HEALTH & DISABILITY COMMISSIONER
TE TOIHAU HAUORA, HAUĀTANGA

Management of blood-glucose levels and administration of insulin to woman with diabetes

1. On 3 June 2021, this Office received a complaint from Mr A about the care provided to his mother, Mrs B,[1] by Health New Zealand | Te Whatu Ora (Health NZ) Capital, Coast and Hutt Valley. Mrs B was aged 75 years at the time of these events and had several serious comorbidities, including type 2 diabetes.[2] She lived alone in the community and, prior to the events discussed in this report, she had had four hospital admissions over the previous eight months for treatment of hypoglycaemia (low blood sugar).

2. On 16 May 2021, Mrs B suffered a hypoglycaemic event followed by a cardiac arrest. As a result of oxygen deprivation, she suffered significant cognitive and functional impairment and required ongoing support. She was discharged to an aged residential care facility, where, sadly, she died in late October 2021. The complaint concerns the monitoring of Mrs B's blood-sugar level (BSL) and insulin administration prior to the hypoglycaemic episode on 16 May.

3. Mrs B was known to have variable compliance with her medication (including insulin administration) and with eating and blood-sugar monitoring. She received assistance from the Health NZ district nursing team with management of her diabetes, which included support from a district nurse and healthcare assistants (HCAs). She also received domestic support from a home and community support service.[3] Health NZ told HDC that district nurses undertake clinical assessments and may liaise with a patient's general practitioner (GP), request advice from clinical nurse specialists, or contact hospital specialists to discuss management options for patients, if required.

4. Health NZ said that Mrs B was responsible for taking her BSL readings and administering her insulin. Health NZ also confirmed that, at the time of these events, HCAs worked under the direction and delegation of the district nurses to prompt BSL monitoring and self-administration of insulin, and their role in relation to Mrs B was to capture and monitor BSL readings taken and recorded by Mrs B. If readings were outside the set parameters, they were to contact the district nurse for guidance. If the readings were within the set parameters, they were to oversee the self-administration of insulin. Health NZ told HDC that it was considered appropriate[4] for Mrs B to take her own BSL readings and self-administer

[1] Mrs B spoke Hindi with limited English and had medical issues that included type 2 diabetes, chronic kidney disease, recurrent urinary tract infections, and a previous myocardial infarction (heart attack).
[2] A chronic condition in which either the body does not produce enough insulin or the cells do not respond normally to insulin, leading to high blood-sugar levels.
[3] The service provided some assistance with prompting Mrs B to take her medication, but it did not have a role in diabetes management or insulin administration.
[4] Health NZ said that it took into account the following factors: Mrs B was known to Community Health Services; up until referral to the service, Mrs B had been monitoring her blood-sugar levels independently and managing the administration of her own insulin; Community Health Services checks whether patients can

insulin. However, it advised that there were no documented criteria in place at the time to determine safe and appropriate prompting of self-administration of insulin.

5. Health NZ told HDC that the expectation was that an HCA would phone the district nurse to report any concerns and document a patient's condition in the clinical notes. Health NZ said that any changes/concerns reported by an HCA were expected to be followed up by the district nurse and acted on appropriately.

6. On 4 May 2021, close to two weeks prior to this incident, Mrs B's insulin dose was increased by her GP as her BSL readings in the preceding five days had been high. On 11 May 2021, the GP advised the district nursing team that the target range for Mrs B's BSL was 10–15mmol/L, and HCAs were asked to inform the district nurse if the readings were outside this range.

7. On the morning of 12 May, Mrs B's BSL was 8.4mmol/L, and in the evening it was 16.6mmol/L. On the morning of 13 May, the BSL reading was 5.9mmol/L and in the evening it was 7.8mmol/L. On 14 May, Mrs B's BSL was 11.9mmol/L in the morning and 7.9mmol/L in the evening. Health NZ told HDC that there was only one incident (13 May) between 12 and 15 May 2021 where BSLs were below expected parameters. Health NZ told HDC that, on 13 May, following the reading of 5.9mmol/L, the HCA contacted the district nurse, who advised that insulin should be withheld. Health NZ said that the district nurse visited Mrs B at 10.55am that morning to assess her, and her BSL was 10.6mmol/L. Accordingly, the district nurse prompted Mrs B to self-administer her insulin. However, it appears that all the readings over this time period were above and below the target range except for one reading on the morning of 14 May. In addition, Mr A, in his response to HDC, provided evidence from the BSL monitor that showed a reading of 3.3mmol/L on 14 May.

