A Decision by the Deputy Health and Disability Commissioner

(Case 23HDC02630)

Introduction

1. This report is the opinion of Dr Vanessa Caldwell, Deputy Health and Disability Commissioner, and is made in accordance with the power delegated to her by the Commissioner.

2. The report discusses the care provided to Ms A at Health New Zealand|Te Whatu Ora Taranaki (Health NZ). Ms A raised concerns that a lesion in her right lung was missed in both her 2017 and 2019 chest X-rays and was discovered only in 2021, which led to a delayed diagnosis of pulmonary malignancy (lung cancer).

3. The following issue was identified for investigation:

   - *Whether Health New Zealand|Te Whatu Ora Taranaki provided Ms A with an appropriate standard of care between 2017–2019 (inclusive).*

4. The parties directly involved in the investigation were:

Ms A	Consumer/complainant
Health NZ Taranaki	Group provider

5. Further information was received from:

General practice	Non-subject provider
ACC	

6. Also mentioned in this report:

Health NZ Region 2	Non-subject group provider
Health NZ Region 3	Non-subject group provider

Background

Introduction

7. On 2 February 2017, Ms A presented to her general practitioner (GP) complaining of coughing with phlegm.

8. On 9 February 2017, Ms A called her GP practice stating that she had finished her medication for her chest infection but was 'still wheezy' and still experiencing a cough. Following this

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phone consultation, Ms A called her GP practice again on 28 March 2017 complaining of her continued 'cough and wheeze morning and night'. The 'plan' section of the clinical records notes 'c[hest] xr[ay] and sputum[1]' and 'spirometry[2]'.

9. On 30 May 2017, Ms A was seen again by her GP, who recorded that she had coughed up 'dark blood' '[two] months ago' but had had no further episodes of coughing up blood.

10. That day, Ms A's GP sent a referral to the public hospital for a chest X-ray, noting Ms A's medical history of being an ex-smoker, asthmatic, and potentially having chronic obstructive pulmonary disease[3] (COPD).

Chest X-rays

2017 chest X-ray

11. On 2 June 2017, Ms A underwent a chest X-ray at the public hospital. The findings were reported as:

> 'The heart and mediastinum[4] are clear.
>
> Lungs are overexpanded suggesting COPD.
>
> The lungs are clear.
>
> A nipple shadow overlies the right lung base.'

12. In response to an information request, ACC (dated 10 November 2022 and discussed further below) and Health NZ Taranaki provided information that this X-ray in fact showed a 15mm[5] nodule in the right lower zone of the lung.

13. Health NZ Taranaki told HDC:

> 'An abnormality in the right lower lobe was identified by the reporting radiologist, however this was misinterpreted as a nipple shadow, which is a common finding particularly in female patients where the nipple surrounded by air is visible as an apparent finding within the lung.'

14. Health NZ Taranaki also told HDC that typically, such nipple shadows are in a 'predictable' location and bilateral (seen on both sides), and able to be seen outside the chest on the accompanying side/lateral view. On the 2017 X-ray, although the nipple projection can be seen on the lateral view, the finding is seen only on the right (ie, not on both sides).

[1] A test of thick mucus produced by the lung.
[2] A test to measure the amount of air breathed into and out of the lungs.
[3] A lung disease that causes restricted airflow and breathing problems.
[4] The space in the chest that holds the heart and other structures.
[5] ACC's external advisor noted that this lesion measured '17mm in diameter'.

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2019 chest X-ray

15. On 4 September 2019, Ms A presented to the Emergency Department after 'coughing and wheezing' for three days with slight rhinorrhoea[6] and pain and tightness in her chest.

16. Another chest X-ray was performed and was compared to the previous X-ray completed in June 2017. The findings from the second chest X-ray noted: 'No focal consolidations or pleural effusions identified. No significant interval change. Atypical infection not excluded.'

17. In the response referred to in paragraph 12, Health NZ Taranaki stated that the lesion from the 2017 X-ray is again evident and had increased to a size of 19 x 22mm.

18. Regarding this X-ray, Health NZ Taranaki told HDC:

> '[A] perceptual error appears to have been made, potentially compounded by a reference to the image only from the 2017 examination, without reviewing the report which notes an abnormality (albeit incorrectly interpreted as a nipple shadow). In 2019 no abnormality was detected by the reporting radiologist; however, it is acknowledged that, again in hindsight, a lesion is visible in the right lower lung and has increased in size. It no longer resembles a nipple shadow, and if the lesion had been appreciated, it is likely that a malignant diagnosis would have been made.'

19. Health NZ Taranaki said that 'in hindsight', a lesion is visible on both the 2017 and 2019 chest X-rays, but that it is 'well recognised' that even the most competent radiologists make perceptual and interpretational errors, in a range between 3–5% in most published studies.

