Taranaki District Health Board

A Report by the
Health and Disability Commissioner

(Case 19HDC01900)

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Executive summary

1. This report concerns the care provided to a woman by Taranaki District Health Board (TDHB) in July 2018.

2. The woman presented to the TDHB Emergency Department (ED) with leg pain and swelling following an angiogram two days earlier. She was referred for a computerised tomography (CT)[1] scan to assess for a retroperitoneal bleed,[2] which confirmed the presence of a pseudoaneurysm,[3] as well as an incidental finding of a liver lesion, for which further non-urgent imaging was recommended. While the woman received timely and appropriate management of her presenting problem, further follow-up of the non-urgent liver lesion was not arranged. Sadly, the woman was later diagnosed with inoperable cancer of the bile duct.

3. This report discusses the vulnerabilities in the results management system in place at TDHB, which resulted in the woman not receiving timely follow-up of the liver lesion.

Findings

4. The Commissioner found TDHB in breach of Right 4(1) of the Code. The Commissioner concluded that the fallibilities of TDHB's results management system, and the collective failures of several clinicians, resulted in the woman not receiving services with reasonable care and skill.

Recommendations

5. The Commissioner recommended that TDHB provide an update on its progress towards introducing a system to monitor abnormal radiology results for ED patients, and extending its procedure of radiologists notifying ordering clinicians of abnormal findings to include after-hours contracted radiologists. The Commissioner also recommended that TDHB consider introducing a mandatory review of all test results ordered during an episode of inpatient care prior to hospital discharge, to ensure that any follow-up is actioned appropriately prior to discharge.

Complaint and investigation

6. The Health and Disability Commissioner (HDC) received a complaint from Mrs A about the services provided to her by Taranaki District Health Board (TDHB). The following issue was identified for investigation:

- *Whether Taranaki District Health Board provided Mrs A with an appropriate standard of care in July 2018.*

[1] A series of X-rays to create cross-sectional images.
[2] The accumulation of blood in the retroperitoneal space (abdomen).
[3] An abnormal collection of blood that forms between the two outer layers of an artery.

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7. This report is the opinion of Health and Disability Commissioner Morag McDowell.

8. The parties directly involved in the investigation were:

Mrs A	Consumer/complainant
Taranaki District Health Board	Provider/DHB

9. Also mentioned in this report:

Dr B	Emergency medicine physician
Dr C	Radiologist
Dr D	Consultant

10. Independent expert advice was obtained from an emergency medicine physician, Dr Tom Jerram (Appendix A), and a health systems expert, Dr Margaret Wilsher (Appendix B).

Information gathered during investigation

Introduction

11. This report considers the management of Mrs A (aged in her sixties at the time) by TDHB after a computerised tomography (CT)[4] scan performed on 20 July 2018 indicated that Mrs A had a mass on her liver. The finding was not followed up in a timely manner and, sadly, Mrs A was later diagnosed with an inoperable cancer of the bile duct.

Background

12. Mrs A had an extensive past medical history, including ischaemic heart disease[5] and a coronary artery bypass graft (CABG).

13. On 17 July 2018, Mrs A underwent a left femoral angiogram[6] at another DHB (DHB2).

Presentation to TDHB Emergency Department

14. At 11.35pm on 19 July 2018, Mrs A presented to the TDHB Emergency Department (ED) complaining of left groin pain and swelling.

15. Shortly after her arrival, Mrs A was assessed by an emergency medicine physician, Dr B.[7] Dr B noted Mrs A's presenting complaint of left leg pain and swelling, left inguinal (groin) pain, and left lower back pain. Dr B undertook an examination and referred Mrs A for a CT

[4] A series of X-rays to create cross-sectional images.
[5] Narrowing of the coronary arteries caused by a build-up of plaque.
[6] A study to look at the heart blood vessels using contrast dye and X rays.
[7] Dr B is a vocationally registered emergency medicine specialist.

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angiogram of her left leg and abdomen to assess for a retroperitoneal bleed.[8] Dr B ordered the CT scan at 12.49am on 20 July 2018.

16. Dr B told HDC:

> "I was aware that [Mrs A] had undergone an angiogram in [DHB2] two days prior … which would have involved the insertion of a catheter into the artery of her upper leg, where she was now experiencing the problem. It is not uncommon for this procedure to have complications, which can include internal bleeding, or formation of a pseudoaneurysm … I therefore concluded that the most appropriate test to evaluate [Mrs A's] problem was an urgent computerized tomograph (CT) angiogram of her leg."

Reporting of CT findings and referral to vascular team

17. The CT scan was reported by radiologist Dr C,[9] who noted the presence of a pseudoaneurysm in the left femoral artery, no significant haematoma (bleed), and a "[h]eterogeneous lesion within the right lobe of the liver", for which he recommended comparison with any prior imaging. Dr C also noted that if comparison with prior imaging was not available, then "non urgent dedicated liver imaging" was recommended.

18. Initially, Dr C telephoned Dr B and provided an informal verbal report of his findings. At 2.54am on 20 July 2018, Dr C's formal written report was issued on Éclair, the electronic system used to manage patient test results. On this report, Dr C documented: "Key finding relayed by phone to referring doctor."

19. In relation to his verbal report, Dr C told HDC that while he cannot specifically recall Mrs A's case, he is "able to confidently predict how [he] would have approached a case like [Mrs A's] based on [the radiology service's] arrangement with TDHB and [his] usual practice". Dr C said that when telephoning results through to a referring physician, it is his usual practice to draw the referrer's attention to all of the findings listed in the conclusion. He stated: "By warranting inclusion in the conclusion section, it is clear to me that I consider them to be key." Dr C is "confident that [he] would have drawn the requesting doctor's attention to the liver lesion, and [his] recommendations".

20. Dr B told HDC that he received the verbal report from Dr C some time prior to 2.20am. Dr B said that he was advised of the presence of the pseudoaneurysm, but felt it was unlikely that he was made aware of the additional finding of a liver lesion at the time of the verbal report by Dr C. Dr B stated:

> "If I had been informed of the additional finding of a liver lesion at that time, then my usual practice would be to pass that information on verbally to the admitting inpatient team."

[8] The accumulation of blood in the retroperitoneal space (abdomen).

[9] At the time of these events, Dr C was working for a radiology service that had an after-hours reporting contract with TDHB.

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21. Dr B also said that it is his usual practice to document all important radiographic findings, but he acknowledged that in Mrs A's case he had "not written about the liver lesion". Dr B said that this indicates that he was not aware of the finding at the time. He also noted that Dr C documented that the "key finding" had been verbally communicated to him, which Dr B said "would normally refer to the primary diagnosis, which in this case was the pseudoaneurysm".

