South Canterbury District Health Board

Pacific Radiology Group Limited

A Report by the

Health and Disability Commissioner

(Case 17HDC00163)

Health and Disability Commissioner

Te Toihau Hauora, Hauātanga

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Executive summary

1. On 29 October 2010, Mrs A (aged 61 years) was referred by her general practitioner (GP) to the Emergency Department (ED) of South Canterbury District Health Board (SCDHB), to investigate a possible pulmonary embolism (PE). A chest X-ray and CT scan were completed, and the ED consultant noted that there was no evidence of a PE, but the CT scan did show a "mass or mass-like area of consolidation in the right upper lobe". The CT report and the discharge summary recommended follow-up with a chest X-ray in six weeks' time.

2. There were a number of communication breakdowns from the DHB to Mrs A and her GP, and the six-week follow-up did not occur. This led to a missed opportunity for additional investigations, and a probable delayed diagnosis of cancer.

3. Five and a half years later, in March 2016, Mrs A presented to her GP with a three-week history of upper respiratory symptoms, and was prescribed antibiotics. On 26 May, Mrs A returned to her GP with intermittent right upper quadrant discomfort and heartburn. Mrs A's GP referred her to SCDHB Radiology for a semi-urgent ultrasound (US) scan of the abdomen in relation to classic gall-bladder symptoms. The accepted timeframe for a semi-urgent US scan was within two to four weeks.

4. The referral was waitlisted on 27 May 2016 and outsourced by SCDHB to Pacific Radiology on 22 June. Pacific Radiology did not send an appointment letter to Mrs A until 24 August, with an appointment date of 18 October 2016. Mrs A re-presented to her GP on 15 September 2016, and a private referral was made to another radiology service (Radiology Service 2) for a US scan of the abdomen. This was completed on 21 September 2016.

Findings

5. The contract between SCDHB and Pacific Radiology did not include detail on the outsourced radiology services, and SCDHB did not have systems in place to manage and monitor the outsourcing of US scans. There was a lack of communication from SCDHB to Mrs A and her GP about the wait. Despite the referral being made in May 2016, Pacific Radiology did not send Mrs A an appointment letter until August, for an October appointment. This is an unacceptable delay for a semi-urgent referral, and the reason for the delay is still unclear. Accordingly, the Commissioner found that SCDHB and Pacific Radiology failed to ensure quality and continuity of services and, in doing so, breached Right 4(5) of the Code of Health and Disability Services Consumers' Rights (the Code).[1]

6. The Commissioner was critical that there was a breakdown in verbal, physical, and electronic communication from SCDHB to both Mrs A and her GP.

[1] Right 4(5) of the Code states: "Every consumer has the right to co-operation among providers to ensure quality and continuity of services."

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Recommendations

7. The Commissioner recommended that SCDHB (a) provide an update on the recommendations in the SCDHB Serious Adverse Event Review Report; (b) provide an update on the outsourcing agreement with Pacific Radiology; (c) audit 50 imaging referrals outsourced to Pacific Radiology over the last six months, to ensure that systems are in place to manage expected timeframes; and (d) provide a written apology to Mrs A's family.

8. The Commissioner recommended that Pacific Radiology (a) provide an update on the outsourcing agreement with SCDHB; (b) review its policies regarding orientation, training, support, and supervision of booking staff; (c) audit 50 imaging referrals outsourced to Pacific Radiology by SCDHB over the last six months, to ensure that systems are in place to manage expected timeframes; and (d) provide a written apology to Mrs A's family.

Complaint and investigation

9. The Health and Disability Commissioner (HDC) received a complaint from Ms B about the services provided by South Canterbury District Health Board (SCDHB) and Pacific Radiology Group Limited. The following issues were identified for investigation:

- *Whether the South Canterbury DHB provided Mrs A with an appropriate standard of care between 2010 and 2016.*
- *Whether Pacific Radiology provided Mrs A with an appropriate standard of care in 2016.*

10. The parties directly involved in the investigation were:

Ms B	Complainant/consumer's daughter
South Canterbury DHB	Provider
Pacific Radiology Group Limited	Provider

11. Further information was received from Dr C, a general practitioner (GP) at the medical centre.

12. Independent expert advice was obtained from Dr Vanessa Thornton, an emergency medicine consultant (Appendix A), and in-house clinical advice was obtained from GP Dr David Maplesden (Appendix B).

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Information gathered during investigation

Background

13. This report concerns a communication breakdown from SCDHB to Mrs A and her GP regarding the need for a follow-up chest X-ray. This led to a missed opportunity for additional investigations, and a probable delayed diagnosis of cancer.

14. In addition, when Mrs A developed gall-bladder-like symptoms many years later, she encountered a five-month wait for a semi-urgent ultrasound (US) scan in the public health system and eventually paid for a scan to be done privately. The delay in appointment was not communicated to Mrs A in a timely manner.

Presentation to Emergency Department

15. On 29 October 2010, Mrs A, then aged 61 years, was referred by her GP, Dr C, to the ED to investigate a possible pulmonary embolism (PE).[2] Mrs A had just completed a ten-day course of roxithromycin[3] for a chest infection.

16. Mrs A was triaged[4] at the ED at 12.40pm, and a chest X-ray was completed at 12.49pm. The chest X-ray report stated: "Probable mild bronchopneumonia in the right upper lobe."

17. At 2.20pm, Mrs A was seen by Dr D, an emergency medicine consultant. He noted a recent history of chest infection, shortness of breath, and treatment with antibiotics. Mrs A was pain free at the time, and an examination of her chest revealed right basal crackles.[5]

18. At 2.30pm, Dr D ordered a computed tomography pulmonary angiogram (CT scan)[6] to check for a PE. The resulting CT scan report was made available on the hospital PACS[7] system at approximately 3.40pm. Dr D reviewed the report, which suggested that there was no evidence of a PE but that there was a "mass or mass-like area of consolidation in the right upper lobe". The report stated: "[F]ollow-up imaging recommended."

19. Dr D considered Mrs A's history and the results of the CT scan, X-ray, and clinical examination, and decided to treat Mrs A for pneumonia. He recommended that she continue the current antibiotic treatment and have a follow-up repeat chest X-ray six weeks later to confirm complete resolution of the changes seen. Dr D recorded in the patient notes that verbal advice was given to Mrs A.

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[2] Obstruction of a blood vessel in the lungs, usually by a blood clot that has originated in a vein of the leg or pelvis and travelled to the lungs.
[3] An antibiotic.
[4] An assessment of the level of urgency to decide the order of treatment.
[5] A clicking, rattling, or crackling noise originating in or near the base of the lungs when a person with a respiratory disease breathes in.
[6] A scan of the arteries that send blood to the lungs.
[7] Picture Archiving and Communication System for storage of and access to medical imaging.

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Discharge from ED

20. At about 4.20pm, Mrs A was discharged home from ED. She did not receive the written ED follow-up information sheet, as she had left the ED before it could be given to her. The ED record states: "[N]ot seen when discharged Dx (discharge) form not given."

21. The discharge summary contained instructions for Mrs A's GP to follow up with a chest X-ray in six weeks' time.

22. SCDHB was unable to provide a copy of the policy relating to the discharge process in 2010; however, SCDHB told HDC that the ED Discharge Processes and Standards dated November 2011 outlined the process that was used from the early 2000s.

23. One of the steps documented in the 2011 ED discharge process was to "provide patient with a follow-up information sheet, indicating reason for follow-up appointment".

24. After Mrs A's discharge from ED, Dr C did not receive a copy of the discharge summary. SCDHB told HDC that it had no way of showing that the discharge summary was posted to Dr C. SCDHB stated that in 2010, ED records were handwritten, and the discharge summary to the GP was a carbon copy of that handwritten record. The hard copy would be retained on the patient file, and the carbon copy would be posted to the GP by administrative staff within 24 hours. In response to the provisional opinion, SCDHB confirmed that the carbon copy of the ED discharge summary had not been left in the patient file erroneously.

25. Dr C's GP practice is an RNZCGP Cornerstone[8] accredited practice, and in 2010 there was a review policy in place whereby all referrals to the hospital were followed up by contacting the patient.

26. Dr C stated that Mrs A was contacted and asked about her attendance at ED. Mrs A's recollection during this telephone conversation was that she had a chest infection and not a PE, and that her antibiotic treatment was correct and she could go home. Mrs A did not recall any need for follow-up.

Communication of 2010 CT scan report

27. Imaging results at SCDHB are communicated electronically to the GP.

28. The SCDHB Radiology Server audit logs show that both the X-ray report and CT report were dispatched to Dr C at the medical centre via Electronic Data Interchange (EDI)[9] on 29 October 2010 — the X-ray report was sent at 1.33pm, and the CT report at 4.03pm.

