General Practitioner, Dr B
Medical Centre

A Report by the
Deputy Health and Disability Commissioner

(Case 20HDC00482)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. A man in his seventies had a long-standing diagnosis of bipolar affective disorder, and his treatment included lithium. In December 2018 he moved to a new medical centre and general practitioner (GP).

2. The man's lithium level was tested three times throughout the time he was seeing the GP, in line with the three-monthly testing requirements. Each test showed a gradual increase in lithium levels, which was not acted on. Subsequently, the man was hospitalised with lithium toxicity.

3. On two separate occasions, the GP failed to inform the man that his lithium levels were outside his normal treatment range, thus not giving him the opportunity to participate in his own care.

4. This report highlights the importance of test results being viewed in the context of previous results. Had this happened, the GP would have noticed the gradual increase in the man's lithium levels and acted sooner to cease lithium as a treatment for his bipolar affective disorder.

5. The report acknowledges the challenge in assessing and managing complex conditions, and notes that the GP became situationally blind to some symptoms he observed in the man, and did not consider the information obtained from the successive lithium tests sufficiently in his diagnostic formulation.

Findings

6. The Deputy Commissioner found that the GP's repeated acceptance of increasing lithium levels without undertaking further investigations constituted a failure to provide services to the man with reasonable skill and care, in breach of Right 4(1) of the Code.

7. Furthermore, the Deputy Commissioner found that the GP's failure to inform the man when his lithium levels were outside the normal range constituted a failure to provide the man with the information that a reasonable consumer in his circumstances would have expected to receive, and therefore that the GP breached Right 6(1)(f) of the Code.

8. Adverse comment was made regarding the GP's decision not to check previous test results once he learned that some of the man's health information did not transfer to his practice.

Recommendations

9. The Deputy Commissioner recommended that the GP present this case as an anonymised case study to a peer group; undergo an audit of patients who are on medications such as lithium that require regular blood tests to check for toxicity; and provide a written apology to the man.

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10. The Deputy Commissioner recommended that the medical centre ensure that its staff are aware of the potential issues with transferring patient files between medical centres with different practice management systems.

Complaint and investigation

11. The Health and Disability Commissioner (HDC) received a complaint from Mr and Mrs A about the services provided to Mr A by Dr B and Medical Centre 2. The following issues were identified for investigation:

- *Whether Dr B provided Mr A with an appropriate standard of care from January to September 2019 (inclusive).*
- *Whether Dr B provided Mr A with information that a reasonable consumer, in Mr A's circumstances, would expect to receive, in March and September 2019.*
- *Whether Medical Centre 2 provided Mr A with an appropriate standard of care from January to September 2019 (inclusive).*

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

13. The parties directly involved in the investigation were:

Mr A	Consumer
Mrs A	Complainant
Dr B	Provider/general practitioner (GP)
Medical Centre 2	Provider/medical centre

14. Further information was received from:

Dr C	GP
Medical Centre 1	Medical centre
Dr D	Geriatrician
A district health board (DHB)	

15. In-house clinical advice was obtained from GP Dr David Maplesden (Appendix A).

Information gathered during investigation

Background

16. Mr A (aged in his seventies at the time of events) was a registered patient of Medical Centre 1 from March 2013 until December 2018, at which time Mr A transferred his care to Medical

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Centre 2. His medical history included Alzheimer's disease, high blood pressure, an underactive thyroid, a probable transient ischaemic attack (TIA)[1] in 2013, and a long-standing diagnosis of bipolar affective disorder.[2]

17. Mr A had been treated for his bipolar disorder with a combination of 800mg of lithium carbonate (lithium) (two doses of 400mg, once daily) and 1,000mg of Epilim (two doses of 500mg, once daily). His bipolar disorder had been stable for a number of years.

18. Lithium is an effective treatment for acute mania, acute depression, and long-term mood stabilisation in people with bipolar disorder. Common side effects of lithium include nausea, vomiting, diarrhoea, vertigo, muscle weakness, fine hand tremors, excessive/frequent urination, excessive thirst, and co-ordination impairment.[3]

19. According to the Medsafe datasheet, the therapeutic range[4] for lithium is quite narrow. The objective is to adjust the lithium carbonate dose so as to maintain the lithium level permanently within the therapeutic range of 0.5–1.5mmol/L. Within this range, a patient will have their own therapeutic range established over a period of time, which is important in monitoring, as the sensitivity to the effects of small changes in levels can be high. Generally, lithium toxicity[5] will occur at concentrations between 1.5–2mmol/L, but it can also occur between 1–1.5mmol/L — particularly in elderly people, as they may be more sensitive to undesirable effects of lithium and may also require lower doses to maintain normal lithium levels. The recommended practice for monitoring lithium levels is through three-monthly blood tests, which should be taken between 12–24 hours following the last dose of lithium.[6]

20. At the time of events, Mr A had become frustrated and angry with his registered GP at Medical Centre 1, Dr C,[7] following her recommendation that he cease driving. On 18 December 2018, he approached Dr B[8] at Medical Centre 2 for a second opinion and to transfer his care to Dr B at Medical Centre 2.

21. This report relates to the care provided to Mr A by Dr B and Medical Centre 2 during the period of January 2019 until September 2019.

[1] A brief stroke-like attack.
[2] A disorder associated with episodes of mood swings ranging from depressive lows to manic highs.
[3] Ataxia.
[4] The range in which lithium is most effective for treatment.
[5] Lithium toxicity is another term for a lithium overdose.
[6] Douglas Pharmaceuticals Ltd, "Medsafe datasheet — Lithium Carbonate", 28 March 2019.
[7] Dr C is a GP with an annual practising certificate from the Medical Council of New Zealand. She is also a Fellow of the Royal College of General Practitioners.
[8] Dr B is a GP with an annual practising certificate from the Medical Council of New Zealand. He is also a Fellow of the Royal College of General Practitioners and a Fellow of the Royal College of Urgent Care. Dr B was the founder of Medical Centre 2 and was the medical director at the time of this complaint.

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Consultations between January 2019 and September 2019

January consultation — Dr D

22. On 7 January 2019, Medical Centre 2 received Mr A's medical records from Medical Centre 1, but Mr A's laboratory records were not included. Dr B told HDC that this was because transmission of records from practice to practice is not always complete, especially when practices use different practice management systems. As such, Dr B was not aware of Mr A's baseline lithium levels. It is unclear what action was taken once the missing information was discovered.

23. On 17 January 2019, Mr A was reviewed by a geriatrician, Dr D, following a previously made referral by Dr C. A blood test indicated that Mr A had a lithium level of 1.03mmol/L — within the therapeutic range. Dr B was not aware of this lithium level until he received Dr D's clinic letter.

