Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

A Decision by the
Deputy Health and Disability Commissioner
(Case 19HDC02255)

Introduction

This is the opinion of Deputy Commissioner Deborah James, and is made in accordance with the power delegated to her by the Commissioner.

This report discusses the care provided to a woman by Dunedin Hospital, Southern District Health Board (SDHB), following an accident on 23 July 2019, during which the woman sustained a fractured femur. The woman underwent surgery to repair the fracture on the same day.

Following her surgery, the woman was scheduled to be repatriated to her home country in the early hours of 1 August 2019. She developed severe sepsis on 31 July 2019, the day before she was due to be repatriated. The woman continued to present as severely septic at the time of the handover to the retrieval team. The Air Ambulance's Medical Director then advised that the woman was too unwell to be repatriated, and requested urgent medical review. It was at this time that her care was escalated and she was treated with intravenous antibiotics.

The woman raised concerns about the postoperative care she received from SDHB. She also raised concerns about the standard of nursing documentation.

The following issue was identified for investigation:

- *Whether Southern District Health Board provided the woman with an appropriate standard of care between 23 July 2019 and 5 August 2019 (inclusive).*

Responses to provisional opinion

The woman and SDHB were given an opportunity to respond to the provisional opinion.

The woman said that she was happy with the provisional opinion and the changes that have occurred and will occur as a result of events.

SDHB stated that it will undertake a documentation audit of the wider unit, and not only of the clinicians who were involved in the woman's care.

Opinion: SDHB — breach

First, I acknowledge the distress that these events have caused.

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I have undertaken a thorough assessment of the information gathered in light of the woman's concerns. To determine whether the care provided by SDHB was reasonable, I considered the expert advice of an orthopaedic surgeon, Dr John McKie.

The following section sets out three key areas of concern about the care provided.

Delay in reviewing and acting on blood test results
As noted by Dr McKie, on 31 July 2019, the day prior to the woman's scheduled repatriation, her condition clearly and progressively deteriorated.

The woman was on the orthopaedic ward, and was reviewed by a house officer at 4.30pm on 31 July 2019 for an elevated temperature[1] and rigors. The house officer initiated blood tests, blood cultures, and urine tests. The impression was a possible urinary tract infection secondary to a catheter that had been left in place for the repatriation flight.

The house officer recommended that antibiotic treatment[2] be started if there was evidence of a urinary tract infection. As the woman was scheduled to be collected by the flight crew at approximately 1.30am that morning, the house officer asked that the woman be reviewed again by the night house officer. She also discussed her plan with two orthopaedic registrars.

Dr McKie advised that the initial assessment and investigation at 4.30pm on 31 July was both thorough and appropriate, and I accept this advice.

Further observations were carried out at 6.20pm and 10.00pm. Observations were carried out again at 1.00am, when the woman continued to present with a fever, an increasingly rapid heart rate, and low blood pressure.[3] At 1.00am, the woman had an Early Warning Score (EWS) of 7.[4] This peak in deterioration coincided with the arrival of the retrieval team.

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[1] At 4.30pm, the observations were blood pressure (BP) 129/81mmHg, a temperature of 38°C, and a heart rate of 107 beats per minute (bpm).
[2] Ceftriaxone, which is used for the treatment of a number of bacterial infections.
[3] At 6.20pm on 31 July 2019, the woman had an EWS of 4. The observations were BP 109/61mmHg, a temperature 38.6°C, and a heart rate of 133bpm. At 10.00pm on 31 July 2019, the woman had an EWS of 5. The observations were BP 89/49mmHg, a temperature of 38.2°C, and a heart rate of 125bpm. In accordance with the Deteriorating Patient Early Warning Score Escalation Pathway Flowchart, when a patient has an EWS of 1–5, the nurse in charge must be informed, and clinical staff should consider referral to the clinical team coordinator, and consider review of the patient by a house officer. Vital sign recording must increase to 1–2 hourly. At 1.00am on 1 August 2019, the woman had an EWS of 7. The observations were BP 87/48mmHg, a temperature of 38.9°C, and a heart rate of 134bpm.
[4] An EWS of 7 requires the nurse in charge to be informed, and there must be referral to the clinical team coordinator out of hours. Review of the patient by a house officer must occur within 60 minutes, and vital signs frequency must increase to 30–60 minutes.