22. On receipt of the verbal radiology report, Dr B documented "36mm pseudoaneurysm of the femoral artery" as the only finding of note from the CT scan, and at about 2.20am he referred Mrs A to the vascular surgery team.

23. There is no documentation by Dr B relating to the liver lesion at that time.

24. Dr B told HDC that the dictated radiology report was not available until 2.54am, after he had referred Mrs A to the vascular team. He said that his Éclair settings were set so that when any results were read, they would automatically be accepted on the system. Éclair recorded Dr B as having viewed and accepted the radiology report at 5.47am on 21 July 2018 (the day after Mrs A's admission). Dr B told HDC:

> "By the time I viewed and accepted the CT report (and therefore by the time I likely became aware of the additional finding), [Mrs A] had been an inpatient for over 24-hours, and it was 05:47h — a time when all the surgical registrars and consultants are normally at home."

25. Further, Dr B noted that Éclair showed that five other people had viewed the CT report on Éclair before him, including a general medicine registrar, two house officers, and the vascular surgery registrar to Dr D, the consultant under whom Mrs A was admitted.

Ongoing care

26. According to the ED nursing notes, by 5.37am on 20 July 2018 Mrs A had been reviewed by the surgical registrar and was awaiting transfer to the ward. She remained on the ward for four days, during which time her pseudoaneurysm was treated. On 24 July 2018, Mrs A was discharged back to the care of her GP, with a plan to undertake a procedure to treat the pseudoaneurysm in one week's time. No further follow-up was arranged in relation to the liver lesion.

27. Other than Dr C's CT scan report of 20 July 2018, there is no documentation in the clinical records relating to Mrs A's liver lesion during her hospital stay.

Further presentation to ED — 18 November 2018

28. On 18 November 2018, Mrs A presented again to the TDHB ED with chest and abdominal pain. She was admitted to hospital, and a CT scan of her abdomen performed on 20 November 2018 showed the liver mass. An MRI scan carried out the following day confirmed the presence of a mass consistent with an intrahepatic cholangiocarcinoma (cancer of the bile duct). The MRI report noted: "[A]ppearances have not significantly changed since initial CT scan of 20/07/2018."

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29. Subsequently, Mrs A was referred to the Oncology service for management. Unfortunately, the cancer was inoperable, and Mrs A has advised HDC that she does not have long to live.

Further information from TDHB

Policies

30. TDHB's "Electronic Acceptance of Laboratory and Radiology Results Policy" (2017) states:

> "Electronic acceptance [of laboratory and radiology results] is the equivalent of signing the hardcopy paper result and acceptance implies that the result has been viewed and action/s required have been completed or arranged. …
>
> It is generally considered that the requestor of a test should take responsibility for checking and acting on the result, however, in hospital, many tests will not be requested by the responsible clinician. Nevertheless that clinician still has the responsibility for ensuring that the result is viewed and accepted or delegated. …
>
> For patients being admitted from ED … responsibility for results acceptance remains with the requestor to either action and accept or reassign to the admitting SMO."

31. TDHB told HDC that the "Electronic Acceptance of Laboratory and Radiology Results Policy" was updated in 2017 and circulated at that time, along with TDHB's Éclair User Guide, "as part of an extensive communications strategy". TDHB said that "all SMOs are aware of the policies governing results management". Further, it stated:

> "[This policy] has been highlighted to SMOs on numerous occasions by the Chief Medical Advisor and provided to them by email. It has also been discussed on multiple occasions in various forums, e.g. the Heads of Department meeting."

Root cause analysis

32. TDHB undertook a root cause analysis (RCA) of this incident.

33. The RCA report noted that "[r]eferral for further specific Liver imaging was not made by the ED Senior Medical Officer following Mrs A's presentation in July [2018]". This was considered a contributing factor to the failure to perform follow-up liver imaging during or after Mrs A's July 2018 admission. The RCA further noted that it is unclear what was communicated verbally by the radiologist to the ED consultant.

34. The RCA report noted that Mrs A's case was discussed with all the specialists involved in her care at TDHB, and that advice was also sought from a hepatobiliary surgeon[10] at Auckland DHB. The report concluded:

> "All of these surgeons and specialists agree that the scan should have been ordered and undertaken sooner. … [A]ll concur that there has been minimal change in the size

[10] A doctor who specialises in the liver.

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of the liver mass between July and November, and that [Mrs A's] clinical pathway and care has not been adversely affected by the delay to have the second imaging."

35. The RCA team made the following recommendations:

> "Investigate the option of improving Éclair electronic layout and visual presentation so that the system clearly flags abnormal radiology diagnostics and alerts the referring doctor/team to significant findings and recommendations.
>
> Case presentation at Clinical review meetings to emphasise for all clinical staff the importance of reviewing the entire radiology report in particular, unforeseen, non related findings and acting on findings."

Further comment

36. TDHB advised that when results are accepted by an SMO, they are moved from the unaccepted results queue and filed in the results section under the patient's electronic medical record. It said that the risk of this system is that "an abnormal result not acted on immediately may be 'lost' if accepted", but that it has two safeguards in place to mitigate that risk.

37. First, Éclair has an inbuilt function that allows the ordering clinician to "Reassign" a test result, which allows for significant results to be sent to the most appropriate person for follow-up. TDHB further noted:

> "There is also a comments section which can be edited that gets added to the bottom of the results so that the receiving SMO is given further context relating to the reassigned result and why they have received it."

38. Second, there is a "Bookmark" function that allows "specific patients or their reported results to be added to a list under each SMO so that they cannot be lost to the system and the SMO can return to action them at any time".

39. Notwithstanding these safeguards, TDHB stated that in its view:

> "[The vascular team] should have assessed the incidental finding on the CT scan and decided on a course of action … [Dr D], Vascular Surgeon — whose team took over the care of [Mrs A] as an inpatient — is of the view that it was an oversight of his team not to have followed up on the incidental finding."

40. Further, TDHB stated: "[Dr D] agrees with [Dr B's] view that it is not an Emergency Department (ED) physician's job to manage incidental findings on the CT scan."

41. TDHB apologised to Mrs A and her family "for not acting in a timely manner in relation to the incidental findings on the initial scan", and said that it is "looking at ways to prevent this from happening in the future".

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Changes made

42. In February 2019, the Radiology Department introduced a procedure that allows for the reporting radiologist to notify the ordering clinician of abnormal, unexpected, or incidental findings. TDHB said that currently this function is available to its in-house radiologists only, but that "the next step will be to work with [its] after-hours [contracted radiology provider] to see if a similar system can be introduced for [its] radiologists".