24. On 5 March 2019, Mr A saw Dr D again. After this, Dr D wrote to Dr B and included the lithium level above in the letter. At this consultation, Dr D diagnosed Mr A with advancing dementia. Dr B told HDC that no cause for concern regarding Mr A's lithium levels arose from the letter.

March consultation — Dr B

25. On 22 March 2019, Dr B carried out the next three-monthly blood test, which showed Mr A's lithium level as 1.17mmol/L. Dr B accepted this as being only a little more than the previous result of 1.03mmol/L and did not consider that it raised any concern. Dr B told HDC:

> "My thinking was that [Mr A] needed his lithium level at the top of the Lithium scale [therapeutic range] to control his bipolar disorder. That I had observed his easy agitation and did not wish this to be worse. His repeated explosive outbursts in regard to not being able to drive and lack of insight into this regard."

26. There is no evidence that Dr B informed Mr or Mrs A of this result, and Dr B acknowledged this.

June consultation — Dr B

27. Mr A's next three-monthly blood test occurred on 25 June 2019, and Mr A's lithium levels had increased again, to 1.33mmol/L. Dr B called Mrs A on 27 June 2019, to inform her of the results. Dr B determined that as the blood test had been taken only two hours after Mr A's last lithium dose (rather than the standard 10–14 hours after the last dose), the result was likely a "peak" level and therefore was not an accurate indicator of his lithium levels.

28. Dr B decided that the test could be repeated at the next three-monthly consultation, taking into account the difficulties faced by Mr and Mrs A accessing laboratory services.[9]

September consultation — Dr B

29. The next three-monthly blood test was carried out on 12 September 2019. At an appointment the same day, Dr B noted that Mr A's general condition had deteriorated

[9] These included Mrs A being unable to drive, and Mr A becoming very vocal if stimulated.

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dramatically, and that he had developed a slow shuffle gait. They discussed the use of a wheelchair, shower chair, and toilet seat. Mr A had developed shingles[10] three days earlier, and Dr B considered the deterioration likely due to the acute shingles infection.

30. Dr B received the results of the blood test late on Friday 13 September 2019, and did not file the results or contact Mr or Mrs A before going home for the weekend. The results showed that Mr A's lithium level had increased to 1.4mmol/L — at the high end of the therapeutic range.

Subsequent events

31. On 14 September 2019, Mr A was admitted to hospital with confusion, an increase in muscle tone causing stiffness in his limbs, increased "jerk-like" movements in his left arm, a right arm tremor, and co-ordination impairment. It was found that he had lithium levels of 1.6mmol/L, and he was diagnosed with lithium toxicity. His lithium was ceased, and olanzapine[11] was substituted.

32. On 15 September, Mr A was discharged from hospital.

Further information

Mr and Mrs A

33. Mr and Mrs A told HDC that Mr A deteriorated quickly over a period of 10 months, and became incapable of reading, writing, dressing, and washing, and ended up in nappies. They said: "[T]he stress that we went through, I just can't describe."

Dr B

34. Dr B told HDC:

> "In retrospect it seems that it is very likely that [Mr A] was having cognitive problems relating to his Lithium when the levels were in the high normal range of [0].9 [mmol/L]."

35. Dr B noted:

> "The tests have been performed 3 monthly. The issue was the acceptance of a higher lithium level to control his bipolar without thought that this was a factor in his deteriorating mental function.
>
> …
>
> Not an error of omission to follow a policy. But an error to reconsider the diagnosis and give thought to reducing his lithium dose."

36. Dr B said that in retrospect it is obvious what should have been done. He noted that he became situationally blind to the possibility of lithium being the cause of Mr A's deteriorating mental status.

[10] A viral infection that causes a painful rash.
[11] An atypical antipsychotic primarily used to treat schizophrenia and bipolar disorder.

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Responses to provisional opinion

37. Mrs A was provided with the opportunity to comment on the "information gathered" section of the provisional report, and had nothing more to add.

38. Dr B was provided with the sections of the provisional opinion that relate to him, and his comments have been incorporated into this report where relevant.

39. Medical Centre 2 was provided with the opportunity to comment on the full provisional opinion, and had no comments to make.

Opinion: Dr B — breach

40. Mr A was a new patient for Dr B, and Mr A presented with complex health needs including being treated with lithium. Lithium levels require regular and frequent monitoring to ensure that levels remain within the patient's therapeutic range. At the outset, Dr B did not establish the therapeutic normal level for Mr A. I agree with Dr B that in the face of other conditions that could explain some symptoms he observed in Mr A, he became situationally blind and did not consider the information obtained from the successive lithium tests sufficiently in his diagnostic formulation.

41. Dr B did not respond to Mr A's increasing lithium results appropriately on three key dates, as set out below.

22 March 2019 consultation

42. On 22 March 2019, Mr A underwent his three-monthly blood test to check his lithium levels. This was the first test since moving to Dr B at Medical Centre 2, as the January blood test had been carried out by geriatrician Dr D (and had shown a lithium level of 1.03mmol/L).

43. Mr A's lithium level for 22 March was 1.17mmol/L. According to the Best Practice Advocacy Centre (bpac^{nz}) article on "Lithium in General Practice", this is above the therapeutic range but still within the range for treating acute manic cases. Dr B had only the January result for comparison, and accepted the March result as only slightly more elevated than the previous result of 1.03mmol/L, and took no further action. There is no record that Dr B contacted Mr or Mrs A at this time in regard to the test results, which Dr B acknowledges.

44. As my in-house clinical advisor, GP Dr David Maplesden, advised, this was a sequential rise from the previous result, and the dose-to-test interval was not evident from the result. Best practice in this situation would have been to repeat the test promptly with attention to the dose-to-test interval, and to consider a reduction in the lithium dose if the levels remained outside the therapeutic zone. There is no evidence that Dr B informed Mr A of this result. Dr Maplesden was mildly to moderately critical of Dr B's management of Mr A's 22 March test result, particularly as Mr A was not notified of the result.

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45. I agree with Dr Maplesden. While the result was still within the therapeutic range for an acutely unwell patient, Dr B should have organised a repeat test promptly for comparison. Furthermore, Mr A should have been informed of his elevated lithium levels.

25 June 2019 consultation

46. During the 25 June consultation, Dr B saw no indication of symptoms suggestive of lithium toxicity, and he organised the next of the three-monthly blood tests. Mr A's lithium level had increased to 1.33mmol/L. Dr B called Mrs A to inform her of the result, noting that the test had been taken only two hours after the last dose (rather than the standard 12–24 hours after the last dose) and was therefore likely at peak level. Dr B decided to repeat the blood test at the regular three-monthly interval.

