Orthopaedic Surgeon, Dr C

District Health Board

A Report by the

Health and Disability Commissioner

(Case 15HDC00312)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. Ms A, 51 years old at the time of the events, had a complex medical history. Previously she had undergone a discectomy procedure on level 4/5 (L4/5) of her lumbar spine. In 2013, she began experiencing worsening lower back pain. She was referred to the Orthopaedic Department at a public hospital. It was considered that she was presenting with cauda equina-like symptoms. A registrar ordered an urgent MRI scan. Orthopaedic surgeon Dr C reviewed the MRI report and advised that Ms A undergo L4/5 discectomy surgery.

2. Ms A underwent the procedure in May 2013. Dr C encountered a large amount of scar tissue, and identified the level of the spine on which to operate using an X-ray image intensifier — a standard procedure. Dr C also sought a repeat MRI. The MRI report was completed on 21 June 2013. The report indicated that Dr C appeared to have operated on L3/4, not L4/5.

3. In the interim, Ms A contacted Dr C and advised that she had experienced nerve pain and faecal incontinence. Ms A presented to ED with back pain the following month. She was prescribed pain relief and was discharged, noting that she was scheduled for follow-up review.

4. On 12 August 2013, Ms A was reviewed at the hospital by specialist registered nurse (RN) RN D. Dr C reviewed the 21 June MRI scan and radiology report. He said that he was "shocked" about the report, as he had used the image intensifier, and Ms A had reported improvement postoperatively. However, Dr C did not contact the radiologist to discuss the MRI report, as Dr C considered that clinical clarification with the aid of spinal steroid injections would be useful to resolve any uncertainty.

5. Dr C did not discuss the MRI report findings with Ms A, as he thought it important to confirm the situation clinically before discussing the situation with her. He recommended a management plan of steroid injection therapy to help determine whether he had operated on the correct level.

6. RN D's clinic note of 12 August 2013 referred to the MRI report, but did not make any reference to the radiologist's comments about the level operated on, or Dr C's view on these comments.

7. Ms A then sought a referral for a second orthopaedic opinion through her general practitioner (GP). In the interim, Ms A was admitted to hospital for the steroid injections. Ms A was discharged the same day, with an outpatient review planned for six weeks' time. No follow-up appointment was organised by the DHB. The normal process of sending a request to the booking administrator to arrange an appointment was overlooked.

8. No further care was provided by Dr C (care was later transferred to another DHB provider), and there are no follow-up notes on file from Dr C regarding whether the injections provided further clarifying information. Subsequent review of the MRI,

including by Ms A's subsequent orthopaedic surgeon, who made contact with Dr C about the issue, resulted in a conclusion that Dr C had operated on the wrong level.

Findings summary

9. Dr C took appropriate clinical measures prior to surgery to identify the appropriate spinal level on which to operate. However, it was clear from the relevant MRI scan that decompression of the L4/5 pathological level had not been performed. In the circumstances, including Ms A's ongoing symptoms, Dr C is criticised for not seeking further advice from colleagues and/or the radiologist about the interpretation of the scan at that stage. Accordingly, Dr C did not provide services to Ms A with reasonable care and skill, and breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).

10. Dr C failed to advise Ms A that the MRI report indicated that it was possible that he had operated on the wrong level of her spine, and that he intended to use the steroid injections to seek clarification in this regard. This was information that a reasonable consumer in Ms A's circumstances would need to receive to make an informed choice or give informed consent to the proposed further treatment. Accordingly, Dr C breached Right 6(2) of the Code. Ms A was unable to make an informed choice or give informed consent to receipt of the steroid injections. It follows, therefore, that Dr C also breached Right 7(1) of the Code.

11. The DHB is criticised for failing to arrange a six-week follow-up appointment for Ms A after her 14 November 2013 epidural steroid injections. As a result of the follow-up appointment not being arranged, Ms A was subjected to further delay in her clinical situation being clarified.

