of standard especially in the setting of the ambulance crew's recommendation against transport to an ED. Likewise, the lack of a systematic approach in recording the findings from the clinical assessment would be viewed as a moderate breach of this standard when seen in the light of the recommendation for non-transport.

Recommendation
That the ambulance crew review the requirements in assessment as described in section 1:20 of the CPGs and receive further training in the systematic acquisition and recording of the findings in a clinical examination.

Failures in the assessment and formation of an appropriate clinical impression have contributed to [Mr A] receiving advice that fell below the expected standards. A more structured approach to assessment, the use of strategies such as differential diagnosis and structured cognitive forcing strategies during 'pause points' may reinforce safer decision making.

Yours sincerely

Don Banks

REFERENCES

Berner, E. S., & Graber, M. L. (2008). Overconfidence as a Cause of Diagnostic Error in Medicine. *American Journal of Medicine*, *121*(5 SUPPL.), S2–S23. https://doi.org/10.1016/j.amjmed.2008.01.001

Croskerry, P. (2002). Achieving Quality in Clinical Decision Making: Cognitive Strategies and Detection of Bias. *Academic Emergency Medicine*, *9*(11), 1184–1204. https://doi.org/10.1111/j.1553-2712.2002.tb01574.x

Graber, M. L., Franklin, N., & Gordon, R. (2005). Diagnostic error in internal medicine. *Archives of Internal Medicine*, *165*(13), 1493–1499. https://doi.org/10.1001/archinte.165.13.1493

Pines, J. M. (2006). Profiles in patient safety: Confirmation bias in emergency medicine. *Academic Emergency Medicine*, *13*(1), 90–94. https://doi.org/10.1197/j.aem.2005.07.028

[The ambulance service's Clinical Procedures and Guidelines] Retrieved from [the ambulance service website]

Sutcliffe, K. M., Lewton, E., & Rosenthal, M. M. (2004). Communication Failures: An Insidious Contributor to Medical Mishaps. *Academic Medicine*, Vol. 79, pp. 186–194. https://doi.org/10.1097/00001888-200402000-00019"

The following further advice was received from Mr Banks:

"Re: C19HDC02285

Thank you for the opportunity to review this information. I have read the responses to your office by [the ambulance service], the witness statements made by [Mr A's] family and the statements made by [Mr F] and [Mr B]. This information does not alter my initial opinion regarding the assessment and care offered to [Mr A] by [the ambulance service].

The statements made by [Mr A's] family contain sections verifying that [Mr B] and [Mr F] acted on their belief that [Mr A's] symptoms were related to a temporary alteration in circulation secondary to the time he had spent lying on the concrete floor under his vehicle. The crew may have compounded the diagnostic error by not removing [Mr A's] socks and not completing the assessment of his feet.

[Mr B's] reflection makes it clear that he considered the presence of deep vein thrombosis. My interpretation of his statement, that [Mr F's] previous experiences dissuaded him from this diagnosis, aligns with my initial view that the failure to recommend [Mr A's] transfer to an Emergency Department resulted from the misinterpretation of the historical features of the case. His acknowledgement and remorse are apparent and do him much credit.

[The ambulance service's] response and the officers' statements do not offer detailed insight into the nature of the interprofessional relationship between the two members of the crew. However, it appears to have influenced the care of [Mr A] and highlights the need for effective strategies to address this. Examples of such strategies include:

1. Reviewing the Clinical Practice Guidelines before a final course of action is agreed. Often, the CPG contains specific headings with 'red flag' sections or other information that may verify the appropriate action. However, in this case, no section specific to limb ischaemia exists, and the crew would need to have relied on more generalised knowledge.
2. The use of 'forcing strategies', such as Rule Out Worst Case Scenario (Croskerry, 2003) or 'not to be missed' diagnosis (Ely et al., 2011). These have the advantage of refocussing the conversation and decision making on the procedural requirements or the client's needs and away from specific biases or interpersonal issues.
3. To acknowledge the difference in opinion and seek further advice from a clinical paramedic advisor or medical officer.

[Mr F's] statement focusses on the role of [Mr B] and the information that supported the initial diagnosis. There is no mention of an alternative diagnosis or strategies that may have improved the situation for [Mr A]. [The ambulance service's] letter of 24 August indicates that he has not supplied further reflection. I understand [the ambulance service's] concern. My colleagues view reflection as an integral part of maintaining contemporary knowledge, skill and behaviour that is appropriate to meet the complexities in providing health care.

Using reflection to reduce diagnostic error and improve clinical reasoning is based on a review of the broader facts of the case in addition to the reasoning the practitioner applied at the time (Nendaz & Perrier, 2012). This process allows an opportunity to understand the nature of the problem and to propose or incorporate methods by which future occurrences can be dealt with more effectively (Brookfield, 2001). A structured reflection would appear to be an appropriate course of action to examine the complexities of a diagnostic error that was perpetuated in the presence of alternative diagnosis and, the interpersonal or communication issue between the crew members. Historically, ambulance training did not include a structured approach to reflection, and there may be an advantage if [Mr F] was offered assistance with this process.

Please, feel free to contact me if you require anything further to this.

Nāku noa, na

Don Banks

References

Brookfeild, S. D. (2001). *Developing Critical Thinkers: Challenging Adults to Explore Alternative Avenues of Thinking and Acting*. Open University Press.

Croskerry, P. (2003). Cognitive forcing strategies in clinical decisionmaking. *Annals of Emergency Medicine*, *41*(1), 110–120. https://doi.org/10.1067/MEM.2003.22

Ely, J. W., Graber, M. L., & Croskerry, P. (2011). Checklists to Reduce Diagnostic Errors. *Academic Medicine*, *86*(3), 307–313. https://doi.org/10.1097/ACM.0b013e31820824cd

Nendaz, M., & Perrier, A. (2012). Diagnostic errors and flaws in clinical reasoning: Mechanisms and prevention in practice. *Swiss Medical Weekly*, *142*(4344). https://doi.org/10.4414/smw.2012.13706"