8. An HCA visited Mrs B at 9.20am on 16 May, but she was asleep and did not answer the door. The HCA visited again at 10.30am and took Mrs B's BSL, which showed a reading of 3.6mmol/L. The HCA documented that Mrs B had said she was not feeling well and that the district nurse had been contacted. Health NZ told HDC that when a district nurse receives a call about a patient, they will assess whether the patient requires a visit and, in their assessment, they will rely on the clinical history of the patient and progress notes to inform their decision.

9. The district nurse who was contacted on 16 May was unable to visit Mrs B. The district nurse was not familiar with Mrs B's clinical history and did not have access to her progress notes or clinical records.[5] The district nurse was therefore unaware of the target BSLs Mrs B's GP had set two weeks earlier. The district nurse told HDC that she asked the HCA about Mrs B's condition and was advised that she was 'alert and oriented'. The district nurse said that no other concerns about Mrs B were raised with her and that, while the BSL of 3.6mmol/L was 'low', in itself she did not consider it to be a red flag, as it was within an acceptable range in the context of what she had been told by the HCA. The district nurse said that she was also

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safely self-administer prior to accepting a referral; Mrs B had appropriate informal and formal supports (protective factors) and supervision from HCAs and district nurses.

[5] The district nurse was driving at the time, and a system outage meant that she was unable to access the system on her iPad.

reassured that another visit (by a home and community support worker) was planned for later that day, and so she advised the HCA to prompt Mrs B to administer the insulin dose and to ensure that she ate some sugar and carbohydrates. Mrs B's target BSLs (10–15mmol/L) were documented in the notes available to the HCA, but this information was not communicated to the district nurse. In response to the provisional opinion, Mr A told HDC that the 'nurse administered insulin while knowing [Mrs B] had a [BSL] reading of 3.6[mmol/L]'.

10. Unfortunately, due to staff sickness and rostering errors, the home and community support worker did not visit Mrs B on the afternoon of 16 May. At around 5.30pm, she was discovered unresponsive, and an ambulance was called. Mrs B's BSL was 3mmol/L, and during the ambulance transfer she suffered a cardiac arrest. As a result of the oxygen deprivation, she suffered significant cognitive and functional impairment and was discharged to an aged residential care facility for ongoing cares, where, sadly, she passed away in late October 2021.

Health NZ Serious Event Review (SER)

11. Health NZ conducted an SER of the events, which identified the following:

- The district nurse had insufficient information available to make an assessment about the need to visit Mrs B on 16 May. The 'process' had always been to review the patient face to face for a hypoglycaemic event, but this process was not formalised and/or documented.
- There was no formal template for diabetic care plans, and BSL readings were not recorded in a consistent place.

Changes made

12. Health NZ told HDC that, since 16 May 2021, district nurses have no longer delegated the prompting of BSL monitoring or insulin administration to HCAs; a diabetic care plan template was created and made accessible to staff; a BSL chart was created, and a copy of the completed chart is to be sent to a community patient's GP every month; a process was implemented whereby clinical oversight for community patients requiring insulin is provided by a clinical nurse specialist; and a nurse educator conducted training for staff on the new care plan and BSL chart, and this training is now delivered to new staff during orientation.

Responses to provisional opinion

Mr A

13. Mr A told HDC: 'Our complaint was about a nurse overdosing insulin to my mum, and that's not mentioned anywhere … It appears that the narrative was intentionally altered'.