Recommendations

12. The Commissioner recommended that Dr C:

a) Consult with orthopaedic peers and consider adding to his clinical regimen not only screening with image intensification prior to incision, but also screening again once down to the lamina — and report back to HDC, within three months of the date of this report.

b) Undertake a review of his process for providing consumers with information during the surgical consent process and postoperatively, including his interaction with specialist orthopaedic nurses, to ensure that relevant clinical information is imparted and a clear and accurate record of this is kept and maintained.

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

Complaint and investigation

13. The Commissioner received a complaint about the care provided to Ms A by the DHB. The following issues were identified for investigation:

- *Whether Ms A received care and services of an appropriate standard from the DHB.*
- *Whether Ms A received care and services of an appropriate standard from Dr C.*

14. The key parties referred to in this report are:

Ms A	Consumer
DHB	Provider
Dr B	Orthopaedic registrar
Dr C	Orthopaedic surgeon
RN D	Orthopaedic nurse
Dr E	Radiologist
Dr G	Orthopaedic surgeon

Also mentioned in this report:

Dr F	General practitioner
Dr H	Orthopaedic surgeon
Dr I	Consultant diagnostic & interventional radiologist
Dr J	Emergency medicine practitioner

15. Information from ACC was also reviewed.

16. Independent expert advice was obtained from an orthopaedic surgeon, Alex Rutherford (**Appendix A**).

Information gathered during investigation

Background

17. Ms A had a complex medical history, including having experienced long-term lumbar back pain. Ms A's medical issues include spina bifida occulta.[1]

18. In 2003, Ms A had a confirmed diagnosis of a spinal stenosis.[2] In 2005, Ms A underwent an L4/5[3] discectomy[4] procedure (performed by orthopaedic surgeon Dr G at the public hospital), and subsequently made a full recovery.

[1] A mild, often asymptomatic, form of spina bifida in which there is no hernial protrusion of the meninges or spinal cord.

19. On 17 April 2013, Ms A (then aged 51 years) saw her general practitioner (GP), Dr F. Ms A had been experiencing lower back pain for a period of a couple of months, which had been getting worse, and a tingling sensation going down her left leg and into her foot.

20. Dr F recorded that Ms A felt that the symptoms were similar to those she had experienced in 2005.

Urgent referral

21. On 17 April 2013 Dr F sent an urgent referral to the Orthopaedic Department at the public hospital.

22. The referral information Dr F sent to the hospital included:

> "… [R]ecurrence of lower back pain & L sciatic nerve impingement, [patient history of] spinal stenosis & decompression[5] 2005
>
> 17-Apr-2013
>
> [B]ack has been painful for a couple of months but now has been getting sorer & bad pain & tingling going down [left] leg into foot. [F]eels like she is dragging her foot now.
>
> [A]ll these symptoms are similar to those when she had spinal stenosis.
>
> [N]o loss of control of urine but does have tea coloured urine at times — for [mid-stream urine test]. [B]owels — only gets a sensation to go just before needing to, has almost had accidents sometimes recently …"

Orthopaedic review and urgent MRI

23. On 6 May 2013, Ms A was seen at the public hospital, in the orthopaedic clinic, by orthopaedic registrar Dr B. Ms A was admitted under the care of Dr C,[6] a consultant orthopaedic surgeon.