[8] The Royal New Zealand College of General Practitioners accreditation for quality systems in general practice.

[9] EDI is the electronic transfer of data from one computer system to another by standardised message formatting.

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29. In 2010, acknowledgement functionality did not have the capability to identify the time and date when messages were received.

30. The X-ray report was received by Dr C via EDI at 3.19pm on 29 October 2010, as evidenced by the date and time stamps in the audit logs of her inbox.

31. However, the audit logs of Dr C's inbox show that the 2010 CT report was not received by Dr C until 26 October 2016 at 12.49pm (some six years later), when SCDHB Radiology sent Dr C the 2010 CT scan report with the results of an X-ray that had been ordered by another provider in 2016.

32. Dr C did not receive a copy of the discharge summary or the CT scan report in 2010, and Mrs A did not have the recommended follow-up chest X-ray in 2010.

US scan referral — 2016

33. On 7 March 2016, Mrs A presented to Dr C with a three-week history of upper respiratory symptoms and more recent productive cough. The notes state that she had no shortness of breath and no chest pain, and the chest was clear on auscultation.[10] A prescription for antibiotics was provided in case the symptoms worsened, as Mrs A was about to travel overseas.

34. On 26 May 2016, Mrs A presented to Dr C in relation to classic gall-bladder symptoms. Dr C noted that Mrs A had intermittent right upper quadrant discomfort and heartburn. Dr C ordered blood tests and referred Mrs A to SCDHB Radiology for a semi-urgent US of the abdomen. SCDHB Radiology received the faxed referral at 9.54am.

35. The expectation was that a semi-urgent US scan would be completed within two to four weeks. The referrer would specify the level of urgency, and the sonographer or radiologist at SCDHB would prioritise referrals and determine when patients were seen.

36. On 27 May 2016, the referral was reviewed, prioritised, and protocolled[11] by the Pacific Radiology sonographer contracted to SCDHB. The referral remained as semi-urgent. The radiology bookings administrator then entered the referral into the waiting list management module in SCDHB's COMRAD,[12] and stamped the referral sheet with "waitlisted" to show that it had been entered.

37. On 22 June 2016, SCDHB Radiology outsourced Mrs A's US scan referral to Pacific Radiology. Pacific Radiology stated that SCDHB would fax through a bundle of 100 to 150 referrals approximately once every three months. SCDHB stated that it outsourced semi-urgent and routine referrals to Pacific Radiology approximately every 6 to 12 weeks to minimise the delay in accessing diagnostic testing.

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[10] Listening to the chest, usually using a stethoscope.
[11] A Protocol is a written outline, checklist, or worksheet that lists the images and measurements that should be acquired during a specified ultrasound examination.
[12] COMRAD is the regional radiology information system.

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38. In 2016, SCDHB and Pacific Radiology had an agreement for "Hospital and Community Radiology Services", including radiologist, sonography, and reporting services, but there was no documented policy or procedure for outsourcing referrals to Pacific Radiology until February 2018.

39. The audit log from Pacific Radiology's COMRAD system shows that Mrs A's referral was manually entered into the system on 19 July 2016. In 2016, SCDHB could not view the Pacific Radiology system.

40. On 24 August 2016, Pacific Radiology created an appointment for 18 October 2016, and a letter was posted to Mrs A. This was the first communication she had received regarding the referral from 26 May 2016.

41. Mrs A recalled ringing the SCDHB Radiology Department to ask about the date for her scan. Her recollection was that she was informed that the scan had been outsourced to Pacific Radiology, and that her appointment date was 18 October 2016. SCDHB does not have a record of this telephone call, so a date cannot be ascertained, and staff were unable to recall the conversation.

42. Mrs A did not want to wait until October for the US scan. She recalled ringing Pacific Radiology to ask whether she could pay for a private scan, and being informed that there was no way in which she could pay for the US scan privately, and she would need to wait. Pacific Radiology does not have a record of this telephone call, so a date cannot be ascertained, and staff were unable to recall the conversation.

43. On 15 September 2016, Mrs A re-presented to Dr C with worsening symptoms, and informed Dr C of the delay in the US scan and her willingness to pay to have it done privately. Blood tests were ordered, and Dr C made a private referral for Mrs A to Radiology Service 2.

44. On 21 September 2016, Mrs A had a US scan of the abdomen at Radiology Service 2, and the results were reported as normal.

45. On 23 September 2016, Mrs A was advised of the results by telephone and prescribed a one-month trial of omeprazole for possible gastro-oesophageal reflux disease (GORD),[13] with a plan to make a surgical referral if the symptoms persisted.

46. Mrs A's family stated:

> "[T]here have been far too many delays throughout this process, and having to wait 5 months for a 'semi-urgent' ultrasound scan (which we then have ended up self funding), is absolutely unacceptable."

[13] Also known as acid reflux, a long-term condition in which stomach contents rise up into the oesophagus.

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Diagnosis of lung cancer

47. On 11 October 2016, Mrs A presented to Dr C with right upper quadrant pain and discomfort, occasional heartburn, weight loss, and a failed response to omeprazole. Dr C made a private referral for Mrs A to Dr E, a general surgeon, for further evaluation of her abdominal pain and weight loss.

48. On 12 October 2016, Mrs A was seen by Dr E, who ordered a chest X-ray and other investigations. The X-ray was performed on 17 October 2016, and showed increased opacification within the right upper lobe with apparent associated rib changes/fractures.

49. On 26 October 2016, Dr E saw Mrs A and recommended further assessment with CT. He asked Dr C to request an urgent CT scan of the chest/abdomen for Mrs A, with a copy to be sent to Dr E and to Dr C as the referrer.

50. On 26 October 2016, Dr C received the results of the recent X-ray plus the results of the chest CT scan done on 29 October 2010. Dr C had been unaware that the ED had ordered a CT scan in 2010, and it was the first time she had seen the results.

51. On 1 November 2016, Mrs A had a CT scan of the chest, which found a "[l]arge pleural based malignancy in the right upper lung posterolaterally,[14] significantly enlarged in the interval with extensive chest wall invasion and associated destruction of the posterolateral right 5th and 6th ribs".

52. The chest X-ray and CT scan identified a concerning lesion in the right lung with involvement of the ribs. Dr E commented that the lesion identified "had grown compared to a previous CT[15] a few years ago".

53. On 2 November 2016, Dr C referred Mrs A to a respiratory specialist for urgent evaluation. Further investigations in November 2016 confirmed a diagnosis of likely primary adenocarcinoma[16] of the lung with right sacral metastasis. Mrs A was then referred to a radiation oncologist.

54. Mrs A received further care and treatment, but died in 2017.

Serious Adverse Event review

55. SCDHB undertook a Serious Adverse Event (SAE) review of systems and processes at SCDHB, which identified the following:

    a) There was a breakdown in verbal, physical, and electronic communication to both the patient and the GP in 2010 that would have clearly outlined the patient's plan of care and the expected ongoing management by the GP.

[14] Situated on the side and towards the back.
[15] This refers to the CT scan done on 29 October 2010.
[16] A cancerous tumour.

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b) There was no communication from SCDHB to Mrs A or Dr C following receipt of the US scan referral in 2016.

56. Mrs A and her husband attended two family meetings. She stated that she had no recollection of being told that a repeat chest X-ray was recommended, or to see her GP again. Mrs A said that there was “no way” she would have ignored the result of the 2010 CT scan had she known more clearly what it contained, in particular the word “mass”. She said that she would have liked the result and the recommended follow-up to have been made clearer to her at the time, preferably in writing.

Changes made by SCDHB

57. As a result of the recommendations in the SAE report, the following changes were made to facilitate follow-up care:

a) SCDHB now generates an electronic ED discharge summary with a place for patient advice. This is given to the patient at discharge or is posted to the patient, and an electronic copy is sent to the patient’s GP. This action was completed in September 2017.

b) All GP practices have been notified of the recommendation to review their current processes to ensure that high priority referrals and results/reports are flagged and actively pursued. GP practices have been given information on how to flag priority reports/results. There is now the ability for a GP to set up a task or alert to check for and follow up on outstanding results or incomplete referrals. This action was completed in August 2017.

c) The electronic ED discharge summary has an area for GP information and transfer of care requirements. This action was completed in September 2017.

58. SCDHB also made the following changes to improve referral processes for ultrasound scans:

a) A review of Aoraki Health Pathways[17] was undertaken to identity the appropriate referral pathways or opportunities for the GP to provide information to the patient on private radiology options. The pathways were adopted and went live on Aoraki Health Pathways in January 2017, including clear information on private options for Pacific Radiology and Radiology Service 2. A report is published two monthly, with approximate waiting times for radiology appointments, so that the GP can advise the patient of the likely timing and offer private options, or alternatively re-prioritise the urgency of the original referral.