47. Dr Maplesden noted that the best practice in this situation would have been to repeat the test promptly with an appropriate time-from-dose interval, because the test had been taken too close in time to the dose having been given and therefore was an inaccurate result.

48. Dr Maplesden pointed to mitigating factors, being an "apparent absence (without the benefit of hindsight regarding the dementia diagnosis) of any symptoms or signs that were particularly suggestive of lithium toxicity". Dr Maplesden also noted Dr B's efforts to determine the timing of the blood tests in relation to the time-from-dose interval, and that it was likely that this result represented the lithium levels at a peak time following the final dose, and Dr B's reporting of the difficulties faced by Mr and Mrs A in accessing laboratory services.

49. Taking these mitigating factors into account, Dr Maplesden considered Dr B's management of the 25 June lithium result to be a mild to moderate departure from accepted practice.

50. I agree that Dr B should have ordered a prompt re-test rather than wait for the next three-monthly test.

12 September 2019 consultation

51. During the 12 September consultation, Dr B noted a dramatic deterioration in Mr A's general condition. Mr A had developed a slow shuffle gait, and the use of a wheelchair, shower chair, and toilet seat was discussed. Three days earlier Mr A had developed shingles, and Dr B considered this to be the cause of Mr A's dramatic deterioration.

52. During this consultation, Dr B organised Mr A's three-monthly blood test for his lithium level. The results were reported to Dr B the following day (13 September) and showed a lithium level of 1.4mmol/L. Dr B did not file the result or contact Mr or Mrs A before leaving for the weekend.

53. On 14 September, Mr A was admitted to hospital and diagnosed with lithium toxicity, and his lithium treatment was stopped.

54. With regard to Dr B's management of Mr A's lithium levels on 12 September, Dr Maplesden advised:

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> "[A]ccepted management was to notify [Mr A] promptly of the abnormal lithium level and consider the possibility of lithium toxicity as a cause of his deterioration. Management may then have included immediate cessation of lithium, preferably with specialist input or request for hospital admission to enable close monitoring of [Mr A's] condition."

55. Dr Maplesden noted several mitigating factors for this consultation, including that there was a reasonable alternative diagnosis to account for the abrupt deterioration of Mr A's condition in September 2019 (the shingles infection). Additionally, while the lithium levels were in fact above the therapeutic range, they were not yet at the levels generally associated with lithium toxicity.

56. Dr Maplesden advised that taking these mitigating factors into account, Dr B's failure to act on Mr A's elevated lithium levels in a timely manner represents a moderate departure from accepted practice.

57. I agree with Dr Maplesden's comments, particularly the lack of timely communication to Mr A by Dr B regarding the 12 September test result, and the lack of consideration of lithium toxicity as a cause of the deterioration. At this point, Mr A's lithium levels had increased and were clearly outside the therapeutic range for lithium and, despite having reviewed the test result before the weekend, Dr B did not consider lithium toxicity and did not act quickly on the result by either stopping the lithium, requesting specialist input, and/or arranging hospital admission. The fact that the lithium result was out of the therapeutic range, combined with the dramatic deterioration in Mr A's general condition, should have prompted Dr B to reconsider his acceptance of Mr A's high lithium results.

Conclusion

58. On three occasions, Dr B accepted an increasing lithium level without undertaking further investigations. In summary:

- Following the 22 March 2019 test, Dr B accepted 1.17mmol/L as he considered this to be only slightly elevated, and did not recognise the significance of even small increases and did not re-test Mr A promptly.
- Following the 25 June 2019 test, Dr B noted the result of 1.33mmol/L but considered that because the test had been taken too close in time to the dose having been given, the result was inaccurate; however, he did not re-order the test promptly.
- Following the 13 September 2019 lithium result of 1.4mmol/L, despite having reviewed the test result before the weekend, Dr B did not consider lithium toxicity and did not act quickly on the result by ceasing Mr A's lithium, seeking specialist input, and/or arranging hospital admission.

59. Accordingly, I find that Dr B did not provide Mr A with services with reasonable care and skill, in breach of Right 4(1)[12] of the Code.

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

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60. Further, Dr B failed to inform Mr A of his test results when his levels were outside the normal range, on two separate occasions. As a result, Mr A was not given the opportunity to participate in his own care, such as stopping the intake of lithium immediately or seeking earlier medical attention. The high lithium level results was information that a consumer in Mr A's circumstances would have expected to receive, particularly in light of Mr A's deteriorating condition. Accordingly, I find Dr B in breach of Right 6(1)(f) [13] of the Code.

Management of patient information — adverse comment

61. Following Mr A's first consultation with Dr B at Medical Centre 2 there was a request for his patient records to be transferred. The records were received on 7 January 2019. Dr B told HDC that the laboratory records did not transfer from the previous practice because the practice management systems were incompatible. Therefore, Dr B was unaware of Mr A's usual lithium levels.

62. Following the transfer of Mr A's patient notes to Medical Centre 2 it is unclear what checks were done to ascertain the completeness of the information. Dr Maplesden was not critical of Medical Centre 2's processes or policies on transferring patient clinical records; rather, he noted that it was an issue with practice management software systems in general.

63. While Dr Maplesden found no departure from accepted practice in this regard, he did state that "if [Dr B] believed it was important to be able to access [Mr A's] previous blood (lithium) results, these could have been obtained from the previous practice or the laboratory".

64. I accept this advice, and consider that as soon as Dr B knew that Mr A was prescribed lithium, he should have requested the most recent history on these tests. This was particularly important because a baseline value is required in order to monitor a patient's lithium levels reliably.

65. It is likely that if Dr B had had access to Mr A's previous lithium levels, the levels above 1mmol/L would not have been accepted. I ask that Dr B consider Dr Maplesden's comments in this regard, for continuity of care. I note the importance of reviewing a new patient's recent medical history, which includes recent laboratory results. This is particularly true in cases where surveillance testing is being undertaken and establishing a baseline may be useful. I remind Dr B of the importance of ensuring that he is well informed about a new patient's recent medical history, including test results.

Opinion: Medical Centre 2 — no breach

66. As a healthcare provider, Medical Centre 2 was responsible for providing services to Mr A in accordance with the Code. As set out above, Mr A presented to Medical Centre 2 for blood tests on three occasions from January to September 2019 in order to check his lithium levels

[13] Right 6(1)(f) states: "Every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, would expect to receive, including the results of tests."