2021 chest X-rays and CT scan

20. On 18 November 2021, Ms A presented to her GP with various symptoms, including green mucus and symptoms of COPD.

21. On 26 November 2021, Ms A underwent another chest X-ray at the hospital. The findings[7] were noted as:

> '[An] ill-defined lesion within the right lower lobe, confirmed to lie adjacent to the oblique fissure on lateral projection. This measures up to 37 mm in size. In hindsight a small lesion was present in 2019.
>
> …
>
> Ill-defined lesion at the right lung base. In the first instance malignancy must be excluded. CT chest is recommended …'

22. On 17 December 2021 a chest and upper abdominal CT scan was completed. The assessing radiologist recorded: 'The right lower lobe lesion most closely resembles adenocarcinoma.' The clinical letter to Ms A's GP dated 23 December 2021 stated that this was likely a cancer

[6] A runny nose.

[7] Noting that the X-ray was performed on 26 November 2021 but reported on 10 December 2021.

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diagnosis and that '[i]n retrospect, this was present on the x-ray in 2017 and 2019 … [and] has gradually increased in size'.

Events following 2021 chest X-rays

23. Between January and February 2022, multiple tests were performed, including a bronchoscopy,[8] biopsy,[9] PET scan,[10] and EBUS,[11] which confirmed Ms A's diagnosis of stage 3A cancer in the right lower lobe of her lung.[12]

24. Following the diagnosis, Ms A's case and her treatment options were discussed by Health NZ Region 2 on 18 February 2022 and by Health NZ Region 3 on 23 February 2022.

25. As recorded in the Serious Incident Review (SIR) report, on 4 March 2022 Health NZ Region 2 discussed Ms A's case at the Lung Multidisciplinary Meeting (MDM). It was concluded that Ms A would be referred for concurrent chemotherapy and radiotherapy to the right lower lobe lesion, while monitoring the left lower lobe lesion. It was considered that surgical resection of the lung cancer was not possible due to the presence of N2 mediastinal node involvement.[13]

Current situation

26. Since this time, Ms A has completed radical radiation therapy to the lung with concurrent chemotherapy and has tolerated the treatment very well. On completion of chemoradiation, Ms A commenced immunotherapy[14] from 4 July 2022, which was administered every four weeks for 12 months, with the final cycle administered on 7 June 2023.

27. Ms A told HDC that on 23 May 2024, after having completed treatment for the lesion on her right lung, she was informed that movement had been detected in the left lower lung lesion. Currently, Ms A is undergoing further testing and treatment for this.

Further information

Ms A

28. Ms A told HDC that currently she is suffering from post-traumatic stress disorder due to the delayed diagnosis, and that due to her breathlessness and fatigue she is unable to continue to work, which was a fulfilling and big part of her life.

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[8] Inspection of the air passages using a small camera located at the end of a flexible tube.
[9] A procedure to remove a piece of tissue to be tested in a laboratory.
[10] Positron emission tomography — a scan used to detect signs of cancer and other conditions.
[11] Endobronchial ultrasound — a procedure used to diagnose different types of lung disorders.
[12] T2a N2 M0 adenocarcinoma of the right lower lobe lung (EGFR positive with two rare mutations). T2a means that the cancer is between 3cm and 4cm, N2 means that there is cancer in the lymph nodes in the centre of the chest on the same side as the affected lung or where the windpipe branches off to each lung, and M0 means that the cancer has not spread to another lobe of the lung or any other part of the body.
[13] 'N2 mediastinal nodes' means that there is cancer in the patient's lymph nodes in the centre of the chest on the same side as the affected lung or just under where the windpipe branches off to each lung.
[14] Durvalumab therapy.

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29. Ms A said that she understands that errors occur, but she wants changes to be made to prevent this from happening to other people, as it has significantly affected her life expectancy. Ms A hopes that her case can be used to make changes to radiology practices to eliminate the possibility of errors reoccurring.

Health NZ Taranaki

30. Health NZ Taranaki told HDC that the delay in diagnosing Ms A changed her treatment options in that she was not a candidate for surgery. Health NZ Taranaki stated that '[Ms A] may well have had early stage disease in 2017 and she could have had surgery with curative intent' (which is the preferred option for small lesions as the 'cure rates' are higher). An oncologist involved in Ms A's care told HDC:

> '[I]t would be anticipated that the lung cancer would have not advanced to Stage III if it had been diagnosed in 2017 or 2019 [which] would mean that [Ms A] potentially would have been a candidate for curative surgical resection … [and] avoided the need for chemotherapy and radiation therapy.'

2022 Serious Incident Review

31. On 28 July 2022, Health NZ Taranaki completed a Serious Incident Review (SIR) report into Ms A's case, noting in its summary that 'in retrospect', the right lower lobe lesion was present on both the 2017 and 2019 chest X-rays.