[17] A web-based information portal supporting primary care clinicians to plan patient care through primary, community, and secondary healthcare systems.

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b) A sonographer was employed on 4 December 2017 to improve the prioritisation and decision-making process for ultrasound referrals, increase the number of sonography clinics in January 2018, and review issues.

c) An SMS text messaging/reminder service to patients was established in April 2017.

d) In August 2017, electronic referrals directly into COMRAD were made available to GPs, and also electronic messaging from SCDHB to GP practices.

e) From October 2017, a process was introduced whereby Pacific Radiology emails SCDHB Radiology on the same day, to alert it to patients who are a "no show"/do not attend (DNA) for a Pacific Radiology appointment. SCDHB then contacts the patient or referrer to ascertain whether the appointment is still required.

f) In October 2017, an electronic gateway was established between SCDHB and Pacific Radiology's respective COMRAD radiology information systems for sending and receiving outsourced referral information.

g) The procedure for outsourcing referrals was completed in February 2018,[18] and an agreement between SCDHB and Pacific Radiology was being negotiated.

h) Since 2010, SCDHB has changed from a local version of COMRAD to a regional version. Audit information now includes "EDI Interface History" acknowledgement messaging. This identifies the time and date on which the EDI mailbox received the report.

Changes made by Pacific Radiology

59. Pacific Radiology reviewed the booking processes used by each branch, including a workflow analysis exercise.

60. In February 2017, Pacific Radiology moved all booking staff to a central location, and disbanded the referral booking office. The booking of referrals became part of centralised bookings made at the contact centre, to improve and standardise processes and service delivery.

61. SCDHB now electronically transfers referrals for imaging to Pacific Radiology. Referral numbers are limited to 30 or fewer at a time, usually monthly.

62. In October 2017, referrals moved to the Pacific Radiology and SCDHB Radiology Department CTI (COMRAD Transfer Integration) link system. This means that there is an electronic record of a referral being received and progressed through the system, which is visible to both SCDHB and Pacific Radiology. SCDHB staff can now view the status of a patient in the Pacific Radiology system. This was not possible in 2016.

[18] SCDHB Radiology Policy Manual on Referrals Outsourced: Pacific Radiology Group, policy number R3, original date 21 February 2018 (version dated 20 August 2018).

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63. Pacific Radiology has increased the imaging capability at its site from one machine to two, and increased the staffing levels at the branch.

Further information

64. According to the SAE review undertaken by SCDHB, SCDHB faxed Mrs A's referral to Pacific Radiology on 22 June 2016. Then on 19 July 2016 and 24 August 2016, a referral was created for Mrs A on the Pacific Radiology computer system with the comment "cancelled, no response". A subsequent referral was then created on 24 August 2016 and an appointment letter sent to Mrs A. According to the SAE review, the Pacific Radiology Manager could not provide information on why the referrals were cancelled, as the system did not track the reason.

65. However, according to Pacific Radiology, the referral was not cancelled on either 19 July or 24 August 2016. There is an unexplained delay between Pacific Radiology being faxed Mrs A's referral on 22 June 2016, and Pacific Radiology sending an appointment letter on 24 August 2016. Pacific Radiology stated that the booking of outsourced referrals from DHBs was left to booking staff, with no documentation about the process and agreed timeframes.

66. According to the SAE review, the Operations Manager at Pacific Radiology stated that Pacific Radiology had recruited new booking office staff, which contributed to the delays experienced. However, more recently Pacific Radiology responded that the staff who worked in the booking office were very experienced.

67. At 3.05pm on 11 October 2016, the Pacific Radiology receptionist cancelled the 18 October 2016 appointment. The computer system shows that the appointment was changed to "cancelled, no response". There is no documentation as to why the appointment was cancelled.

68. On 3 November 2016, SCDHB Radiology imported Mrs A's US scan report carried out at Radiology Service 2 on 21 September 2016. SCDHB Radiology then closed the original US scan referral from May 2016, and reviewed the referrals outsourced to Pacific Radiology in June 2016. A number of patients (including Mrs A) were identified as having a "cancelled no response" status. The SAE review found that Pacific Radiology had not followed up to re-offer an appointment to Mrs A, and had not advised SCDHB or Dr C.

Responses to provisional opinion

69. Ms B and Dr C were given an opportunity to comment on the "information gathered" section of the provisional report, and SCDHB and Pacific Radiology were given an opportunity to comment on the relevant parts of the report. Their comments have been incorporated where appropriate.

70. Ms B stated:

> "Mum was a sensible, intelligent and capable woman who valued her good health and was proactive in taking responsibility for this. If she had been told verbally that she

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needed further investigations or follow up in six weeks time from presenting to ED, we are in no doubt that she would have followed through with this."

71. Ms B added that the family recognise the value and importance of including a patient in his or her own care journey, but noted that it would be unfair to expect the patient alone to be responsible for arranging follow-ups.

72. Ms B also commented:

> "For much of 2016 we felt we were outside the public health system desperately trying to get in, feeling frustrated and only managing to enter the public system by self funded private referral. However, we would like to acknowledge that once in the care of the public system, the care and attention we received by clinicians and support staff, could not be faulted."

73. SCDHB stated that it aims to complete all ultrasound referrals within six weeks, in anticipation that the Ministry of Health will soon mandate this goal, similar to the CT and MRI waiting time. The DHB is in the process of reviewing in-house capacity.

Opinion: South Canterbury District Health Board

Delay in ultrasound scan of the abdomen in 2016 — breach

74. District health boards are responsible for the operation of the services they provide, and can be held responsible for any service-level failures. I consider that SCDHB failed to provide appropriate services in the following respects.

75. On 26 May 2016, Mrs A presented to Dr C and was referred to SCDHB Radiology for a semi-urgent US scan of the abdomen. The accepted timeframe for a semi-urgent US scan to be completed was within two to four weeks.

76. On 27 May 2016, SCDHB Radiology entered the referral into the waiting list management module in COMRAD. Almost a month later, on 22 June 2016, Mrs A's semi-urgent referral was outsourced by SCDHB to Pacific Radiology. This was not communicated to Mrs A or Dr C, and Mrs A did not receive the scan within the accepted timeframe of two to four weeks.

77. In 2016, SCDHB and Pacific Radiology had an agreement for "Hospital and Community Radiology Services", but this did not include detail on outsourced radiology services. There was no documented policy or procedure for outsourcing referrals to Pacific Radiology at that time.

78. There was then a further delay in the service provided by Pacific Radiology. On 24 August 2016, Pacific Radiology created an appointment for 18 October 2016, and a letter was

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posted to Mrs A. Mrs A and Dr C had received no communication from SCDHB Radiology since Dr C made the referral on 26 May 2016.

79. I note the opinion expressed by Mrs A's family:

> "[T]hat there have been far too many delays throughout this process, and having to wait 5 months for a 'semi-urgent' ultrasound scan (which we then have ended up self funding), is absolutely unacceptable."

80. I also note the comments of my in-house clinical advisor, Dr David Maplesden:

> "Ultimately, the delays in [Mrs A] … having a semi-urgent ultrasound scan performed in 2016, must be regarded as significant departures from expected standards of care. However, it has been difficult to clearly define the underlying factors contributing to these delays."

81. I note the improvements that SCDHB has made to the referral process for ultrasound scans in recent times. However, in 2016 the contract between SCDHB and Pacific Radiology did not include detail on the outsourced radiology services, and SCDHB did not have systems in place to manage and monitor the outsourcing of US scans. There was a lack of communication from SCDHB to Mrs A and her GP about the wait. I am concerned that the lack of systems at SCDHB in 2016 contributed to a five-month delay for a semi-urgent scan for Mrs A, when the accepted timeframe was two to four weeks. I consider that SCDHB failed to ensure quality and continuity of services and, in doing so, breached Right 4(5) of the Code.

Communication in 2010 — adverse comment

82. On 29 October 2010, Mrs A was discharged home from ED. She received verbal advice from the ED consultant, but unfortunately she had left ED before the written ED follow-up information sheet could be given to her, and the sheet was not posted to her. Mrs A had no recollection of the recommendation for a follow-up X-ray in six weeks' time.

83. SCDHB was unable to provide a copy of the policy relating to the discharge process in 2010, but did provide the ED Discharge Processes and Standards 2011, which outlined the process used from the early 2000s. One of the steps was to "provide patient with a follow-up information sheet, indicating reason for follow-up appointment".

84. I note that Mrs A told the SAE review team that she would have liked the 2010 CT scan report and the recommended follow-up to have been made clearer to her at the time, and preferably in writing. She said that there was "no way" she would have ignored the result of the 2010 CT report had she known more clearly what it contained, in particular the word "mass".