The clinical records indicate that the test results from the samples taken at 4.30pm on 31 July 2019 were first reviewed by a doctor at approximately 3.00am on 1 August 2019. At that time, no abnormalities were detected in the blood cultures and urine results, but the full blood count showed signs of neutropenia[5] and an elevated CRP.[6] The doctor charted antibiotics, and the woman received antibiotic treatment at 3.11am on 1 August 2019.

Dr McKie advised that the blood test results should have been reviewed earlier. He stated:

> "[T]here is a clear problem with investigations being ordered, but results not being promptly reviewed when available. Once the diagnosis of sepsis was eventually made the management was exemplary. However, as noted above, had the abnormal blood tests been reviewed earlier, [the woman] may have been started on antibiotics earlier leading to a less severe course of events."

Dr McKie considers the delay in reviewing the blood test results to be a moderate departure from the accepted standard of care.

I note that clinical staff at SDHB presented differing opinions as to when the blood test results were reviewed, and whether antibiotic treatment should have been provided earlier.

A consultant orthopaedic surgeon advised that the blood test results were reviewed by a house officer at approximately 7.30pm on 31 July 2019, but this was not documented in the clinical notes. With regard to providing treatment, the surgeon stated:

> "The reason no further treatment was instigated may be the fact that an elevated CRP would be common in someone after trauma who has undergone surgery to nail their femur. A neutropenia with [one] previous temperature may be of uncertain significance. The trend over the evening to the early hours of the morning with persistent temperature and tachycardia[7] are more persuasive of developing sepsis and requirement of treatment escalation. The blood tests taken together with this trend is more useful in determining more aggressive management. This reinforces the importance of the EWS process when applied appropriately."

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[5] An abnormally low count of a type of white blood cell, which can be caused by infection.
[6] C-reactive protein (CRP). A high CRP test result is a sign of acute inflammation, and may be due to serious infection, injury or chronic disease.
[7] A fast heart rate.

On the other hand, an intensive care consultant agreed that the blood test results should have been reviewed, and antibiotic treatment should have been started, at an earlier stage. He stated:

> "The overall treatment provided to [the woman] regarding her complications from gram-positive sepsis, particularly in hindsight, are not ideal. The risk of not giving antibiotics, given her clinical presentation postoperatively, should have been recognised and the blood results of the full blood count taken in the afternoon of [31 July 2019] reviewed at an earlier stage."

The electronic clinical information system shows that the blood test results were reviewed at 7.30pm on 31 July 2019, as stated by the consultant orthopaedic surgeon. However, I am critical that no further action was taken on the abnormal results (neutropenia and an elevated CRP). I am also concerned that it took over ten hours from the time when the blood tests were requested for treatment to be provided.

I acknowledge that the woman's evolving symptoms and the developing trend would have been a stronger indication of sepsis than the blood test results. However, I accept Dr McKie's advice that had these abnormal blood test results been reviewed and acted on earlier, the diagnosis of sepsis may have been arrived at earlier, which would have led to earlier treatment. I agree that the delay in reviewing the blood test results was unreasonable and a departure from the accepted standard of care.

I have considered whether any individuals should be held to account, but conclude that because multiple staff members had the opportunity to review and act on the results (two nurses and a house officer), the delay in reviewing and acting on the blood test results was a service delivery failure, and responsibility more appropriately rests with SDHB.

Proceeding with repatriation when the woman's condition was unstable

The woman was scheduled to be collected by the flight crew for repatriation at approximately 1.30am on 1 August 2019.