32. The SIR identified the following:

> 'In 2017 and then again in 2019 there was an opportunity to [diagnose] and subsequently commence treatment for the lung cancer that Ms A was diagnosed with in 2021. Te Whatu Ora Taranaki deeply regrets the mis-read chest X-rays taken in 2017 and 2019. We appreciate that we have missed the opportunity to diagnose and treat this cancer earlier. This was determined to be human error. We are taking steps to minimise the risk of such an error being repeated. In particular, facilitating uninterrupted reporting time.'

33. The SIR listed the following as factors contributing to the error:

a) Task and technology factors — Using older computer radiography technology as opposed to the now industry standard digital radiography resulted in relatively 'lower quality imaging' and 'may have influenced the interpretation of the films'.

b) Individual (staff) factors — The chest X-rays of 2017 and 2019 were reported incorrectly by two separate radiologists, and '[r]emorse has been expressed at the errors made'.

c) Work environment factors — Radiology services nationwide are 'chronically understaffed' with a significant shortage of radiologists, and considerable pressure to provide reports in a timely manner. Consequently, there is a significant use of outsourcing[15] to cover gaps.

[15] Noting that Health NZ Taranaki confirmed that outsourcing did not occur in Ms A's case.

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d) Institutional context factors — Health NZ Taranaki took 'full control' of the Radiology Department in 2016. As a result, a number of 'legacy policies' and business processes remained and were in the process of being migrated to full integration with Health NZ Quality and Safety practices.

e) Organisational management — There were no formal policies to manage departmental audit meetings at the time of the reporting error, although these meetings were held regularly.

Information obtained from ACC

34. On 29 November 2022, Ms A's claim was approved by ACC. The injury that has been covered by ACC is 'progression in adenocarcinoma of the right lobe of the lung with increase in tumour size and development of bronchopulmonary and right tracheal lymph node involvement causing a change in treatment options as a result of a failure to treat in a timely manner'.

35. When considering Ms A's claim, ACC sought independent clinical advice from a radiologist. Although I acknowledge that ACC engages advisors for a different purpose to that of HDC, I note that this advisor stated:

> 'There is an abnormality in the right lower lobe on the radiograph of 2/6/2017 which if correctly observed and interpreted could have led to a CT examination and subsequent earlier diagnosis of lung cancer in [Ms A].'

Responses to provisional opinion

Ms A

36. Ms A was given the opportunity to comment on the 'Information gathered' section of the provisional report. Ms A stressed the following:

> 'I felt upset how two mistakes were made and how if found in 2017 this could have been dealt with early and I wouldn't be going through so much pain and suffering today.'

Health NZ Taranaki

37. Health NZ Taranaki was provided with a copy of my provisional decision for comment, and it accepted the provisional finding and the proposed recommendations. Further comments received from Health NZ Taranaki have been incorporated into this report where relevant.

Opinion: Health NZ Taranaki — breach

Introduction

38. At the outset, I again offer my sincere condolences to Ms A for her diagnosis and acknowledge her ongoing distress. I also acknowledge Health NZ Taranaki's cooperation and ongoing engagement with HDC's process to help achieve a timely resolution of this complaint given the unfortunate circumstances.

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39. On 6 March 2024, I wrote to Health NZ Taranaki stating that I considered this complaint to be one that could be resolved by agreeing to a breach of Right 4(1)[16] of the Code of Health and Disability Services Consumers' Rights (the Code) as I considered it clear that Ms A received a level of care that was below the accepted standard, and that there were several missed opportunities over the course of her care. On 3 July 2024, Health NZ Taranaki responded that it agreed to my proposal of an agreed breach in relation to the radiology care it provided to Ms A.

40. I note that when making this proposal, I relied on the conclusions drawn in the SIR that was completed for this case, as referred to at paragraphs 31–33. Therefore, as the SIR formed the basis of my proposal, I have also relied heavily on its evidence in formulating my opinion.

Adequacy of radiology care — breach

41. As a healthcare provider, Health NZ Taranaki is responsible for providing healthcare services in accordance with the Code. It is of critical importance that it provides its staff with a work environment conducive to providing an appropriate standard of care.

42. I appreciate that there are recognised challenges for radiologists when interpreting scan results, and that observations in this report are made with the benefit of hindsight. However, I consider that this further highlights the need for careful consideration to be given, particularly in cases where there are reoccurring symptoms, but previous scans appear normal.

43. Furthermore, considering that two individual errors occurred separately within the same hospital system, it appears that Health NZ Taranaki did not have appropriate systems or processes in place to detect the first error, nor the second. The SIR report mentioned that the use of older computer radiography technology (instead of industry-standard digital radiography) may have influenced the interpretation of the films. As stated earlier in this report, the SIR report also identified the 'chronic understaffing' of radiology services, and that there is 'considerable pressure' on radiologists to provide reports in a timely manner. The SIR report also noted that at the time of events, Health NZ Taranaki was in the midst of fully integrating quality and safety practices, and it had no formal policies around audit meetings.

