

Inadequate escalation pathway for transfers from rural to base hospital

Executive summary

1. In August 2023, Mrs A (aged 67 at the time) presented to a rural hospital¹ with sepsis. Her condition warranted escalation of care to Dunedin Hospital (Health New Zealand | Te Whatu Ora Southern (Health NZ Southern)). The Health NZ Southern escalation pathway required the rural hospital clinicians to find an accepting specialty at Dunedin Hospital before transfer could occur. Three Dunedin Hospital specialties declined the early requests for transfer because the source of Mrs A's sepsis had not yet been confirmed. Mrs A remained at the rural hospital for a further 13 hours, during which time her condition continued to deteriorate. She was eventually transferred to Dunedin Hospital by helicopter, where she was diagnosed with necrotising fasciitis, a bacterial soft tissue infection that spreads rapidly and can cause death. Early diagnosis is critical to outcomes.
2. Under Right 4(4) of the Code of Health and Disability Services Consumers' Rights (the Code), Health NZ had a responsibility to ensure that services at Dunedin Hospital were provided in a manner that minimised the potential harm to patients. I have found that Health NZ Southern did not have an adequate escalation pathway in place for managing transfer requests from a rural hospital. This lack of pathway caused delays in definitive diagnosis and treatment, which increased the risk of harm to Mrs A and, accordingly, breached Right 4(4) of the Code.
3. I have found that the care from the rural hospital clinicians was provided with reasonable care and skill, as required under Right 4(1) of the Code. However, I have made adverse comment about Dr B's decision to delay a further request for escalation of care despite Mrs A's condition having deteriorated to a point where it was no longer appropriate to continue management at the rural hospital.
4. I note further that this investigation proceeded following a complaint by Mrs A's husband, Mr A. Mr A also advised the Health and Disability Commissioner (HDC) that, after a prolonged period of hospitalisation and difficult rehabilitation, Mrs A was eventually transferred to an aged residential care facility where, sadly, she died in April 2024. I extend my sincerest sympathies to Mr A and his family, for their loss of Mrs A.

Recommendations

5. Considering changes made, I recommend that Health NZ Southern:

¹ The rural hospital was operated by district health services at the time of these events. On 1 July 2024, Health New Zealand | Te Whatu Ora (Health NZ) ended its contract with the district health services. Health NZ Southern now manages the delivery of services at the rural hospital.

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- a) Provide a written apology to Mr A for the breach of the Code identified in this report. The apology is to be provided to HDC within three weeks of this report for forwarding to Mr A.
- b) Develop a new pathway/policy for escalation of care from a rural hospital to Dunedin Hospital, setting out criteria for escalation, responsibilities of the rural team, responsibilities of the team receiving the referral, transport options and pathways, and a pathway for when the team receiving a patient is not best placed to provide the care. The pathway should specify that, if a patient meets the criteria for escalation, the first Dunedin Hospital team contacted by the rural hospital should accept the patient and, if the patient requires another specialty to be involved or transfer to another specialty, this will be organised by Dunedin Hospital. A copy of the new pathway/policy is to be provided to HDC within six months of this report.
- c) Mandate that a registrar at a base hospital can accept a patient from a rural hospital but that there can be no refusal without SMO/senior clinician-to-SMO discussion. Confirmation and evidence of this is to be provided to HDC within three months of this report.

Background

- 6. At 4.30pm on 4 August 2023, Mrs A presented to the rural hospital Emergency Department (ED) with a burn wound on the top of her right hand, sustained three or four days prior, and symptoms of vomiting, cognitive changes/confusion, elevated breathing rate, elevated heart rate, low blood pressure, low oxygen saturation, and blood tests showing high inflammation markers. She had been brought in by ambulance on the advice of her general practitioner (GP). Intravenous (IV) fluids and antibiotics (Augmentin) had been administered in the ambulance at 3.52pm. On arrival at hospital, Mrs A's pain score was 0/10.
- 7. At around 4.45pm, Mrs A was seen by Dr C, who was the only doctor on shift. Dr C noted that Mrs A's right hand had an area of redness on the back and it was swollen, warm, and tender. Dr C also noted Mrs A's abnormal vital signs and deranged blood results and that she had type 2 diabetes, hypothyroidism (underactive thyroid), and atrial fibrillation (irregular/rapid heart rate). Mrs A's blood sugar and ketones were both high.²
- 8. Dr C's impression was that Mrs A had sepsis, likely due to hand cellulitis (a common bacterial infection of the skin and tissues beneath the skin) as well as hyperglycaemia (abnormally high blood glucose) secondary to infection. Dr C requested repeat blood tests, including cultures, a urine test, X-rays of Mrs A's chest and hand, and a COVID-19 test. Noting that Mrs A had received antibiotics in the ambulance, Dr C charted IV fluids and insulin.
- 9. Based on Mrs A's clinical presentation and comorbidities, Dr C was concerned that Mrs A was significantly unwell with a high potential to deteriorate and was likely to need a level of care beyond what the rural hospital could provide. Although test results were pending, Dr C

² Infection can reduce the effect of insulin. When the body does not have enough insulin, it starts to burn fat instead of sugar for energy, which releases ketones in the blood. A build-up of ketones causes blood to become acidic (a condition called ketoacidosis), which can be dangerous if left untreated.

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attempted to arrange transfer of Mrs A to Dunedin Hospital. Dr C's shift was ending at 5pm, and Dr C wanted to minimise handovers, cognisant that the road transfer service from the rural hospital to Dunedin finished at 7pm.

10. At the time, the process to arrange transfer required the rural hospital clinicians to find an accepting specialty at Dunedin Hospital. Health NZ said that, for ED transfers, patients can be referred to the Dunedin ED if no inpatient team has accepted the transfer but that patients could face significant wait times in the Dunedin ED. Health NZ said that, because of this, wherever possible it is encouraged to find an accepting inpatient team but that this should not be a barrier to transferring a deteriorating patient. Health NZ acknowledged that, at the time of Mrs A's presentation in 2023, the ED pathway was not clear.
11. Dr C asked three specialties (Orthopaedics, then Plastics, then General Medicine) to accept transfer of Mrs A but was declined each time. In each of these discussions, Dr C explained that there was concern for a septic patient who appeared very unwell and needed more care than the rural hospital could provide. Dr C described the clinical history, vital signs, and Mrs A's blood test derangement. When speaking to the Plastics team, Dr C sent photos of Mrs A's hand injury.
12. Dr C documented the outcome of the discussions with the Dunedin Hospital speciality services in the clinical records as follows:

‘Attempted to fast track to [Dunedin Hospital] as needs inpatient management

– [Orthopaedics] say to talk to Plastics

– Plastics have review[ed] photos and do not think infection significant enough to cause level of derangement in bloods/sepsis. Recommend review other causes[.] Cover with antimicrobial dressing, Add tetanus cover.