43. TDHB also advised that it is looking into the introduction of a new system for the management of radiology findings, similar to one already introduced in its ED where it has established a list, reviewed every 24 hours, that records any positive culture obtained from an ED patient.

44. TDHB said that it has also made significant changes to the way it investigates and reports serious incidents, "to ensure that all key stakeholders are engaged in the process".

Response to provisional opinion

TDHB

45. In relation to Dr B's responsibility in following up the incidental CT scan finding, with reference to the findings of the provisional opinion and the advice of both Dr Jerram and Dr Wilsher, TDHB submitted:

> "[I]t is not the requirement of the emergency medicine doctor to follow up with respect to clinical care and treatment plans developed and carried forth by the inpatient teams. The eventual discharge letter from the inpatient service should address all concerns and develop reasonable plans to address clinically important findings that were uncovered during a hospitalization. These discharge plans would never expect that an emergency medicine doctor would be responsible for arranging a follow up, particularly given that it would not be known to him or her if something had already been arranged, or if the study itself was already carried out during the inpatient process."

Mrs A

46. Mrs A was provided with a copy of the "Information gathered" section of the provisional opinion. She did not wish to make any further comment in relation to this section of the report.

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Opinion: Taranaki District Health Board — breach

Introduction

47. TDHB had a duty to provide services to Mrs A with reasonable care and skill, and to have in place adequate systems to ensure that the care delivered to Mrs A complied with the Code of Health and Disability Services Consumers' Rights (the Code).

48. As noted above, Mrs A presented to the TDHB ED at 11.35pm on 19 July with leg pain and swelling following an angiogram two days earlier. Shortly after her arrival, Mrs A was assessed by emergency medicine physician Dr B, who immediately referred her for a CT scan.

49. The CT scan was reviewed by radiologist Dr C, who subsequently reported his findings. As noted by systems expert Dr Margaret Wilsher, Dr C's report was long and detailed. It focused on looking for a retroperitoneal haematoma, and the conclusion highlighted the presence of a pseudoaneurysm. A number of other findings are listed in the conclusion of Dr C's report, including the presence of a liver lesion, for which Dr C recommended non-urgent imaging to investigate further. In relation to that recommendation, Dr Wilsher advised:

> "Whilst it might not be clear what is meant by non-urgent, it would be reasonable to conclude that such imaging did not need to be performed in the context of the current acute problem, but that it should be performed within a small number of weeks."

50. Unfortunately, while Mrs A received appropriate and timely management of her presenting problem, further follow-up of the non-urgent liver lesion finding was not arranged.

Policies

51. TDHB's policy for the management of laboratory or radiology results placed the responsibility for management of results with the requestor, to either action or delegate as appropriate. In relation to the management of results for patients admitted from the ED, the policy explicitly stated that the "responsibility for results acceptance remains with the requestor to either action and accept or reassign to the admitting SMO".

52. TDHB said that this policy had been well circulated to staff prior to these events, and that, in addition, the option of delegating responsibility for a radiology report was easily available to staff through Éclair, its electronic results management system.

53. Dr Wilsher considers that this results sign-off policy was appropriate, and that it had been well communicated to staff. Emergency medicine expert Dr Tom Jerram also advised that the policy was consistent with the system in place at many other DHBs in New Zealand.

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Responsibility for follow-up

54. While Dr B, as the requestor of the CT scan, took appropriate and timely action in relation to the primary finding of a pseudoaneurysm, he did not take any action in relation to the liver lesion.

55. In accordance with the above policy, by accepting the results of the radiology report, Dr B was accepting responsibility for taking further relevant actions, which in this case was to delegate follow-up of the non-urgent findings of the radiology report to the inpatient vascular team. However, I note that by the time Dr B reviewed and accepted Dr C's written radiology report, Mrs A had already been transferred to the vascular team about 27 hours earlier, and at least four members of the inpatient vascular team had reviewed the imaging report before Dr B. Further, Mrs A remained an inpatient for another four days. During that time, no one took any action in relation to the liver lesion.

56. In this respect, Dr Wilsher commented:

> "By the time [Dr B] came to sign off the final published report, as part of his administrative duties some 27 hours later, he could have reasonably assumed that the inpatient team would have addressed all the other radiologic findings."

57. This view was shared by Dr Jerram, who noted that although by accepting the radiology report Dr B had a responsibility to ensure handover of the non-urgent findings to the vascular team, this responsibility should be shared by the vascular team.

58. TDHB's view is also that the vascular team "should have assessed the incidental finding on the CT scan and decided on a course of action". Furthermore, it stated: "[Dr D] agrees with [Dr B's] view that it is not an Emergency Department (ED) physician's job to manage incidental findings on the CT scan."

59. Further, in response to the provisional opinion, TDHB submitted that in a situation such as this, the responsibility for follow-up was the responsibility of the inpatient team, and the discharge letter from the inpatient services should address any clinically important findings uncovered during a hospitalisation.

Conclusions

60. This case highlights the vulnerabilities in the system where, despite apparently reasonable processes and safeguards being in place, Mrs A's clearly identified liver lesion was not followed up in a timely manner.

61. The initial responsibility for follow-up rested with Dr B, as the clinician who requested the scan and accepted the results. However, I acknowledge Dr Wilsher's comments:

> "The case in question was exceptional due to the challenging system in which doctors work — unwell patients present outside ordinary working hours, full reports of investigations are not always available at the time of transfer of care, handover is complex and hard to perform well when many complexities exist in relation to any

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individual patient. That system complexity combined with human factors means that sometimes, despite a hospital's best efforts, an error will occur."

62. Dr Jerram noted similar concerns:

"The practicalities of an ED SMO handing responsibility for following up a non-urgent finding to a Surgical SMO at 3 in the morning are problematic. Ideally, [Dr B] would have viewed the result, then contacted the surgical SMO or registrar the next day to pass on responsibility, and made a note to this effect in the clinical records. The realities of being a shift worker engaged in episodic acute care make it difficult to implement this consistently."

63. Accordingly, although there was a clear responsibility under the policy for Dr B to delegate the follow-up of the liver lesion to another clinician, there are obvious challenges in ensuring absolute compliance with the policy when taking into account a busy ED setting, and where the test results come in after a patient has been transferred to another team. I accept Dr Jerram's view that there should have been redundancies built into the system to ameliorate these challenges and associated risks.