44. I acknowledge Health NZ Taranaki's submissions, particularly around perception errors due to older technology and the issue of chronic understaffing. However, previously this Office has noted[17] that '[w]hether the standard of care has been met will be assessed on a range of factors, including the clinical history of the patient and how obvious the abnormality is'. I therefore remain concerned that the errors regarding Ms A's lung lesion were not detected until after her third presentation, and I also note Ms A's predispositions[18] as stated on the referrals made to the public hospital.

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[16] Right 4(1) states: 'Every consumer has the right to have services provided with reasonable care and skill.'
[17] In decision 22HDC01141.
[18] Being an ex-smoker, known to have asthma, and having COPD.

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45. I consider that systemic issues, such as workplace pressures and an inadequate working environment, were largely responsible for the breach that occurred in the misinterpretation of Ms A's chest X-rays in 2017 and 2019. Therefore, with Health NZ Taranaki's agreement (as noted above), I find that Health NZ Taranaki breached Right 4(1) of the Code at an organisational level.

46. While I acknowledge that the purpose of this investigation was not to determine whether earlier detection of Ms A's lung cancer would have changed her long-term prognosis, I note that it is apparent from the clinical records and submissions made by Health NZ Taranaki that later detection affected Ms A's treatment options in that she was not a candidate for surgery. This case highlights the significance of missed opportunities in interpreting radiology scans, and I trust that Health NZ Taranaki will consider this when moving forward with providing radiology services to its patients.

Nationwide radiology services — other comment

47. In terms of the wider national context, Health NZ told HDC that '[r]adiology services in New Zealand are chronically understaffed, with a significant shortage of radiologists in public employment'. I acknowledge the significant pressures faced by radiology services and radiologists in terms of reporting times, and that this has led to increasing efforts to source radiologists from overseas to fill the gaps.

48. Furthermore, I recognise the substantial work being completed to improve radiology services at a national level. Health NZ Taranaki's internal review stated that as a result of taking full control of the Radiology Department in 2016:

> 'A number of legacy policies and business processes from this prior structure remain and are in the process of being migrated from this legacy structure to full integration with DHB and Te Whatu Ora Quality and Safety practices. These have been fully evaluated by the 2021/22 radiology service review and resolution of these remaining issues is ongoing.'

49. I also note that a national radiology clinical network has been established with the intent of standardising radiology systems and models of care throughout the country. Health NZ has identified radiology as a priority for workforce retention and recruitment efforts, and this includes a focus on both international recruitment as well as domestic training pathways and the implementation of a registrar training programme. I look forward to the positive contribution of these changes on radiology services.

Changes made since events

50. I am encouraged by the significant number of changes Health NZ Taranaki has made since these events took place. As stated above, I also acknowledge the extensive work being done at a national level to address the issues of understaffing.

51. Health NZ Taranaki set out the changes and improvements it has made as follows:

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a) All radiography rooms in the region have been upgraded to industry-standard digital radiography systems.

b) Radiology Quality Improvement Meetings to facilitate collective learning and improve patient safety commenced in May 2022.

c) This case was anonymised and discussed at the August 2022 Radiology Quality Improvement meeting to allow for collective learning. Health NZ Taranaki told HDC that discussion of cases where an error has been made improves patient safety by preventing future occurrence of poor practice.

d) Health NZ has made workforce a priority so that sufficient radiologists can be recruited and trained to provide sustainable services, including recruitment from overseas and the implementation of a registrar training programme.

e) Legacy policies and business processes were fully evaluated by the 2021/2022 radiology service review (noting that the resolution of these issues remains ongoing).

f) Formal departmental auditing of reports in line with international best practice guidelines has been implemented.

g) A duty radiologist roster has been implemented to facilitate uninterrupted reporting time for reporting radiologists to report scans and decrease any lapse in concentration due to distractions.

Recommendations

52. In light of the changes and improvements made, I recommend that Health NZ Taranaki:

a) Provide a written apology to Ms A for the breach of the Code found in this report. The apology is to be sent to HDC within three weeks of the date of this report, for forwarding to Ms A.

b) Provide evidence of Health NZ Taranaki 'facilitating uninterrupted reporting time' as referenced in the SIR. This could be by way of providing a copy of the 'duty radiologist roster' or other information to demonstrate this. Please ensure that this information is provided to HDC within six months of the date of this report.

c) Provide a copy of the formal departmental auditing guidelines. Please ensure that this information is provided to HDC within six months of the date of this report.

d) Provide confirmation that legacy policies and business processes have been resolved. If this remains ongoing, please provide information to indicate when this will be resolved. Please ensure that this information is provided to HDC within six months of the date of this report.

Follow-up action

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

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