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for toxicity. His lithium levels increased and had exceeded the therapeutic range by September 2019, when he was diagnosed with lithium toxicity.

67. I have considered whether there were broader systems or organisational issues at the practice that may have contributed to Mr A receiving poor care.

68. Following Mr A's first consultation with Dr B there was a request for his patient records to be transferred. The records were received on 7 January 2019, but the laboratory results, including those that contained Mr A's previous lithium level results, were omitted. Dr B told HDC that the laboratory records did not transfer from the previous practice because the practice management systems were incompatible.

69. Dr Maplesden reviewed Medical Centre 2's response and relevant policy documents in relation to the management of patient information and clinical correspondence (see Appendix B) and advised that the policies appeared robust and consistent with accepted practice. Dr Maplesden noted that the difficulties described with export and import of electronic patient files are accurate, particularly where practice management systems of different medical centres may not be fully compatible, and improving this process "is in the hands" of the practice management software and electronic service providers.

70. I accept Dr Maplesden's advice about the limitations of electronic systems, but in my view, it is important for medical centres to ensure that steps are taken to obtain a patient's complete medical file. This in turn supports continuity of care and sound treatment decisions when a patient changes healthcare providers. While there is room for improvement in the systems for transfer of patient records, I do not consider that this reflected an organisational issue specific to Medical Centre 2, and accept Dr Maplesden's advice that the policies in place were appropriate. I therefore do not consider that Medical Centre 2 breached the Code directly.

71. In addition to any direct liability for a breach of the Code, an employing authority can be vicariously liable for any acts or omissions of its employees. A defence is available to the employing authority of an employee under section 72(5) if it can prove that it had taken such steps as were reasonably practicable to prevent the acts or omissions.

72. I have found that Dr B breached Right 4(1) of the Code for failing to take appropriate action in response to Mr A's rising lithium levels. Dr B was the medical director of Medical Centre 2 at the time of this complaint, and had been an employee since it began operating. He is a very experienced doctor.

73. In my view, in light of Dr B's position and experience, Medical Centre 2 was entitled to rely on him to take appropriate clinical action in response to Mr A's rising lithium levels, and could not reasonably have taken steps to prevent Dr B's omission to do so. I do not find Medical Centre 2 vicariously liable for Dr B's breach of the Code.

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Changes made since events

Dr B

74. Dr B has implemented several changes to the way in which he and Medical Centre 2 operate, including the following:

a) Regular planned external audits for both Cornerstone accreditation and Urgent Care Standards.

b) Monthly doctors meetings in which complaints and issues are discussed in an open environment to facilitate learning for the whole group with the aim of improving patient care.

c) Dr B has attended seminars regarding communication skills, critical thinking, and systems errors.

d) In October 2019, Medical Centre 2 enrolled in the safety in practice scheme. This is ongoing and looks at different aspects of the medical practice. Dr B stated that one aspect of this was the timely and accurate handling of results and ongoing internal audits.

e) In February 2020, Medical Centre 2 commenced use of Patient Portals, which allows enrolled patients to access their own results, and eases communication between patient and doctor.

f) Dr B has re-read extensively about the use of lithium, and has stated that he will not allow any patient to have lithium levels above 1mmol/L without taking action to address the levels.

75. Dr B told HDC that the changes set out in points a) to c) have been a part of his drive for quality patient care and an attempt to minimise unwanted outcomes for patients. He stated that changes d) to f) have been introduced subsequent to the events of September 2019, as part of Medical Centre 2's continuing improvement in patient communications.

Recommendations

76. Further to the practice improvements Dr B has made (noted above), I recommend that Dr B:

a) Present this case as an anonymised case study to a peer group, to discuss:

- the importance of keeping lithium within a patient's therapeutic range;
- the importance of monitoring levels and what to look for;
- the potential consequences of a high lithium concentration, including how the symptoms can mimic other conditions; and

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- the issue of contextual/situational blindness and how peer review and critical analysis is important to challenging treatment formulation.

Dr B is to provide HDC with evidence that this has been done, within four months of the date of this report.

b) Undergo an audit of patients who are on medications that require regular blood tests to check for toxicity — such as lithium — to determine whether the changes made have resulted in appropriate action being taken on receipt of each result, where applicable. This audit is to be provided to HDC within six months of the date of this report.

c) Provide a written apology to Mr A for the breaches 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 to Mr and Mrs A.

77. I recommend that Medical Centre 2 ensure that its staff are aware of the potential issues with transferring patient files between medical centres with different practice management systems. Medical Centre 2 is to provide HDC with evidence that this issue has been communicated to staff, within three months of the date of this report.

Follow-up actions

78. A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to MedTech (the Practice Management System used by both medical centres) to bring this issue to its attention and enquire whether work is in progress to improve and/or remedy the issue identified.

79. 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 New Zealand and the Royal New Zealand College of General Practitioners, and they will be advised of Dr B's name.

80. A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to the Mental Health and Wellbeing Commission, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

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Appendix A: In-house clinical advice to Commissioner

The following expert advice was obtained from Dr David Maplesden:

"1. Thank you for the request that I provide clinical advice in relation to the complaint from [Mrs A] (with support from [an emergency medicine specialist]) about the care provided to her husband [Mr A] by GP… [Dr B] of [Medical Centre 2]. 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 documentation on file: complaint from [Mrs A]; report from [the emergency medicine specialist]; …; response from [Dr B] and clinical notes from [Medical Centre 2].

2. Brief background to complaint

[Mr A] had a long history of bipolar disorder treated with lithium carbonate. On 14 September 2019 [Mr A] was admitted to [a public hospital] with confusion, hypertonia and ataxia. He was diagnosed with acute on chronic lithium toxicity (lithium level at this time 1.6 mmol/L). He had experienced a decline in mobility and cognitive functioning over the previous year or more which was attributed by internal medicine specialist [Dr D] to advancing Alzheimer's dementia following review in January and March 2019. Lithium was stopped during the hospital admission in September 2019 and [Mr A] had a marked improvement in his previous level of functioning, both physically and cognitively. [Mrs A] and [the emergency medicine specialist] have concerns including: the possibility of lithium toxicity should have been entertained much earlier in the course of events when [Mr A's] lithium levels increased from late 2017; lithium testing and follow-up of elevated results was inadequate; [Mr A] had been commenced on cilazapril which has an association with increased lithium levels yet monitoring of levels was not increased; CT scans were interpreted by [Dr D] as supporting a diagnosis of dementia when they showed only age-appropriate changes (outside the scope of this report); ACC have inappropriately declined a Treatment Injury claim (outside the scope of this report).