24. Dr B's resulting clinic letter of 6 May 2013 described Ms A as presenting with cauda equina[7]-like symptoms. Dr B documented that Ms A had had "back pain for six months since she broke her fifth metatarsal[8] on the left … and was using crutches", and that she had "developed back pain down the back of her left thigh, lower limb, and into her sole, and associated pins and needles …"

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[2] Spinal stenosis is a narrowing of the open spaces within the spine, which can put pressure on the spinal cord and the nerves that travel through the spine to the limbs.
[3] Lumbar vertebrae segments 4 and 5.
[4] L4/L5 discectomy — surgical removal of a whole or part of the intervertebral disc.
[5] A surgical procedure to alleviate pain caused by a pinched nerve (neural impingement, compressed nerve) in the spine, caused by conditions such as spinal stenosis, herniated disc, and spondylolisthesis.
[6] At the time of these events, Dr C, a Fellow of the Royal College of Surgeons, was employed by the DHB as a consultant orthopaedic surgeon.
[7] Cauda equina syndrome is a rare disorder that usually is a surgical emergency. In patients with cauda equina syndrome, there is compression on the spinal nerve roots, requiring prompt treatment to prevent lasting damage leading to incontinence and possibly permanent paralysis of the legs.
[8] Bone of the mid-foot.

25. Dr B recorded that over the previous fortnight Ms A had also been incontinent of her bowels four times and her bladder twice, with some decreased sensation over her left buttock. An urgent Magnetic Resonance Imaging (MRI)[9] scan was also arranged by Dr B for the next morning. The scan showed moderate spinal canal narrowing at L4/5 with enhancing scar at this level. The MRI was reported by a consultant radiologist.

26. The 7 May 2013 MRI report stated:

> "Clinical
> Previous L 4/5 decompression 200[5], now left leg pain ?cauda equina due to scar tissue.
> …
>
> Findings
> The lumbar alignment is satisfactory. There is a slight spondylolisthesis[10] of L3 on L4 only. There has been a previous left-sided laminectomy[11] at the L4/5 level.
>
> The remainder of the spinal alignment is satisfactory. The discs are within normal limits.
>
> The conus[12] is situated at T12.
>
> On the axial sequences:
> At L2/3, canal is satisfactory. There is some slight left-sided foraminal protrusion but no significant narrowing.
>
> At L3/4, facet osteophyte[13] contributes to minimal narrowing. There is broadbased bulge with mild left foraminal narrowing.
>
> At L4/5, the level of previous surgery, the spinal canal is narrowed and there is crowding of the cauda equina nerve roots. The degree of narrowing is moderate. There is contribution from facet osteophyte.
>
> There is enhancing scar within the canal just below the L4/5 level.
>
> At the level of the laminectomy this abuts and is close to the left L5 nerve root without apparent compression.
>
> At L5/S1, the canal is normal, there are small annular[14] tears on both sides in the foraminal region.
>
> Comment

[9] Magnetic resonance imaging (MRI) uses a powerful magnetic field, radio frequency pulses, and a computer to produce detailed pictures of organs, soft tissues, bone, and other internal body structures.
[10] Condition where one vertebral body slips forward over another.
[11] Laminectomy is surgery that creates space by removing the lamina — the back part of the vertebra that covers the spinal canal. Also known as decompression surgery, laminectomy enlarges the spinal canal to relieve pressure on the spinal cord or nerves.
[12] The conical lower extremity of the spinal cord.
[13] A bony projection along the joint margin.
[14] The annulus fibrosus is the tough circular exterior of the intervertebral disc that surrounds the soft inner core, the nucleus pulposus.

> Moderate canal narrowing at L4/5 with enhancing scar at this level, this comes close to the left L5 nerve root."

27. Dr C reviewed the MRI report and advised that Ms A undergo L4/5 open discectomy and decompression surgery.

28. Dr B completed the elective surgery documentation with a view to Ms A proceeding to the 9 May 2013 theatre list for the surgery.

Surgery, 9 May 2013

29. Ms A was admitted to the public hospital on 9 May 2013 and underwent the spinal cord discectomy and decompression surgery, carried out by Dr C.[15]

Image intensifier

30. Dr C's operation note makes reference to a large amount of scar tissue found at the time of the decompression surgery, and that the L4/5 level was identified by an X-ray image intensifier,[16] which is a standard procedure for identifying the level.