64. Furthermore, it is my view that in a situation such as this, it could be reasonably expected that the receiving team would act as a safety net and take responsibility for following up any unaddressed test results. I am concerned that despite Mrs A being an inpatient for four days, and a number of staff reviewing the CT report, no one took steps to act in relation to the liver lesion. There is no doubt that this was a missed opportunity by the inpatient team. I note, and accept, Dr Wilsher's view that "their collective failure to act on the reported abnormality (the liver lesion) is a moderate departure of care".

65. In conclusion, I am of the view that the fallibilities of TDHB's results management system, and the collective failures of several clinicians, resulted in Mrs A not receiving services with reasonable care and skill, which meant that Mrs A did not receive timely follow-up of the liver lesion. As a result, I conclude that TDHB breached Right 4(1) of the Code.

Opinion: Dr B — other comment

66. As identified, Dr B was the clinician who ordered Mrs A's CT scan, and who received both a verbal and a written report of its findings.

67. Sometime before 2.20am on 20 July 2018, Dr C communicated the CT scan findings to Dr B by telephone, before his written report was issued on Éclair at 2.54am.

68. It is unclear on the evidence, and therefore I am unable to determine, whether Dr C advised Dr B of the incidental liver lesion finding at the time he provided his informal verbal report. While Dr C advised HDC that, consistent with his usual practice, he is "confident" that he did advise Dr B of the liver lesion, Dr B said that he recalls being

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advised only of the presence of the pseudoaneurysm. The radiology report documented by Dr C refers only to the "key finding" being verbally communicated to Dr B. There is no documentation in Mrs A's clinical records referencing the liver lesion at that time.

69. Immediately after receiving the verbal report from Dr C, at around 2.20am, Dr B referred Mrs A to the vascular team for ongoing management of the pseudoaneurysm.

70. Emergency medicine expert Dr Tom Jerram advised that the decision to refer Mrs A to the vascular team based on Dr C's verbal report was "common practice and totally appropriate". I accept that advice. Dr B later viewed and accepted the radiology report at 5.47am on 21 July 2018 (about 27 hours after Mrs A's transfer to the vascular team), it having been viewed already by four other clinicians.

71. In accordance with the results policy, it was Dr B's responsibility as the requestor of the CT scan to ensure that the non-urgent radiology findings were either actioned and accepted, or reassigned to the admitting SMO. Having accepted the results, he did not reassign them. However, in my view, in the particular circumstances outlined (that the results were opened by Dr B 27 hours after their availability electronically, and after other clinicians had viewed the result), it was not unreasonable for Dr B to assume that the in-patient team had acted in relation to the results. In reaching this conclusion I note that my experts were critical of Dr B's failure to ensure the handover, but both also identified that the system in these circumstances was set up to fail. That is, the system was flawed. My experts also identified many mitigating factors. For example, I note Dr Jerram's comment:

> "I think it is unreasonable to expect that the burden of follow up for a non-urgent result on an urgent scan ordered at 1.30 in the morning falls entirely on a clinician who looked after the patients for the first 2 hours of a 4 day hospital stay."

72. Dr Wilsher also stated:

> "This case illustrates how human factors contribute to error and missed opportunity in complex hospital systems and thus systems must be robust to protect from such. Whilst clinicians have skill in anticipating risk, adjusting practice to mitigate such and intervening to prevent harm, they are also subject to anchor bias, distraction, and assumptions regarding the actions of others. The clinicians involved in the care of [Mrs A] were undoubtedly preoccupied with the presenting problem, an important problem that required diagnostic investigation in the middle of the night and decision making when most senior staff were in bed. Human factors simply reflect that humans are fallible — no single individual in this case acted in a way to cause harm but they did overlook the significance and ownership of an unexpected finding and in doing so, missed an opportunity to intervene sooner than otherwise proved to be the case."

73. Having carefully considered the evidence, submissions, and responsibility for this error, as I have noted above, my primary concern is with the fallibilities of TDHB's results management system, and the *collective* failures of several clinicians to act on Mrs A's results. No further comment is required.

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Recommendations

74. I recommend that within three months of the date of this opinion, TDHB undertake the following and report back to HDC on the actions taken:

a) Provide an update on its progress towards introducing a system to monitor abnormal radiology results for ED patients. Consideration should be given to reviewing the results policy given the circumstances of this matter.

b) Provide an update on its progress towards extending its procedure of radiologists notifying ordering clinicians of abnormal findings to include after-hours contracted radiologists.

c) Consider introducing a mandatory review of all test results ordered during an episode of inpatient care prior to hospital discharge, to ensure that any follow-up is actioned appropriately prior to discharge.

Follow-up actions

75. A copy of this report with details identifying the parties removed, except TDHB and the experts who advised on this case, will be sent to the Medical Council of New Zealand, the Australasian College for Emergency Medicine, and the Health Quality & Safety Commission, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

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Appendix A: Independent advice to the Commissioner

The following expert advice was obtained from an emergency medicine specialist, Dr Tom Jerram:

"Complaint [Mrs A]/Taranaki District Health Board

Ref 19HDC01900

Thank you for your request to review the above complaint.

In doing so I have reviewed the documents sent to me including:

— Your letter dated 3 March 2020

— Letter of complaint dated 9 October 2019

— Taranaki District Health Board's response dated 7 November 2019

— Clinical records from Taranaki District Health Board covering the period 19 July 2018 to 24 November 2018

— Taranaki DHB's 'Electronic Acceptance of Laboratory and Radiology Results Policy'

I am currently a Fellow of the Australasian College for Emergency Medicine since 2011 and work full time as an Emergency Medicine Specialist at Nelson Hospital Emergency Department. I am also a Senior Clinical Lecturer with the Otago University Christchurch School of Medicine. I have read the HDC guidelines for expert advisors. I have reviewed the persons and entities in this case, and can see no conflicts of interest.

Referral instructions

I have been asked by the Commissioner to give an opinion on whether the care provided to [Mrs A] met accepted standards, and to explain my rationale. In particular, I have been asked to comment on:

1. The adequacy of the care provided to [Mrs A] at Taranaki DHB
2. The reasonableness of the actions taken by the ED consultant following the reporting of the CT scan to him by the radiologist
3. The adequacy of Taranaki DHB's 'Electronic Acceptance of Laboratory and Radiology Results Policy'
4. The safety and appropriateness of [Dr B's] discharges home or transfers from ED
5. Any other matters in this case that I consider amount to a departure from the standard of care/accepted practice

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Case summary

[Mrs A] presented to [the public hospital's] Emergency Department on 19/7/2018 at 2325h. She had a presenting complaint of Left leg swelling. She was assessed by a triage nurse at 0005 on 20/7/18, with a triage note that she had had a recent angiogram (study to look at the heart blood vessels with dye and X rays) at DHB2, and had been discharged from [DHB2] 2 days prior.