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3. Summary of lithium results ([Mr A's] renal function was stable within normal limits)

Date	Lithium[1] level (mmol/L)	Approx time since dose(hrs)	Comment
19/5/13	0.50	12	
19/6/13	0.80	12	
17/7/13	0.90	12	
6/9/13	0.80	12	
10/1/14	1.00	12	
7/5/14	0.70	-	Time of last dose not stated
12/8/14	0.60	19	
22/10/14	0.60	18	
4/2/15	0.70	13	
5/5/15	1.00	12	
6/10/15	0.71	20	
15/9/16	0.83	19	Almost 12 months since previous test
23/11/16	0.73	19	
14/3/17	0.74	19	
8/6/17	0.59	18	
13/12/17	0.91	-	Time of last dose and collection time not stated
4/7/18	0.90	1	Cilazapril commenced just prior. NB dose to collection interval
22/1/19	1.03	18	Ordered by [Dr D] and described in his response as *at the upper limit of the accepted therapeutic range*

[1] Laboratory comment is: *A range of 0.5–1.0 has been suggested in the treatment of acute mania. Toxicity possible at levels greater than 1 mmol/L; toxicity common above 1.5mmol/L. These levels refer to specimens collected 12 hours after dose.*

22/3/19	1.17	-	Time of last dose and collection time not stated
25/6/19	1.33	-	Time of last dose not stated on result. [Dr B] established interval was 2 hours.
12/9/19	1.44	-	Time of last dose not stated
14/9/19	1.6		Admission to [the public hospital]

6. Summary of response from [Dr B]

(i) [Dr B] first consulted with [Mr A] on 18 December 2018. At that stage [Mr A] was agitated and angry with [Dr C] regarding the recommendation he should not drive. [Dr B] elected to await the results of the upcoming geriatrician assessment and [Mr A's] medical records were received from [Medical Centre 1] on 7 January 2019. [Dr B] states that laboratory results were not received but does not state what action was taken once this was recognised.

(ii) [Dr B] describes his subsequent contact with [Mr and Mrs A] and receipt of the geriatrician [Dr D's] reports in January and March 2019. Lithium level on 22 March 2019 was 1.17 and [Dr B] states: *My thinking was that* [Mr A] *needed his lithium level at the top of the lithium scale to control his bipolar disorder. That I had observed his easy agitation and did not wish this to be worse … the letter from [Dr D] reassured me that his behaviour was improved which I interpreted as being from a combination of the lithium and* [Mrs A's] *constant attention. I accepted 1.17 as being a little more than 1.03* (the previous level noted in January 2019 by [Dr D] and apparently not causing [Dr D] any concern).

(iii) On 27 June 2019 [Mr A] recorded a lithium level of 1.3 which [Dr B] noted was taken only two hours after the last dose and therefore did not represent a true trough level. Plans were made to repeat the level in three months.

(iv) At review on 6 August 2019 [Mr A] presented symptoms of urinary frequency and occasional incontinence and was commenced on a trial of doxazosin with concomitant cessation of felodipine.

(v) [Mr A] developed shingles in early September 2019 and this coincided with a dramatic deterioration in his wellbeing with shuffling gait and reduced verbalisation. At review by [Dr B] on 12 September 2019 the deterioration was attributed to the shingles infection and blood tests were arranged. Lithium level was received on 13 September 2019 (1.4) and [Dr B] acknowledges he did not file the result but also did not notify the patient.

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(vi) Lithium levels in patients at [Medical Centre 2] are monitored three-monthly unless there is a clinical indication to do otherwise.

7. [Mr A] was reviewed by [Dr D] on 19 January 2019 in relation to his memory decline. Copy of the report was sent to [Dr B]. Assessment findings included unremarkable neurological examination and there was no reference to symptoms strongly suspicious for lithium toxicity. Significant decline in cognition was noted since the 2013 assessment and [Dr D] concluded: *…I believe [Mr A] has an advancing dementia. Clinically this looks more to be Alzheimer's disease then multi-infarct, however he does have a history of stroke.* Follow-up included blood tests (lithium level as part of this) and outpatient brain CT scan. Review was undertaken on 5 March 2019. [Dr D] records a comment from [Mr A's] wife that there had been a *great improvement in his behaviour* since the last review. He notes: *His last lithium level was 1.03; this is being monitored every three months.* Diagnosis of dementia is recorded. There is no specific reference to the CT results (28 February 2019 — *There is moderate symmetric fronto-parietal volume loss that has progressed compared to the prior study* (14/3/18). *There is ex vacuo dilation of both lateral ventricles. No cortical or lacunar infarct is demonstrated and there is no suggestion of a space-occupying lesion*).

Comment: On reading [Dr D's] reports, I think it was reasonable for [Dr B] to assume [Mr A's] most likely diagnosis was Alzheimer type dementia and that no specific intervention was required by him. I would not expect [Dr B] to determine whether the brain CT report was consistent with this diagnosis although I would expect [Dr D] to have recorded some comment to this effect in his report. [Dr D] had ordered the lithium test and did not express any concern at the result with his report implying a retest in three months' was appropriate.

8. Comments — management by [Dr B]

(i) [Dr B] comments that his practice received [Mr A's] notes from [Medical Centre 1] on 7 January 2019 (sent electronically via GP2GP) but laboratory records did not transfer successfully. The GP2GP transfer system has some flaws and it is important to check all expected notes are received. [Dr B] does not elaborate what steps were taken when it was evident laboratory results had not transferred successfully but I would expect the practice to have a process in place with respect to handling of transferred notes, and this should include checking notes for completeness and actions to be taken if the transfer is incomplete. Many [GPs in the region] have electronic access to community and hospital laboratory results via Testsafe if they are not available from the PMS.

(ii) Lithium level dated 22 January 2019 was just outside the therapeutic range (per pathologist comment) at 1.03 mmol/L. [Dr B] did not receive a copy of the result (ordered by [Dr D]) although it was mentioned in the clinic letter dated 5 March 2019 with no apparent cause for concern (see discussion above). [Dr B] organised a repeat lithium level at the consultation dated 22 March 2019 and result was 1.17 mmol/L. This was a sequential rise from the previous result and dose to test interval was not evident from the result. Previous results could have been obtained if required to give a more comprehensive picture of the pattern of [Mr A's] lithium levels over time if these were not evident from the available clinical notes. I believe best practice on this occasion

would have been to repeat the test promptly with attention to dose to test interval recording, and consider reduction in [Mr A's] lithium dose (or at least seek psychiatrist advice) if the level remained outside the therapeutic range whether or not there were obvious signs of toxicity. It is unclear if [Mr A] was notified that his result was outside the accepted therapeutic range on this occasion (result not annotated) and routine recall for repeat testing in three months was maintained. I am mildly to moderately critical of [Dr B's] management of [Mr A] on this occasion, particularly if [Mr A] was not notified of his result.

