Medical Centre
General Practitioner, Dr C

A Report by the
Deputy Health and Disability Commissioner

(Case 20HDC00280)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Contents

Executive summary

1. This report concerns the care provided to a man by a number of doctors at a medical centre. In 2018 and 2019, the man had multiple consultations about his iron deficiency and anaemia, in particular with one general practitioner (GP). This case highlights the importance of thinking critically about patient presentations and symptoms.

Findings

2. The Deputy Commissioner considered that on a number of occasions the GP failed to investigate the nature of the man's persistent anaemia and to think critically about prescribing him with iron supplements, and did not carry out further examinations on the man or refer him to specialist care. Accordingly the Deputy Commissioner found the GP in breach of Right 4(1) of the Code.

3. The Deputy Commissioner criticised the continuity and communication of care provided to the man at the medical centre, but considered that no broader systems issues contributed to the shortcomings in care provided to the man.

4. The Deputy Commissioner also criticised a second GP in relation to the missed opportunities for her to investigate the man's persistent anaemia further, and criticised a locum doctor in relation to her decision to administer an intravenous iron infusion without investigating the man's symptoms further.

Recommendations

5. The Deputy Commissioner recommended that the GP review the health pathways on investigation and management of anaemia and perform an audit to ensure that recommended guidance was followed, and provide a written letter of apology to the man's family.

6. The Deputy Commissioner also recommended that the medical centre provide a written letter of apology to the man's family, and report to HDC on the support it will provide to staff to implement its new handover and coordination policies, and on its monitoring of the effectiveness of the new policies.

Complaint and investigation

7. The Health and Disability Commissioner (HDC) received a complaint from Ms B about the services provided to her late father, Mr A, by Dr C at the medical centre. The following issues were identified for investigation:

- *Whether Dr C provided Mr A with an appropriate standard of care in 2018 and 2019.*
- *Whether the medical centre provided Mr A with an appropriate standard of care in 2018 and 2019.*

8. This report is the opinion of Deputy Commissioner Kevin Allan, and is made in accordance with the power delegated to him by the Commissioner.

9. The parties directly involved in the investigation were:

Ms B	Complainant
Medical centre	Provider
Dr C	Provider/general practitioner (GP)

10. Further information was received from:

Dr D	Provider/GP
Dr E	Provider/doctor
Dr F	Provider/doctor
The Medical Council of New Zealand	Regulatory body
District Health Board	

11. Also mentioned in this report:

Dr G	Reviewer

12. Expert advice was obtained from in-house vocationally registered GP Dr David Maplesden (Appendix A).

Information gathered during investigation

Background

13. This opinion considers the care provided to Mr A (aged in his eighties) by a number of medical practitioners at the medical centre[1] from 2018 until his diagnosis of gallbladder cancer in 2019. Mr A passed away in 2020.

14. Between 2018 and 2019, Mr A repeatedly presented at the medical centre about his iron deficiency symptoms. He had a history of anaemia since 2014, reportedly as a result of his semi-vegetarian diet, reflux disease, and use of blood thinners. Mr A's existing medication included treatment for indigestion and reflux, and regular pain relief (paracetamol).

Iron deficiency and anaemia

15. Anaemia is a condition that can have many causes. Iron deficiency can be a cause of anaemia (iron deficiency anaemia (IDA)) when there is insufficient iron in the blood. When this occurs, the body is not able to produce enough haemoglobin (a substance in red blood cells that enables the blood to carry oxygen). At various times in 2018 and 2019, Mr A's

[1] The medical centre is approximately 40 minutes' drive from a main centre. The practice has an enrolled population of around 3,000 patients. Mr A was registered at the medical centre from mid-2008.

haemoglobin and iron levels were measured (with a full blood count[2] and iron studies[3]). Conditions that cause inflammation (such as infections, autoimmune diseases, cancer, and chronic kidney disease) can also cause anaemia, and this is referred to as "anaemia of chronic inflammation" (ACI).

Month1[4] — review by Dr F for possible transient ischaemic attack

16. On 12 Month1, Mr A was seen at the medical centre by a short-term locum, Dr F,[5] for a possible warning stroke[6] that had occurred earlier on the same day. Dr F examined Mr A and started treatment for a possible TIA.[7] As Mr A was observed to be experiencing high blood pressure, Dr F treated this condition with medication.[8]

17. Amongst other actions, Dr F ordered a number of tests, including a full blood count.[9] The results (reported on the same day) showed that Mr A was anaemic, as his haemoglobin level was low,[10] and it was lower compared to his previous tests taken in 2015 and 2016.[11] However, no further reference to the blood test results was made, including whether this was discussed with Mr A's regular GP, or whether any further actions were taken in response to the results.

18. Dr F recalled to HDC that she would have expected Mr A's regular GP or the hospital (as part of the TIA management) to follow up and monitor Mr A's blood results. She noted that the practice was poorly staffed at the time, and there had been recent computer system changes.

Month3 — consultation with Dr C

19. On 5 Month3, Dr C, a GP at the medical centre, saw Mr A for a review of his existing medications. Dr C's clinical notes contain no reference to indicate that he was aware of Mr A's blood test results from 12 Month1, or his anaemia.

6 and 9 Month6 — blood test and medication review

20. On 6 Month6, various tests, including iron studies, were ordered by Dr C. However, Dr C did not order a full blood count or an immature red blood cell count.[12] The iron studies

[2] A full blood count (FBC) is a commonly ordered test in which a blood sample is taken to determine the kinds and numbers of cells in the blood.
[3] Iron studies evaluate the amount of iron in the body by measuring several substances in the blood.
[4] Relevant months are referred to as Months 1–23 to protect privacy.
[5] Dr F told HDC that she spent two weeks at the medical centre from 5 to 15 Month1.
[6] A transient ischaemic attack (TIA) — a temporary period of symptoms similar to those of a stroke but often without permanent damage. A TIA may be a warning sign of a future stroke.
[7] Ibid.
[8] Mr A's blood pressure showed rates of 145/80mmHg and 156/78mmHg. This was treated with felodipine.
[9] A full blood count (FBC) is a commonly ordered test in which a blood sample is taken to determine the kinds and numbers of cells in the blood.
[10] His haemoglobin was 118g/L, which was in the lower reference range of 130–175g/L. In medicine, the reference range is a set of values used to interpret a patient's test results based on a group of healthy persons.
[11] The medical centre provided Mr A's blood test results from 2015 to Month23.
[12] A reticulocyte count, which measures the level of immature red blood cells (which form and mature in the bone marrow before being released into the blood). If the count is too high or too low, it can indicate a

showed that Mr A had low ferritin and iron levels consistent with iron deficiency. However, as a full blood count was not completed, Mr A's haemoglobin levels were unknown at this time. Dr C asked Mr A whether he had lost blood, and this was denied by Mr A. A recommendation of iron supplements was documented in the notes.

21. On 9 Month6, Mr A was seen by Dr C for a medication review. Dr C's clinical notes record that Mr A was generally "doing fine", and that "nothing [had] really changed". Dr C noted that Mr A's iron levels were all low. In light of these observations, Dr C prescribed oral iron supplements.[13] However, no detailed functional enquiry or gastrointestinal-focused examination was performed, nor was there any further investigations that may have clarified the nature of the anaemia (i.e., whether it was caused by inflammation and/or iron deficiency). Dr C acknowledges, in hindsight, that he should have "conduct[ed] a rigorous systemic enquiry and … examine[d] the patient's gastrointestinal tract".

22. Dr C explained that at the time he felt stretched and had a significant workload, with the practice being very busy, and with staff on leave between Month3 and Month9. He stated: "The responsibility for the majority of the patient care (and lab results) fell therefore to me." He advised that the usual procedure to manage the workload was that nursing staff would lead many consultations, and they would also generate the laboratory recalls.

27 Month8 and 1 Month9 — further blood tests and review

23. On 27 Month8, further iron studies showed that Mr A had persistent iron deficiency.[14] A full blood count was not ordered, so Mr A's haemoglobin level was unknown at this time. Dr C wrote on the test result: "If he was willing, we might have to meet to talk. Why is he iron deficient, is he losing blood? Is he aware of why otherwise?" Dr C told HDC that this was documented for nursing staff to ask Mr A when they telephoned him about his results and to ask him to return to discuss his iron deficiency.

24. On 1 Month9, Dr C reviewed Mr A to discuss his iron deficiency. Mr A was not aware of having had any bleeding or dark stools after taking the prescribed iron, which he had stopped taking by this appointment. It was also documented that Mr A was not examined rectally, but that there were no changes in his stool habits, and he was not experiencing any coughs or shortness of breath. An abdominal examination was not performed. Although not documented, Dr C explained to HDC that he had considered the possibility of Mr A's existing medication being relevant to his iron deficiency at this point.

25. A full blood count was ordered and taken on the same day, but iron studies were not ordered. The results showed that Mr A's haemoglobin level was below the normal range, which was indicative of mild anaemia. Dr C documented that he would likely investigate the anaemia further if the repeat full blood count and iron studies in six weeks' time showed a further decline.

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serious health problem, including anaemia and disorders of the bone marrow, liver, and kidneys. The result is also used to diagnose specific types of anaemia and/or to see if the treatment of anaemia is working.

[13] Ferrous fumarate — a medication used to treat and prevent iron deficiency anaemia.

[14] This is observed as persistent low serum iron levels and transferrin saturation (a protein in blood that binds iron and transports it throughout the body).