At 6.20pm, while the woman was under the care of a nurse, the woman had an EWS of 4, which then increased to 5 at 10.00pm. The increased score from 4 to 5 was due to the woman's drop in blood pressure and her fast heart rate. An EWS of 1–5 requires the nurse in charge to be informed, that clinical staff should consider referral to the clinical team coordinator, and consider review of the patient by a house officer. Vital sign recording must increase to 1–2 hourly.

At 10.20pm, the nurse recorded in the clinical notes that she had received a telephone call from a hospital in the woman's home country, advising that they had had a phone call from the woman's mother saying that the woman was very unwell and might not be able

to fly out that evening. The nurse then noted that the plan was to continue with the transfer, and to pack the last of the woman's belongings so that she could be collected by the overseas team at 1.30am.

The woman's condition then continued to deteriorate, and at 1.00am, while she was under the care of a nurse, her EWS had increased to 7. An EWS of 7 requires the nurse in charge to be informed, and there must be referral to the clinical team coordinator out of hours. Review of the patient by a house officer must occur within 60 minutes, and vital signs frequency must increase to 30–60 minutes.

The woman continued to present as severely septic at the time of handover to the retrieval team at 2.15am on 1 August 2019. The Air Ambulance's Medical Director declined to transfer the woman as she was too unwell, and requested an urgent review by senior medical staff.

Dr McKie advised that it was inappropriate and potentially dangerous for staff not to cancel the plan to repatriate the woman earlier. He considers this to be a moderate departure from the accepted standard of care.

I accept Dr McKie's advice. The woman was presenting with a fever, an increasingly rapid heart rate, and low blood pressure.

Given that the woman's condition was continuing to deteriorate, I would have expected the clinical staff to have postponed the repatriation earlier than they did. In my view, the repatriation should have been cancelled at 10.00pm, when it was clear that the woman's condition was unstable and not improving. At the very least, it should have been cancelled at 1.00am, when the woman had an EWS of 7. Instead, staff proceeded with plans to repatriate the woman, and it was the Air Ambulance's Medical Director who finally recognised that the woman was too unwell and declined the transfer.

In my view, the staff failed to obtain the full clinical picture, and did not appreciate the risks involved in proceeding with the repatriation. Further, the staff did not take the appropriate actions, as required by the Deteriorating Patient Early Warning Score Escalation Pathway Flowchart, when the woman's condition deteriorated and her EWS increased.

The intensive care consultant also accepted that the woman's unsuitability for repatriation should have been recognised at an earlier stage, and her repatriation should have been cancelled.

While there is certainly individual accountability and obligations on individual providers to provide care within accepted standards, SDHB has an organisational responsibility to provide a reasonable standard of care to its patients. In my view, because there were

multiple staff members involved, this demonstrated a pattern of poor care, for which ultimately SDHB is responsible.

Clinical documentation

The woman raised concerns about the standard of clinical documentation. She is described in the notes as "difficult and controlling", and "childlike and attention seeking". The clinical documentation also states that the woman was "acting weird … annoying behaviour".

SDHB accepted that the wording used in the clinical documentation was unprofessional. It explained that the nurses who recorded these entries in the clinical notes did so in an attempt to describe the behaviour they had observed, but that the descriptions may not have been accurate owing to English being their second language.

As commented on by Dr McKie, it is important that nursing staff record their observations about a patient, and any concerns they may have without fear of criticism. While the comments in the clinical documentation may have been unprofessional, it is important that physical and behavioural observations about a patient be clearly and accurately documented, as this will inform clinical decision-making.

It is the responsibility of SDHB to have oversight of nursing staff, and to provide support and supervision in relation to clinical documentation. SDHB should reflect on the quality of the clinical documentation and ensure that its staff record their observations accurately and professionally.

The nursing staff involved have apologised for the distress their clinical records caused the woman.

Conclusion

To conclude, I consider that SDHB failed to provide services to the woman with reasonable care and skill for the following reasons:

- There was an undue delay on the part of multiple staff members in reviewing and acting on the blood test results, and in recognising and identifying sepsis;
- The decision to repatriate the woman when her condition was unstable and it was unsafe to proceed was unreasonable; and
- The quality of the clinical documentation was poor.