Medics have no beds, can provide IV [antibiotics] and fluid, [and] insulin sliding scale here so no benefit from transfer.’
13. The Orthopaedics team suggested that Plastics was the appropriate specialty because it did not appear that Mrs A's infection involved a bone or joint.
14. The Plastics SMO who declined to accept transfer of Mrs A said that he did not think the clinical history and photos accounted for her septic presentation and, in particular, necrotising fasciitis. Necrotising fasciitis was considered unlikely because there was no report of severe or disproportionate pain, which is a classic symptom of the disease. The Plastics SMO therefore recommended to wait for the chest X-ray and urine results to exclude other causes of infection and for the rural hospital to contact them again if tests for these were negative. The consideration of necrotising fasciitis was not discussed with Dr C.
15. Health NZ Southern's Clinical Director of Plastics and Reconstructive Surgery said that a chest X-ray and urine results are basic components of a septic screen, which the Plastics service always requires before accepting a patient, as blanket acceptance would result in the service managing numerous patients with sepsis from other sources, risking suboptimal

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care to these patients and potential morbidity from a delay to treatment from the appropriate service.

16. As a last attempt, Dr C called the Dunedin Hospital General Medical service. Dr C said that the General Medical registrar declined transfer because Dunedin Hospital had no inpatient beds and a current ED wait time of 16 hours, which would not be in Mrs A's best interests. This is reflected, in part, in the rural hospital clinical records.
17. On the other hand, Health NZ told HDC that General Medicine does not decline patients based on bed occupancy, and Health NZ records show that 45 beds were available at the time. The General Medicine SMO on call at the time of Dr C's request had limited recollection of the event and said that it is not her practice to decline a transfer from a rural hospital as it is very difficult to make an accurate assessment based on information by phone call to a General Medical registrar. She said that she has never refused a patient on the grounds of bed capacity and that, if she had been notified of Mrs A's white blood cell count, she would have accepted her.
18. The ED registrar who spoke to Dr C did not provide a statement to this investigation or Health NZ's adverse event review. Health NZ noted that General Medical registrars who have not visited the rural hospitals are often unaware of the realities of the rural environment and their resource limitations, which impact decisions to transfer early to a higher level of care that is not an intensive care unit (ICU).
19. Dr C updated Mrs A and her husband about the concerns and unsuccessful attempts to escalate to Dunedin Hospital. Mr A told HDC that Dr C had been trying to arrange helicopter transfer, and he said that he asked about the possibility of road transfer but was told that it would be too expensive to send a doctor with Mrs A in the ambulance. Health NZ said its records show that an ambulance transfer was booked on 4 August 2023 but did not proceed because the Dunedin specialty services declined to accept transfer.
20. At around 5.30pm, Dr C completed handover to the evening doctor, Dr B. Dr C told Dr B about the concerns for Mrs A and the unsuccessful attempts to arrange transfer, and Dr C asked Dr B to review Mrs A, follow up the outstanding investigations, and manage her accordingly. Before finishing the shift, at 6.30pm Dr C charted antibiotics (Augmentin).
21. Once again, Dr B was the only doctor onsite during the shift. Health NZ said that, between 5pm and 3am, Dr B provided care for 13 patients in the ED and likely also took calls from the ward. Dr B recalled that the plan for Mrs A at handover was to continue treatment for cellulitis and contact the Dunedin Hospital ICU if her condition changed to require vasopressors (drugs used to treat low blood pressure by making blood vessels constrict). Worsening sepsis can cause dangerously low blood pressure that does not improve with fluids, and this is usually when vasopressors are indicated. This is a sign of septic shock, a life-threatening condition in which the internal organs do not receive enough blood and oxygen.
22. Mrs A continued to be monitored in the ED. She was administered IV Augmentin at 7.14pm. At 7.30pm, Mrs A was admitted to the acute observation unit. At 8pm, Dr B reviewed Mrs A

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and examined her arm. Dr B noted that she did not have ‘pain out [of] proportion’, any significant increase of pain on passive extension, or crepitus (a crackling sound made by gas buildup under the skin that can be a symptom in some cases of necrotising fasciitis).

23. Dr B said that there was a delay in administering antibiotics because Dr B had initially understood that Dr C had administered Augmentin but on later review of the paper medication chart saw that it was not documented there. The prescribing and administration of Augmentin had been recorded in the electronic medication chart.
24. At 10.30pm, Dr B charted ceftriaxone and ciprofloxacin to broaden the antibiotic coverage. Dr B said that, because it was thought that antibiotics had been delayed, Dr B was hopeful that Mrs A would improve after administration. IV ceftriaxone and ciprofloxacin were administered at 11.45pm and 12.15am, respectively. Dr B was unable to explain this further delay in antibiotic administration.
25. By 1am, Mrs A’s blood pressure remained below normal levels despite having received over three litres of IV fluids. Dr B started an IV vasopressor infusion (metaraminol). Dr B considered at that stage that Mrs A’s condition was ‘under control’ and that, if they had believed differently, Dr B would have called Dunedin Hospital immediately after starting the vasopressor infusion.
26. Dr B attempted to call Dunedin Hospital at 3am, but the operator did not answer the phone. Health NZ did not comment on this.
27. At around 4am, Mrs A’s blood pressure had dropped further. At 4.45am, Dr B started a different vasopressor infusion (peripheral noradrenaline) with the intention of maintaining adequate blood flow to Mrs A’s vital organs while arranging transfer to Dunedin Hospital. At 6am, Dr B contacted Dunedin Hospital, and the General Medicine service accepted Mrs A for transfer by helicopter.
28. Dr B did not attempt to request transfer to Dunedin Hospital earlier because it was felt that they should first see whether Mrs A responded to (delayed) antibiotics; Dr B was the only doctor in a busy ED, which made continual reassessment difficult; and the earlier refusals to accept transfer caused Dr B to wait, until it was felt Mrs A’s treatment requirements had gone beyond the capability at the rural hospital before making a further request for transfer.
29. Health NZ said that it would have been appropriate for Dr B to request transfer earlier, when Mrs A’s condition progressed, but noted that Dunedin Hospital had advised that Mrs A could be accepted once she required care beyond what the rural hospital could provide and that Dr B had the skillset to manage her and sought transfer when Dr B had reached the limit of what Dr B could provide. Further, Health NZ said that making multiple calls to request transfer is time consuming and impacts on the care of other patients, noting that Dr B was the sole doctor in a busy ED.
30. The electronic aeromedical evacuation records show that the helicopter was requested at 6.34am, dispatched at 6.56am, arrived at the rural hospital at 7.28am, departed with Mrs A

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at 8.24am, and arrived at Dunedin Hospital at 8.56am. Mr A was advised of Mrs A's transfer at around 7.25am.