26. Dr C acknowledged that the "blood tests and other forms of investigation of [Mr A's] anaemia undertaken up to [Month9] were not sufficient to reveal a wider selection of possibilities of the causes".

15 and 19 Month11 — final consultations with Dr C in 2018

27. On 15 Month11, Dr C arranged for a further full blood count and iron studies for Mr A. Dr C indicated on the laboratory request form that the working diagnosis was iron deficiency anaemia,[15] with uncertainty on blood loss.

28. The blood test results showed that Mr A's anaemia remained persistent.[16] Dr C asked a nurse to follow up with Mr A about the blood test results, although no subsequent documentation of any contact with Mr A was recorded. Dr C told HDC: "[I]t is not possible for me to tell from the notes … what the outcome of that enquiry was, or whether it actually occurred as it ought to have."

29. Dr C stated that no specialist referrals were made when subsequent re-testing of Mr A's iron levels did not improve. Dr C stated:

> "I cannot provide [an] explanation as to why this did not occur, as it was certainly part of my thinking when [I first] assessed [Mr A] with causes as to his deficiency in mind."

30. Dr C added:

> "I agree at this point it would have been appropriate to consider more closely the persistence of the anaemia and its non-response in wholeness to iron supplementation. It had certainly been my intention to investigate a persistence of the issue if it remained, but most regrettably this did not take place."

31. On 19 Month11, Dr C arranged for a further prescription of oral iron tablets for two months, without further investigation, referral, or seeking specialist advice about the nature of Mr A's anaemia. Dr C documented that it was unclear whether Mr A was taking the oral iron supplements that had been prescribed.

Month10 to Month11 — initial consultations with Dr D

32. On 22 Month11, Mr A presented to GP Dr D for his ear and chest lesions. The consultation notes indicate that Dr D was aware of Mr A's anaemia, as the prescription of oral iron supplements was repeated. It was also documented that Mr A was starting to eat more meat.

33. Dr D told HDC that she believed that the investigation into Mr A's anaemia had already been carried out by Dr C, and that Mr A's anaemia was historic given his ongoing

[15] Iron deficiency anaemia is the most common type of anaemia and is due to insufficient iron in the blood.
[16] The haemoglobin count had decreased from 115g/L (Month 11) to 109g/L (Month 10), although other red blood cell parameters, such as the concentration and size of the cells, remained within the reference range. The serum iron and ferritin (a protein that stores iron) levels remained low.

medication and diet. She understood that Mr A's anaemia improved when he took iron consistently, but went down when he stopped.

Month12 to Month18 — regular review consultations with Dr D

34. On 4 Month12, Dr D saw Mr A for his regular review and repeat of his medication. During the consultation, it was noted that Mr A ate little meat owing to his wife being vegetarian. Dr D reduced Mr A's oral iron supplements from two tablets to only one tablet per day.

35. Dr D told HDC that she saw Mr A while his regular GP was away. She stated that on 4 Month12, Mr A's haemoglobin levels had increased, and at that time she did not consider that his iron levels were any cause for concern, as there were other explanations for his anaemia.

36. Dr D explained that Mr A's iron deficiency improved when he took the oral iron consistently, but worsened when he stopped.

37. On 5 Month15, Mr A returned to the medical centre for his regular review and a repeat of his medication. A full blood count and iron studies were also ordered. Dr D's clinical notes state that Mr A was taking iron and appeared to be in "good colour". The blood test results showed that Mr A's haemoglobin count had improved from the last test undertaken in Month11, but still remained low.[17] Dr D told HDC that she interpreted the improvement as a positive response to the oral iron supplements, which showed no cause for concern.

38. On 4 Month18, Dr D saw Mr A for his regular review and a repeat of his medication. Dr D provided Mr A with a laboratory form for blood, iron studies, and renal function tests. She told HDC that Mr A did not complete these tests.

39. Dr D stated:

> "Having reflected on this case, I recognise that I could have instigated a further investigation into [Mr A's] anaemia on either the 4 [Month12] or 5 [Month15] consultations …
>
> I do note that if I had been the one to set up the recall bloods, I would have included a full blood count on the recall and on reflection this is something that I could have changed."

Month18: Blood test results reviewed by Dr C

40. On 18 Month18, various blood tests were ordered, but a full blood count was not included. Dr C told HDC that he understood that these tests were set up on recall, arranged by the practice nurses. The iron studies showed improvement, with the levels of ferritin[18] now within the normal ranges, but the other measures of anaemia remained abnormal.[19]

[17] His haemoglobin level on 15 Month11 was 109g/L, which had improved to 117g/L on 5 Month15.
[18] A protein in blood cells that stores iron, releasing it when the body needs it.
[19] Serum iron (7µmol/L) was below 10–30µmol/L; transferrin saturation (10%) was below 16–50%.

41. Dr C annotated the result, querying the amount of iron Mr A was now taking, and noting that he could benefit from taking more if he was on only one tablet, or, if he had stopped, that he should restart. Dr C also considered whether Mr A could be prescribed an intravenous iron infusion, but noted that this was not an "emergency" at that point.

42. The results showed that Mr A's iron deficiency had not been resolved after a year of intermittent iron therapy. Dr C stated:

> "[T]he notes show at an earlier date that it clearly was my intention to do a full review if he did not improve — taking into account the uncertainty about just how much of the iron prescribed to him was actually being taken. I am so sorry that this did not occur."

43. Dr C explained to HDC that by Month18, it had been many months since his last involvement with Mr A.

Month20 to Month22 — care provided by Dr D

44. On 27 Month20, Mr A presented to Dr D for his driver licence medical examination. Dr D observed that Mr A's overall health was "well" and that he had made a full recovery from the warning stroke experienced in Month1. Arrangements were made for a biopsy of the skin on his chest, as he had visible ulcerations.

45. On 30 Month20, iron studies were ordered but a full blood count was not. Again, the results showed low serum iron and transferrin saturation levels below the reference level.[20] [Dr D] annotated the result as "S[erum] l[ron] down".

46. Dr D noted that the iron studies completed in Month20 were arranged by the nurses as part of a regular recall set-up, hence a full blood count was not arranged. At this point, the last haemoglobin level observed was on 5 Month15.

47. The skin biopsy was taken on 4 Month21, and the histology report indicated skin cancer.[21] Mr A received a prescription for his regular medications. Aside from a repeat of the oral iron supplements, there was no further mention of Mr A's anaemia in the clinical notes.

19 Month22 — iron infusion prescribed by Dr E

48. On 19 Month22, Mr A was seen by Dr E, who was the locum doctor for the day. Mr A presented with "upper gastric stomach pain, slightly darker stool, no energy", likely related to recent use of non-prescribed ibuprofen. Dr E noted that Mr A was on regular iron tablets but that his anaemia had not improved. It was also documented that Mr A was intolerant of the iron tablets. Dr E arranged for Mr A to be administered an intravenous

[20] Serum iron (8µmol/L) was below 10–30µmol/L; transferrin saturation (12%) was below 16–50%.
[21] Squamous cell carcinoma in situ (Bowen disease).

iron infusion that day.[22] Dr E did not order a full blood count prior to the infusion, nor check for any gastrointestinal bleeding.

49. Dr E explained that she had made the decision to prescribe Mr A with an iron infusion having reviewed his most recent iron studies and, looking at the trend of his serum iron results, she believed he might not have absorbed the oral iron well.

26 Month22 — care provided by Dr D

50. On 26 Month22, Mr A presented to Dr D with various new symptoms, including weight loss, loss of appetite, and an increased belly size. Upon examination, it was identified that Mr A had an enlarged liver, and Dr D queried whether there was an upper gastrointestinal mass. Blood tests were ordered and an urgent ultrasound scan referral was arranged on the same day.

51. The blood test results showed markedly deranged liver function with a continued low haemoglobin count and white blood cell abnormality.[23] The blood tests were repeated on 4 Month23 and showed results similar to Month22 but with higher calcium levels in the blood.[24] The iron studies test results were also abnormal, with an excess of ferritin (hyperferritinaemia). The pathologist interpreted this as "suggestive of infection and inflammation".

Subsequent events

52. Mr A's ultrasound scan was performed on 5 Month23, and showed a markedly enlarged liver. Dr D arranged for admission to the public hospital on the same day. Mr A was diagnosed with gallbladder cancer with multiple metastases[25] throughout the liver.

53. A chest X-ray taken at the public hospital indicated further metastases in his lungs. Following discussion with Mr A and his family, he was discharged and referred to palliative care, and passed away at a hospice.

Further information received

Ms B (daughter)

54. Ms B told HDC that she was concerned about the lack of investigation or appropriate referrals undertaken for Mr A to determine whether his anaemia was related to blood loss or malignancy, especially when there was no improvement from the oral iron supplement prescribed. She believes that her father was "failed miserably by his service providers".

[22] Ferinject is an intravenous iron preparation for treatment of iron deficiency. Mr A was prescribed with a 500mg/10ml injection (as ferric carboxymaltose).
[23] A white blood cell differential determines the percentage of each type of white blood cell present in the blood. A differential can also detect immature white blood cells and abnormalities.
[24] Hypercalcemia — a condition in which the calcium level in the blood is above normal.
[25] Cancer that has spread from an initial site in the body.

Dr C

55. Dr C told HDC:

> "I am devastated and deeply sorry that I did not follow my usual practice. I wish I could live this time over again and make a different decision … I regret that I was unable at an early stage to seize upon the abnormality in order to carry out further investigations that might have made a difference.
>
> …
>
> What happened matters to me and I care deeply about the outcome as well as the distress it has caused. I wish to apologise wholeheartedly to the family of [Mr A]."