For the reasons outlined above, I find SDHB in breach of Right 4(1) of the Code of Health and Disability Services Consumers' Rights.

Changes made since events

SDHB told HDC that a number of changes have been made since the events.

SDHB said that the following training has been provided to nursing staff:

- An education session was presented on the topic of sepsis recognition and nursing assessment skills. The session was attended by 12 nurses.
- The consultant orthopaedic surgeon presented an education session on the early recognition and management of sepsis, during which he referred to issues raised with the woman's care. The session was attended by 14 nurses.
- There was a visual display on the televisions at the nurses' stations for all health team members to view, which provided an opportunity for staff to refresh their knowledge on current evidence-based practice.
- Deteriorating Patient audits of adult vital signs charts are undertaken weekly. The mandatory escalation pathway is reviewed. Any deviation in the prescribed escalation pathway is discussed with the individual nurses, and clinical guidance is provided to enable them to understand the rationale and the evidence-based practices that underpin this requirement.
- All nursing staff are to complete on-line training on EWS, and have practical guidance on the ward during their orientation period.
- Specific study days on the Deteriorating Patient are attended by all Nurse Entry to Practice (NETP) graduates, and all new nurses are rostered to attend these study days as soon as possible after commencing employment. On these days, nurse educators provide scenario-based teaching.
- ISBAR (Identify, Situation, Background, Assessment, and Recommendation) communication skills have been practised in simulations, and medical staff have been invited and have given feedback on this process for the Deteriorating Patient Management.
- Two Associate Charge Nurse Managers have participated in the Care of the Critically Ill Surgical Patient (CCrISP) Australia and New Zealand course, which includes a lecture on sepsis and a skill station.
- A Clinical Facilitator Registered Nurse was appointed in April 2020 to provide coaching to nursing staff in Deteriorating Patient Early Response. This role also provides a link between nursing, medical, and allied health staff for trauma and complex patient care.

SDHB also told HDC that it plans to commence a specific patient safety round in which the Director of Nursing visits the ward fortnightly to review a number of randomly selected notes, and compliance with processes, including risk assessments for pressure injury, falls risk assessments, and EWS observations.

SDHB said that it discussed the issue around the nursing documentation at an Intensive Care Unit ward meeting. It also provided a set of mandatory training sessions for all staff, reiterating to nurses that observations, both physical and behavioural, need to be objective. SDHB said that it asked those nurses who have English as their second language to consider asking a colleague to read their clinical notes when describing behavioural issues.

Further, SDHB said that it reviewed the safety first system, which is an electronic system that records all serious adverse events, complaints, and feedback.

SDHB stated that it is also exploring the implementation of an electronic EWS system. This system can integrate laboratory information and include decision-assistance software and alerts, such as sepsis alerts when key combinations of parameters become abnormal. In the event that there are failures to monitor or respond appropriately to alerts, an automated escalation alert will be generated to more senior nurses and doctors. However, SDHB said that currently there is no electronic EWS system available to it, and such a system is unlikely to be available within the next two years.

SDHB also said that following receipt of this decision, a further review and educational update will be undertaken at the surgical service's weekly clinical session, convened by the consultant orthopaedic surgeon.

Recommendations and follow-up actions
Taking into account the changes made by SDHB since the time of events, I recommend that SDHB:

1. Provide a formal written apology. The apology should be sent to HDC, for forwarding to the woman, within three weeks from the date of this decision.
2. If not done already, develop and implement guidelines for the identification of sepsis, and for the assessment and management of patients clinically symptomatic of sepsis. Evidence of both the guidelines and their implementation is to be provided to HDC within six months from the date of this decision.
3. Audit the management of EWS for ten consecutive patients admitted to the ICU for sepsis. Identification of themes and recommendations are to be presented at the Clinical Directors meeting and the Deteriorating Patient Recognition and Response Committee, and are to be sent to HDC within six months of the date of this decision.
4. Provide all nursing staff who were involved in the woman's care with training on documentation, and undertake audits of their documentation. Evidence of this is to be provided to HDC within six months from the date of this decision.