(iii) Routine blood tests including thyroid function were repeated on 25 June 2019 following GP review (no reference to complaint of symptoms suggestive of lithium toxicity with cognitive decline I think reasonably attributed to the specialist diagnosis of progressive dementia). Result was 1.33 mmol/L and annotated by [Dr B] as *had meds only 2 hrs before.* [Dr B] discussed the result with [Mr A] on 27 June 2019 and established this was a peak dose (level obtained two hours after dose (peak occurs two to four hours after ingestion) rather than standard 12-hour dosing interval). Advice was apparently to repeat the test in three months (recorded as 'next time'). I believe accepted practice in this situation (invalid lithium result, outside standard therapeutic range and sequential rise evident from previous results) is to repeat the test promptly with attention to appropriate dose/test interval and further management as dictated by the subsequent result. I am moderately critical of [Dr B's] decision to defer repeat testing for a further three months. A mitigating factor is the apparent absence (without the benefit of hindsight regarding the dementia diagnosis) of symptoms/signs particularly suggestive of lithium toxicity.

(iv) At review on 12 September 2019 (Thursday) [Mr A] was noted to have gait changes and reduced mobility. He had a noticeable decline in his general condition which was attributed by [Dr B] to concurrent shingles infection. Blood tests taken that day revealed an elevated lithium level at 1.4 mmol/L. [Dr B] acknowledges he received and reviewed the result and although he did not file it, he did not notify [Mr A] of the result before the weekend. [Mr A's] condition deteriorated further over the next two days and he was admitted acutely to [the public hospital] on 14 September 2019 *with confusion, hypertonia and ataxia. At that stage he was clearly lithium toxic with a level of 1.6* [per the DHB's response]. [Mr A's] lithium was stopped and his general condition, including mobility and cognition, subsequently improved. However his underlying psychiatric condition deteriorated after some weeks despite alternative pharmacological treatment and he required reintroduction of lithium towards the end of November 2019. Noting the somewhat abrupt change in [Mr A's] wellbeing evident at review on 12 September 2019 with his lithium level at that time being within the range associated with toxicity and having increased on sequential measurements over the preceding nine months, I believe accepted management was to notify [Mr A] promptly of the abnormal lithium level and consider the possibility of lithium toxicity as a cause of his deterioration. Management may then have included immediate cessation of lithium, preferably with specialist input or request for hospital admission to enable close monitoring of [Mr A's] condition. I believe the failure by [Dr B] to act on [Mr A's]

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elevated lithium level in a timely manner represents a moderate departure from accepted practice with mitigating factors being there was a reasonable alternative diagnosis to account for the abrupt deterioration in [Mr A's] wellbeing in September 2019 (shingles infection) and the lithium level of 1.4, although within the range associated with possible toxicity, was not at the level commonly associated with toxicity.

(v) [Dr B] has outlined in his response remedial measures undertaken since this complaint and these appear appropriate. The practice policy on management of test results appears robust.

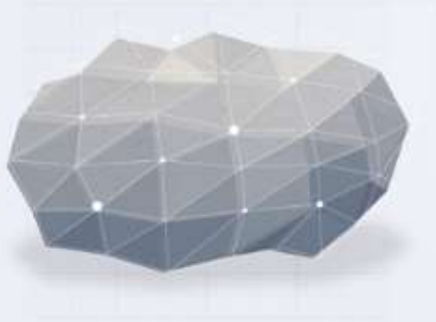
Appendix 1[2]

Monitoring the safe use of lithium

Lithium is an effective treatment for acute mania, acute depression and long-term mood stabilisation in people with bipolar disorder.[16] However, lithium is associated with a risk of serious adverse effects and patients need to be monitored closely.

Lithium has a relatively slow onset of action and will take six to ten days to produce a clinical effect in patients who are manic, and six to eight weeks for patients with bipolar depression.[16] Lithium is available in 250 mg capsules, and 250 mg and 400 mg tablets.[17] The bioavailability of the different formulations of lithium varies widely, therefore if the preparation is changed, careful monitoring is required, particularly if switching between modified and immediate-release formulations.[17]

Monitor serum lithium levels: Lithium has a narrow therapeutic index and patients need to be monitored to ensure safe and effective serum lithium levels are achieved and to prevent the development of adverse effects. Local guidelines can vary and Psychiatrists may adjust recommendations depending on the individual patient.



The patient's lithium serum concentration should be measured five to seven days after dose initiation, or dose change, with the blood sample taken 12 hours after dosing. Generally the patient's serum lithium is titrated to 0.6 – 0.8 mmol/L as this is reasonably well tolerated; a higher concentration (0.8 – 1 mmol/L) is recommended for acute episodes of mania,[17] and for patients who have experienced a relapse or have subsyndromal symptoms. Lithium levels should be monitored weekly after initiation and after every dose change, until a desired stable lithium level is achieved.[17] Levels should then be measured every six months and more frequently if the patient's sodium or fluid intake changes or they develop a concurrent illness.[17] Placing a patient recall in the Practice Management System (PMS) will automatically generate reminders. Patients should be educated to maintain adequate fluid intake, particularly during summer or during periods of physical exertion, or febrile illness. A serum lithium level > 1.2 mmol/L is usually considered to be toxic. A level > 2 mmol/L is a medical emergency.[17]

Monitor for adverse effects: Fine tremor and nausea are common dose-dependent adverse effects of lithium treatment, but often pass after one to two days. Coarse tremor, general fatigue, vomiting, diarrhoea, a metallic taste in the mouth, and a reduction in the sensitivity of the abdomen (central obtunding) indicate toxicity.[16, 17] Adverse effects mostly occur when lithium plasma levels change rapidly and should be anticipated when doses are increased.[16] Lithium overdose can cause chronic neural toxicity and may even be fatal.[16] Lithium reduces the ability of the kidneys to concentrate urine causing polyuria and increased thirst; it is reported that 10% of patients taking lithium long-term will develop reversible diabetes insipidus.[16] The dose of lithium will need to be reviewed in older patients and patients with renal impairment to avoid serum lithium reaching toxic levels.