Dr D

56. Dr D expressed her condolences for Mr A's family's loss.

Medical centre policies at time of events

57. The policy for management and follow-up of test results at the time of events[26] stated that primarily the ordering and follow-up of tests were the responsibility of the providers (whether it was the GP or nurse).

58. As part of the medical centre's internal review, Dr G provided his own report to HDC in relation to Mr A's anaemia. He believes that Mr A had anaemia of chronic condition[27] rather than anaemia caused by a primary iron deficiency. Dr G suggested that "there was no clinical indication that there was or may have been any active bleeding". Dr G also considered that Mr A "developed probable cancer of the gallbladder and that this was not related to any haematological abnormalities[28] that pre-existed".

59. Dr G submitted additional comments to HDC upon his review of HDC's expert advice report. He concurred with the conclusions in relation to the various providers' day-to-day management. However, Dr G emphasised that Mr A's long-term anaemia was not related to his cause of death, and the anaemia was not a warning symptom of the gallbladder cancer.

Responses to provisional opinion

Mr A's family — Ms B

60. Mr A's family was given an opportunity to comment on the "information gathered" section of the provisional opinion. Ms B wanted to thank all the relevant parties for their responses and, in particular, thanked Dr C for the condolences offered and kind words.

Dr C

61. Dr C was given an opportunity to comment on the provisional opinion. He confirmed that he had no further comment to make in relation to the opinion.

[26] See Appendix B: "[Medical Centre] — Management of Clinical Correspondence".
[27] Anaemia of chronic condition is also known as "anaemia of chronic inflammation" (ACI).
[28] No abnormalities were found in Mr A's blood.

Medical centre

62. The medical centre was given an opportunity to comment on the provisional opinion. It advised of further action taken to improve its service, which is outlined in the "actions taken after events" section below.

Dr D

63. Dr D was given an opportunity to comment on relevant sections of the provisional opinion. She advised of changes made to her practice, outlined in the "actions taken after events" section below. Dr D told HDC that she feels that there have been positive changes at the practice since this case, including better script policy, more time allocated to process laboratory results, time set aside for patients to communicate problems with doctors, and ability to share the workload.

Dr E

64. Dr E was given an opportunity to comment on relevant sections of the provisional opinion. She advised of changes made to her practice, outlined in the "actions taken after events" section below. Dr E told HDC that she recognises that her arrangement for the iron infusion was "hasty without first ordering a CBC", and that she should have made sure that there was appropriate follow-up.

Opinion: Introductory comment

Diagnosis of Mr A's gallbladder cancer

65. As outlined above, Mr A was diagnosed with gallbladder cancer. One issue raised was whether this could have been diagnosed earlier by the providers involved in his care during 2018 and 2019.

66. My in-house clinical advisor, Dr David Maplesden, advised that an earlier and more comprehensive investigation would not necessarily have resulted in an earlier diagnosis of Mr A's malignancy.[29] Dr Maplesden advised:

> "Iron deficiency anaemia is rarely due to the type of malignancy with which [Mr A] was eventually diagnosed, and even had [Mr A] undergone standard investigations for iron deficiency anaemia (upper and lower GI tract endoscopy) it does not seem likely these investigations would have detected the uncommon malignancy. However, these are comments made with the benefit of hindsight."

67. Dr Maplesden also stated:

> "I concur with [Dr G's] observations regarding the strong possibility [Mr A's] IDA was unrelated to [his] bile tract malignancy (a point made in my original advice) and note

[29] Owing to the absence of significant localising symptoms and the rarity of gallbladder cancer compared with the relatively common finding of anaemia.

> there is no criticism of any provider regarding the failure to make an earlier diagnosis of [Mr A's] malignancy, rather any criticisms are related to investigation of IDA compared with recommended practice."

68. Relying on Dr Maplesden's advice, I am not critical of the providers for failing to diagnose Mr A's cancer earlier. However, I am critical of the deficiencies in care provided to Mr A in relation to the investigations into his anaemia and iron deficiency, as discussed below.

Opinion: Dr C — breach

Introduction

69. During 2018 and 2019, Mr A presented to Dr C at the medical centre on multiple occasions. Throughout these consultations, Dr C did not fully investigate the nature of Mr A's anaemia.

Inadequate investigation of anaemia

70. In Month6 and Month8, Mr A consulted with Dr C twice about his blood test results, which had indicated iron deficiency. The blood tests had included only an iron studies test. On both occasions, there was no accompanying full blood count to investigate whether Mr A's haemoglobin levels had dropped further since the previous test undertaken in Month1. Dr C prescribed oral iron supplements to Mr A without undertaking a detailed functional enquiry or a gastrointestinal focused examination.

71. Dr Maplesden was mildly to moderately critical of the consultation in Month6, in that further investigation into anaemia as per the HealthPathways guidance was not followed by Dr C.[30] Dr Maplesden stated:

> "There was apparently no more detailed functional enquiry or GI focused examination undertaken (or not documented) before oral iron was prescribed, and further investigations which might have clarified the nature of the anaemia …"

72. In Month9, there had been a slight improvement in Mr A's iron levels, but he remained anaemic. Dr C performed a more extensive functional enquiry, which noted that Mr A was not aware of any bleeding and did not have dark stools after taking the iron, which subsequently he had stopped taking. Dr C noted that he did not examine Mr A rectally or conduct an abdominal examination.

73. In relation to this consultation, Dr Maplesden advised that Dr C should have performed an abdominal and rectal examination, and not doing so was a moderate departure from the accepted standard of care.

[30] From HealthPathways sections on "Anaemia in Adults" and "Iron Deficiency Anaemia".

74. In Month11, follow-up blood tests arranged by Dr C showed that Mr A's iron levels remained low. Dr C repeated the prescription of oral iron supplements, although he was aware that Mr A may not have been taking them. A nurse was to contact Mr A about his low iron levels, but Dr C cannot recall whether this occurred.

75. Dr C next saw Mr A eight months later, in Month18. Blood tests were ordered by the practice's recall system, but did not include a full blood count. Questions were posed by Dr C about the amount of iron Mr A was taking, but despite it being a year after commencing treatment for the anaemia, Dr C did not investigate further why there was an inadequate response to the iron supplements already being taken.

76. Dr Maplesden was concerned by Dr C's repeated prescriptions of oral iron supplements to Mr A without further appropriate investigations into the nature of his anaemia. Dr Maplesden considers that for both the Month11 and Month18 consultations, Dr C ought to have investigated why there was an inadequate response to the iron supplements being prescribed. Dr Maplesden was moderately critical that there was no referral to a specialist (such as a haematologist) before repeating the prescription of iron supplements.

77. Overall, Dr Maplesden concluded:

> "The clinician reviewing the results must still take responsibility for overall management of the patient, which includes appropriate surveillance. I acknowledge [Mr A's] case was quite complex and the work pressures described by [Dr C] may well have impacted on his management decisions and deserve some recognition."

78. I accept Dr Maplesden's advice that Dr C's care of Mr A departed from accepted standards. In my view, Mr A was a vulnerable consumer who required careful attention given his age and previous episodes of anaemia. I note Dr Maplesden's advice that, in the elderly, about one-third of the cases of anaemia are unexplained. In my view, this does not mean that clinicians can assume an unexplained cause and neglect to investigate properly or think critically about the effectiveness of iron supplements being prescribed. This can result in missed opportunities to understand a patient's condition better and provide timely and appropriate treatment.

79. I agree with Dr Maplesden's comment that work pressures in 2018 deserve some recognition, but note that the issues of concern detailed above occurred over a number of consultations across both 2018 and 2019. In my view, the cumulative effect of Dr C's omissions are not fully mitigated by the work pressures he experienced.

Conclusion

80. In summary, I consider that Dr C failed to provide Mr A services with reasonable care and skill, because he failed to investigate the nature of Mr A's persistent anaemia on a number of occasions. This includes the failure to think critically about his prescribing of iron supplements, and to carry out further examinations on Mr A and refer him to specialist

care. Accordingly, I find that Dr C breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[31]

Opinion: Medical centre — adverse comment

Continuity and communication of care

81. The medical centre told HDC that at the time of events, there was no policy for communication about patient information between doctors. Whilst the doctors had the overall responsibility to manage and monitor the patients, it was noted that the nursing staff were relied upon to set up patients' regular blood recalls and conduct queries over the telephone, owing to the ongoing staffing constraints.

82. Dr Maplesden advised that the use of nursing staff to assist with clinical tasks is an accepted means of attempting to cope with clinical shortages. He stated:

> "I do not believe there was any deficiency at a practice level that contributed to delays in the investigation of [Mr A's] IDA but I acknowledge the impact staff shortages can have on the ability of a practice to provide good continuity of care."

83. Dr Maplesden reviewed the medical centre's revised policy for the management of clinical correspondence and follow-up, and stated:

> "I believe the policies in place (last reviewed [Month9]) regarding management of test results and clinical correspondence were robust and consistent with similar policies I have reviewed from other practices, but have been further improved in the revised (September 2020) versions which could be an exemplar for other practices."

84. I accept Dr Maplesden's advice. I observe that Mr A was seen by not only one doctor but several, over a relatively short period of time. There were staff shortages, and temporary locum doctors were used frequently. The expectations and understanding of nursing roles by the GPs around communication and recall of test results may not have been optimal under the circumstances. Each of these issues posed difficulties in ensuring continuity of care for Mr A.