31. Dr C explained that prior to surgery he reviews the MRI and clarifies the correct level using the image intensifier, and marks the skin accordingly before an incision is made.

32. Dr C told HDC:

> "During [Ms A's] surgery, level L4/5 was marked under image intensifier. At operation I noted that [Ms A] had massive scar tissue at the L4/5 level. This was an expected finding because [Ms A] had been operated on at the same level in 2005 …"

33. The operation note includes:

> "Skin was marked under Image Intensifier and incision was distal to the old scar. Skin prepped and draped and midline lumbar incision performed … Massive scar tissue formation noted. L4/5 level identified on Image Intensifier and entered via a mixture of sharp and blunt and dissection …"

Post-operation

34. Postoperatively, Ms A was advised to mobilise as soon as the pain allowed, and told that she could go home the next day or the one after that, and that she was to be seen in the clinic again in six weeks' time for review.

35. Ms A was discharged on 11 May 2013 with support from district nursing and home help services arranged.

[15] The documentation records that the procedure was to be carried out on the L4/5 level of Ms A's spine.

[16] A device used for diagnosis in radiology — it provides a more intense image for a given amount of radiation than can be obtained by the usual fluorometric methods.

Post-surgical review

36. On 17 June 2013, Dr C saw Ms A for post-surgical review. Dr C's clinic letter states:

> "[Ms A] did really well initially with very good improvement in all her symptoms. However she has started to feel that her symptoms are returning down the left leg. She has had no incontinence problems since the operation."

37. Dr C requested a semi-urgent repeat MRI with contrast to "assess whether [Ms A] ha[d] post operative adhesions or whether she ha[d] a recurrent disc protrusion".

38. Dr C prescribed Ms A gabapentin,[17] 300mg (orally) three times daily, to treat the nerve pain in the interim. Dr C wrote that he would see Ms A after the MRI scan.

39. A nursing note on file for 20 June 2013 records that Ms A telephoned the Orthopaedic Department that morning reporting that she had had an episode of faecal incontinence the previous day. Dr C was contacted by the department. He advised to reduce the gabapentin dosage to twice daily, as Ms A had been experiencing some nausea and headache side effects.

Postoperative MRI

40. The postoperative MRI scan was performed the next day — 21 June 2013.

41. The 21 June MRI report (produced by a consultant radiologist, Dr E) detailed a comparison with Ms A's previous MRI of 7 May 2013. The findings include no change in the L4/5 facet cyst, and marked persistent L4/5 focal stenosis, with the report commenting that Ms A's 9 May surgery appeared to have been performed at the L3/4 site of the spine rather than L4/5.

42. The 21 June 2013 MRI report, addressed to Dr C, the referrer, stated:

> "Clinical
> Left L4/5 open discectomy and decompression on 9 May 2013. Now incontinent of faeces.
>
> …
>
> Scans have been compared with the previous MR from 07/05/13.
>
> Findings
> There is evidence of further surgery since the previous scan with subcutaneous soft tissue material extending from the level of the mid part of L3 to the top of S1. There is persistent canal narrowing at the L4/5 with the degree of narrowing similar to before. There is mild forward shift of L4 on L5 as previously with loss of T2 signal and loss of disc height at L4/5 and L5/S1 and to a lesser extent at L2/3 and L3/4. The conus returns normal signal. The upper spinal canal above L4 is of normal calibre.

[17] Medication to treat pain. Prescribed via a special authority request.

On the transverse scans:
At L5/S1 there are small annular tears on both sides with some minor disc bulge on the left but the nerve roots exit satisfactorily, appearances unchanged.

At L4/5 there is fluid in the facet joints on both sides more so on the right where there is a facet cyst indenting the posterior margin of the thecal sac on the right side. This is unchanged from before.

There is marked focal stenosis similar to previously.

At L3/4 there is a laminectomy on the left side which appears to be the site of the current operated level. There is left far lateral disc bulge which is similar to before but there is now some mid signal material in the lateral recess extending into the exit foramen for the left L3 nerve root.