85. Regarding the level of follow-up advice given to Mrs A, I note the comments of my independent expert, emergency medicine consultant Dr Vanessa Thornton:

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> "[W]ritten instructions assist the patient with ongoing care … It is not clear from the notes if it would be standard practice to post this form to the patient if it was not received by the patient at the time of discharge. It would be the best standard of care to receive both written and verbal discharge instructions at the time of leaving ED."

86. The policy and processes at the time suggest that Mrs A should have been provided with a follow-up information sheet, but the opportunity on discharge from ED was missed. It is not clear from the ED Discharge Processes and Standards that there was any requirement to take a further step and post the information to the patient. A safety-net of posting the follow-up information to Mrs A would have been best practice.

87. Mrs A's GP, Dr C, did not receive the discharge summary by post from SCDHB, and the DHB had no way of showing that it had been sent. In addition, audit logs show that although the CT scan was dispatched electronically by SCDHB, it was not received in Dr C's inbox in 2010. Therefore, Mrs A's GP was unaware of the need for a follow-up X-ray six weeks after discharge.

88. It remains unclear why the dispatched 2010 CT scan was not received in Dr C's inbox in 2010. SCDHB's SAE review concludes: "There was a break down in verbal, physical and electronic communication to both the patient and the GP that would have clearly outlined the patient's plan of care and the expected ongoing management by the GP." I note Dr Maplesden's comments:

> "Ultimately, the delays in [Mrs A] receiving follow-up of her abnormal CT scan in 2010 … must be regarded as significant departures from expected standards of care. However it has been difficult to clearly define the underlying factors contributing to these delays."

89. I note that SCDHB has improved its systems since 2010. Electronic discharge summaries are now sent to the GP, and a copy is given to the patient on discharge from ED or posted to the patient. The SCDHB Radiology Server audit information now has the capability to identify the time and date when messages have been received.

Opinion: Pacific Radiology Group Limited

Delay in ultrasound scan of the abdomen in 2016 — breach

90. On 26 May 2016, Mrs A was referred by her GP to SCDHB Radiology for a semi-urgent US scan of the abdomen. The referral was added to the waiting list on 27 May 2016. On 22 June 2016, SCDHB outsourced the referral to Pacific Radiology.

91. In 2016, Pacific Radiology and SCDHB had an agreement for "Hospital and Community Radiology Services", but this did not include detail on outsourced radiology services. There

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was no documented policy or procedure for the outsourcing of referrals to Pacific Radiology until February 2018.

92. Mrs A's referral was manually entered into Pacific Radiology's system on 19 July 2016. According to the DHB's SAE review, two referrals were created in the Pacific Radiology computer system on 19 July and 24 August 2016, but then cancelled. However, according to Pacific Radiology, the referral was not cancelled on either 19 July or 24 August 2016.

93. On 24 August 2016, Pacific Radiology created an appointment for 18 October 2016, and a letter was posted to Mrs A. This was the first communication from Pacific Radiology to Mrs A since Dr C made the referral to SCDHB on 26 May 2016.

94. Mrs A re-presented to Dr C on 15 September 2016, and a private referral was made to Radiology Service 2 for a US scan of the abdomen. This was completed on 21 September 2016. The May 2016 referral was cancelled by Pacific Radiology on 11 October 2016.

95. As stated above, I note the opinion expressed by Mrs A's family:

> "[T]hat there have been far too many delays throughout this process, and having to wait 5 months for a 'semi-urgent' ultrasound scan (which we then have ended up self funding), is absolutely unacceptable."

96. I also reiterate Dr Maplesden's comments referred to above:

> "Ultimately, the delays in [Mrs A] … having a semi-urgent ultrasound scan performed in 2016, must be regarded as significant departures from expected standards of care. However it has been difficult to clearly define the underlying factors contributing to these delays."

97. I agree that there was an unacceptable delay by Pacific Radiology. The referral was outsourced by SCDHB on 22 June 2016. The referral was logged in Pacific Radiology's system on 19 July 2016. There was a subsequent delay before an appointment letter was sent by Pacific Radiology on 24 August 2016, with a scan date of 18 October 2016. The reason for the delay is still unclear, but it is unacceptable for a person to wait for 20 weeks for a semi-urgent scan.

98. Pacific Radiology acknowledged that "the process in 2016 for the receipt and booking of out sourced referrals lacked clarity and may have led to the length of time taken for [Mrs A] to receive a booking for her ultrasound scan". I note that SCDHB's practice at that time was to send a batch of 100 to 150 referrals. However, if Pacific Radiology could not manage the referrals it was receiving, it should have informed SCDHB. I acknowledge that Pacific Radiology has now increased the imaging capability at its site from one machine to two, and has increased the staffing levels at the branch. However, I am concerned that in 2016 the lack of systems at Pacific Radiology to manage outsourced US scans contributed to the five-month delay Mrs A experienced, when the accepted timeframe for a semi-urgent scan was two to four weeks. I consider that Pacific Radiology failed to ensure quality and continuity of services and, in doing so, breached Right 4(5) of the Code.

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Recommendations

99. I recommend that SCDHB and Pacific Radiology each provide Mrs A's family with a written apology. The apologies are to be sent to HDC within three weeks of the date of this report, for forwarding to Mrs A's family.

100. I recommend that SCDHB:

a) Provide an update on the recommendations outlined on pages 5, 7, and 8 in the SCDHB Serious Adverse Event Review Report.

b) Provide an update on the outsourcing agreement with Pacific Radiology.

c) Undertake an independent audit of 50 imaging referrals outsourced to Pacific Radiology over the last six months, to ensure that systems are in place to manage expected timeframes. If expected timeframes are not being met, then a corrective action plan is to be provided.

d) Report back to HDC on the above recommendations, within three months of the date of this report.

101. I recommend that Pacific Radiology:

a) Provide an update on the outsourcing agreement with SCDHB.

b) Review its policies regarding orientation, training, support, and supervision of booking staff.

c) Undertake an independent audit of 50 imaging referrals outsourced to Pacific Radiology by SCDHB over the last six months, to ensure that systems are in place to manage expected timeframes. If expected timeframes are not being met, then a corrective action plan is to be provided.

d) Report back to HDC on the above recommendations, within three months of the date of this report.

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Follow-up actions

102. A copy of this report with details identifying the parties removed, except the experts who advised on this case and South Canterbury District Health Board and Pacific Radiology, will be sent to the Ministry of Health 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 Dr Vanessa Thornton, an emergency medicine consultant:

"I have been asked to provide an opinion to the commissioner on case number 17HDC00163, and I have read and agree to follow the commissioner's Guidelines for Independent advisors.

I am the Head of Department of Middlemore Hospital Emergency Department New Zealand the largest Emergency Department in Australasia. I have been the HOD since 2008. My qualifications are FACEM (Fellow of the Australasian College of Emergency Medicine) and MBChB at Auckland University. I have been a fellow of the college for 18 years and graduated as a Doctor in 1992. I am drawing on my experience as an Emergency Physician and discussion with peers.

I have reviewed the following documentation:

1. Letter of complaint […]
2. South Canterbury DHB's response dated [2017]
   A. Included response from [Dr D]
3. Clinical records SCDHB
4. SCDHB SAE review and report
5. [Medical centre] responses dated [2017] [and] Clinical records from [Medical centre]
6. [Dr C's] response [2017]
7. [Dr C's] response [2018]
8. [Dr C's] response dated [2018]
9. Pacific Radiology Response [2018]

I have been advised to provide advice on the following:

South Canterbury DHB

1. The clinical assessment of [Mrs A] and the standard of care she received in the ED on the 29th October 2010
2. [Mrs A's] claim that she was not provided with a verbal or written summary when she was discharged from the ED on that day
3. Communication of the results of the X-ray and the CTPA to [Mrs A's] GP [Dr C]

Summary of presentation 29/10/2010

[Mrs A] presented to the ED on the 29.10.2010 at 1240. She was referred by her GP to ED due to her raised D dimer and concern that her chest pain was related to a PE. At triage [Mrs A] was a triage 4 and the nurse noted a history of flu for 2 weeks with fatigue. [Mrs A] was on antibiotics and although improved clinically her D dimer was elevated on her recent blood tests and the GP was concerned about a PE. [Mrs A]

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complained of R sided chest pain for 4 days keeping the patient awake in the night. The pain was worse with inspiration.

[Mrs A's] current medication was roxithromycin and she was a non-smoker. The nurse noted the obs on arrival were HR 77 temp 36.7 RR 18 sats 96%.

[Mrs A] was seen by [Dr D] and he noted a history of increased D dimer in the context of ongoing SOB in association with the GP concern for PE. The D dimer was noted at 973 elevated and on examination the chest R basal crackles were noted. The CXR showed patchy midzone change and [Dr D] felt that a PE was unlikely but in the context of raised D Dimer requested a CT. [Dr D's] impression at the time was of R middle zone pneumonia.