Health NZ

14. Health NZ accepted the findings and recommendations outlined in the provisional opinion.

15. Health NZ told HDC: 'I want to share my sincere apology on behalf on Health NZ | Te Whatu Ora – Capital, Coast and Hutt Valley for the breakdown in communication that occurred, which impaired the delivery of critical information necessary for Mrs B's care, and Mrs B's passing'.

Opinion: Health NZ — breach

16. Right 4(5) of the Code of Health and Disability Services Consumers' Rights (the Code) states that every consumer has the right to cooperation among providers to ensure quality and continuity of services.

17. Mrs B was a vulnerable elderly woman living in the community at the time of the events. She had several serious comorbidities, including type 2 diabetes, and had presented to hospital multiple times in the months prior to these events with unstable BSLs. She was also known to have variable compliance with her insulin, the administration of which was done by Mrs B and overseen by HCAs. Mrs B was also responsible for monitoring her own BSL, which was also overseen by HCAs. Health NZ's role in this context was to assist Mrs B with the management of her diabetes, and the oversight Health NZ provided was integral to her staying well and maintaining her independence. When consumers with chronic life-threatening medical conditions are living alone in the community, robust systems are required for adequate health care delivery to ensure their complex needs are met. For community-based care to be safe and effective, it must be consistent, and this requires a well-coordinated multi-disciplinary approach where all parties involved have a clear understanding of their responsibilities and scope of expertise, there is good communication, and there is an agreed escalation pathway should the need arise.

18. Health NZ's SER identified that, when the district nurse was contacted by the HCA on 16 May, she had insufficient information available to her to make an assessment of the need to visit Mrs B. The SER noted that the process had always been that the district nurse should review the patient face to face for a hypoglycaemic event, but this process had not been formalised or documented. In addition, the SER identified that there was no formal template for diabetic care plans, and BSLs were not recorded in a consistent place. With reference to BSLs not being recorded in a consistent place, I also note that, between 12 and 15 May 2021, most of the BSL readings were above and below the accepted range.

19. In my view, the findings of the SER highlight the failures in the care provided to Mrs B. It is also my opinion that there was a breakdown in communication between the HCA and the district nurse during the phone call of 16 May, whereby important information about Mrs B's condition and history was not relayed to the district nurse to allow her to make an informed decision. In saying that, I do not believe it was reasonable to put the onus on the HCA to report that Mrs B's GP had increased her insulin dosage 12 days prior and that the target range for Mrs B's BSL was 10–15mmol/L. I consider that it would have been more appropriate for this level of clinical information to have been sourced directly from Mrs B's clinical notes.

20. This breakdown in communication was compounded by the fact that Mrs B was unfamiliar to the district nurse and the district nurse could not access Mrs B's clinical notes at the time due to a systems outage. The notes would have provided critical information about Mrs B's diabetes management.

21. Accordingly, I find that Health NZ breached Right 4(5) of the Code for failing to ensure cooperation among the providers involved in Mrs B's care and for failing to have in place

formalised and documented processes to ensure the coordination of care for vulnerable consumers with complex healthcare needs living independently in the community.

22. I note Mr A's comments in response to the provisional opinion, that his main concern was that a nurse had overdosed Mrs B on insulin. However, I have found during this investigation process that the district nurse's assessment of Mrs B's condition was based on insufficient information, and I have relied on this failing as one of the factors in determining that Mrs B did not receive an appropriate standard of care. In these circumstances, I have considered that the inadequate care provided to Mrs B was not the result of an individual error but rather a result of system failures. Accordingly, I have not made a finding on this matter.

Recommendations

23. I recommend that Health NZ Capital, Coast and Hutt Valley provide Mrs B's family with a written apology for the failings identified in this report. The apology is to be provided to HDC, for forwarding to Mrs B's family, within three weeks of the date of this report.

24. I am satisfied that Health NZ's SER identified appropriate improvements and that these have now been implemented. Accordingly, I have no further recommendations.

Follow-up actions

25. A copy of this report with details identifying the parties removed, except Health NZ Capital, Coast and Hutt Valley, will be placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Rose Wall
Deputy Health and Disability Commissioner