85. Noting the issues with individual clinical decision-making identified, and the absence of a policy regarding communication, overall I accept that there were no broader systems issues that contributed to the shortcomings in care provided to Mr A. In addition, the medical centre's policies in place at the time were generally robust, and the practice was making best endeavours to cope with the clinical shortages in a rural GP setting. The new policies in place have been commended by Dr Maplesden, and should improve the standard of care for other patients going forward.

[31] Right 4(1) states: "Every consumer has the right to have services provided with reasonable care and skill."

Opinion: Dr F — no breach

86. On 12 Month1, Mr A consulted with Dr F. Upon review of Dr F's response to HDC, Dr Maplesden was satisfied that the care provided by her for Mr A's warning stroke was managed well. I accept this advice and, in the circumstances, I am not critical of the care provided by Dr F.

Opinion: Dr D — adverse comment

87. From 22 Month11, Dr D provided care to Mr A for varying presentations.

88. Dr Maplesden advised that between Month12 and Month15, Dr D was prescribing Mr A with oral iron, and therefore had some responsibility to ensure that this treatment was appropriate. This included further investigation of the cause of Mr A's iron deficiency. Dr Maplesden was mildly critical that Dr D did not recognise the incomplete assessment of Mr A's anaemia at this stage, and did not initiate further appropriate investigations in line with the anaemia health pathways.

89. Dr D told HDC that upon reflection of the care provided to Mr A, she acknowledges that she could have instigated a further investigation into Mr A's anaemia at an earlier point in time.

90. Dr Maplesden also considered that when Dr D reviewed Mr A on 27 Month20, a full blood count should have been ordered. Dr Maplesden was mildly critical that this did not occur.

91. I accept Dr Maplesden's advice and consider the above to have been missed opportunities for Dr D to investigate Mr A's persistent anaemia further. I note that she has reflected on these aspects of her care. I have recommended that Dr D review the health pathways on investigation and management of ACI and IDA.

Opinion: Dr E — adverse comment

92. On 19 Month22, Mr A was seen by Dr E. Mr A presented with "upper gastric stomach pain, slightly darker stool, no energy", likely related to recent use of non-prescribed ibuprofen. Dr E arranged for Mr A to be administered with an intravenous iron infusion that day.

93. Dr Maplesden advised that noting that Mr A's history was suspicious for an acute gastrointestinal bleed, best practice would have been to obtain a full blood count prior to the infusion, given that it was over six months since the last haemoglobin measurement, and it may have helped to quantify the extent of the gastrointestinal bleed.

94. I accept this advice. This could have been an opportunity for Dr E to investigate Mr A's symptoms further, prior to providing treatment.

Actions taken after events

95. Dr C and the medical centre told HDC that changes have been made as a result of the complaint regarding Mr A's care.

96. Dr C told HDC that he has made, or will make, the following changes to his practice:

a) He has completed a self-reflection and instigated many practice changes. This included reviewing complicated symptom clusters more mindfully with a greater emphasis on assuming the worst-case scenario of the symptoms unless proven otherwise.

b) He will complete an audit of patients with anaemia (a peer group review) and will log the outcome on the RNZCGP Maintenance of Professional Standards member portal.

c) He will now personally, wherever possible, contact patients with abnormal results. Dr C stated that he will be delegating responsibilities to nurses less frequently, which he finds helps to resolve problems sooner.

d) He has arranged follow-up sessions with a general practitioner.

97. The medical centre acknowledged that at the time of events it did not have policies in place for handover and co-ordination of patient care between multiple staff members, which it has now implemented.

98. In its response to the provisional opinion, the medical centre submitted that it has initiated changes by reviewing and updating its policies and procedures. These changes have been included in Appendix B.

99. The medical centre told HDC that it has also made the follow changes:

a) It has increased permanent staffing levels, which provides patients with more available appointments and the practice team with additional collegial support. A Nurse Prescriber has also joined the practice for two days a week.

b) It actively promotes the use of the Patient Portal (ManageMyHealth) to enable patients to view their test results electronically.

c) The medical centre group (which includes the medical centre) is working on improved collegial support within its network of practices. This includes developing smart technology based on specific clinical rules to help clinical staff to monitor and manage test results over time rather than focus on specific one-off test results.

d) Electronic tasks are made part of the daily routine for all team members to ensure that all information is communicated amongst team members.

e) Doctors have been allocated weekly slots in their appointment books to allow them to debrief and provide updates for complex and at-risk patients where necessary.

f) It has reviewed and updated other policies and procedures in preparation for the next Cornerstone Accreditation (due in 2021).

100. In response to the provisional opinion, Dr D told HDC that she has implemented the following changes to her practice:

a) A "blood form" requested by her is now given to the patient, placed in the notes, and then put on recall.

b) Time is set aside for addressing any concerns regarding difficult cases, including treatment. The practice teams have been advised that all patients are to be allocated to the same doctor to provide continuity of care wherever possible unless it is very urgent.

c) Repeat scripts are annotated in the patient notes and are written and signed by the doctor who ordered the scripts.

101. In response to the provisional opinion, Dr E told HDC that this experience has changed her approach, and she now takes more time with patients similar to Mr A.

Recommendations

102. I make the recommendations below allowing consideration of the actions Dr C and the medical centre have taken in response to the complaint from Mr A's family.

103. I recommend that Dr C:

a) Provide a written letter of apology to Mr A's family for the breach of the Code identified in this report. The apology letter is to be sent to HDC within three weeks of the date of this report, for forwarding.

b) Review the health pathways on investigation and management of ACI and IDA, and perform an audit of ten patients with a current diagnosis of anaemia, to ensure that recommended guidance has been followed in those cases. The findings of the audit and any further remedial actions are to be sent to HDC within three months of the date of this report.

104. I recommend that the medical centre:

a) Provide a written letter of apology to Mr A's family for the criticisms contained in this report. The letter should contain details of the changes made at the practice in light of

the care provided to Mr A. The letter should be sent to HDC within three weeks of the date of this report, for forwarding.

b) Report back to HDC, within three months of the date of this report, on the support it will provide to staff to implement its new policies regarding handover and coordination, and how it will ensure compliance with the policies.

c) Monitor the effectiveness of the new policies, and report back to HDC on this, including any further remedial actions identified, within six months of the date of this report.

105. In response to my proposed recommendation to review the health pathways on investigation and management of ACI and IDA, Dr D and Dr E advised that they have reviewed the health pathways and made changes to their respective practice, as outlined above. In the circumstances, I consider that no further recommendations are required.

Follow-up actions

106. A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to the Medical Council of New Zealand and the Royal New Zealand College of General Practitioners, and they will be advised of Dr C's name.

107. A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to the Ministry of Health, Te Aho o Te Kahu (Cancer Control Agency) and the district health board, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: In-house clinical advice to the Commissioner

The following expert advice was obtained from GP Dr David Maplesden:

> "1. Thank you for the request that I provide clinical advice in relation to the complaint from [Ms B] about the care provided to her late father, [Mr A], by [Dr C] and [Dr D] of [the medical centre]. In preparing the advice on this case to the best of my knowledge I have no personal or professional conflict of interest. I agree to follow the Commissioner's Guidelines for Independent Advisors. I have reviewed the information on file: complaint from [Ms B]; response from [Dr C]; response from [Dr D]; management review by Dr G; [medical centre] clinical notes; [public hospital] clinical notes.
>
> 2. [Ms B] complains that [Dr C] and [Dr D] failed to adequately investigate the cause of [Mr A's] iron deficiency anaemia since [Month1], instead providing treatment with oral iron and an iron infusion which did not actually improve his haemoglobin. [Mr A] was diagnosed with advanced malignancy in Month11 (likely gallbladder primary) and [Ms B] feels appropriate investigation of the anaemia may have led to earlier recognition of [Mr A's] malignancy and an option of active rather than palliative management.
>
> 3. GP notes have been reviewed from [early] 2018. …: Seen for blood pressure and medication review. Notes include BP 127/80 ie much improved this time. Rpt meds — uses paracetamol vs inoperable left shoulder arthralgia to reasonable effect … Uses PPI prn, effectively, [noticing] recurrence of dyspeptic Sx when without past 2/52; continue @prn. Prescription provided for omeprazole 20mg mane and paracetamol.
>
> 4. 12 [Month1] ([Dr F]): Seen following possible TIA. Appropriate physical examination documented. ABCD score 3 Imp: possible TIA. Plan start treatment as per guidelines and treat BP with low dose Ca channel blocker. Refer TIA service, check bloods. Commenced on felodipine, aspirin, clopidogrel and atorvastatin. Bloods showed normocytic normochromic anaemia and this result was annotated been referred. [Mr A] was reviewed by [the public hospital's] neurology service on 27 [Month1] with agreement he had likely suffered a TIA and the medication regime maintained apart from cessation of clopidogrel. Brain CT was arranged. There is no reference to the anaemia in the clinic report (I assume blood tests results were provided in the referral).
>
> Comment: Management was conscientious and appropriate in terms of management of the TIA. The haemoglobin result was an incidental finding but was significantly reduced from previous results (see Appendix 4). While it was appropriate priority was given to management of the TIA, I believe best practice would have been to further investigate the anaemia at this stage, initially by repeating the FBC with reticulocyte count within the next few weeks as per the guidance cited in Appendix 1. The absence in the specialist report of any concern regarding the anaemia might be regarded as a mitigating factor, and it appears [Dr F] was not [Mr A's] usual GP. However, I am

mildly critical there was apparently no communication with the usual GP ([Dr C]) to ensure he was aware of the haemoglobin result and the need for further investigation (noting the normal haemoglobin results in 2015 and 2016), nor any apparent reporting to the patient of the need for follow-up of his anaemia (there is an annotation from the nurse dated 16 [Month1]: Phone call from wife requesting blood results, given).