She was documented to have a tachycardia (fast heart rate) at 115 beats per minute, with a borderline fast breathing rate of 20 per minute, and normal oxygen saturations of 97% on room air. She had a mildly elevated blood pressure at 147/63mm Hg, and a normal tympanic temperature of 37 degrees C. Note is made of an extensive past medical history and medication list including warfarin as a blood thinner, as well as aspirin and clopidogrel to further thin the blood. Her triage category is not documented, however she was rapidly brought through to a resuscitation area in the department, and was seen by [Dr B] at some stage prior to 0021 on 20/7/18 (ie within 30 minutes of triage time).

[Dr B] documents a primary complaint of Left leg pain and swelling, Left inguinal pain, and Left back pain. There is an adequate documentation of her presenting complaint and past medical history, and a well documented examination including an Ankle Brachial Index (a comparison between the blood pressure in the leg and arm which is used to check for problems with arterial flow). She had blood tests sent off, & [Dr B] expediently ordered a CT angiogram of the leg and abdomen, with a documented concern for retroperitoneal bleeding following the angiogram. This is a recognised serious complication of femoral arterial access in which blood continues to leak from the needle puncture site, & collects in the deep tissues of the back behind the abdominal cavity, and was entirely appropriately the major concern at the time.

He documents 'has a 36mm pseudoaneurysm of the femoral artery', and further documents that 'surgery informed at 2.20 am and will admit' (a pseudoaneurysm is an organised blood clot with flow inside it that happens at the site of an arterial injury. It is relatively common following vascular access procedures such as angiography).

The formal report for the CT (which is time stamped 0254 & done by [Dr C] for [the radiology service]) documents a pseudoaneurysm of the left superficial femoral artery, and no retroperitoneal or other significant haematoma. It also notes a 'heterogenous lesion within the right lobe of the liver, incompletely characterised on this examination. In the first instance, correlation with any prior imaging is recommended. If this is not available, non urgent dedicated liver imaging is recommended'. It is unclear who was expected to do this 'correlation with prior imaging' — this would normally be done by a radiologist at the time of reporting a scan. The report noted 'no prior studies of relevance available on PACS for review'.

The report further documents 'key finding relayed by phone to referring doctor'. It is important to note that 'key finding' is singular, & it is unclear whether the liver lesion was included in this conversation. This report has subsequently been electronically

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accepted by [Dr B] (a process that automatically happens when the report is reviewed in the éclair software), however it is unclear as to when this accepting of the report happened.

The nursing notes timed 0537 document that [Mrs A] had been seen by the surgical registrar, and handed over to the ward nursing team for admission. [Mrs A] was documented to be walking around in ED and was non-distressed.

Appropriate and timely analgesia appears to have been given in the ED.

[Mrs A] was admitted under the care of vascular surgery, and spent 4 further nights on the ward at [the public hospital]. She had her Warfarin (a blood thinner) stopped, had direct pressure applied to the pseudoaneurysm. An ultrasound at day 4 showed flow with no clotting in the pseudoaneurysm, and she was discharged back to the care of her GP, with a plan for an outpatient procedure to thrombose (clot) the pseudoaneurysm in a week's time. There is an 'advice to patient' and 'advice to GP' section in the discharge summary. In neither of these is there any mention of the scan result or suggestion for follow up imaging of the liver lesion.

There is a 'relevant results' section of the discharge summary — this contains a cut and paste (or possibly autopopulation) of blood results from 23/7/2018, but again makes no mention of the CT scan result.

[Mrs A] returned to hospital on 1/8/18 to have the planned follow up procedure done by an interventional radiologist. She was discharged the same day with a plan for follow up ultrasound at 1 week. I can't see any record of this scan in the notes provided.

[Mrs A] next presented to the Emergency Department at [the public hospital] on 19/11/18 with a complaint of chest and abdominal pain. She was referred to the general surgical team, who organised a CT scan of her abdomen the next morning. This showed a mass within the liver, and recommended an MRI scan for more detailed evaluation. The MRI was done the following day, and was reported as showing a mass within the liver which was most in keeping with an intrahepatic cholangiocarcinoma (a cancer of the bile duct). The report also notes that 'appearances have not significantly changed since initial CT scan of 20/7/2018'. [Mrs A] then underwent a CT guided biopsy of the lesion, and was referred to the oncology service.

In answer to your specific questions

1. The adequacy of the care provided to [Mrs A] at Taranaki DHB

AND

2. The reasonableness of the actions taken by the ED consultant following the reporting of the CT scan to him by the radiologist

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[Mrs A] was triaged appropriately on her ED presentation on 19/7/18, and was rapidly transferred into a high acuity area of the department. She was seen expediently by [Dr B], who is a vocationally registered specialist in Emergency Medicine. [Dr B's] history, examination, prioritisation, and rapid ordering of definitive testing was all well within the standard of care expected. He appropriately referred to the correct service immediately on getting a verbal report of the CT scan, and documented this referral. The issue in this case is around the follow up of the incidental CT scan finding of a liver mass.

The CT report was initially issued verbally (documented as 'key finding relayed by phone to referring doctor') sometime before 0220 hrs. [Dr B] seems to have made his referral to the surgical team based on this verbal report, which is common practice and totally appropriate. It is unclear as to whether the information about the liver lesion was part of this initial phone report, although the use of the singular 'key finding' suggests that it probably wasn't. The formal CT report which mentions the liver lesion was not issued electronically till 0254hrs, ie more than 30 minutes after the referral to general surgery was made. It is likely that at this point [Dr B] considered he had handed over care to the surgical team, and may not have checked the formal report that morning. This would be within the standard of care for an Emergency Medicine practitioner, who is responsible for multiple other acutely unwell patients during a shift. [Dr B] does seem to have viewed the result at some point (it is marked as 'viewed and accepted' by him on the éclair system). It is unclear when this happened, as it is not timestamped.

The Taranaki DHB's policy on follow up of results is clear, and is similar to other DHBs around the country. For patients admitted from ED, the responsibility for results acceptance remains with the requestor to either action and accept, or reassign to the admitting SMO.

My feeling is that this is a system set up to fail. [Dr B] would ideally have made an explicit note that he had handed over full responsibility for followup of the non-urgent incidental finding to the surgical team, and I would consider the failure to do so a minor departure from the standard of care. However I think it is unreasonable to expect that the burden of follow up for a non-urgent result on an urgent scan ordered at 1.30 in the morning falls entirely on a clinician who looked after the patient for the first 2 hours of a 4 day hospital stay.