31. At Dunedin Hospital, Mrs A was diagnosed with necrotising fasciitis and underwent extensive successive surgeries and a prolonged period of complex care and rehabilitation. After a further period of rehabilitative care at the rural hospital, Mrs A moved to a residential care facility, where she later died.

32. Health NZ told HDC:

'The lack of an escalation pathway with clear criteria for transfer from a rural hospital to a higher level of care regardless of the diagnosis is the underlying cause of this issue. An escalation pathway would not require an accepting specialist, as the patient would be transferred to be at the centre with a higher level of care.

Had there been such a pathway in place, Mrs [A] would have been transferred to Dunedin when Dr [C] requested it, and her necrotising fasciitis would likely have been diagnosed and treated earlier.'

33. Health NZ Southern's Clinical Director for Plastic and Reconstructive Surgery commented:

'[I]t is essential to understand the limitations of care for the very ill at the rural hospital. The concept that a single rural hospital [doctor] (and therefore a doctor who should have a supervisor available at all times) was managing a floridly septic patient alone and without the straightforward ability to transfer this patient to a tertiary care centre is not satisfactory and needs review. ...

Having correctly diagnosed Mrs [A]'s sepsis, and correctly instituting resuscitation and emergent care, Dr [C] should have been able to arrange an emergency transfer of Mrs [A] to an accredited Emergency department with FACEM (Fellow of Australasian College of Emergency Medicine) where the source of the sepsis could be accurately determined and then referred to the appropriate department for management. The current system is the equivalent of an ambulance crew having to diagnose all the injuries and find a [specialty] to accept a trauma patient before the ambulance can park up at the ambulance bay.

It was apparent to everyone, and certainly Dr [C] and [Mrs A]'s family, that Mrs [A] required a higher level of care than the rural hospital could provide ... and they faced systemic blocks to achieving care for their family member and patient.'

Adverse event review

34. An adverse event review commenced in September 2023. Its findings included the following:

- There appears to be a disconnect in communication between the rural team and the Dunedin teams. The photographs were of poor quality and difficult to interpret. The Plastics team in Dunedin were under the impression that what they were seeing in the photographs of the top of the hand was the burn; however, the burn was on a small area of the side of the hand, and the top of the hand showed the infection. The actual

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site and size of the original burn was not clarified by either service. This assumption influenced the decision to request further tests to rule out other sources of infection.

- Looking for other sources of infection was inappropriate because a source of infection had already been identified. There were no clinical indicators of a respiratory source, and checking the urine in the absence of symptoms would have had a very high false-positive rate in a woman of Mrs A's age with diabetes and urosepsis.
- The Laboratory Risk Index for Necrotising Fasciitis (LRINEC) is a scoring system to distinguish between cases of possible severe cellulitis and necrotising fasciitis. This was not used in Mrs A's case. A LRINEC score of 8 has been shown to have a positive predictive value of >90% for necrotising fasciitis. At the time of her attendance in the rural hospital, Mrs A had a LRINEC score of 9. However, this test is not appropriate for all cases and is not completely reliable.

Decision

35. My role is to determine whether the health services Mrs A received were delivered to an appropriate standard, including whether services were provided with reasonable care and skill (Right 4(1)) and in a manner that minimised the potential harm to her (Right 4(4)).
36. To assist in my investigation, I obtained independent advice from a rural hospital medicine specialist, Dr Johan Peters (**Appendix A**).
37. Dr Peters explained that necrotising fasciitis is a rare condition that is very difficult to diagnose and that many of its features are shared by cellulitis, which is many times more common. A detailed description of the features of necrotising fasciitis and its diagnostic challenges is set out in Dr Peters's report.

Health New Zealand – breach

38. In reviewing the care provided to Mrs A at the rural hospital, Dr Peters noted that Dr C's attempts to transfer Mrs A to Dunedin Hospital were obstructed by a system that required an accepting specialty. He considered that there did not appear to have been adequate systems in place for escalation of care between the rural and Dunedin hospitals. Dr Peters described this as a 'catch 22 situation', where the rural team's undifferentiated patient could not be accepted at Dunedin Hospital, but their small rural hospital did not have the facility to further differentiate the issue.
39. Health NZ has acknowledged that the key failing in this case was the lack of a clear escalation pathway that would have enabled appropriate and efficient transfer of a septic patient with a high risk of deterioration who was inevitably going to require care beyond what could be provided at a rural hospital.
40. As the operator of the base facility responsible for accepting transfers from a rural hospital within its region, I hold Health NZ responsible for this failing. I acknowledge that there was apparently an option to transfer Mrs A to Dunedin Hospital ED (without requiring an inpatient-accepting specialty). However, by Health NZ's own acknowledgement, this option was not clear at the time of events, and it appears that Dr C was discouraged from doing this because of long waiting times. In this respect, I accept Dr C's evidence, corroborated by

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the contemporaneous note that pressured bed state was one of the reasons given for why ED transfer was not suitable.