5. 5 Month3 ([Dr C]): Review of medications. BP 146/70. [Mr A] noted to be doing well after his TIA and driving again. CT result awaited (no acute changes noted). No specific complaints and regular medications prescribed.

Comment: [Mr A] was apparently well and there was no reference in the clinical notes or the public hospital letter to concerns regarding the prior incidental finding of anaemia to alert [Dr C] to this diagnosis. Management was appropriate.

6. 6 [Month6] — blood tests requested by [Dr C] (indication unclear) showed abnormal iron studies (no CBC or reticulocyte count done) — see Appendix 4. Pathologist comment was: Low ferritin and iron is consistent with iron deficiency. The result has been annotated: Recommend iron — has he lost blood. D/W [Mr A], nil bleeding. Has had to take iron before. Will d/w [Dr C]. It is unclear who made this annotation but the result has been filed by [Dr C] with additional annotation: note iron indices are all low ?why → offer iron. [Mr A] was reviewed by [Dr C] on 9 [Month6]. Notes include: here for meds, doing fine, nothing has really changed … BP was elevated at 160/80 and amlodipine increased to 5mg daily. Usual medications were provided together with a prescription for ferrous fumarate 200mg (iron tablets) two to three times daily x 120 tabs.

Comment: There was no FBC accompanying the iron studies to determine whether the haemoglobin had dropped further since [Month2] or whether other characteristics of iron deficiency anaemia (IDA) (hypochromia and microcytosis) were evident. Nevertheless, on the basis of the pathologist comment it was reasonable to manage [Mr A] as if he had IDA (and in hindsight it appears he had anaemia of chronic inflammation (ACI) with some iron deficiency). I note [Dr G's] comments that the iron deficiency component of [Mr A's] anaemia may have been related to inadequate dietary intake which is relatively common in the older population. Iron deficiency anaemia is rarely due to the type of malignancy with which [Mr A] was eventually diagnosed, and even had [Mr A] undergone standard investigations for iron deficiency anaemia (upper and lower GI tract endoscopy) it does not seem likely these investigations would have detected the uncommon malignancy. However, these are comments made with the benefit of hindsight. On the basis of the contemporaneous documentation, it is apparent [Dr C] reasonably considered there to be a component of iron deficiency in [Mr A's] anaemia and on this basis, I believe best practice would be to have further investigated and managed [Mr A] as per the guidance summaries in Appendix 1. The notes and provider response indicate some enquiries were made regarding overt bleeding and it was established [Mr A] had had an episode of anaemia in 2014 apparently responding to iron. However, there was apparently no more

detailed functional enquiry or GI focussed examination undertaken (or not documented) before oral iron was prescribed, and further investigations which might have clarified the nature of the anaemia (including repeat CBC and reticulocyte count) were not undertaken before the trial. I am mildly to moderately critical of these omissions although, as noted above, I cannot state that had further investigations been undertaken as per cited guidance, this would necessarily have resulted in an earlier diagnosis of [Mr A's] uncommon malignancy given he was largely asymptomatic otherwise until the malignancy was advanced (as is characteristic of gall bladder cancer — see Appendix 3). I am also aware that the cited guidance states: If no identifiable cause [for the anaemia] it may be appropriate to monitor the patient until symptomatic or until a treatable cause is found. In the elderly about one third of anaemias are unexplained.

7. Blood tests were evidently scheduled for 27 [Month8] — iron studies showed persistent low serum iron and transferrin saturation but ferritin was now within the reference range (lower end) and transferrin was normal. The result was annotated: If he was willing, we might have to meet to talk. Why is he iron deficient, is he losing blood? Is he aware of why otherwise? Appt 1 [Month9] [initials]. [Dr C] reviewed [Mr A] on 1 [Month9] noting: I had asked whether he would come with his continued iron deficiency in mind, not aware of any bleeding, no melaena, dark stools after iron, took 2 months' worth of rx, stopped since then. BP 138/76, not examined rectally, no change in stool habit, no cough or SOB, paracet for sore joints not doing much P: For FBC today, FBC and Iron Studies 6 weeks' time, thereafter if a drop prob investigate. FBC on 1 [Month9] showed mild anaemia (115 g/L) with MCV and MCH within the reference range. Result was annotated by [Dr C]. Observe what the next lot show.

Comment: By [Month9] there had been a very modest improvement in [Mr A's] iron parameters but he remained anaemic, the overall picture being most consistent with ACI although the low ferritin which had improved somewhat with iron supplementation was consistent with an iron deficiency component. Although not documented, [Dr C] apparently considered the possibility of [Mr A's] medications being relevant to the iron deficiency component (possible covert GI blood loss with aspirin and reduced iron absorption with omeprazole). A more extensive functional enquiry is documented. Best practice would be to have performed an abdominal and rectal examination. Iron studies and FBC were to be monitored which was appropriate and there was a stated intent to investigate further if follow-up results showed deterioration in iron parameters, but I remain mildly to moderately critical of deficiencies in investigation of the anaemia to this point when compared with the cited accepted practice.

8. 15 [Month11] — Follow-up blood tests performed as arranged by [Dr C]. Clinical details listed on the blood test request form are: anaemia iron deficiency ?cause, rechecking 6/52 after to see there has been further blood loss. Iron studies results showed low ferritin, serum iron and transferrin saturation with normal transferrin. Pathologist comment was: The ferritin suggests borderline or low iron stores. Result has been annotated. Nurse to contact re iron [Dr C]. Haemoglobin had decreased

further (now 109 g/L) but red cell parameters remained within the reference range (normochromic normocytic picture) although MCH was at the lowest end of the reference range. Pathologist comment was: Anaemia persists. Red cells show increased rouleaux formation. Occasional microcytes seen. Know iron deficiency. The result is annotated by [Dr C]: Hi, [Mr A] is still iron deficient and does not appear to be taking iron — I will do a script for TID ferrous fumarate for 2 months if he tolerates that much. Mess. 19 [Month10] Done [initials]. On 19 [Month11] [Dr C] has noted: [Mr A] has iron deficiency anaemia and may not be taking iron and a prescription was provided for iron tablets as ferrous fumarate 200mg (iron tablets) two to three times daily x 84 tabs.

Comment: I think the blood results on this occasion were even more suggestive than previously of an iron deficiency component to [Mr A's] anaemia and there was an inadequate response to oral iron therapy (Hb showed further decrease and ferritin had dropped below the reference range lower limit) although [Mr A's] adherence to the prescribed iron regime over this period is unclear. [Dr C] notes in his response that further enquiries were to be made of [Mr A] (regarding any suspicious symptomatology) by the practice nurse and he is unable to recall if this was undertaken. I believe there were clear indications by this point to further investigate the iron deficiency component of [Mr A's] anaemia as opposed to just treating with oral iron, and this had apparently been [Dr C's] intent. I am moderately critical that the decision was made to continue oral iron without appropriate further investigation, referral or seeking of specialist advice (eg from haematologist). Mitigating factors are the absence of any additional 'red flags' for GI malignancy, the nature of the anaemia being somewhat unclear (ACI vs IDA), and noting [Mr A] did not attend [Dr C] subsequently (although [Dr C] provided further advice on 4 [Month1] — see below).

9. 22 [Month11] ([Dr D]): Consultation for ear and chest lesions with plans made for review after trial of Pimafucort cream and possible punch biopsies. Comments include: Says eats well, hb seesawing a little … starting to eat more meat. Prescription provided for paracetamol and further oral iron. At review on 5 [Month11] [Dr D] noted an improvement in the ear lesion which was then treated with liquid nitrogen.

Comment: [Dr D] apparently noted [Mr A's] anaemia at this consultation even though this was not the primary reason for his attendance. She states in her response: [Mr A's] anaemia was longstanding from 2014 and put down to his semi vegetarian state, reflux disease and blood thinners. It improved when he consistently took iron and went down when he stopped. On my review of sequential blood results from 2016 to current, the pattern was of progressive decrease in haemoglobin despite periods of iron replacement (results 135, 118, 115, 109). I am unable to confirm whether [Mr A] was taking oral iron consistently when the haemoglobin results of 125 g/L (2015) and 135 g/L (2016) were obtained. Nevertheless, given the proximity of this consultation to the review and annotations by [Dr C] which were more focussed on management of [Mr A's] anaemia, and the primary reason for this consultation being management of potential skin cancers, I think it was reasonable for [Dr D] to assume [Dr C] was managing [Mr A's] anaemia in an appropriate fashion.

10. Next consultation 4 [Month12] ([Dr D]): Regular review — needs medication, no problems, wife a vegetarian and he eats little meat, was taking 2 iron tabs, go to one only, previous TIA so needs aspirin. Skin lesion reviewed and referred back to usual GP for punch biopsy. Repeat of regular medications provided including iron tabs. Weight 82.2 kg. Further consultation on 5 [Month15] ([Dr D]): Regular review — needs repeats, looks good colour, taking iron … No symptoms of concern recorded. Weight 82.9 kg. Repeat of regular medications provided including iron tabs (one daily). Referred for bloods (completed 5 [Month15] — see Appendix 4). Hb result annotated by [Dr D] as hb 117, improved.