After the CT [Dr D] reviewed [Mrs A's] report and noted that the CTPA showed middle lobe bronchiectasis, a small area of consolidation R upper zone ? Infection with a reactive node consistent with infection and no evidence of a PE. [Dr D] made a diagnosis of R middle zone pneumonia and he recommended a repeat CXR in 6 weeks with GP and antibiotics as recommended by the radiologist. He also has confirmed in the notes that the patient is aware of the advice.

The CXR was reported in the notes with a report and the films being sent to [Dr C] and Dr E. The CTPA report is in the notes from the 29.10.2010 and this reported ? Mass or mass like area in the R upper lobe which was visible on CXR. The report also noted R middle lobe bronchiectasis. A lymph node was also reported which may well be reactive. Assuming the mass is inflammatory. Follow up imaging to ensure resolution was recommended. This report was sent to the ED and to the GP [Dr C] and [Dr E].

[Mrs A] was discharged from the ED at 1630. The ED summary note from the nurse reports that the patient was discharged at 1630 but the patient was not given the discharge form as she was not present at the time.

Questions

The clinical assessment of [Mrs A] and the standard of care she received in the ED on the 29th October 2010

[Mrs A] was seen and triaged appropriately in ED by the registered nurse. The history was taken by the nurse and a full set of observations. She was noted to be a GP referral for a CT based on the D dimer being elevated in the context of ongoing SOB and chest pain. She was seen by [Dr D] who completed the history and physical exam and requested the CTPA due to the D dimer being elevated. [Dr D] reviewed the CXR which reported changes in the upper lobes, the clinical picture of a recent infection and the CTPA reporting middle lobe bronchiectasis and made a decision to discharge [Mrs A] on antibiotics with advice for a follow up CXR to ensure resolution of the X-ray changes.

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The clinical assessment and standard of care for the treatment at the time of [Mrs A's] referral on 29th of Oct 2010 are at the standard of care expected for an Emergency Physician. This would be accepted standard of care by a group of my peers.

[Mrs A's] claim that she was not provided with a verbal or written summary when she was discharged from the ED on that day

The ED Dr has written in his discharge summary that he did discuss the findings of the CT with [Mrs A]. [Dr D] treated [Mrs A] as an infection (an acceptable diagnosis) and recommended a follow up in 6 weeks. His notes indicate he discussed the recommendation with the patient at the time. This would be standard of care to repeat a CXR in 6 weeks with the GP to ensure resolution of an infection as recommended in the notes and advise the patient to see the GP to repeat the test.

The RN recorded that the patient had left ED before the written discharge summary was given.

[Dr D] reports that the GP would usually receive a summary of the case which in 2010 a triplicate of the notes would be posted to the GP. Posting of the notes to the GP would be the expected standard of care for an ED where electronic summaries were not transmitted.

[Dr D] has given verbal instructions to the patient but written instructions assist the patient with ongoing care. In this case the RN reports that [Mrs A] did not receive the written discharge form as she had already left the ED. It is not clear from the notes if it would be standard practice to post this form to the patient if it was not received by the patient at the time of discharge. It would be the best standard of care to receive both written and verbal discharge instructions at the time of leaving ED.

Communication of the results of the X-ray and the CTPA to [Mrs A] GP [Dr C]

It is important to have communication at the interface between ED and the GP. This is an extremely difficult area of work for all EDs and GPs. ED is an episodic event without any continuity care. The usual way that communication occurs from the ED to the GP is through the discharge summary, the results of reports being sent to the GP and communication with the patient (both verbal and written if possible) about appropriate follow up with their GP.

Furthermore most EDs have a results review process for radiology and blood tests to ensure that results are followed up after the final report has been sent by the consultant radiologist. The principles are set out in a policy by the Australasian College of Emergency medicine[1] and states 'Systems need to be in place to ensure that the results of investigations ordered from an emergency department are reported to the responsible clinician, documented by them and followed up within a clinically appropriate time frame'. If a result is abnormal on review of report and the patient or GP was unaware of this result most EDs will let the GP and patient know the result via a phone call or amendment to the discharge summary.

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In this case the ED believed that the discharge summary was posted to the GP (although this cannot be confirmed), the results of the CXR and CTPA were reportedly sent to the GP by the radiology group and the patient received verbal instruction around follow up.

This communication would be at an acceptable level of communication for the care to be transferred from the ED to the GP. The DHB reports that electronic discharge summaries now occur in the ED which assists in the assurance that notes are being received by the GP. The DHB has identified that they have also reviewed the signing of results by the ED to ensure 'that robust practice is followed'.

In 2018 closing the loop around electronic discharge summaries and radiology reports assists in patient safety for reports where follow up is required. Many electronic discharge routes don't have an ability to close the loop. Including the patients in the communication and reinforcing the expected follow up is mandatory. This is an ongoing challenge for ED where interface with the GP remains extremely important in the ongoing care of patients.

Reference

Policy on the follow-up of results of investigations ordered from emergency departments https://acem.org.au/getmedia/8aa38420-fcaa-488b-bdc6-325575326d6a/P54_v02_Followup_resultsordered_from_EDs%20Jul-14.aspx"

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Appendix B: In-house clinical advice to the Commissioner

The following advice was provided by GP Dr David Maplesden:

"1. Thank you for providing this file for advice. To the best of my knowledge I have no conflict of interest in providing this advice. I have reviewed the available information: complaint from [Ms B], daughter of [Mrs A]; response from [Dr C] of [the medical centre]; GP notes [the medical centre]; brief response from South Canterbury DHB; [clinical notes].

2. [Ms B] states that her mother was referred to [the ED] by [Dr C] in October 2010 following a presentation with signs of persistent chest infection which did not clear with antibiotics. [Dr C] wanted possible diagnosis of pulmonary embolus (PE) to be excluded. [Mrs A] had a chest X-ray and CTPA performed and was told she had a chest infection with no evidence of PE. She was discharged back to her GP. From March 2016 [Mrs A] had symptoms of right lateral chest pain, lethargy, weight loss and increasing right hip and leg pain. In May 2016 [Dr C] referred [Mrs A] for an abdominal ultrasound querying a diagnosis of gallstones. The appointment offered was 19 October 2016 and when [Mrs A] queried with the radiology provider (Pacific Radiology) if she could access a scan sooner than this by paying privately she was told this was not possible. Following review by [Dr C] on 15 September 2016 a private ultrasound was organized and performed on 21 September 2016. The scan was normal. [Dr C] then referred [Mrs A] privately to surgeon [Dr E] in October 2016 because of her persistent symptoms. She underwent endoscopies and chest X-ray and CT scan were organized as part of the surgical work-up. Chest X-ray on 17 October 2016 showed a right upper lobe mass with local invasion of the ribs. CT scan on 1 November 2016 confirmed a likely malignant large right upper lobe mass. Both reports referred to abnormal findings identified on X-ray and scan of October 2010 at which time follow-up had been advised. Subsequent investigations led to a diagnosis of likely primary adenocarcinoma of the lung with bony metastases demonstrated in the sacrum. [Mrs A] was referred for palliative radiotherapy and possible chemotherapy or immunotherapy. [Ms B], on behalf of her family, expressed concern that apparent process deficiencies led to the significant radiology reports of October 2010 being overlooked and no appropriate action being undertaken at that time. They feel that the seven-year delay in diagnosis is likely to have adversely affected [Mrs A's] prognosis and would like the circumstances leading to this situation investigated and any process deficiencies remedied. A claim for treatment injury due to delayed diagnosis has apparently been accepted by ACC.