41. Noting the resource limitations in rural settings such as the rural hospital, it is imperative for the safety of rural hospital populations that adequate pathways are in place for timely and safe escalation of care to base hospitals. I consider that the lack of an appropriate escalation pathway is a significant systemic failing that has resulted in Mrs A receiving care well below an appropriate standard, including critical delays in definitive diagnosis and treatment. Such delays increase the risk of harm for any patient and especially one with Mrs A's condition and comorbidities. For these reasons, I consider that Health NZ failed to provide services to Mrs A in a manner that minimised the potential harm to her and, accordingly, breached Right 4(4) of the Code.
42. Additionally, Dr Peters identified two further missed opportunities for Mrs A to have been accepted for transfer to Dunedin Hospital. First, Dr Peters noted that the Plastics SMO appears to have considered the possibility of necrotising fasciitis but that this was lost somewhere in the communication from Plastics SMO to Plastics registrar to the rural hospital doctor. Additionally, the General Medicine SMO said that she would have accepted Mrs A if she had been made aware of her white blood cell count, and Dr Peters considered that this indicates that this information was also lost in communication. He further commented that the General Medicine registrar may have had little understanding of the facilities available in the rural hospital and raised the threshold for transfer too high. While this latter point is somewhat speculative in the absence of information directly from the General Medicine registrar, the fact remains that, despite blood test derangement, referral was refused (and in this respect I accept Dr C's direct evidence that this information was conveyed – noting that sepsis and potential for deterioration, was the reason for the attempted referral). In both cases, Dr Peters considered that direct SMO-to-SMO communication may have avoided these missed opportunities. I accept Dr Peters's advice and have made recommendations accordingly.
43. I acknowledge that there are concerns about whether it was appropriate for the Plastics and General Medical services at Dunedin Hospital to decline Dr C's requests for transfer. However, I consider that the greater issue is the lack of an appropriate escalation pathway to Dunedin Hospital. Had an appropriate pathway been in place that did not first require a diagnosis of the source of sepsis, Dr C would not have faced the barriers presented by each specialty, whether these were appropriate or not. I therefore do not consider it necessary to discuss whether it was reasonable for the Dunedin specialty services to have declined Dr C's requests.
44. Lastly, I have considered Mr A's concern that transfer to Dunedin Hospital was declined on the basis of cost. However, there is no evidence to corroborate this concern, and, in my view, it is more likely than not that the reasons for decline by each specialty were as Dr C documented contemporaneously in the clinical record.

Dr C – other comment

45. I am satisfied that the care provided by Dr C at the rural hospital was reasonable in the circumstances that Dr C faced.

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46. Dr Peters advised that Dr C's initial assessment of sepsis and the treatment with fluids were reasonable. He said that Dr C's choice of antibiotics (Augmentin) was reasonable but not optimal because the severity of Mrs A's condition indicated a broader spectrum of antibiotic cover. However, Dr Peters considered that this would not have materially changed the outcome for Mrs A.
47. Dr Peters advised that Dr C's decision to transfer Mrs A to Dunedin Hospital was appropriate. He said that Dr C gave enough information to the specialty services at Dunedin Hospital that Mrs A was sufficiently unstable, that she was going to need transfer regardless of the source of sepsis, and that the ability to exclude all other sources did not reasonably exist at the rural hospital. Dr Peters said that, as a doctor in training for rural hospital medicine, Dr C would not be expected to be aware of the LRINEC tool, and he noted that use of this tool requires suspicion of necrotising fasciitis in the first place.
48. Dr Peters considered that Dr C's care departed mildly from accepted practice in that Dr C did not diagnose or consider necrotising fasciitis and was unable to achieve transfer to Dunedin Hospital. In mitigation, Dr Peters noted that Dr C made the important assessment that Mrs A was seriously ill and needed transfer, many doctors would not have been able to make the diagnosis of necrotising fasciitis at an early stage, Dr C was a doctor in training in this specialty who should have been supervised, and the attempts to transfer Mrs A were obstructed by a system that required an accepting specialty. Dr Peters also said that Dr C's handover to Dr B appears to have been adequate.
49. Noting Dr Peters's advice that not many doctors would have been able to make a diagnosis of necrotising fasciitis at the early stage in which Dr C saw Mrs A, I am not critical of this aspect of Dr C's care. Further, I am satisfied that Dr C appropriately recognised Mrs A's septic condition, attempted to transfer Mrs A to Dunedin Hospital, and provided sufficient information to the specialty services. I agree that Dr C was obstructed by the system that required it to find an accepting specialty, and I do not hold Dr C responsible for not being able to achieve transfer. Accordingly, I am satisfied that Dr C's care of Mrs A was provided with reasonable care and skill.

Dr B – adverse comment

50. Dr Peters advised that, as Dr B was the more senior doctor, he might have expected Dr B to question Dunedin Hospital's lack of acceptance when Dr C handed Mrs A over to Dr B's care. Although Dr Peters acknowledged the considerable workload in the rural hospital at the time, he emphasised that Mrs A was significantly unwell. I accept this advice and consider that this case is a salient reminder of the need for critical thinking when receiving handover of patients, especially when being handed over by a more junior doctor.
51. Dr Peters considered that Dr B's choice of antibiotic treatment was reasonable. I accept this advice. I am satisfied that Mrs A received early antibiotics (Augmentin, first in the ambulance and again in hospital at 7.14pm) and that further treatment was provided on this basis.
52. However, later, when Dr B checked the paper medication chart, there was no record of antibiotics charted by Dr C, as this had been charted in the electronic medication record. Dr B therefore (mistakenly) believed that antibiotics had not yet been given in hospital, and

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one of the reasons for continuing to manage Mrs A at the rural hospital was that Dr B was hopeful that her condition would improve after having antibiotics. I am concerned that this misunderstanding influenced Dr B's decision to continue to manage Mrs A at the rural hospital rather than request transfer to Dunedin.

53. Further, Dr Peters considered that it was a moderate departure from accepted practice that Dr B did not escalate care to Dunedin Hospital at 1am on 5 August 2023 when Mrs A's blood pressure dropped despite adequate treatment with fluids. Dr Peters acknowledged that Dr B's commencement of a metaraminol infusion was reasonable and that Dr B was discouraged by Dunedin Hospital's previous refusals. Nevertheless, Dr Peters considered that, at this point, Mrs A's condition had deteriorated to a stage where it was no longer appropriate to continue management at the rural hospital. Additionally, Dr Peters noted that, at this point, there is little documentation of any progression in Mrs A's arm symptoms. He said that the rapid progression may have alerted Dr B to the possibility of necrotising fasciitis.
54. I accept Dr Peters's advice and note that this aligns with Dr B's account that the plan on handover was to escalate care to Dunedin Hospital if Mrs A's condition changed to require vasopressors. I consider that Dr B should have followed this plan and escalated care to Dunedin Hospital at 1am, and I am critical that Dr B did not.
55. However, I also acknowledge the broader context that likely impacted on Dr B's care and decision-making. Dr B was the sole doctor managing a very busy rural ED and appears to have had the expertise to administer vasopressor treatment, and, because three Dunedin specialties had declined to accept Mrs A earlier, Dr B wanted to be sure that all available treatment had been explored at the rural hospital before requesting transfer again. Once again, Dr B's care was affected by the wider systems issue of Health NZ Southern's inadequate pathway for transfers from rural hospitals. In this context, I do not consider the threshold for a breach finding has been met. Nevertheless, I consider that this case serves as an important reminder for Dr B to bear in mind the limitations of treatment that can be provided in a rural setting and the importance of escalating care in a timely manner (particularly in situations where care/treatment for the underlying cause of concern is, or could be, time critical).