Comment: Both of these consultations were routine for repeat of usual medications, with no concerning symptoms presented — in particular, no GI symptoms. Weight was constant. The possibility of low-iron diet was considered and iron replacement continued. Repeat blood tests showed an improvement in haemoglobin to 117g/L and ferritin levels were within the reference range. Liver function tests were normal. It appears in hindsight that [Dr D] was now [Mr A's] main GP provider although I note [Dr C] did not leave the practice until [Month22] and it is unclear whether he was still [Mr A's] registered provider. [Dr D] continued to prescribe [Mr A] oral iron and, in this context, I believe she had some responsibility to ensure this was appropriate treatment, which included determining he had IDA and the cause of the IDA had been appropriately investigated. As noted previously, [Dr D] states she attributed [Mr A's] iron deficiency to his semi vegetarian state, reflux disease and blood thinners and this may well have been an accurate attribution noting that gallbladder cancers rarely present with iron deficiency anaemia. Nevertheless, I remain of the view the investigation of [Mr A's] anaemia (ACI and IDA components) had been deficient to this point and the presence of upper GI symptoms (albeit controlled with intermittent use of omeprazole) but need for ongoing aspirin therapy probably indicated the need to consider referral for gastroscopy to exclude occult malignancy or significant peptic ulcer disease. On the other hand, current blood results showed a positive response to consistent use of oral iron (improved ferritin and haemoglobin levels). Notwithstanding my previous criticism of [Dr C's] management of [Mr A's] anaemia, I am mildly critical that [Dr D] did not recognise the incomplete assessment of the anaemia at this stage and did not initiate appropriate further investigations as per the cited guidance. I note [Mr A] remained apparently well and there was no particular reason to suspect occult malignancy, but occult malignancy can be a cause of both ACI and IDA. [Ms B] makes reference to absence of tumour markers in [Mr A's] investigations. Such testing does not form part of the recommended investigations because they lack specificity as screening tests, and use of tumour markers as screening for malignancy is generally discouraged in primary care[1].

11. 4 [Month18] ([Dr D]): Regular review. Rash under chin assessed. No new symptoms of concern recorded. Weight 84 kg. Repeat of regular medications provided including iron and plan to recheck Hb — iron continues. A lab request form was provided by [Dr D] requesting FBC, iron studies and renal function but it does not

[1] https://bpac.org.nz/BT/2010/July/tumour-markers.aspx Accessed 28 July 2020

appear this was completed by [Mr A]. A request form (referrer [Dr C]) was provided to [Mr A] on 18 [Month18] but FBC was not requested. Bloods done 18 [Month18] (see Appendix 4) showed ferritin within the normal range (lower end) but abnormal iron studies. [Dr C] has annotated the result Hi — how much iron is [Mr A] taking? He could benefit from taking a little more if he is only on 1. If he has stopped get him to restart thanks. Could also have IV iron also but not an emergency. Nurse has annotated: [Dr C], [Mr A] will restart Fe tablets as hasn't taken for a while.

Comment: [Mr A] remained apparently well. [Dr D] documented an intention to appropriately monitor [Mr A's] anaemia but for unclear reasons the intended tests were not repeated. [Dr C] then provided a blood test form which was limited to iron studies and he received and acted on the results. Under the circumstances, I am not critical of [Dr D's] management on this occasion but I am critical that [Dr C] apparently failed to consider why there was an inadequate or consistent response to [Mr A's] iron replacement.

12. 27 [Month20] ([Dr D]) — Driver license medical examination. No reference to any particular symptoms presented. Driver license form annotated Fit and well. Arrangements made for biopsy of skin lesion on chest which was undertaken on 4 [Month21] (squamous cell carcinoma). Weight recorded as 84kg on 4 [Month21]. Iron studies were repeated on 30 [Month20] (no Hb, ferritin at low end of normal range) and annotated by [Dr D] as sl down. A script for regular medications was provided on 4 [Month21] (including iron tabs one daily). There were several nurse consultations for dressing changes over the next two weeks and on 11 [Month21] [Dr D] referred [Mr A] for wider excision of his chest lesion.

Comment: Priority was given to management of [Mr A's] chest skin lesion over this period. [Mr A] was apparently well otherwise with no symptoms presented suggestive of underlying malignancy (anaemia aside). I am mildly critical blood count was not repeated in the tests of 30 [Month20] given it was now over six months since the last FBC result. Iron study results were stable over the same period with ferritin remaining at the lower end of (but within) the reference range. While I remain of the view [Mr A's] anaemia had been inadequately investigated from the outset, his apparent stability currently and absence of any particular additional concerning symptoms since the anaemia was noted in [Month1] was somewhat reassuring.

13. 19 [Month22] (Dr E) — history recorded as: presented with upper gastric stomach pain, slightly darker stool, no energy. This happened after he took 1 dose of ibuprofen, given by a friend for pain in his knee … Has been on regular iron tabs but this has not changed anything … +++ tender epigastric area, especially substernal and to the left. Assessment: gastric irritation after NSAID, entered warning and intolerant to iron tablets, qualifies for Ferinject, will arrange an appointment with nurses … IV infusion of iron (Ferinject 1g) was undertaken the same day and omeprazole dose increased to 40mg daily. Blood test were to be repeated in four to six weeks (per phone call to [Mr A] 25 [Month22] following enquiry from wife).

Comment: [Mr A] presented with symptoms suggestive of an upper GI bleed, likely related to recent use of non-prescribed ibuprofen. His history of chronic anaemia despite oral iron use was evidently noted. He was haemodynamically stable (BP 134/76, P 74). It was probably reasonable to consider iron infusion given the previous picture of iron deficiency being a component of the anaemia, although such treatment would not generally be indicated in management of ACI given the issue in that condition is related to inability to use available iron (ferritin generally normal or increased). However, noting the history suspicious for an acute GI bleed, I believe best practice would have been to get a FBC prior to the infusion given it was over six months since the last haemoglobin measurement (more recent baseline desirable) and it might help quantify the extent of the GI bleed. It might also be of some concern that [Dr E] failed to detect [Mr A's] hepatomegaly which was obvious to [Dr D] only a week later.

14. 26 [Month22] ([Dr D]) — history recorded as: had iron infusion last week, hasn't picked up, off food, wife says belly bigger. O/e wt 78.6, lost 5kg, big palpable liver edge, upper GI mass? … Urgent ultrasound scan was arranged and blood tests performed. Fortisip prescribed. Skin surgery was scheduled for 6 [Month23]. Blood results showed markedly deranged liver function, marked hyperferritinaemia and reactive white cell differential. On 2 [Month23] [Mr A's] wife rang for the blood results and nurse has documented: … advised [Dr D] has seen them and there is some derangement, looks like we are waiting on US results and go from there. [Mrs A] says [Mr A] is doing OK, a bit better if anything, will call if anything changes. Referral was made to district nurses to perform initial needs assessment of [Mr A] as he had recently fallen at home. Ultrasound was scheduled for 5 [Month23]. On 4 [Month23] blood tests were repeated with similar results to previously but hypercalcaemia noted. Ultrasound on 5 [Month23] revealed marked hepatomegaly with multiple metastatic deposits throughout the liver and possible primary tumour in the gallbladder. [Dr D] notes this day that [Mr A] has been much sleepier today … Plan: Admit, lower calcium, investigate where primary is … Admission to [the public hospital] was arranged the same day.

Comment: I believe [Dr D's] management of [Mr A's] management at this point was consistent with accepted practice. She facilitated rapid investigation of [Mr A's] new and concerning symptoms of weight loss and abdominal pain with palpable hepatomegaly. When [Mr A] became increasingly unwell and hypercalcaemia was noted, she appropriately arranged acute hospital admission.

15. [The public hospital] MO notes dated 5 [Month23] include: Epigastric pain worse over past few weeks, +++ fatigue ~yr. Wgt loss noticeable past 6/12. Anaemia not responding to oral iron. Skin cancer [recent history noted]. ↓ appetite weeks–months with associated early satiety, bloating + reflux (no prev hx). Recent sore throat and hoarse voice. Dysphagia esp H2O + bread (manages Fortisip better). Reports no change bowels, no PR bleed/melaena, reg soft. No urinary symptoms … Physical assessment showed no evidence of jaundice or palmar erythema. There was visible hepatomegaly evident which was firm on palpation. Blood tests confirmed anaemia

with deranged liver function and hypercalcaemia. Tumour markers (CEA, CA19-9) were elevated. Chest X-ray showed multiple pulmonary metastases. [Mr A] received treatment for his hypercalcaemia and later diagnosis of pneumonia. Oncology opinion was that tissue diagnosis was required for consideration of chemotherapy, but that any such intervention was likely to impact negatively on [Mr A's] quality of life without extending it. Following discussion with [Mr A] and his family a palliative approach was taken to his management and he was discharged from the public hospital on 9 [Month23] under Hospice oversight and died [a few weeks later].

Comment: The history obtained by the MO suggests [Mr A] had a history of concerning upper GI symptoms for weeks to months prior to his diagnosis but it is not evident from the GP notes that such symptoms were presented to his GP providers until [Month22]. In particular, GP notes show mild weight gain (rather than loss) up to 4 [Month21]. Had symptoms such as early satiety, abdominal pain, worsening reflux, dysphagia and hoarseness been reported to [Mr A's] GPs in the six months prior to his diagnosis I would expect such symptoms to have been documented and prompt referral made for upper GI endoscopy.