5. Use this report as a basis for both nursing and medical staff learning at SDHB, and provide HDC with evidence that this has been completed within six months from the date of this decision.

I will undertake the following follow-up actions:

1. A copy of this decision with details identifying the parties removed, except SDHB, Dunedin Hospital, and the expert who advised on this case, will be sent to the Health Quality & Safety Commission, and
2. A copy of this decision with details identifying the parties removed, except SDHB, Dunedin Hospital, and the expert who advised on this case, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

22 August 2022

Names have been removed (except SDHB, Dunedin Hospital and the expert who advised on this case) to protect privacy.

Independent clinical advice to Commissioner

4 May 2021

RE: [Patient]/Southern District Health Board
Your ref: C19HDC02255

Thanks very much for asking me to review the details of this case and the specific questions regarding the adequacy or otherwise of care provided.

I have now had the opportunity to review all the data that you have sent me which includes the patient's complaint regarding the care received at Dunedin Public Hospital, the contemporaneous clinical records, the copies of Dunedin Hospital's policies and the responses of various health professionals with respect to the issues raised in the complaint.

In summary, the case is that of a [woman in her thirties], on holiday [in NZ], who suffered the misfortune of a comminuted subtrochanteric femoral fracture [in an accident] on the 23rd of July 2019. She is noted to [be a health professional].

Following her injury and assessment [on location], she was air lifted to Dunedin and underwent assessment and then internal fixation of her fracture on the night of her admission, the 23rd of July 2019.

I have also taken the opportunity of directly reviewing the radiographic images taken before and after her fixation. The surgery that was undertaken was both appropriate and clearly competently performed with satisfactory post-operative radiographs. The clinical records show that the patient was experiencing significant and ongoing pain well outside the spectrum of what would normally be observed for such an injury both in terms of magnitude and duration. She is recorded as having had large doses of opioid and neuroleptic agents including fentanyl, ketamine, gabapentin and diazepam to control her pain in doses that led to documented slurring of her speech. She is also recorded to have been concerned about ongoing ipsilateral right knee pain and having apparently been sharing images of her radiology with contacts at [a public hospital in her home country], suggesting that injuries had been either missed or mismanaged. This led to the clinical team ordering a CT examination of the entire femur which did not exhibit any new, untreated or mistreated injuries.

There was a plan developed to repatriate the patient to [hospital in her home country] on the 1st of August and it would seem from reviewing the record in its entirety that the patient was very keen to facilitate this.

The transfer plan was for her to leave Dunedin by air ambulance, to be transferred [within NZ] at 2 am on the 1st of August and then [overseas]. I am unaware whether this is regular practice to arrange long distance transfers in the middle of the night, but of itself seems unusual particularly when the patient had had such a stormy early post-operative course with respect to achieving appropriate pain management and with obvious anxieties about the adequacy and appropriateness of her initial management. I can only assume this was seen as being the most expedient option by both parties to the transfer.

On the afternoon of the 31st of July, prior to her scheduled repatriation that night, her condition clearly and progressively deteriorates. She is noted to have undergone a thorough medical review by the house surgeon at 1630 hours, which documents an extensive review of systems, the drawing of blood tests and raises the possibility of possible urosepsis and also specifically notes there is no sign of IV cannula phlebitis, but confirms patient pain and discomfort on cannula removal.

Her condition continues to deteriorate over the course of that evening and at the time of arrival and review by the air retrieval team at 1 am, her early warning score is noted to have risen to 7, she was febrile at 38.9°, tachycardic with a pulse of 134 and a recorded blood pressure of 87/47.