District health services– other comment

56. As noted by Dr Peters, Dr C was a doctor training in the rural medicine specialty and should have been supervised or had access to a supervisor. Dr C indicated there was 'limited supervision' in this case and said that during the time at the rural hospital there were 'various supervision issues.'
57. I am concerned that Dr C felt adequate supervision was not provided during training. However, without further information about this, I am unable to make a finding. I note that this rural hospital is no longer accredited as a training hospital for rural registrars. As such, supervision for training doctors at this rural hospital is no longer a live concern, so I have not considered this issue further. However, an anonymised copy of this report will be provided to the Division of Rural Hospital Medicine of the Royal New Zealand College of General

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Practitioners, and it will be advised of the names of this rural hospital and district health services for consideration of further action.

Changes made

58. Changes made since these events include:

- On 1 July 2024, the operation of services at this rural hospital changed from district health services to Health NZ Southern. Health NZ said this has significantly strengthened relationships between clinical teams, aligned this rural hospital policies and pathways with Health NZ Southern and ensured that patient safety and quality are prioritised with effective clinical governance structures as a Health NZ hospital.
- Health NZ Southern has issued communications regarding the 'direct to ED' pathway for any patient in a rural ED who requires an escalation of care.
- Health NZ has implemented Variation Response Management and Escalation policies at the rural hospital that allow for earlier identification when the ED workload is high or additional staffing is required, so that the ED can respond to the demand and ensure that safe patient care can still be delivered. One of the actions is reviewing whether patients should be transferred to a higher level of care.
- Changes have been made to nursing and medical staff rostering at the rural hospital, including a shorter night shift for medical staff, a second doctor on call overnight for when the ED is busy or has high acuity, and a 'swing shift' to cover the afternoon and evening so two doctors are on duty at the busiest time in the ED.
- The rural hospital staff now have access to Health NZ Southern's antimicrobial prescribing guidelines, and they are encouraged to use this.
- The rural hospital has adopted Health NZ Southern's sepsis pathway protocol, which provides guidance on antibiotic choice and recommends early involvement of the ICU. For rural hospitals, by definition, this means transfer to a higher level of care where there is ICU or high-dependency unit support, allowing for earlier transfer from a rural hospital for patients with sepsis and high-risk features such as those that Mrs A had. The focus is on transfer due to sepsis rather than requiring a diagnosis for the sepsis.
- Relationships between Dunedin and the rural hospitals have been strengthened at the front-line clinician level by creating opportunities for clinicians from across the region to work together, including doctors from Dunedin, Southland and Lakes District Hospital EDs undertaking shifts in the rural ED, and the Dunedin ED Associate Clinical Director (now Clinical Director) being seconded to work with the rural team for six months in 2025 to identify areas of concern and improvement.
- The Health NZ Southern medical director for primary and community (which includes rural hospitals) regularly attends the rural medical peer review and is available for rural medical staff to contact if there are concerns about transferring patients or escalation of care.
- The rural hospital teams now participate in Health NZ adverse event reviews across the patient journey.

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59. Additionally, Health NZ Southern is investigating having specialists from Dunedin Hospital and Lakes District Hospital support the rural roster. These specialists would have FACEM and/or rural medicine training.
60. There are ongoing workstreams for quality improvement in the rural Hospital ED, including sepsis pathway alignment, resuscitation processes and policies, triage and front-of-house processes, patient flow and tracking through the ED, transport and patient transfers, variation response management and escalation policies, and building relationships between the Dunedin and the rural EDs.
61. Dr B advised that they have reflected on this case, discussed it with the clinical supervisor, and participated in a peer review meeting. Dr B has also undertaken further review and discussion of the LRINEC tool and its role in the assessment of necrotising soft tissue infections.
62. My recommendations directed to Health NZ Southern are outlined at the beginning of this report.

Follow-up actions

63. Health New Zealand will be referred to the Director of Proceedings in accordance with section 45(2)(f) of the Health and Disability Commissioner Act 1994 for the purpose of deciding whether any proceedings should be taken. In making this referral, I have had regard to the serious systemic deficiencies that, in my view, fell significantly below the appropriate standard, as shown by the circumstances in which a rural hospital promptly recognised the severity of the patient's condition and treatment needs, appropriately requested transfer, and yet was met with systemic roadblocks that increased the risk of harm to Mrs A. I consider that there is public interest in further holding Health NZ to account for these serious deficiencies, and in maintaining, upholding, and enforcing an appropriate standard for timely and safe escalation of care for rural hospital populations.
64. A copy of the final report with details identifying the parties removed, except Health New Zealand Southern and my independent advisor, will be sent to the Division of Rural Hospital Medicine of the Royal New Zealand College of General Practitioners, and it will be advised of the names of the rural hospital and district health services.
65. A copy of the final report with details identifying the parties removed, except Health NZ Southern, Dunedin Hospital, and my independent advisor, will be sent to the Royal New Zealand College of Urgent Care, the Medical Council of New Zealand, the Australasian College for Emergency Medicine, and the Health Quality & Safety Commission Te Tāhū Hauora and placed on the HDC website, www.hdc.org.nz, for educational purposes.

Morag McDowell
Health and Disability Commissioner

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Appendix A: Independent clinical advice to the Commissioner

The following independent advice was obtained from rural hospital medicine specialist Dr Johan Peters:

‘Complaint: [Mrs A] / [The rural hospital]

HDC ref: 24HDC02480

Independent advisor: Dr Johan Peters

Qualifications/experience: I am a 1983 University of Otago graduate, MB, ChB, and hold the post-graduate qualifications of DipObst, FRNZCGP, FDRHM, and AFRACMA. My experience has been that of a surgical trainee, followed by a long career in rural general practice, including obstetrics and forensics. This was followed by a career in rural hospital medicine, including work in Tairāwhiti, Cook Islands, rural Queensland, and the King Country. This was followed by a career in emergency medicine in Gisborne and then holding the positions of emergency medicine clinical director, surgical and medical clinical director, and interim CMO [Chief Medical Officer].

I have managed and taught our GP training scheme and have been an assessor for GP training.

In my CMO role, I have been supervisor of our RMO [resident medical officer] junior doctors and responsible for incident investigation, addressing complaints, and the general quality of clinical services.