3. Response [Dr C]

(i) [Dr C] has provided a summary of events. [Mrs A] kept in good health and had never smoked. She had no family history of malignancy. She presented on 19 October 2010 with symptoms and signs of a chest infection and was treated with roxithromycin. She saw the practice nurse on 28 October 2010 for a routine cervical smear and mentioned she had persisting symptoms of chest pain and shortness of breath. Following discussion with [Dr C], [Mrs A] was referred for blood tests and an urgent chest X-ray, and further antibiotics were prescribed. Blood results received the

following day showed elevated D-dimer but normal blood count. [Dr C] contacted [Mrs A] and asked her to present to [the ED] immediately to exclude possible PE. The chest X-ray was to have been performed that afternoon. [Dr C] states: *I was not aware of what investigations were done at ED on 29/10/2010 as no further information was ever received from ED to myself via fax or mail or phone call.*

(ii) [Mrs A] did not re-present to the practice until September 2012 when she received treatment for an infected dog-bite. [Dr C] summarises management in the second half of 2016 as: *[Mrs A] presented to me in May 2016 with symptoms suggested of possible gallbladder/gastric issues that were investigated further with bloods and semi-urgent ultrasound. This led to referral to [Dr E] for further evaluation. (Note there was a 6 month wait for a semi-urgent ultrasound that forced the patient to pay for this privately). It was here that she underwent tests (Colonoscopy and gastroscopy plus X rays) and she was found to have H Pylori gastritis (and placed onto treatment) plus a mass in her chest. As soon as I was made aware of this mass I referred her for repeat CT scan as well as to Respiratory specialist for urgent evaluation.*

(iii) With respect to the apparently overlooked radiology reports, [Dr C] states: *The first I was made aware of any issues with regards to this critical event was when I was sent the result of the CT scan done on 29/10/2010 […] on 26/10/2016. I never received anything from ED at that time in 2010. I am advised by [Mrs A] that she was not informed of this result nor was any follow up of this abnormal test arranged by ED. I phoned [the] X ray department to ask why she has sent me results from 2010, who had ordered it and what follow up had been done at that time. She advised me that she was not aware of any follow up and that as she had noted that as I had never received the report in 2010 she thought it best that she should send it to me as well as [Dr E].* [Dr C] notes that although the radiology reports feature in chronological order in the 'Inbox' module of her PMS, review of the notes will confirm the results were not imported until 26 October 2016. [Dr C] states: *I thus did not receive this report until 6 years later! Not only was I unaware that this scan has been completed I was not made aware of the result.*

4. SCDHB response

The DHB response indicates that the incident has been recorded as a serious adverse event and a root cause analysis is currently underway. They are unable to provide further comment until this review has been completed.

5. Review of clinical notes

(i) The first consult of relevance is with [Dr C] on 19 October 2010 when [Mrs A] presented with upper respiratory tract symptoms for two weeks and was noted to have a few lung crepitations. Diagnosis code was *bronchitis unspecified* and a prescription was provided for roxithromycin. On 28 October 2010 [Mrs A] returned to the practice nurse for a routine cervical smear. The smear was undertaken and additional nurse notes record: *Also wanted chest listened to, just recovering from bronchitis. Dull R base, coughing++, has had pain and shortness of breath. Refer bloods and X-ray. Advised to be reviewed if any concerns or deterioration.* There are additional notes by [Dr C] noting a discussion with the nurse and management advice

provided. Blood results on 29 October 2010 showed an elevated D-dimer and [Mrs A] was contacted and referred to [the ED].

(ii) [The ED] notes dated 29 October 2010 note [Mrs A] arrived at 1240hrs and was given a triage category 4. Nurse notes include: *Fatigued easily — flu for 2 wks — seen GP — on antibiotics — feeling improved — sent to GP for elevated D-dimer — CXR ordered for 1500 today. Rt sided chest pain 4 days — awoke pt in night originally, not so bad now, maybe worse on inspiration.* Vital signs were unremarkable. Under the section of nursing notes titled 'Admission/Discharge Information' there is recorded: *P: GP f/u Dx home Not seen when discharge Dx form not given.* Based on this information it appears [Mrs A] left ED without being given a written copy of her discharge form and it is unclear what verbal information or instructions, if any, was provided to her before discharge.

(iii) ED MO notes dated 29 October 2010 record [Mrs A's] recent history and elevated D-dimer (973). Assessment notes include: *Chest — R basal crackles, no evidence lower limb DVT, For CTPA please.* Handwritten MO interpretation of the imaging undertaken includes: *CXR→ patchy R midzone …* [CTPA result]: *No evidence PE→ as per CXR small area consolidation R upper zone + LN reaction, nil otherwise.* Provisional diagnosis was *R midzone pneumonia.* Management plan is documented as: *advise pt rpt CXR in 6/52 to confirm resolution, pt aware and recommenced antibiotics*. Under the section titled 'Follow-up instructions' is recorded: → *2GP* → *F/U CXR 6/52*

(iv) Formal chest X-ray report dated 29 October 2010 lists [Dr C] as the referrer (copy to *[Dr E] Emergency*), and clinical indication being *?ongoing infection.* The report reads: *The lung bases are not particularly well expanded. There is some continuing atelectasis and probable mild bronchopneumonia in the right upper lobe and in the lingular segments left upper lobe. No pleural fluid is seen. The heart and mediastinum are clear.* The report in the hospital notes has been initialled.

(v) CT report dated 29 October 2010 lists *[Dr E] [Emergency Dept]* as the referrer. The copy in the hospital notes lists a copy to [Dr C] only, and the report has been initialled. The copy in the GP notes is identical other than listing copies to [Dr C] and [Dr E] (suggesting, as [Dr C] has stated, that this copy was sent in October 2016 rather than 2010). Clinical indications is: *Mild shortness of breath. Elevated D-dimer following a period of relative immobility. Right basal crackles.* The formal report noted absence of any signs of PE but found: *Within right upper lobe peripherally abutting the oblique fissure along its posterior margin and the pleural surface along its lateral margin, there is a heterogeneous 30 x 25 x 25mm mass or mass-like area of consolidation. Within right middle lobe there is moderate volume loss along with cylindrical bronchiectasis. Several well and ill-defined nodules bilaterally. These measure <4mm in mean dimension. Mildly enlarged right hilar lymph node and enlarged right paratracheal lymph node …* and under 'Comment': *Mass or mass-like area of consolidation in the right upper lobe. This is visible on chest X-ray. Follow-up imaging recommended to confirm resolution if an inflammatory cause is suspected clinically.*

(vi) In the sequential notes, there is an Inbox record of receipt of chest X-ray result and (separately) CT scan result on 29 October 2010. Similarly, as noted above the full

reports appear sequentially in the Inbox module as if received in 2010 but with the 'copy' to section of the CT report suggesting it was a more recent import. It is possible to determine, from the audit log, when a result was acknowledged by the provider (ie 'filed' in the patient notes) and I presume it must be possible to determine when it was actually imported. For the sake of completeness, [Dr C] might be asked to provide screenshots of the audit and import logs for both of these results (see Appendix 1 assuming she is using Medtech). If there is a discrepancy between the logs and her recollection of the timing of events, comment might be obtained from the PMS supplier regarding possible sequence of events. Could [Dr C] also confirm when she received the chest X-ray result dated 29 0ctober 2010. She should also be asked what process her practice was using in 2010 to store any hard copy clinical correspondence received such as handwritten ED discharge summaries, specialist letters etc. Were these invariably scanned into the system or acknowledged in some other way in the electronic record? There is no reference to import of a [hospital] discharge summary around this time and no documentation from [the hospital] in the GP notes provided regarding [Mrs A's] ED presentation.

(vii) As per the response, [Mrs A] did not return to the practice for almost two years. On 10 September 2012 [Dr C] recorded *letter seen A&E dog bite* referring to [Mrs A's] recent attendance at [the] ED with a dog bite. I could not find a hard copy of the letter referred to in the GP notes provided and [Dr C] might be asked to clarify how this letter was processed. On 19 September 2012 [Dr C] reviewed the dog bite and prescribed antibiotics.

(viii) On 28 November 2012 [Mrs A] presented with recent onset of productive cough and lethargy. She was seen by a medical student initially (supervised by [Dr C]) and notes refer to absence of haemoptysis, shortness of breath or chest pain on this occasion. Chest was clear to auscultation. Antibiotics were prescribed for suspected bronchitis. On 4 December 2012, there is a retrospective entry referring to a consultation two days previously (provider [initials]) for sinusitis. On 17 December 2012, there was a consultation for suspected corneal abrasion (eventually requiring specialist assessment and diagnosis of episcleritis March 2013) and on 24 December 2012 assessment for cough and nasal congestion treated with antihistamines (bot [Dr C]).

(ix) The next consultation unrelated to eye issues was 20 May 2015 when [Mrs A] was seen for general checkup and flu vaccine. Routine bloods taken at this time were unremarkable. Next consult was 7 March 2016 when [Mrs A] presented a three-week history of upper respiratory symptoms and more recent productive cough. Medical student notes include *No SOB, no chest pain.* Chest was clear to auscultation. Antibiotics were provided in case the symptoms worsened ([Mrs A] was about to travel overseas) but she did not use them. Routine cervical smear and flu vaccine were undertaken on 26 May 2016 and at this same appointment [Dr C] noted: *Classical Gallbladder symptoms RUQ discomfort comes and goes Heartburn ++.* Ultrasound and blood tests were ordered (normal CBC and liver function, minimally elevated CRP (6)).

(x) [Mrs A] did not return for review until 15 September 2016 when [Dr C] noted: *ISQ still waiting for u/s! Over 6 months now. Plan: 1) Pvt u/s. If abn refer surgery (Pvt). If*

normal refer anyway as ? cause, advised to be reviewed if any concerns or deterioration. There is no reference to symptom of weight loss or lethargy, or to any physical assessment (abdominal examination). Blood tests were repeated and showed mild elevation of CRP (12) but were otherwise unremarkable. Ultrasound on 21 September 2016 was normal and [Mrs A] was advised of the result by phone and prescribed a one month trial of omeprazole for possible gastro-oesophageal reflux disease (GORD) with a plan to undertaken surgical referral if the symptoms persisted.