[Dr B] did however electronically sign off the final CT report, and thus does bear some responsibility for follow up of the result. If he verbally handed over follow up to the surgical team, I would consider this at most a minor breach of the standard of care. If this did not occur, then I would consider it a more significant breach (although responsibility for this breach should be shared with the surgical team). I would reiterate that the system is set up to fail, and without significant change in result follow up process, an incident like this seems highly likely to happen again. I would also point out that theses systemic issues are widespread in New Zealand.

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3. The adequacy of Taranaki DHB's 'Electronic Acceptance of Laboratory and Radiology Results Policy'

The relevant passages from this document are as follows:

'delegated authority for the electronic acceptance of radiology and laboratory results is by written agreement of the responsible clinician and is reviewed annually'

'electronic acceptance is the equivalent of signing the hardcopy paper result and acceptance implies that the result has been reviewed and actions/s required have been completed or arranged

'For patients being admitted from ED. Tests may be requested by Resident Medical Officers (RMOs, Midwives (including LMCs) and nurses acting under delegated authority), or performed during the ED assessment, and responsibility for results acceptance remains with the requestor to either action and accept or reassign to the admitting SMO

'For patients being discharged from the ED. ED medical staff/ordering clinicians who have not received results back from a laboratory or radiology test prior to a patient being discharged from the ED must make note of this on the patient's EDS and request that the patients GP follow the result up. If ED medical staff/ordering clinicians have received the results back prior to discharge, he/she is expected to action and accept these.

ED medical staff/ordering clinicians are still required to electronically sign off the unread results for discharged patients even when delegation of responsibility has explicitly been passed on to the GP. In the event that a result shows unexpected findings, the patient's ED EDS will be amended and resent to the GP. In the event that a critical result requiring urgent follow up is found, the ED clinician will communicate the finding directly to the GP Practice and patient if clinically indicated.

This policy is generally adequate. I think the issue comes in the implementation of the policy, in particular around the sentence '*responsibility for results acceptance remains with the requestor to either action and accept or reassign to the admitting SMO'.* The practicalities of an ED SMO handing responsibility for following up a non-urgent finding to a Surgical SMO at 3 in the morning are problematic. Ideally, [Dr B] would have viewed the result, then contacted the surgical SMO or registrar the next day to pass on responsibility, and made a note to this effect in the clinical records. The realities of being a shift worker engaged in episodic acute care make it difficult to implement this consistently. A better system would include a mandatory review of all tests ordered during an episode of care prior to hospital discharge. The surgical team would be much better placed to organise non-urgent follow up imaging than the Emergency Department team. This is not to exonerate [Dr B] of all responsibility, but to acknowledge that the system is prone to error, and therefore should have redundancy built in to ameliorate this risk.

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4. The safety and appropriateness of [Mrs A's] discharges home or transfers from ED

As previously stated, the acute care [Mrs A] received in the Emergency Department on both relevant visits appears exemplary.

5. Any other matters in this case that I consider amount to a departure from the standard of care/accepted practice

Although there was clearly a breach in the overall standard of care in this case, I think it is important not to lay significant blame on individuals. There are issues with offsite contracting of radiology reporting (and subsequent lack of clinical engagement by radiology), surgical team review of results, GP review of results, as well as failure to hand over follow up of results by the Emergency Physician.

I think this is symptomatic of a system which is not robust, and prone to error.

In an ideal system a single clinician would have oversight of the entirety of a patient's care, including review of test results. General Practice would be the most appropriate group of clinicians to do this, but the unfortunate reality is that they are not currently resourced to do this.

I don't think it is reasonable to lay the entirety of the responsibility on following up non-urgent results to an acute care clinician who had a brief early involvement in a significant hospital stay.

I would love to see some commitment to systemic change come out of this case.

My thoughts are with [Mrs A] and her family.

Please let me know if I can be of further assistance in this matter.

Nga Mihi Nui

Dr Tom Jerram MBChB FACEM Senior Clinical Lecturer
Nelson Hospital Emergency Department"

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Appendix B: Independent advice to the Commissioner

The following expert advice was obtained from a systems specialist, Dr Margaret Wilsher:

"**Report for Commissioner Initiated Investigation**

Ref: 19HDC01900

1) I have been asked to provide an opinion to the Commissioner on case number 19HDC01900 and I have read and followed the Commissioner's Guidelines for Independent Advisors.

2) My qualifications are as follows: MB ChB, University of Otago; MD, University of Otago; Fellow, Royal Australasian College of Physicians; Distinguished Fellow, Royal Australasian College of Medical Administrators; Fellow Thoracic Society of Australia and New Zealand. I am currently the Chief Medical Officer for Auckland District Health Board and Honorary Professor of Medicine, Faculty of Medical and Health Sciences, University of Auckland. I am accountable for the clinical practice and professional standards of nearly 1500 doctors employed by ADHB and have been involved in medical leadership and health management for over 15 years. I am a practising physician in public and private sectors, a clinical researcher and teacher. I also hold chartered membership of the New Zealand Institute of Directors and sit on a number of external health related governance and advisory committees and boards.

3) My referral instructions from the Commissioner are to provide an opinion on the care provided by Taranaki District Health Board (TDHB) and [Mrs A] in July 2018.

4) I have read and considered the following material supplied by the Commissioner:

   a. Letter of complaint dated 9 October 2019
   b. TDHB's response dated 7 November 2019
   c. Clinical records from TDHB covering July 2018–November 2018
   d. TDHB's response dated 22 June 2020 (including staff statements)
   e. A USB stick containing relevant images (CT scan undertaken July 2018)

5) I have also read and considered information from the Medical Council of New Zealand and the Royal Australasian College of Surgeons, and reviewed the current literature in respect of management of diagnostic results.

6) Factual Summary

[Mrs A] presented to the Taranaki DHB emergency department (ED) on 19 July 2018 with left groin and back pain following a left femoral angiogram at [DHB2] two days prior. At 12.49 am on 20 July a CT scan of the left leg and abdomen was requested by [Dr B], an ED consultant.

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The radiologist was [Dr C]. The CT scan confirmed a pseudoaneurysm of the left femoral artery. The scan also showed a 48mm lesion within the right lobe of [Mrs A's] liver and [Dr C] documented a recommendation for non-urgent liver imaging.

It is documented in [Dr C's] report that he relayed the 'key finding' of the CT scan by telephone to the ED consultant. However, it is uncertain if this included the incidental finding of the lesion; [Dr B] believes that [Dr C] probably did not mention this to him, whereas [Dr C] believes that he probably did mention the lesion. The 48 mm lesion was not documented on the ED medical record. [Mrs A's] care was then transferred to the vascular surgery team.