I [am no longer in this role]. I continue to have advisory and examiner roles for [the New Zealand Medical Council] NZMC, and [the Division of Rural Hospital Medicine] DRHM, and am currently negotiating roles with DRHM regarding credentialling, and Te Whatu Ora regarding clinical and advisory roles.

I have no conflicts of interest with either [the rural] hospital or Dunedin Hospital or their employees.

Regarding other sources of information, this report is primarily the product of my training and experience, and the opinions are mine. Additionally:

1. I have used UpToDate, a commonly used online source of current medical information, in order to provide a background on the patient’s condition, to assist the investigator.
2. I have reviewed the registration status of Doctors C and B in the online register of the New Zealand Medical Council.
3. I have discussed the use of the LRINEC tool in broad terms with colleagues in general surgery, emergency medicine, and rural hospital medicine and trainees in the above specialties, without disclosing that this is part of an HDC enquiry, or any details thereof.

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NECROTISING FASCIITIS

For the purposes of understanding [Mrs A]’s progress through her illness, I will summarise this condition, as understood by a rural hospital practitioner, as it is a rare condition that many practitioners will never see in a lifetime of practice.

This is an infection of the deep soft tissues, or fascia. It can be caused by a single organism, such as streptococcus or staphylococcus, but is often caused by a mixture of aerobic and anaerobic bacteria, such as clostridia. It may be triggered by a wound, such as a burn, or there may be no apparent source of entry. It usually affects the periphery, such as the lower limb, but can affect the groin, or head/neck, or upper limb, which is an uncommon site. The bacteria produce toxins that are responsible for tissue necrosis/death, shock, and organ failure and may not be detectable in the bloodstream. Incidence ranges vary widely from 0.3 to 15 per 100,000 population, so it is uncommon.

Risk factors include injury, major or minor, including surgery; immunosuppressive conditions, of which in our community diabetes is the most common. Risk factors for poor response to treatment include any other underlying conditions, and age. For [Mrs A], her risk factors were age more than 60, type 2 diabetes, and heart failure, and the minor burn provided the portal of entry for the infection.

Regarding the clinical features of necrotising fasciitis, the problem here is that the disease affects the deeper tissues first, and the changes in the skin may not be obvious at first. Most cases will have erythema [redness] without defined margins, oedema [swelling] beyond the redness margins, potentially no pain, as nerve endings are destroyed, or severe pain out of proportion to the visible changes, fever, crepitus, and skin bullae [blisters] or ecchymoses [bruising]. It should be noted that cellulitis is many times more common and may have many of these features. In my experience of necrotising fasciitis, all cases have presented with a different constellation of symptoms and signs, with no unifying pattern, other than progression over a period of hours, and it is this progression and change that has often led to suspicion of the diagnosis. Patients will often, and always eventually, show signs of systemic toxicity, which in [Mrs A]’s case were confusion/delirium, changes in oxygenation, and perfusion, or blood pressure and pulse.

Laboratory findings are not specific but can be spectacularly abnormal, including changes in inflammatory markers, in particular CRP [C-reactive protein] and WBC, or white blood cell count, changes in kidney function, with rising creatinine and low sodium, and signs of sepsis, such as acidosis, or drop in pH, rise in lactate, and – in diabetics – rise in ketones. [Mrs A] displayed all of these, but they can all occur in sepsis from any source. Imaging investigations such as x-ray and CT [computed tomography], do not really play a role in the diagnosis and may delay definitive treatment.

The diagnosis is suspected in patients with soft tissue infection and systemic signs, when there is rapid progression, crepitus, or disproportionate pain. The dilemma is that, in order to recover, an early diagnosis is necessary, but the signs and symptoms are not specific, and simple cellulitis is the much more common explanation.

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In addition, the diagnosis is only confirmed by surgical exploration in an appropriate operating room setting, by an appropriate surgeon, with adequate anaesthesia to provide anaesthesia and organ function support, and the ability to proceed to definitive debridement of the affected tissue. This requires the early-as-possible assessment by a surgeon of whatever specialty is appropriate or available. In the context of rural hospital medicine, this requires transfer to a location with surgical services, promptly and on suspicion.

Regarding treatment with antibiotics, this is a requirement, but on its own will not affect the outcome for the patient. If the diagnosis is suspected, this should reflect the complex microbial nature of the infection and therefore be broad. Most recommendations include broad-spectrum antibiotics such as meropenem, plus vancomycin, and clindamycin.

Treatment will also necessarily require any or all of the various organ failure support treatments delivered in ICUs, such as ventilation, inotropic support, or dialysis. The outcome of this disease is poor, with a mortality in the range of 14–34%, or a third. And survivors will nearly always have a prolonged hospital stay with multiple surgeries and may have permanent disabilities such as amputation, or related to tissue loss, or general loss of body reserve from a prolonged severe illness.

MRS [A] CLINICAL COURSE

This is consistently described in the documentation by doctors [C] and [B], the clinical record, and the Dunedin Hospital incident investigation review, signed by [...], GDO [Group Director of Operations], Southern. I have been asked specifically to comment on the course of [Mrs A]’s treatment and transfer at [the rural] hospital, as that is my area of expertise. [Mr A]’s complaint essentially relates to a delay in making a definitive diagnosis of necrotising fasciitis, a delay in timely transfer to Dunedin hospital, and an allegation that cost of transfer was part of the reason for a lack of timely and appropriate transfer. [Mr A] also has extensive complaints about [Mrs A]’s prolonged treatment in Dunedin Hospital and subsequent non-acute care on her transfer back to [the rural hospital]. I have not been asked to address these and do not have the expertise to do so. But I will acknowledge that [Mrs A]’s long illness, much of it while desperately ill, followed by a very prolonged incomplete recovery, ultimately ending in her death, in a woman previously active and able, must have been an excruciatingly painful experience for both [Mr and Mrs A].

[Mrs A] was recorded as having had a minor burn on her hand, according to [Mr A] on the day prior, and on her records as three days prior, to presentation. This led to swelling and discolouration of the hand and forearm and led to an urgent appointment with the family GP, [...] on 4 August. He diagnosed cellulitis, prescribed appropriate antibiotic treatment, and arranged blood tests. When these were reported to him as markedly deranged, with a CRP 330, WBC 44, he rightly felt that these reflected more severe disease than explained by his initial diagnosis and acted promptly and decisively, by attempting to contact the patient, and when unable to do so, contacting both [Mr A] and Hato Hone St John, the ambulance service. While there is some confusion about

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what message [Mr A] received, he was able to get home and provide access for the ambulance crew. It is my view that the GP management was entirely appropriate.