The decision was made at that point that she was clearly very unwell and it was inappropriate for her to be transferred. She was further reviewed at this stage and the results of blood tests taken at 1630 on the 31st of July were reviewed at 3 am on the 1st of August which confirmed the patient was neutropenic and had a CRP of 115. Ceftriaxone was prescribed and the medication record notes that 2 grams was given intravenously at 0311. She returned to the orthopaedic ward at approximately 4 am and is noted to have further recordings done at 0455 and 0620 both which yielded an early warning score of 6 and then a further recording at 0725 at which stage her early warning score was now 9. The orthopaedic registrar and consultant were notified and reviewed the patient personally within a timeframe of 15-20 minutes. A presumptive diagnosis was made of septic shock and at 0830 gram-positive cocci were reported in the blood culture samples that had been drawn the previous afternoon at 1630. The question was raised at that time whether there may be a surgical site infection or possible seeding from an infected cannula. Following identification of gram-positive cocci, flucloxacillin was added to the antibiotic cocktail and this was delivered at 0844 and subsequently both piperacillin and vancomycin were added and on the 2nd of August she was started on regular cefazolin. She was treated with supportive and antibiotic care in Intensive Care from the 1st of August and then subsequently discharged from Dunedin Hospital on the 5th of August back home.

In answer to your specific questions:

1. Whether there was appropriate escalation of [the woman's] care to involve senior clinicians when she began to deteriorate.
The early warning guidelines suggest with an early warning score of 1-5, that a house surgeon review is considered and vital sign monitoring occurs every 1-2 hours. This was clearly followed and a thorough review of the patient was documented at 1630 on the 31st of July. Subsequent recordings were then done at 1820, 2200 and 0100 on the 1st of August which is less frequent than the recommendations. The recordings at 0100 yielded an early warning score of 7 and while more senior review may have been beneficial at that time, the guidelines for an early warning score of 6-7 recommend house officer review within 60 minutes. The review of the patient at that time by both the retrieval team and the resident house staff led to a thorough review of the patient including blood results from 1630 and led to the important and appropriate administration of intravenous ceftriaxone at 0311. Notwithstanding this was occurring in the middle of the night, one would normally expect a deterioration such as this to be at least notified to the on-call registrar.

The record notes that [the doctor] did indeed discuss this management plan with [the] on-call registrar who was in agreement of the proposed management plan.

2. The timeliness of [the woman's] transfer to the HDU.
At 0725 the patient's early warning score had risen to 9 and she was reviewed by [an] orthopaedic registrar, and [a] consultant orthopaedic surgeon, within 15 minutes and at that stage arrangement was made for her transfer to the high dependency unit where she is noted to be reviewed by [a doctor] as part of the ICU outreach service at 0930.

By midday on the 1st of August the patient was exhibiting an increased oxygen requirement and the decision was then made by the ICU staff to formally transfer her to the intensive care unit.

While the patient possibly could have been transferred to the HDU in the early hours of the 1st of August after returning to the ward, I don't believe this would have had any significant impact on her care or treatment as the key fact of being started on appropriate antibiotic therapy for presumed sepsis was started appropriately at 0311 when the patient was in the orthopaedic ward. The escalation of her level of care with her progressively increasing needs through to midday on the 1st of August were all appropriate.

3. Medication administration, specifically any perceived undue delays.

I can find no evidence of any significant delay in the administration of prescribed medication. However, there is one significant anomaly in that the results of blood tests taken at 1630 on the 31st of July which showed neutropenia and a raised CRP at 115 were not reviewed and acted upon until 0300 on the 1st of August.

Had those results been reviewed by the medical team later in the evening of the 31st of July, when the patient was remaining in a febrile and tachycardic state, a diagnosis of probable sepsis may have been arrived at earlier leading to an earlier prescription and administration of antibiotics.