(xi) Next consultation was 11 October 2016 and [Dr C] recorded:

Lots of unusual possibly unrelated symptoms

Pain and discomfort RUQ extends to epigastrium Comes and goes Has heartburn on occasions now divulges and says she's had a weight loss of 1.5 stone over 7 month!!

Says her glands are up (Feel normal to me)

U/S normal

Bloods relatively normal apart from sl elevated CRP

Failed response to Omeprazole

Dx uncertain

Needs further Ix

Req private referral — refer [Dr E] [Surgeon]

(xii) Report from [Dr E] dated 12 October 2016 includes: *Her main problem is one of right upper quadrant pain and weight loss, which she has had since March of this year. She informs me she had a lung infection and received a course of antibiotics. She experiences pain on a daily basis. It can be intermittent in nature, is situated in the right upper quadrant sub-costal area and radiates through to the right scapula. She has lost about two and a half stone in weight over the last seven months and has been suffering from fatigue. She has tried Omeprazole with no relief of her symptoms … ultrasound results which show a normal gallbladder with no signs of gallstones. The liver, spleen and pancreas appear normal … blood tests reveal slightly elevated Creatinine at 91, normal LFTs, slightly raised CRP at 12 and normal complete blood count … On clinical examination, she has got no jaundice, anaemia or lymphadenopathy. Abdominal examination revealed slight tenderness in the right upper quadrant. She has got a midline sub-umbilical scar. There are no abdominal masses*. [Dr E] organized gastroscopy and colonoscopy to be performed on 26 October 2016, and chest X-ray. The endoscopies were performed on 26 October 2016 and showed no concerning pathology. Gastric biopsies revealed chronic active Helicobacter pylori gastritis which was treated.

(xiii) Chest X-ray report dated 17 October 2016 gives clinical notes as: *Several months of right lower chest pain … Comparison is made to previous imaging performed on 10/10/2010*. Findings and recommendations included: *The previously demonstrated opacification within the right upper lobe inferior segment is more conspicuous on the current examination and measures up to 3.9 cm x 4.1 cm in size. There are rib changes/fractures on the right and the possibility that these are associated with this*

area of opacification is difficult to exclude. Further evaluation of the chest with CT scanning is recommended.

(xiv) On 26 October 2016 [Dr C] recorded: *Radiology faxed through a copy of the CT scan done 2010. I phoned and spoke to [radiology] and asked why this was sent to me. She advised me that [Dr E] had requested it and that she noticed that it has never been sent to me so thought she'd give me a copy too. Went through ED ? What action was completed at that time.* [Dr C] organized an urgent CT scan which was undertaken on 1 November 2016, and again compared with previous CT of 29 October 2010. The report included: *Large pleural based malignancy in the right upper lung posterolaterally, significantly enlarged in the interval with extensive chest wall invasion and associated destruction of the posterolateral right 5th and 6th ribs. Apart from 2 new small non-specific left sided pulmonary nodules, no evidence of distant metastases.* [Dr C] then referred [Mrs A] for urgent respiratory physician review.

Subsequent specialist letters confirm the diagnosis of likely primary adenocarcinoma of the lung with right sacral metastasis. Medical oncologist noted (clinic letter 2 December 2016): *Back in 2010 she had a chest X-ray and CT scan that were both noted to be abnormal. Unfortunately, there seems to have been some issue and she was not followed up … She re-presented this year with a nine-month history of pain in her right chest, initially thought to be related to gallbladder issues … She thinks she may have lost a little weight but it has now stabilised. Her energy levels were not 100% but not particularly poor … [Mrs A] has an unusual history. There is evidence that she had a lung mass five years ago and it has not changed particularly over that time. It has obviously grown and invaded the chest wall but the primary mass does not seem to have altered very much …* The initial management strategy was to wait and assess response to the radiotherapy currently being undertaken but later letters indicate consideration was being given to immunotherapy (patient funded).

6. Comments

(i) Further information is required from both the DHB and [Dr C] before any conclusions can be drawn regarding apparent delayed transmission to the GP of [Mrs A's] 2010 CT result, and failure to transmit information regarding [Mrs A's] ED attendance during which the CT was performed. Sections 5(vi) and 5(vii) refer to the information required from [Dr C]. The DHB should be asked to provide the following information if it is not addressed in the RCA report:

- What process was in place in 2010 for transmission of ED attendance information to the patient's GP? The notes reviewed indicate [Mrs A] left ED without any written discharge information. What process would normally be followed in this situation?

- What process was in place in 2010 for management of abnormal imaging results ordered by an ED clinician and report received and initialled by them (as appears to be the case here)?

(ii) [Mrs A's] chest X-ray dated 29 October 2010 suggested a diagnosis of mild community acquired pneumonia (CAP). Accepted CAP guidelines in place at the time

made the following recommendation in regard to follow-up chest X-rays: *A chest radiograph should be arranged after about 6 weeks for all those patients who have persistence of symptoms or physical signs or who are at higher risk of underlying malignancy (especially smokers and those aged >50 years) whether or not they have been admitted to hospital*[1]*.* The ED summary (which [Dr C] apparently did not receive) indicated management consistent with this guideline, the indication being [Mrs A's] age. However, New Zealand suspected cancer in primary care guidelines[2] also released in 2009 make the following recommendation: *A person with risk factors* for lung cancer who has consolidation on an initial chest X-ray should have a repeat chest X-ray within 6 weeks to confirm resolution [* Current or ex-smokers, smoking-related chronic obstructive pulmonary disease, previous exposure to asbestos, history of cancer (especially head and neck cancer)].* Assuming [Dr C] received the chest X-ray report dated 29 October 2010 suggesting a diagnosis of mild CAP, I think best practice would be to have referred her for repeat X-ray in six weeks. Certainly, if the CT scan report had been received concurrently, such follow-up was mandatory. However, there are significant mitigating factors for [Dr C] in this case: the CT scan report was apparently not received; the ED advice was apparently not received; there was no recommendation for follow-up contained in the chest X-ray report; the lobar changes were mild in nature and bilateral; [Mrs A] did not return for review and it could be reasonably assumed therefore her symptoms had completely resolved; [Mrs A] had never smoked and had no additional risk factors for lung cancer (apart from age); there was conflicting management advice at the time regarding requirement for follow-up in the circumstances described. Under the circumstances, I do not feel the failure by [Dr C] to organize a follow-up chest X-ray for [Mrs A] in late 2010 can be regarded as a significant departure from accepted practice. I do acknowledge that had such follow-up occurred, it is likely [Mrs A's] malignancy would have been detected at the time.

(iii) [Dr C's] subsequent management of [Mrs A] I think was consistent with accepted practice assuming she had no knowledge of the 2010 CT scan result. There was no presentation pattern to suggest significant underlying disease until October 2016 when [Mrs A] evidently first reported her symptom of significant unexplained weight loss. Prior to this, [Dr C] had been managing [Mrs A] in a manner appropriate to the working diagnosis of gallbladder disease, with delays in getting an ultrasound scan being outside of her control. Clinical notes might have been improved with respect to documenting the nature and features of [Mrs A's] abdominal/chest pain and assessment findings in May and September 2016, but I think management over this period was reasonable with the underlying diagnosis of lung cancer being a particularly difficult one (leaving aside the issue of the previous abnormal imaging)."

[1] Lim WS, Baudouin SV, George RC, et al BTS guidelines for the management of community acquired pneumonia in adults: update 2009 Thorax 2009;64:iii1–iii55.

[2] New Zealand Guidelines Group. Suspected cancer in primary care: guidelines for investigation, referral and reducing ethnic disparities. Wellington: New Zealand Guidelines Group; 2009.

Dr Maplesden provided the following further advice:

"[Dr C] has provided the information requested in sections 4(vi) and (vii):

(i) The chest X-ray report dated 29 October 2010 was received by [Dr C] and imported into the PMS on 1 November 2010 (audit log viewed).

(ii) The CT scan dated 29 October 2010 was received by [Dr C] and imported into the clinical notes on 26 October 2016 (audit log viewed).

(iii) The process followed by [Dr C] in 2010 and currently with respect to recording of 'hard-copy' medical reports received is for salient features of the report to be recorded in the patient's electronic notes and for the 'hard copy' to be permanently filed for future review if required. [Dr C] was able to retrieve the ED discharge summary received in relation to [Mrs A's] dog bite of 10 September 2012 and I have viewed a copy of this document.

Comment: On confirming it appears [Dr C] did not receive either an ED discharge summary for [Mrs A's] review on 29 October 2010, or a copy of the CT scan result of the same date (until six years later) I feel her management of [Mrs A] did not depart significantly from expected standards of care as discussed in section 6 above.