The ambulance crew were able to assess that [Mrs A] was seriously ill, based on their own observations of her swollen and discoloured hand, and abnormal vital signs. They achieved IV access, administered an appropriate resuscitative fluid, normal saline. They also gave an initial IV bolus of amoxycillin/clavulanic acid [Augmentin]. This is not usually done in urban settings where ambulance transfers to definitive care is brief, but the ambulance service has protocols that allow them to administer these medications in areas where transfer time is going to interfere with early administration of these drugs in hospital. I don't know what the local protocols are but assume they were acting within them.

[Mrs A] was presented to [the rural] hospital ED at 1630, 4 August, and was promptly triaged as level 3, she had RR [respiratory rate] 24, HR [heart rate] 110, O2 sats [oxygen saturation] 93, temp 37.1, bp [blood pressure] 111/60, and signs of hypovolaemia [not enough fluid/blood volume]. Dr [C] was on duty at the time, and [Dr C's] shift was due to end at 1700. I understand [Dr C] was the only doctor on duty. [Dr C] is vocationally registered in general practice and is a trainee in rural hospital medicine. As part of this programme, [Dr C] has a supervisor, who is expected to be available at least by phone. I have no record of [Dr C's] supervisor, or if they were contacted. [Dr C] noted the small wound; the swelling and discolouration of [the] patient's arm; the abnormal vital signs, which may have been ameliorated by her being on metoprolol, which will have masked the extent of the tachycardia; the prior administration of resuscitative fluids, which may have masked the hypotension; and the hypoxia, which the ambulance may have treated. [Dr C] noted cognitive change.

Based on [Dr C's] observations, it was reasonable to make a diagnosis of sepsis, based on the likely source of cellulitis in her arm. It should also be noted that [Dr C] was aware of the marked elevation of WBC, CRP, elevated glucose, and ketones, and I note an elevated lactate, which all indicated severe illness, and with comorbidities of diabetes, and heart failure [on prior echo], represented a risk of deterioration. [Dr C] charted further IV fluids, and I note a further dose of IV Augmentin was given at 1914.

According to the clinical record and the Dunedin hospital response, [Dr C] decided that transfer to a higher level of care was appropriate and urgent and took reasonable steps to action this. The requirement at the time was for there to be an accepting service. Orthopaedics declined the referral, based on no evidence of bone or joint infection, and indicated plastic surgery as the next step. These discussions all occurred at somewhere between 1700 and 1730. I also note an ambulance transfer was booked but not enacted at this time.

[Dr C] then had a discussion with the plastics registrar, who also received photos, and had a discussion with his SMO, a consultant plastic surgeon. I have reviewed these doctors' responses, and it appears that the patient was declined on the basis of insufficient evidence of a plastic surgical issue. That message was then relayed back to Dr [C]. I note there appears to have been a discussion regarding the diagnosis of

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necrotising fasciitis at that time, but considered excluded, and I can see no evidence that this was further discussed with Dr [C].

[Dr C] then had a discussion with the medical registrar on call. Their recollection is distant, and there is no record of such phone calls. [Dr C] in [their] statement recalls that the patient was declined due to excessive wait times in Dunedin, and treatment could be administered in [the rural hospital]. I find this surprising, as the Dunedin response indicates there was bed availability, internal medicine services around the country routinely overflow, and this was a very sick patient. In the subsequent Dunedin response, the medical SMO on call indicates that, had she known about the laboratory parameters, she would have accepted the patient.

Regarding Dr [C]’s treatment:

1. [The] initial assessment of sepsis was reasonable, while accepting that subsequently it was shown to be incorrect.
2. [The] fluid prescription regimen was reasonable.
3. Antibiotic treatment choice was acceptable, but not optimal. There will be an antimicrobial guide for Dunedin hospital, which [Dr C] could reasonably have used, and – given the severity of the patient’s condition – this would have indicated a broader spectrum of antibiotic cover, such as meropenem/vancomycin/clindamycin. This would not have materially affected the outcome, however.
4. Decision to transfer was appropriate.
5. Regarding sufficiency of information provided to the receiving services, my opinion is that [Dr C] gave enough information that the patient was sufficiently unstable, that she was going to need transfer, regardless of the source of the sepsis, and that the ability to exclude all other sources did not reasonably exist in [the rural hospital].
6. Regarding the use of the LRINEC tool, the application of this tool is variable. It was initially thought to have a high predictive value for necrotising fasciitis but appears to be falling out of favour somewhat. [Dr C] is a GP, in training for rural hospital medicine, and I would not expect [Dr C] to be independently aware of this tool. Moreover, it requires a starting point of a suspicion of necrotising fasciitis in order to be applied. It is my view, and I believe this to be representative, that if this diagnosis is being considered in a peripheral or rural hospital, that the patient requires urgent surgical assessment.
7. Suitability of photos. Personal cellphones are widely used to communicate patient conditions in referral situations around New Zealand. There are many reasons for this to be a risk, and suboptimal; however, generally this is the only modality available. Moreover, if necrotising fasciitis was reasonably being

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considered, then a photo was never going to be sufficient to exclude the diagnosis.

8. Communication. I note that there is discussion about necrotising fasciitis between the plastics registrar and SMO, but this was not conveyed to Dr [C]. In my view, if the plastics service was considering this diagnosis, their best option was to accept the patient, or alternatively if the LRINEC tool was to be used, they had enough laboratory data to apply it themselves or to call [Dr C] and ask [Dr C] to apply it. It is likely that this is because there were at least three people in the communication pathway and therefore this opportunity was lost.
9. Regarding the internal medicine service, my sense is that the exact words used have been lost in time but that enough information was available for them to have accepted the patient. I am unable to ascertain that all of this was transmitted, but clearly [Dr C] was faced with “pushback” or reasons why this would be hard, and [Dr C] was discouraged by this.
10. [Mr A]’s contention that a helicopter transfer was not arranged for financial reasons cannot be supported in any of the documentation.
11. The documentation from both doctors indicates that the handover between Drs [C] and [B] was adequate.