4. Whether it was appropriate to persist with plans for repatriation when [the woman's] condition was unstable.

With retrospect, the answer to this is clearly that this was not appropriate. It must, however, be acknowledged that prior to the afternoon of the 31st of July, [the woman] did not have any recorded elevated body temperatures and an isolated temperature at 38.0 of itself may not have been significant. However, given her elevated temperature was maintained as well as being increasingly tachycardic and relatively hypotensive, plans to repatriate were inappropriate. As mentioned above, the fact that repatriation was being planned in the middle of the night added to these potential problems.

5. The overall management of the deteriorating patient including sepsis management.

The initial assessment and investigation at 1630 on the 31st of July was both thorough and appropriate. However, there is a clear problem with investigations being ordered, but results not being promptly reviewed when available. Once the diagnosis of sepsis was eventually made the management was exemplary. However, as noted above, had the abnormal blood tests been reviewed earlier, she may have been started on antibiotics earlier leading to a less severe course of events. Notwithstanding this, staphylococcal septicaemia, even when treated appropriately and in a timely manner, carries significant morbidity and at times mortality as noted in some of the reports already provided.

6. Whether the relevant policies were adhered to by Southern DHB including their sepsis policy.

The frequency of recordings was less than prescribed in the early warning score system. However, when the early warning score was escalated to 9, rapid more senior assessment and intervention took place as per the protocol.

Reviewing the information provided, I was unaware of any specific hospital sepsis policy other than that for neutropenia.

7. The adequacy of remedial measures taken by Southern DHB since the events of this complaint, as outlined in the response from the Southern DHB.
There looks to have been extensive reviews by multiple services following this case and some of the comments made, I believe, are inappropriate in the name of political correctness. Nurses have clearly being criticised for recording subjective observations of patient behaviour which have been noted on review as being inappropriate and unprofessional.

I believe this is a very dangerous trend as staff should be encouraged to actually record what they observe and any concerns they have without fear of chastisement. The comments made in the notes by the nurses in this case may well have been accurate if in unprofessional language. To suggest someone is behaving bizarrely or inappropriately may well be completely correct and should lead to review as to why that behaviour is occurring. Patients may be delirious or exhibit bizarre behaviours for a number of important medical reasons including hypoxia, any kind of systemic toxicity, be it from sepsis or other pharmacological agents or metabolic imbalance, or indeed may have mental health issues driving this. These abnormalities need to be identified and investigated and primarily nurses need to record what they see and observe.

It would seem in all other respects this case has been extensively reviewed within the hospital environment.

If you have any further questions or require clarification, please feel free to contact me directly.

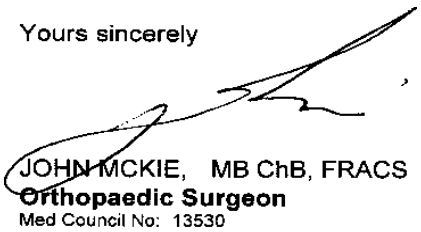
12 May 2021 Amendment:
Thanks for your further inquiry regarding my report. With respect to the three specific questions you have raised, the frequency of recordings as per the DHB Early Warning System protocol were less frequent than specified in the protocol, however, as mentioned above, I don't believe this had any material impact on the management of the patient. While these recordings were less frequent than specified in the protocol, they were still done regularly and I believe this to be, in essence, a technical breach of protocol and as such only a minor deviation from acceptable standard of care.

With respect to the other two factors, the planned continuation of the repatriation programme while her physical condition was clearly declining and the failure to promptly review blood results taken at 1630, I believe these are both of at least moderate severity. As noted above, had the results of the blood tests been seen and acted upon earlier, this may have allowed the penny to drop earlier with her worsening clinical condition. Similarly, to continue a plan of international repatriation in the middle of the night in the presence of deteriorating clinical

observations and patient stability was clearly inappropriate and potentially dangerous.

If you require any further clarification, please feel free to further contact me directly.

Yours sincerely



JOHN MCKIE, MB ChB, FRACS
Orthopaedic Surgeon
Med Council No: 13530

22 August 2022

Names have been removed (except SDHB, Dunedin Hospital and the expert who advised on this case) to protect privacy.