8. In an e-mail to HDC dated 16 June 2017, SCDHB noted:

(i) *The process for transmission of ED attendance information to GPs in 2010 was a handwritten carbon copy, 1 of which would be given to the patient, 1 would be sent to the GP and one went on the patient's file.*

(ii) *The process for management of abnormal imaging results ordered by an ED clinician and report received and initiated* [? should be initialled] *by them in 2010, was that a clinical review was completed and the GP was provided with a copy and an investigation follow-up in 6 weeks was suggested.*

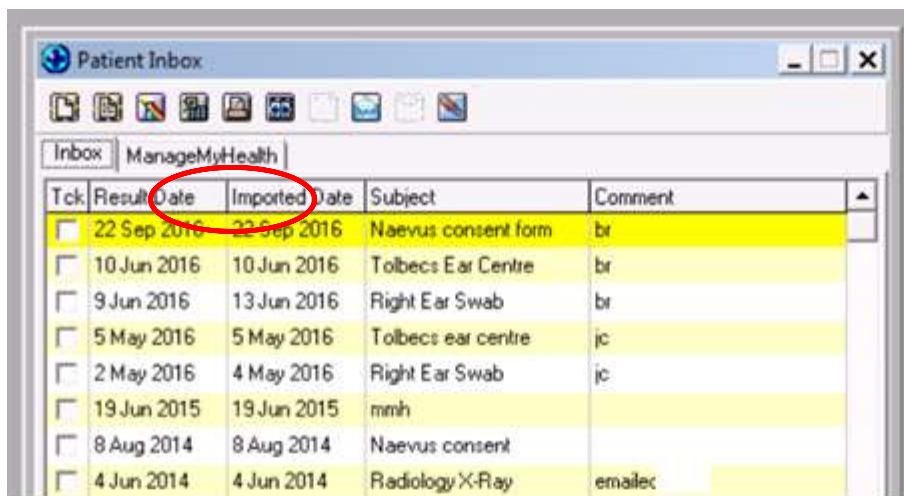
9. I have reviewed copy of the SCDHB Serious Adverse Event Review report. There appear to be some unanswered questions and it may not be possible to resolve this. The report states the DHB server indicated [Dr C's] practice had received an electronic copy of the CT scan report yet the audit screenshots supplied by [Dr C] suggest the report was not imported until 2016 as previously discussed. There is no way of confirming whether or not a copy of the ED discharge summary was ever sent to [Dr C] by the DHB, but [Dr C] states she did not receive a copy and [Mrs A] was not supplied with a copy. [Mrs A] does not recall ever receiving verbal advice regarding the need to follow-up her CT scan and X-ray results with the GP. It appears current electronic information handling is more robust than it was in 2010, and the DHB have made other process improvements outlined in the report which should reduce the risk of such an incident being repeated. It appears the processes SDHB had in place in 2010 were reasonable for that time, but for unexplained reasons the information 'loop' broke down so that [Dr C] was never aware [Mrs A] had actually had a CT scan, and was never aware of the result of that scan. I am not sure that further investigation will resolve the 'unexplained' aspects of this incident and without such resolution it is somewhat difficult to define a departure from expected standards of care.

10. Similarly, the precise reasons for the delay in [Mrs A] receiving an ultrasound scan in 2016 seem somewhat obscure (unable to establish why two earlier scheduled appointments were annotated 'cancelled no response') but there appeared to be a lack of information provided to the referrer and the patient regarding scheduling of the examination (ultrasound had been outsourced to Pacific Radiology). The DHB report suggested [Dr C] should have provided [Mrs A] with the option of private referral from the outset, but notes also that the expected timeframe for a semi-urgent referral to be completed was 2–4 weeks. I agree that best practice would be to offer the option of private referral for such procedures, but if a relatively rapid DHB response was expected (as noted above) and the expected wait was reasonable from a clinical perspective (as it was), there would be less pressure to do so. [Dr C] was not given the opportunity to revisit the 'private' opportunity as she was not kept informed of the delays in [Mrs A] receiving her ultrasound until she saw [Mrs A] several months after the original referral had been sent. At this point a private referral was arranged. The remedial measures undertaken or planned as a result of the ultrasound delay appear appropriate.

11. Ultimately, the delays in [Mrs A] receiving follow-up of her abnormal CT scan in 2010, and in having a semi-urgent ultrasound scan performed in 2016, must be regarded as significant departures from expected standards of care. However, it has been difficult to clearly define the underlying factors contributing to these delays."

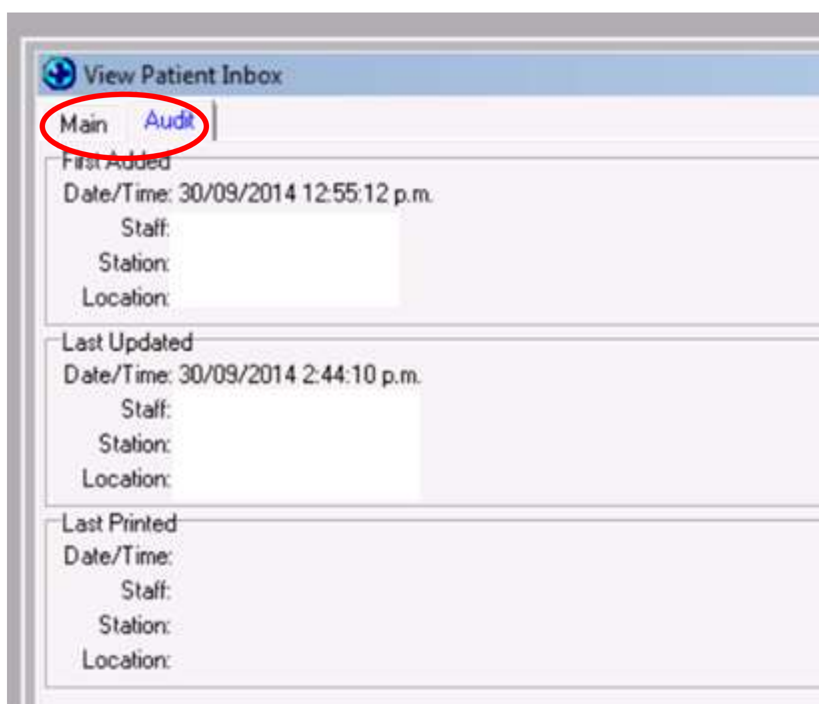
Appendix 1: Medtech audit log screenshots

(i) Patient Inbox view



Tck	Result Date	Imported Date	Subject	Comment
	22 Sep 2016	22 Sep 2016	Naevus consent form	br
	10 Jun 2016	10 Jun 2016	Tolbecs Ear Centre	br
	9 Jun 2016	13 Jun 2016	Right Ear Swab	br
	5 May 2016	5 May 2016	Tolbecs ear centre	jc
	2 May 2016	4 May 2016	Right Ear Swab	jc
	19 Jun 2015	19 Jun 2015	mmh	
	8 Aug 2014	8 Aug 2014	Naevus consent	
	4 Jun 2014	4 Jun 2014	Radiology X-Ray	emailec

(ii) Individual result view



Dr Maplesden provided the following further advice on 7 December 2018:

"I have reviewed the additional advice provided by [Dr C], South Canterbury DHB and Pacific Radiology. There is no new information provided which alters my opinion that the management of [Mrs A] by [Dr C] was consistent with accepted practice (my advice dated 10 April 2017 with addendum 22 June 2017). This opinion is based on several factors which I will reiterate:

(i) [Dr C] did not receive a copy of the CT scan report dated 29 October 2010 until 26 October 2016 (confirmed on review of PMS audit log). However, it appears the report was successfully sent to [Dr C's] EDI mailbox from SDHB on 29 October 2010 but there was no facility (at the time) to confirm it had been received electronically. The reason for the apparent electronic communication failure in this instance has not been established, but communication processes in place at the medical centre at the time were consistent with accepted practice.

(ii) [Dr C] did not receive a copy of the handwritten ED discharge summary for 29 October 2010 (nor did the patient). SDHB has stated it is not possible to confirm whether or not a copy of the discharge summary was provided to [Dr C], but it was accepted practice at the time for such a summary to be provided. I am unable to comment further on this issue other than to state that from my personal experience with my own DHB provision of ED discharge summaries is certainly not consistent.

(iii) [Mrs A] was not provided with written information to follow-up her ED visit with her GP as she had left the department before standard patient information in this regard could be provided. Neither [Mrs A] nor [Dr C] was ever aware (until October

2016) that the CT scan result of 29 October 2010 was abnormal and required specific follow-up.

(iv) [Dr C] was not kept informed regarding delays in [Mrs A's] abdominal ultrasound scheduling between May and October 2016."