Some patients will experience weight gain of as much as 10 kg after lithium treatment is started and this can affect treatment adherence. Hypothyroidism is reported to be six times more prevalent in patients taking lithium.[16] Patients taking lithium may develop hypercalcaemia due to elevated parathyroid concentrations.[16] If hypercalcaemia is significant then lithium treatment may need to be withdrawn.[16] Lithium should be avoided where possible during pregnancy and breast-feeding.[16]

If lithium is withdrawn abruptly there is an increased risk of manic relapse. When lithium treatment is ceased doses should be reduced over a period of at least four weeks, and preferably over a period of three months.[17]

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Monitor other laboratory parameters: Local guidelines vary for the frequency of monitoring of other parameters and this is likely to be directed by a Psychiatrist. Table 2 provides a reasonable approach to monitoring patients taking lithium long-term.

Medicine interactions: Angiotensin converting enzyme (ACE) inhibitors, angiotensin receptor-II antagonists (ARBs), diuretics (particularly thiazide diuretics, e.g. bendrofluazide, hydrochlorothiazide) and non-steroidal anti-inflammatory drugs (NSAIDs) can reduce the renal clearance of lithium and result in increased serum lithium levels.[22] Where possible the combination of any of these medicines with lithium should be avoided. If combination treatment is required the medicines should be prescribed at a stable, rather than variable dose. Patients should be aware of the potential risk of over-the-counter NSAIDs and advised to avoid these. Regular monitoring of renal function is recommended if medicines which can affect renal function are taken concurrently with lithium. Medicines that affect serotonin, e.g. SSRIs, clomipramine, tramadol and venlafaxine, can cause serotonin syndrome when taken in combination with lithium.[22] Sodium restriction can result in lithium toxicity and excess sodium, e.g. in patients taking sodium bicarbonate, can cause lithium serum levels to fall.[17]

Table 2: Recommended baseline and follow-up monitoring for patients taking lithium long-term[16, 17]

Test	Baseline and follow-up	Rationale
Serum lithium	Five to seven days after first dose, then weekly, until stable, then every six months	Lithium has a narrow therapeutic window
Serum creatinine	Baseline and every six months	Lithium is excreted by the kidneys, therefore there is risk of reduced renal function with long-term use
Serum electrolytes (sodium)	Baseline and then every six months	Sodium levels influence lithium levels
Thyroid function (TSH)	Baseline and then every six months. More frequently if clinically indicated	Hypothyroidism and rarely hyperthyroidism is increased with the long-term use of lithium
ECG in patients aged over 45 years or with cardiac problems, including hypertension	Baseline and then yearly (if cardiac risk)[22]	Lithium can cause sick sinus syndrome and QT prolongation and baseline ECG is useful if future complications develop, or if other medicines are added that have cardiac conduction effects
Serum calcium	Baseline and then yearly[22]	Lithium can cause hypercalcaemia secondary to elevated parathyroid concentrations

[2] From: BPAC. Bipolar disorder: Identifying and supporting patients in primary care. 2014. https://bpac.org.nz/BPJ/2014/July/bipolar.aspx Accessed 22 June 2020

16. Malhi G, Tanious M, Bargh D, et al. Safe and effective use of lithium. Aust Prescr 2013;36:18–21.

17. New Zealand Formulary (NZF). NZF v25. 2014. Available from: www.nzf.org.nz (Accessed Jul, 2014).

18. Ng F, Mammen OK, Wilting I, et al. The International Society for Bipolar Disorders (ISBD) consensus guidelines for the safety monitoring of bipolar disorder treatments. Bipolar Disord 2009;11:559–95.

19. Isojarvi JI, Tapanainen JS. Valproate, hyperandrogenism, and polycystic ovaries: a report of 3 cases. Arch Neurol 2000;57:1064–8.

20. Actavis New Zealand Limited. Arrow - Lamotrigine. Actavis, 2013. Available from: www.medsafe.govt.nz/profs/datasheet/a/Arrow-Lamotriginetab.pdf (Accessed Jul, 2014).

21. Ray WA, Chung CP, Murray KT, et al. Atypical antipsychotic drugs and the risk of sudden cardiac death. N Engl J Med 2009;360:225–35.

22. Sussex Partnership. Guidelines for the prescribing and monitoring of inpatient lithium therapy. Available from: www.sussexpartnership.nhs.uk/gps/policies/finish/2030/5137 (Accessed Jul, 2014).

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Appendix 2[3]

Lithium

- There are numerous brands of lithium carbonate with different drug strengths. These are not interchangeable.
- Aim for serum drug levels of 0.6 to 0.8 mmol/L.
- When acute, commence 750 mg to 1000 mg daily. Variable onset
- Usual range when stable: 400 mg to 1200 mg daily.
- Give once a day (either morning or evening). Two doses a day increases polyuria, side-effects, and may increase renal damage.
- Measure levels 5 days after dose change or initiation and 10 to 14 hours after dose.
- Monitoring:
  - Lithium level, renal function and electrolytes every 3 to 6 months.
  - TFT, serum calcium, and weight every 6 months.
  - If aged over 40 years or obese, annual ECG, lipids, HbA1c.
- Adverse effects

Adverse effects of lithium

Adverse effects are infrequent if less than 1.0 mmol/L.

- Initial symptoms:
  - Mild gastrointestinal effects
  - Mild nausea
  - Bloating
  - Vomiting and diarrhoea
  - Vertigo
  - Muscle weakness
  - Dazed feeling
- Persistent symptoms:
  - Fine hand tremor
  - Polyuria and polydipsia
  - Memory problems
  - Weight gain
- Skin conditions can be aggravated:
  - Acne
  - Psoriasis
  - Rashes
  - Leg ulcers
- Other:
  - Cold intolerance
  - Joint and muscle pain
  - Restlessness
  - Avoid in pregnancy – see Perinatal Mental Illness. Refer to Mothers and Babies Service.

[2] https://nzf.org.nz/ Accessed 22 June 2020

- Metabolic effects

Metabolic effects of lithium

- Hypothyroidism
- Weight gain
- Nephrogenic diabetes insipidus (24-hour urine greater than 3 L)
- Hyperparathyroidism
- Hypercalcemia

- Toxicity

Toxicity

- Severe or persistent diarrhoea
- Vomiting
- Tremor
- Mild ataxia
- Drowsiness
- Muscle weakness
- Hyper-reflexia
- Hypertonia
- Cardiac dysrhythmia

- Important drug interactions that raise lithium concentration include NSAIDs, ACE inhibitors, and diuretics.