16. Summary: I believe there were deficiencies in the investigation of [Mr A's] anaemia compared with recommended practice as outlined in the body of this report. However, I am unable to state that earlier investigation including panendoscopy, would necessarily have resulted in an earlier diagnosis of [Mr A's] malignancy given the absence of significant localising symptoms until late in the course of the disease (as is characteristic of gall bladder cancer) and the rarity of this type of cancer compared with the relatively common finding of anaemia in older age, the cause for which may not be established in up to a third of elderly patients despite investigations. I recommend [Dr C] and [Dr D] review the cited guidance on investigation and management of ACI and IDA, and perform an audit of ten patients with current diagnosis of anaemia to ensure guidance has been followed in those cases.

Appendix 1[2]

Anaemia in Adults

Background

About anaemia

About anaemia

- Anaemia can be caused by:
  - iron, folate, and B_{12} deficiencies
  - renal insufficiency
  - anaemia of chronic inflammation (ACI)
  - bone marrow malignancy.
- 10% of people aged > 65 years living in the community have anaemia. After age 50, the prevalence rises rapidly.
- Most anaemia is mild. Only 3% of women and 1.5% of men have haemoglobin levels < 110 g/L.
- In older people with anaemia, one third have nutrient deficiency, one third have ACI or chronic renal disease (or both), and the remainder are unexplained.

Assessment

Anaemia is often asymptomatic and picked up as an incidental laboratory finding.

1. Ask about bleeding, medication (including OTC), fever, weight loss, and night sweats.
2. Examine for lymphadenopathy, jaundice, hepatomegaly, and splenomegaly.
3. Initial investigations – determine the most likely cause by arranging or assessing **all of the following**:
   - FBC (indicates severity and whether other cell lines are involved).
   - Blood film (gives blood cell morphology which helps indicate the likely cause). Request this specifically on the laboratory form.
   - Reticulocyte count (indicates whether bone marrow is active). If reticulocyte count is:
     - low i.e., decreased production – indicates nutritional anaemias, anaemia of chronic inflammation, renal failure, or bone marrow failure or infiltration.
     - normal, assess in relation to the MCV.
     - high i.e., increased destruction – indicates haemolysis or acute blood loss.
   - Mean cell volume (MCV) identifies whether macrocytic (MCV > 100), normocytic (MCV 80 to 100), or microcytic (< 80).

[2] From HealthPathways sections on 'Anaemia in Adults' and 'Iron Deficiency Anaemia'

4. Further investigations will depend on the results.

Result	Action
Increased reticulocytes	Look for haemolysis or acute blood loss.
Macrocytic anaemia	Consider alcohol excess, B_{12} deficiency or folate deficiency, thyroid deficiency, primary bone marrow failure or bone marrow malignancy including multiple myeloma, myelodysplasia, and secondary cancers.
Microcytic anaemia	Consider iron deficiency or anaemia of chronic inflammation. If neither of these, consider haemoglobinopathy such as thalassemia, and request haemoglobinopathy screen.
Normocytic anaemia	Consider recent haemorrhage, renal failure, thyroid or other endocrine abnormality, anaemia of chronic inflammation or bone marrow malignancy including multiple myeloma and secondary cancers. **Anaemia of chronic inflammation** • Previously known as anaemia of chronic disease. • Can be caused by any systemic inflammatory condition e.g., malignancy, infection, autoimmune conditions. • May have normal or elevated ferritin and reduced serum iron. • May have an elevated CRP and other inflammatory markers. • Can present as either microcytic or normocytic anaemia.
Cause is not obvious	Measure: • serum iron, B_{12}, folate, ferritin • if the ferritin level is in the normal range and the diagnosis is still unclear, then order a soluble transferrin receptor • renal and liver function • CRP • thyroid function, and • immunoglobins and serum protein electrophoresis

Management

Most anaemia is managed in general practice.

1. Identify the cause and treat the underlying problem e.g,. blood loss, chronic inflammation, folate, or B_{12} deficiency.
2. If no identifiable cause, it may be appropriate to monitor until symptomatic or until a treatable cause is found. In the elderly, about one third of anaemias are unexplained.[1]
3. If severe anaemia, consider whether the patient may benefit from a blood transfusion.

Iron Deficiency Anaemia

Red Flags

- Severe anaemia (haemoglobin < 80 g/L)
- Weight loss
- Family history of gastrointestinal malignancy
- Strong suspicion of gastrointestinal malignancy

Background

About iron deficiency anaemia ^

About iron deficiency anaemia

Main causes:

- Excessive blood loss e.g:
  - Gastrointestinal tract blood loss e.g., NSAIDs, cancer, ulcer
  - Menorrhagia
  - Recurrent epistaxis
  - Renal tract malignancy
  - Chronic blood donation
  - After major surgery with inadequate replacement
- Dietary inadequacy especially in growing children, elderly, and vegetarians
- Failure of iron absorption e.g., medications, malabsorption (coeliac disease), after gastric surgery
- Excessive requirements e.g., pregnancy, rapid growth in children

Assessment

1. Assess for symptoms ^.

Symptoms

- Fatigue
- Palpitations
- Shortness of breath on exertion
- Worsening angina
- Gastrointestinal, e.g. change in bowel habit, rectal bleeding, weight loss
- Menstrual, e.g. abnormal uterine bleeding, postmenopausal bleeding

2. Ask about medications ^.

Medications

- NSAIDs
- Aspirin
- Anticoagulants

3. Examination:
   - Check the abdomen for masses.
   - Consider performing a rectal examination.
4. Investigations:
   - Urinalysis for haematuria.
   - If microcytic anaemia i.e., MCV < 80, check serum ferritin. Low ferritin is diagnostic of iron deficiency.
   - Screen for coeliac disease with tTG.
   - Conflicting results ^ may occur when iron deficiency is associated with an inflammatory response and ferritin may be normal.

     Conflicting results
     - Ferritin reflects tissue iron stores as well as being an acute phase protein.
     - A raised soluble transferrin receptor level would support iron deficiency, in some cases.
     - A trial of iron therapy may be warranted.
   - If investigations do not confirm iron deficiency, see Anaemia in Adults.
5. Establish a possible cause ^.

   Possible causes
   - Overt bleeding, e.g. nose bleeds, rectal bleeding
   - Menstrual, e.g. menorrhagia
   - Gastrointestinal, e.g. colorectal cancer, dyspepsia, coeliac disease
   - Inadequate diet
   - Medications, e.g. NSAIDs
   - Others, e.g. blood donation, familial diseases
6. Request gastroscopy and colonoscopy or CT colonography in all postmenopausal females and all males with unexplained iron deficiency anaemia, even in the absence of gastrointestinal tract symptoms.[1]
   - Some patients are not eligible for publicly funded endoscopies.
   - Screen pre-menopausal women with iron deficiency anaemia for coeliac disease, and reserve upper and lower gastrointestinal investigations for those with symptoms or a strong family history of colorectal cancer.[1]

Management

1. Request acute assessment, as below, if unwell due to blood loss e.g., severe anaemia (haemoglobin < 80 g/L), haemodynamic compromise or cardiorespiratory compromise.
2. Manage any established cause v.
3. Trial oral iron in all patients.
   - Check ferritin and CBC in 3 months to ensure normal levels.
   - If normal, continue oral iron treatment for another 3 months to build up iron stores.
4. Manage all preoperative patients v before elective surgery.
5. If the patient fails a trial of oral iron:
   - do not use intramuscular (IM) iron, because of side-effects and variable absorption.
   - consider whether a blood transfusion is indicated v.
   - consider whether an IV iron infusion v is indicated.

Appendix 2. Additional information on anaemia of chronic disease/anaemia of inflammation[3]

ACD/AI typically presents as mild to moderate anemia with normochromic, normocytic RBCs and a low reticulocyte count in an individual with a known chronic infectious or inflammatory disorder … Some individuals may have concomitant iron deficiency.

All individuals with suspected ACD/AI should have a complete blood count (CBC), reticulocyte count, review of the RBC indices or blood smear, and iron studies. A test for inflammation (typically C-reactive protein [CRP]) may be helpful, along with laboratory testing for hemolysis, kidney and liver function, hormone levels, and vitamin deficiencies.

ACD/AI is characterized by normal to increased iron stores and evidence of an inflammatory state. Additional testing may be helpful in selected cases, especially those with possible concomitant iron deficiency. The diagnosis is generally made based on the pattern of findings consistent with ACD/AI and exclusion of other types of anemia; there is no specific diagnostic test.

The serum ferritin concentration is increased in ACD/AI, making it less useful as a measure of iron stores, unless it is below the normal range, which is good evidence of iron deficiency. The iron studies in ACD/AI show sufficient storage iron, with the following findings typically seen:

- Serum iron concentration low
- Transferrin level (also measured as total iron binding capacity [TIBC]) low
- Transferrin saturation (TSAT) low (<20 percent in approximately four-fifths of cases); It may be 'pseudo-normal' if patients have very low transferrin concentrations.
- Ferritin normal or increased; generally >100 mcg/L
- Some of these findings are also characteristic of iron deficiency anemia, including low serum iron and low TSAT

In contrast, unlike ACD/AI, in iron deficiency, transferrin is generally increased and ferritin is generally decreased (ferritin level typically <30 mcg/L in isolated iron deficiency, <100 mcg/L in those with ACD/AI plus iron deficiency, and <200 mcg/L in those with ACD/AI and dialysis-dependent kidney disease plus iron deficiency). A ferritin level below these thresholds (or below the normal reference range) is good evidence of iron deficiency, but a ferritin level up to 200 mcg/L cannot be used to exclude iron deficiency when a chronic inflammatory state is present. If results are inconclusive, the soluble transferrin receptor (sTfR) or sTfR-ferritin index can be used to identify concomitant iron deficiency in the setting of ACD/AI.