The ED consultant viewed [Mrs A's] CT scan report (which showed the 48 mm lesion) and signed it off approximately twenty-seven hours later, after [Mrs A] was transferred to the vascular team.

The lesion is not mentioned again in [Mrs A's] clinical documentation. A referral for non-urgent liver imaging did not occur. [Mrs A] presented acutely four months later in November 2018, where she was diagnosed with inoperable bile duct cancer.

TDHB has stated its view was that the vascular team 'should have assessed the incidental finding on the CT scan and decided on a course of action'.

7) Glossary

Acronyms used in this report are as follows:

- DHB, District Health Board
- TDHB, Taranaki District Health Board
- ED, Emergency Department
- SMO, Senior Medical Officer
- RMO, Resident Medical Officer

8) Opinion

TDHB's systems (including policies and practices) for ensuring that, when ED clinicians request imaging, any incidental findings from that imaging are appropriately followed up.

a) The standard of care/accepted practice

Failure to respond to abnormal diagnostic tests in a timely way can result in patient harm. Results management requires complex linked systems and embedded processes which unfortunately do not exist in many health jurisdictions. Health systems are complex and many have legacy IT systems with poor interoperability. There are multiple steps in the pathway of results management: decision to order, placement of order, receipt of order, radiology processes, issuing of report, sign off of report and action on the results. Unlike a laboratory test where the parameters are generally numeric and either normal or abnormal, the imaging report is largely a subjective one. Significant abnormalities are usually evident and reported as such. With subtle

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abnormalities it is not always clear that pathology (disease) exists. With additional unexpected findings, it is often not clear if these are of significance. No agreed method of dealing with unexpected findings exists. Every hospital has a different process from highlighting the abnormality in the report, phoning the ordering clinician (if very abnormal) or simply reporting the finding along with the key abnormality of interest. It would be expected that a reported unexpected abnormality would be acted upon in a timely way.

The MCNZ mandates that doctors take 'prompt and suitable action' in respect of providing patient care, including diagnostic pathway actions. Imaging is frequently ordered by ED doctors who then pass on the care of the patient to the inpatient team, aiming to transfer the care within 6 hours. Imaging reports typically take longer than that to be published on the electronic results repository. A verbal report may be provided, typically focused on the immediate abnormality of interest. Unless the emergency department has an embedded process for sign off of all results, then it would be expected that the inpatient team review and sign off outstanding results prior to discharge. That does however require an agreed system to be in place where accountabilities for sign off are unambiguous and, in particular, that the transfer of care means that any outstanding results must now be managed by the responsible team. In principle however, the clinician who orders the test is responsible for its receipt and sign off, and any required actions.

b) Departure of care

TDHB had an electronic acceptance of laboratory and radiology results policy, published June 2017. That policy states that electronic acceptance of laboratory and radiology results is the responsibility of the ordering clinician. It also states that each department will develop a process to ensure that all results are accepted. It is explicitly stated that ED medical staff/ordering clinicians have responsibility for results acceptance and to either action and accept or reassign to the admitting SMO. In accepting the report therefore, the ED SMO/clinician orderer is tacitly accepting responsibility for the actions required in respect of any reported abnormality. Most DHBs have a very large number of policies and procedures — more than the average clinician can ever hope to read and adhere to. Thus the DHB should have ensured that a critical policy such as results sign off was well understood by all staff and the Emergency Department should have had standard operating procedures in place to ensure that results management was adhered to as the policy instructed.

The CT scan dated 20/07/2018 is long and detailed. The request states 'evaluation for retroperitoneal haematoma' and the ordering clinician was clearly interested in a cause for the upper thigh/pelvic pain and left leg swelling. The first conclusion in the report is that there is a pseudo aneurysm of the proximal left superficial femoral artery and the second, that there is no retroperitoneal haematoma. The report describes multiple other findings but notably the conclusion highlights the heterogeneous lesion within the right lobe of the liver and the radiologist suggests non-urgent liver imaging. Whilst it might not be clear what is meant by non-urgent, it

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would be reasonable to conclude that such imaging did not need to be performed in the context of the current acute problem, but that it should be performed within a small number of weeks. Although not stated, it could be inferred that any such lesion might be malignant and hence a faster cancer treatment pathway would be appropriate. In most hospitals that would mean imaging within 2 weeks.

The departure of care in this instance relates to the ownership of the report and the timely ordering of the advised imaging. TDHB had a policy but not a robust system to allow safe transfer of care from the emergency department to the inpatient team in that there was no mandatory handover documentation available to prompt reliable transfer of all outstanding actions. Individual clinicians cannot be expected to design their own systems for results transfer as the risk is assumption that the other team will address any outstanding findings. In this case the verbal transfer of care was conducted prior to the receipt of the formal imaging report but that report was posted on the results repository before the patient left the emergency department. It is a moot point but the care of the patient technically transferred at the time of doctor to doctor handover, not at the time of patient arrival in the destination ward.

Whilst the radiologist did provide a timely verbal report, it would appear that only the key and immediate relevant problem was communicated. That would be usual practice unless the additional unexpected finding required immediate attention. The full report was not published until after the patient had been handed over to the inpatient service. In signing off the report many hours later, the ordering clinician (ED SMO) assumed that the reported abnormalities would be addressed by the inpatient team. He did not however formally transfer responsibility for all the new information as he should have, as indicated by the policy. Given the logistical impracticality of an ED SMO ringing ward teams and GPs with new results information long after the patient had left the emergency department it would be more appropriate to assign the report, unsigned and hence clearly un-actioned, to the inpatient SMO case manager. It is not entirely clear how simple that is with the electronic results repository in place at TDHB but the 2017 policy is clear that the action should be considered.

It would be presumed that any doctor from the accepting inpatient team who opened the imaging report would check that action had been taken in respect of any reported abnormalities. Four junior medical staff viewed the report in the eight hours after it was published. Whilst those doctors were all junior and may not have considered the significance of the unexpected finding, their collective inaction does constitute a missed opportunity.

Patients have a right to know the results of any investigation carried out during their care. If this patient had been informed that there was a reported abnormality on imaging that required additional investigation she would have been in a position to discuss next steps with either the inpatient team or her GP. That would have constituted a further safety net in respect of management of an unexpected result.

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c) Attribution of departure of care

TDHB had a very good results sign off policy but not a robust system to support that policy. That is a moderate departure of care given the complexity of designing such systems and the fact that international evidence suggests fail safe systems are challenging to implement.