As far as an assessment of Dr [C]’s care for [Mrs A], I consider [the] care to show a mild departure. This is on the basis that [Dr C] did not diagnose necrotising fasciitis, and did not appear to consider it, and was unable to achieve a transfer. [The] antibiotic management was adequate but suboptimal. The mitigating circumstance was that [Dr C] made the important assessment that [Mrs A] was seriously ill and needed transfer, many doctors would not have been able to make the diagnosis of necrotising fasciitis at an early stage, and [Dr C] was a doctor in training in this specialty and should have been supervised. [Dr C] was also obstructed by a system that required an accepting specialty, which prevented the receiving doctors from accepting her patient. [Dr C] was also not well served by the plastic surgical service considering the diagnosis of necrotising fasciitis but not relaying this [...], requesting more information, or accepting the patient. [Dr C]’s handover appears to have been adequate.

Regarding the care provided by Dr [B], I note that on the NZMC website [Dr B] is recorded as being a [...]. However, the records from [the rural hospital] indicate that [Dr B] is considered the more senior doctor. Certainly, [Dr B]’s ability to insert an intra-arterial line and willingness to prescribe inotropic infusions suggests [Dr B] has considerable experience. It appears that the handover between [Dr B] and [Dr C] gave [...] sufficient information and opportunity to question Dr [C]. However, as the more senior doctor, I might reasonably have expected [Dr B] to question the lack of acceptance of this patient by Dunedin hospital; though I understand there was a considerable workload in the hospital at the time, it is unlikely that any other patients were as unwell as [Mrs A]. [Dr B] appropriately considered that the antibiotic spectrum needed to be increased and prescribed additional antibiotics. The combination does not

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seem particularly evidence based but was a reasonable response. However, at 0100, [Mrs A] was at the point where she'd had adequate volume replacement therapy but became more hypotensive. While commencing metaraminol infusion was a reasonable therapeutic step, I consider that at this point, with a septic patient now receiving inotropes, there is no place to continue management in [the rural] hospital. I accept that [Dr B] was discouraged by previous refusals to accept the patient, but this was an important progression in her condition. I also note that there is little documentation in any progression in the changes in [Mrs A]'s arm. Rapid progression may have alerted [Dr B] to the possibility of necrotising fasciitis. Generally, the use of inotropic agents is limited to an intensive care situation. The details of these treatments are outside my scope as a rural hospital doctor, but, in general, metaraminol can maintain blood pressure but does not necessarily improve end organ perfusion. I would consider this a temporising move to get the patient through to definitive care. Noradrenaline infusions are probably more effective, but at this stage the patient really is very ill. I consider 0100 progression to be a missed opportunity, and I consider this a moderate departure from an accepted standard of care.

There do not appear to have been adequate systems in place for escalation of care between [the rural] and Dunedin hospitals. In fact, this series of events is one where each of the practitioners was attempting to make the best decisions that they could, within the limits of the system in which they were working, and these decisions were shown to have serious pitfalls. I do not work in the South Island, and I am not aware whether subsequent changes have been made.

However, I have given several opinions to the HDC regarding care at [the rural] hospital, most of which concern the systems in place around transfers to Dunedin Hospital. Accepting that I do not work there, and changes may already have been made, and some of my suggestions may not be workable, I will make some suggestions about steps that could be taken, though I consider this is an unusual step. Potential steps that can be taken:

1. [The rural] hospital to adopt the Dunedin Hospital antimicrobial prescribing recommendations. Dunedin will have this available either as an app or internally.
2. I expect Dunedin hospital to have a sepsis pathway protocol. This needs to be adopted by [the rural hospital]. This is both so patients have appropriate treatments and so that when the patient does not respond this permits the referring physician to have a further discussion with Dunedin.
3. Joint clinical review process. I note the extensive and complete review done by Dunedin Hospital; however, I do not see a contribution from the [rural] clinical team. Given that the critical issues here were around acute management of a critically ill septic patient and decisions around transfer – when, how, and to whom – I would consider this a missed opportunity. A structure needs to be in place where these clinical incidents are jointly reviewed. [The rural hospital] is

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only 1.5 hours away, or immediately present by zoom, so there should be no logistical barriers.

4. Consideration given to a central point of acceptance by Dunedin Hospital. [The rural hospital] found themselves in a catch-22 situation, where their undifferentiated patient could not be accepted, but a small rural hospital does not have the facility to further differentiate the issue while the patient deteriorates. The need to “shop the patient” to different services is not efficient or constructive. Possibilities include a direct referral to the emergency department in Dunedin or criteria-based referral to the ICU for critically ill patients, with a specific accepting service determined as appropriate in the better-resourced receiving hospital.
5. Consideration given to mandating SMO-to-SMO communication for transfers. There seem to have been two further missed opportunities for an earlier transfer. The plastic surgeon appears to have considered the diagnosis of necrotising fasciitis or the application of a scoring system. Somewhere in the communication from SMO to registrar to [the rural] registrar, this was lost. Additionally, I note in the Dunedin Hospital review that the consultant physician stated that if she’d been aware, specifically, of the WBC level, that she would have accepted the patient. While we can only speculate on the exact contents of the conversation between [Dr C] and the Dunedin medical registrar, the impression I have is of a registrar under workload distress, probably with little understanding of the facilities available in [the rural hospital], who raised the threshold for transfer too high. Direct SMO-to-SMO discussion may have prevented this.
6. Consideration of a joint workforce. I appreciate the difficulties implied here. However, we do now have one national employer, Te Whatu Ora | Health New Zealand. Currently, Dunedin has a FACEM [vocational emergency medicine physician]-led ED, who works with the support of a full range of secondary and tertiary services. [The rural hospital] struggles to recruit and finds itself with a range of employees and locums asked to have a very broad range of skills, which some will have but many won’t, in an environment of minimal support. My view is that if [the rural] hospital ED was staffed by a combination of rural hospital specialists, and emergency physicians on a rotation from Dunedin, that this would go a long way to improving the safety of [the rural] hospital ED, for both patients and staff. It would improve the skill set available in [the rural hospital] and substantially increase the understanding that each service has for each other, both for the limitations and risks, and the processes involved. The distance may be too great for commuting but may be practical for short periods with a large enough Dunedin ED workforce. I am acutely aware of the workforce implications, the contractual limitations, and recruitment issues that this suggestion raises, and note that I have not achieved this in my own workplace.

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7. The HDC should consider advising the Division of Rural Hospital Medicine [DRHM] of the RNZCGP, as they are the appropriate educational body for Dr [C], and they need to be aware of the apparent limitations of supervision in this instance, so that they can conduct their own investigations.

Once again, my condolences to [Mr A] and this most difficult year of his life. Sadly, the disease that [Mrs A] had, combined with her pre-existing conditions, was always going to make the outcome guarded, but I hope that the outcome of the HDC investigation will lead to better care for the Otago community.

Johan Peters