[3] Camaschella C et Weiss G. Anemia of chronic disease/anemia of inflammation. Uptodate. Literature review current through June 2020. www.uptodate.com

There is no single test that will reliably make the diagnosis of ACD/AI. Rather, a pattern of abnormalities and the exclusion of other possible diagnoses serves to make this diagnosis. Major challenges include distinguishing ACD/AI from iron deficiency in individuals with an inflammatory condition, and identifying individuals who have both ACD/AI and iron deficiency. ACD/AI is most likely when all (or most) of the following are present:

- Normochromic, normocytic anemia (hemoglobin generally between 100 and 120 g/L)
- Low reticulocyte count (or inappropriately low for the degree of anemia)
- Low serum iron (generally <10 µmol/L)
- Normal to low serum transferrin (generally <3.0 g/L)
- Low transferrin saturation (TSAT; generally <20 percent)
- Normal to increased serum ferritin (>100 mcg/L)
- Elevated CRP (generally >5 mg/L)

If the pattern of this testing is confusing or equivocal, additional studies may be helpful in confirming or excluding the diagnosis.

The goal of treatment in ACD/AI is to reduce symptoms and improve clinical outcomes, not to normalize the hemoglobin level. The preferred initial therapy for ACD/AI is treatment of the underlying disorder. Other causes of anemia should be identified and treated if possible.

Iron supplementation is generally reserved for those with concomitant iron deficiency (ferritin <100 mcg/L and transferrin saturation [TSAT] <20 percent; elevated soluble transferrin receptor [sTfR] if standard iron studies are inconclusive).

Appendix 3. Background on gallbladder cancer[4]

Gallbladder cancer (GBC) is an uncommon but highly fatal malignancy … The majority are found incidentally in patients undergoing exploration for cholelithiasis … The poor prognosis associated with GBC is thought to be related to advanced stage at diagnosis, which is due both to the anatomic position of the gallbladder, and the vagueness and non-specificity of symptoms.

Patients with early invasive GBC are most often asymptomatic, or they have nonspecific symptoms that mimic or are due to cholelithiasis or cholecystitis … Among symptomatic patients, the most common complaint is pain, followed by anorexia, nausea, or vomiting. The symptoms of advanced GBC often differ from usual biliary colic and are more suggestive of malignant disease (eg, malaise, weight loss). Patients who present with a symptom complex suggestive of acute cholecystitis more often

[4] Mehrotra B. Gallbladder cancer: Epidemiology, risk factors, clinical features, and diagnosis. Uptodate. Literature review current through June 2020. www.uptodate.com

have earlier stage disease and a better long-term outcome than those who present otherwise.

Patients with GBC may also present with obstructive jaundice, either from direct invasion of the biliary tree or from metastatic disease to the region of the hepatoduodenal ligament. Physical examination may reveal a palpable gallbladder in a jaundiced patient … Rarely, patients present with extra-abdominal metastases (lung, pleura), hepatomegaly, a palpable mass, ascites, or paraneoplastic syndromes."

Appendix 4. Blood result summary

Date:													
Test	Ref Range												
Haemoglobin	130-175 g/L	125	133	118			115	109	117			104	107
MCV	80-99 fL	89	87	91			85	85	90			90	92
MCH	27-33 pg	29	29	29			27	27	29			28	28
s Iron	10-30 µmol/L				3	9		8		7	8	6	
Ferritin	20-500 µg/L	39			12	26		18	32	31	28	2109	1534
Transferrin (TIBC)	2.0-3.5 g/L				3.4	2.9		3.3		2.9	2.6	1.8	
Trans Satn.	16-50%				4	12		10		10	12	13	
Additional comments			CRP ↑ 54	No iron studies	No FBC recorded	No FBC recorded			Normal LFT	No FBC	No FBC	LFT deranged↔ CRP ↑ 47	Similar to prev s Calcium ↑

Further advice

The following further expert advice was obtained from Dr Maplesden:

"**17. Addendum 27 October 2020**

(i) I have reviewed [Dr C's] response dated 29 September 2020. The response is appropriately reflective and I am confident the measures taken by [Dr C] (including further focused education, use of HealthPathways, clinical audit) will reduce the risk of delayed investigation of IDA in the future. [Dr C] notes he was under considerable work pressure for much of the period in question due to staffing issues at the medical centre. Primary care staffing issues are a national concern, particularly in rural general practice, and the measure taken by [the medical centre] (increased use of nursing staff to take over some clinical tasks usually done by GPs) is an accepted means of attempting to cope with clinician shortages. [Dr C] implies nursing staff may have ordered some of the blood tests referred to in my report as being incomplete and this may be the case. However, the clinician reviewing the results must still take responsibility for overall management of the patient, which includes appropriate surveillance. I acknowledge [Mr A's] case was quite complex and the work pressures described by [Dr C] may well have impacted on his management decisions and deserve some recognition. However, from a clinical perspective there is no new information presented which alters the comments in my original advice.

(ii) I have reviewed a response from [Dr D] dated 28 September 2020. The failure to monitor [Mr A's] haemoglobin and red cell parameters appears to relate to blood test recalls generated by nursing staff rather than the GP although I note a form for CBC was provided to [Mr A] in [Month18] but not completed by him. There is no additional

new clinical information presented and my mild criticisms of some aspects of [Dr D's] management of [Mr A] in 2019 remain unchanged.

(iii) Response from [Dr F] dated 22 October 2020 is limited by her lack of access to full clinical notes and the time that has elapsed since the events in question. [Dr F] notes the staffing issues present at the time she saw [Mr A] and her priority was ensuring his diagnosis of TIA was appropriately managed. She was working as a short-term locum and expected that any ongoing issue with abnormal blood tests would be followed up by the regular GP or as part of further work-up of [Mr A's] TIA (hospital). Given the lack of clarity over the duration of [Dr F's] tenure at [the medical centre] and noting the priority of diagnosing and managing [Mr A's] TIA (which was undertaken in a very competent manner) I withdraw the previous mild criticism of [Dr F] in relation to follow-up of [Mr A's] anaemia.

(iv) I have reviewed the response from [the medical centre] dated 5 October 2020. I believe the policies in place (last reviewed [Month9]) regarding management of test results and clinical correspondence were robust and consistent with similar policies I have reviewed from other practices, but have been further improved in the revised (September 2020) versions which could be an exemplar for other practices. I do not believe there was any deficiency at a practice level that contributed to delays in the investigation of [Mr A's] IDA but I acknowledge the impact staff shortages can have on the ability of a practice to provide good continuity of care. I concur with [Dr G's] observation regarding the strong possibility [Mr A's] IDA was unrelated to his bile tract malignancy (a point made in my original advice) and note there is no criticism of any provider regarding the failure to make an earlier diagnosis of [Mr A's] malignancy, rather any criticisms are related to investigation of IDA compared with recommended practice."

Appendix B: Medical centre policies

The medical centre's "Management of Clinical Correspondence" policy (initiated 1 April 2017 ...) stated at the time of events:

> "• *It is the ordering practitioner's responsibility to follow up on their own test requests.*
>
> …
>
> • *Any results requiring feedback or follow up will be done by the General Practitioner themselves or be forwarded to [the medical centre] inbox ([the medical centre]) for follow up.*
>
> …
>
> • *Any tests outstanding and not completed after 4 weeks should be investigated by the ordering doctor or nurse*."

[The medical centre's] "Screening and Recall Systems" (initiated 1 April 2017 ...) stated at the time of events:

> "• *The Practice Nurses are responsible for the screening and recall programmes at [the medical centre].*
>
> …
>
> • *Results are forwarded to either the Doctor or Nurse who ordered the test/procedure.*
>
> • *Ordering Doctor or Nurse is responsible for recording and actioning results as well as checking that the appropriate recall is recorded on patient's notes …*
>
> …
>
> *It is the responsibility of the GP to check all incoming results, reports and correspondence and to initiate follow up as required."*

In response to the provisional opinion, [the medical centre] told HDC that it has initiated the following changes to its policies:

> "***<u>The Management of Clinical Correspondence, Test Results, and other Investigations</u>,*** *and how these are communicated between clinicians within the practice. This has now become the responsibility of all staff at [the medical centre], including locums and contractors. With the whole team on board, from admin (ensuring the inboxes have been checked daily, especially if a GP is on leave) to clinical, whereby lessening the chance for correspondence/results going undetected.*
>
> …

Doctor In-Box Management Guideline

We have a separate policy for the management of the GPs in-box to ensure the receipt of all electronic results and reports are received and actioned in a timely manner. We have allocated additional time in the GPs appointment books, daily, for checking and action. All GP inboxes are required to have another GP monitor if they are going to be away from the practice and GPs are liaising with their colleagues in advance regarding any urgent matters. GPs are now also expected to arrange cover amongst their colleagues if they are going to be away on leave.

…

Test Tracking Guideline

Although follow-up of patients who have had ordered laboratory tests carried out outside of the practice were followed up by clinicians, we do not have a written policy about this. We now have a Test Tracking Policy in place."