The ordering clinician, [Dr B], in signing off the imaging report, accepted responsibility for the required actions. He did not formally assign the report and hence transfer that responsibility to the inpatient team. He did communicate the principal radiologic finding which was related to the presentation symptoms. That was his responsibility as an ED specialist and he executed it in a timely way. By the time he came to sign off the final published report, as part of his administrative duties some 27 hours later, he could have reasonably assumed that the inpatient team would have addressed all the other radiologic findings. However, the TDHB policy at the time did indicate that results he ordered were his to address or assign. Failure to do that constitutes a moderate departure of care but only in the context that the TDHB had made him aware of its published policy.

The inpatient team junior medical staff viewed the report on multiple occasions subsequent to the patient being transferred to an inpatient care team but did not take action in respect of the unexpected finding. It is not clear if any of them informed the SMO ultimately responsible for the patient's care. It would be speculative to comment on whether they thought that action had been taken, or that it was required. Overall, their collective failure to act on the reported abnormality (the liver lesion) is a moderate departure of care, one that is potentially a consequence of the system in which they work where multiple junior medical team members are accountable for care, where current rostering practice means continuity of such care is fragmented and where team members may change frequently with weekends and rostered days off. It is unclear whether such factors were at play in this instance. It is also not clear if diagnostic anchor bias was at play with the junior doctors focused on the presenting complaint and the imaging findings in relation to that with subsequent unintentional disregard of other unexpected findings.

d) Recommendations for improvement

Subsequent to this incident and attendant review, the TDHB has published a controlled document titled Radiological Communication: risk management for the unexpected finding, date issued 19 February 2019. This document provides advice for clinicians where there is potential for the radiological report to be overlooked and recommends steps to be taken by the radiologist to ensure the report is received and acted upon. A risk stratification approach is taken with results graded 1–3 on the likelihood of impact if the unexpected finding was not acted upon within certain timeframes.

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TDHB could consider strengthening its medical handover documentation to ensure that all outstanding actions have been referred to and accepted by the receiving team. Tools such as ISOBAR and SBARR as used by TDHB nursing and midwifery can be used.

If an ED clinician, on reviewing a report recognizes that necessary actions cannot be completed in the emergency department, then that clinician should not sign off the report but assign to the inpatient team, preferably following a conversation with a senior member of that team. The TDHB should ensure that all ED doctors or nurses ordering tests are aware of current policy as part of their orientation on appointment. Correspondingly, the inpatient services medical teams should ensure that all outstanding reported imaging abnormalities are documented in respect of further action, and that such findings are communicated to the patient and their GP with a clear action plan if one is required. Whilst consideration can be given to copying GPs on all imaging reports, this does not close the loop in respect of action and only serves to fill the GP's inbox with information that is not relevant to his/her care responsibilities.

In regards to the patient who is being discharged to the GP then the existing policy should be followed with consideration of modification of 'critical results' to 'results of potential significance' in which case the GP should be contacted directly. There should not be an assumption that any clinician will follow up an abnormal result merely because it has been copied to them.

Recommendations for improvement that may help prevent a similar occurrence in the future.

This case illustrates how human factors contribute to error and missed opportunity in complex hospital systems and thus systems must be robust to protect from such. Whilst clinicians have skill in anticipating risk, adjusting practice to mitigate such and intervening to prevent harm, they are also subject to anchor bias, distraction, and assumptions regarding the actions of others. The clinicians involved in the care of [Mrs A] were undoubtedly preoccupied with the presenting problem, an important problem that required diagnostic investigation in the middle of the night and decision making when most senior staff were in bed. Human factors simply reflect that humans are fallible — no single individual in this case acted in a way to cause harm but they did overlook the significance and ownership of an unexpected finding and in doing so, missed an opportunity to intervene sooner than otherwise proved to be the case.

Yours sincerely

Margaret Wilsher MD, FRACP, FRACMA, FTSANZ
Chief Medical Officer

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Appendix

Publications of relevance

Rinke ML et al. Project RedDE: cluster randomised trial to reduced missed or delayed abnormal laboratory results. Pediatr Qual Saf 2019;5:e218

Callen J, Georgiou A, Li J, Westbrook JI. The safe implications of missed test results for hospitalised patients: a systematic review. BMJ Qual Saf 2011;20:194–9

Alley R, Peden AH, May W. Laboratory order errors before and after implementation of electronic health record. Clin Lab Sci 2016;29:158–162

Plaisant C, Shneiderman B, Hettinger AZ. Reducing missed laboratory results: defining temporal responsibility, generating user interfaces for test process tracking and retrospective analyses to identify problems. J Am Med Inform Assoc 2010;17104–7

Lacson R, O'Connor SD, Andriole KP, Prevedello LM, Khorasani R. Automated critical test result notification system: architecture, design, and assessment of provider satisfaction. Am J Roent 2014;203:491–95

Grant S, Checkland K, Bowie P, Guthrie B. The role of informal dimensions of safety in high-volume organisational routines: an ethnographic study of test results handling in UK general practice. Implentation Sci 2017;12:56"

Dr Wilsher provided the following further advice:

"Thank you for the opportunity to revise my advice in respect of this complaint.

1. I accept [Dr C's] statement regarding the impossibility of proving whether the finding in question was communicated or not. I do not believe this is ultimately of significance in the wider context of my findings.

2. I acknowledge the extraordinary effort TDHB has undertaken to ensure reports of investigations are signed off and acted upon in a timely manner. The case in question was exceptional due to the challenging system in which doctors work — unwell patients present outside ordinary working hours, full reports of investigations are not always available at the time of transfer of care, handover is complex and hard to perform well when many complexities exist in relation to any individual patient. That system complexity combined with human factors means that sometimes, despite a hospital's best efforts, an error will occur.

3. I accept TDHB's statement that the Acceptance of Electronic Laboratory and Radiology Results Policy has been well communicated. To strengthen that, on employment all orderers of investigations could sign a contract that ensures that they, amongst other things, have read and understood the policy. That also applies to the TDHB response on attribution of care in which it confirms all SMOs are aware of the policies governing results management.

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4. Taranaki DHB Response (2). I believe I am saying the same thing as the DHB in advising that the ED SMO could have assigned the report to another team (reassigned). I do not think it appropriate for an ED SMO to bookmark a result to action at a later stage as ED SMOs are not ultimate case managers.

5. I acknowledge the improvements TDHB has made in respect of handover and commend the DHB for its proaction. I also commend the DHB for continuing to improve results management, including ensuring GPs are advised of any outstanding results or action that could be required."

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