Appendix 3

(i) From New Zealand Formulary 'Stockley's Interaction Alerts'[4]

***Interactions between:* lithium carbonate; cilazapril**

Medicines		Explanation
lithium (systemic) and **cilazapril** (systemic)		ACE inhibitors can raise lithium levels, increasing the risk of hospitalisation, and resulting in toxicity in some patients. Any interaction can take several weeks to develop.

[4] https://nzf.org.nz/ Accessed 22 June 2020

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Action	Severity	Evidence
Monitor: Monitor for lithium adverse effects (tremor, dysarthria, ataxia, confusion). Consider frequent monitoring of lithium levels (every 1 to 2 weeks): reduce the lithium dose accordingly.	Severe	Theoretical

(ii) From Medsafe data sheet for lithium carbonate (controlled release preparation (Priadel) which [Mr A] was taking)[5]:

3. The objective is to adjust the PRIADEL dose so as to maintain the serum lithium level permanently within the diurnal range of 0.5-1.5 mmol/L. In practice, the blood sample should be taken between 12 and 24 hours after the previous dose of PRIADEL. "Target" serum lithium concentrations at 12 and 24 hours are shown in the table.

"Target" serum lithium concentration (mmol/L)

	At 12 hours	At 24 hours
Once daily dosage	0.7-1.0	0.5-0.8
Twice daily dosage	0.5-0.8	

Serum lithium levels should be monitored weekly until stabilisation is achieved.

4.5. Interaction with other medicines and other forms of interaction

If one of the following medicines is initiated, regular monitoring of serum lithium levels and for signs of lithium toxicity should be performed during concomitant treatment. Lithium dosage should either be adjusted, or concomitant treatment stopped, as appropriate.

Interactions that may increase lithium concentrations

- ACE inhibitors

...

(iii) From Medsafe manufacturer data sheet for cilazapril[6]:

4.5 Interaction with other medicines and other forms of interaction

Lithium should generally not be given with ACE inhibitors. ACE inhibitors reduce the renal clearance of lithium and add a risk of lithium toxicity."

[5] https://www.medsafe.govt.nz/profs/datasheet/p/priadeltab.pdf Accessed 22 June 2020
[6] https://www.medsafe.govt.nz/profs/Datasheet/a/apocilazapriltab.pdf Accessed 22 June 2020

The following additional expert advice was obtained from Dr Maplesden:

> "2. I have reviewed the response from [Dr B] dated 27 April 2021. While my original comments remain largely unchanged, I have downgraded my criticism of [Dr B's] management of [Mr A's] lithium result of 25 June 2019 from moderate to mild to moderate. This places more weight on [Dr B's] efforts to confirm the timing of the blood tests and determination that the result represented a peak level, with the trough level (on which management is generally based) likely to be considerably lower than the result of 1.33. I have also taken account of [Dr B's] reporting of the difficulties faced by [Mr and Mrs A] in accessing laboratory services. However, I remain of the view that best practice on this occasion would have been to repeat the test promptly and at the appropriate time-from-dose interval.
>
> 3. I have reviewed the response and relevant policy documents from [Medical Centre 2] in relation to management of new patient information and clinical correspondence. The policies reviewed appear robust and consistent with accepted practice. The difficulties described with export and import of electronic patient files are accurate and improving this process is in the hands of the PMS software and electronic transfer service providers. I am not sure in this case whether a request for the previous practice to re-export [Mr A's] inbox documents would have resulted in a successful transfer of that information with the alternative of requesting a printout of the information to rescan into the [Medical Centre 2] PMS being impractical. However, if [Dr B] believed it was important to be able to access [Mr A's] previous blood (lithium) results, these could have been obtained from the previous practice or the laboratory.
>
> 4. I have no further comments or recommendations."

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Appendix B: Relevant standards

Medical Centre 2's Test Results & Medical Record Management Policy (last updated: 3 August 2019) in relation to patient notification states:

> "All patients undergoing tests will be informed that it is clinic policy if the doctor thinks the results is clinically significant then the patient will be contacted and informed of this … Notification of a significant test result will usually take place within a day or two of receiving the results depending on the importance. Patients will be notified of urgent results as soon as they can be contacted."

Medical Centre 2's Request of notes from Another Clinic for newly enrolled patients (last updated 24 October 2018) states:

> "Instructions:
>
> 1. Patient to have completed our enrolment form
>
> 2. Reception to have loaded F3 screen correctly
>
> Registered
>
> Date of enrolment
>
> Work
>
> Eligibility confirmed and noted in Notes pg7
>
> 3. Request of notes: Go to F3 screen Notes &, put details of previous Dr requesting notes from
>
> e.g. date of request 10.03.13 Dr […]/ clinic / address or a fax number if faxing request or note 'by mail' if posting request.
>
> 4. Print out letter 'Request of Notes' from patient outbox.
>
> 5. Photocopy enrolment form and attach to letter requesting notes and fax or mail.
>
> 6. File original enrolment form in 2EFS files. (Kept at x-ray).
>
> 7. File copy of enrolment form in 'GP File' (under reception desk)
>
> 8. [R]eceptionist to set themselves a task for 10 days later to check that the notes have arrived. If not a 2nd request is sent and the task to check on arrival is moved 10 days ahead."

Medical Centre 2's Collection of Personal and Health information for new patients (last updated 24 October 2018) states:

> "Policy/Procedure Statement and objectives
>
> This delineates the process whereby personal and health information should be collected on new patients to the clinic to ensure that all appropriate and relevant health and personal information concerning the patient i[s] recorded in the PMS.
>
> Authorisation:
>
> [Medical Centre 2]
>
> Processes
>
> Patients new to the clinic are asked to complete an enrolment/registration form which includes details of age, address, ethnicity, current GP for casual patients etc (see enrolment form).
>
> Receptionists upon receiving this form and entering the data into the PMS will ask patients for next of kin details and ensure contact details for the patient are current.
>
> As part of the initial visit by the patient to see a doctor (or nurse) important and relevant health and personal information will be gathered and loaded into the clinical records for the patient. This will include; any known drug allergies, current medication(s), current health problems, significant past health problems, smoking status, use of alcohol or other recreational drugs, family medical history of relevance or significance. If the patient being seen is a casual patient who has their own GP outside the clinic then the most important information to be obtained will be any known drug allergies, current medication(s), and current health problems. Other personal or medical information gathered will depend on the reason for the visit to the clinic.
>
> Further information will need to be collected but due to time constraints this may need to be obtained at subsequent visits. This information will include height, weight, BMI, screening information including mammograms, cervical smears and immunisations, occupational history.
>
> Upon receipt of the medical records from patients previous GP(s), this information will be read by a doctor and any further relevant health information about the patient will be added to their records."

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