This is consistent with some post-operative change.

Comment
The current operative level appears to be at L3/4 with laminectomy on the left side [emphasis added] and mid signal material on the left side of the thecal sac. *There is persistent quite marked focal spinal stenosis at L4/5* [emphasis added] with facet degeneration and a facet cyst noted. The mild forward shift of L4 on L5 is consistent with the degenerative change in the facet joints."

Receipt of MRI

43. Dr E's formal imaging report was sent to Dr C, and is date stamped as being received in the orthopaedic clinic on 27 June 2013. The DHB file copy of Dr E's report provided to HDC has an (undated) handwritten note on it — "?August Clinic is OK." The DHB told HDC that it is unable to identify the author of this handwritten note.

DHB process

44. The DHB told HDC that the practice at the time was for the investigation results to be sent to the orthopaedic secretary, who then made an appointment for the patient to attend an outpatient clinic, where the results were reviewed and discussed with the patient with a subsequent management plan formulated. The DHB said that it "had no policy in place relevant to the public hospital for review and follow-up of test results at the time of these events".

45. Dr C told HDC that his understanding of the DHB system in place for review of test results ordered by orthopaedic staff was that if a particular member of staff orders an investigation, then it is that person's responsibility to review the test result/report and act on it as that person sees appropriate.

46. Dr C did not review the MRI report at the time it was first received in the orthopaedic clinic. The DHB told HDC that Dr C went on leave, and on return from leave, his clinics were booked with ward and acute follow-up patients from prior to Dr C taking leave. As Dr C was a part-time employee, normally he was scheduled only one clinic per week. Ms A was booked into the first available follow-up clinic on 12 August 2013.

ED presentation

47. In the interim, on the afternoon of 11 July 2013, Ms A attended the Emergency Department (ED) with back pain.

48. Dr J reviewed Ms A and noted her surgery of two months previously. He documented that Ms A had told him that her pain had eased for two weeks following her surgery, but that over the last two weeks the pain had increased in her left lower limb. She had developed new pain in her left buttock radiating to her groin, and the pain was affecting her walking. Ms A reported twice having intermittent faecal incontinence. She was passing urine and had no perianal or perineal sensation changes.

49. Ms A was examined physically. The impression formed was of back pain exacerbated by a recent increase in activity using stairs. Ms A was prescribed pain relief and discharged, and follow-up was arranged for one month's time (at the August orthopaedic clinic) with Dr C. In response to the provisional opinion, Ms A told HDC that the pain relief masked the pain and led to some constipation, meaning that the issue with incontinence was not then prevalent. She said that she did not "feel much of anything" until she began reducing the amount of pain relief she was taking.

50. Dr C told HDC that he cannot recall whether he was contacted or informed directly by ED staff concerning Ms A's attendance at ED.

51. The DHB told HDC that Dr C was not informed of Ms A's 11 July 2013 visit to ED. The DHB said that Dr J did not specifically remember the case but, from reviewing his entry, was confident that he did not discuss the case with Dr C but rather did discuss it with an ED consultant at the time. The ED consultant did not speak to Dr C at the time either. Ms A told HDC that she cannot recall the details of her ED presentation.

52. The DHB also told HDC that it does have an expectation that patients will be discussed with the specialist they have been treated by previously if the condition is deemed life-threatening or sufficiently urgent to require escalation. Escalation in this case means contacting the specialist consultant to seek advice regarding the management of a patient that cannot be done by the ED team. If follow-up is required by the specialist, an appointment will be made for that to occur within the outpatient department.

53. The DHB stated that on presentation to the ED:

> "[Ms A] was diagnosed with back pain exacerbated by recent increase in activity using the stairs. There was no mention of neurological issues such as from nerve root compromise and certainly no mention of bowel or bladder dysfunction. The operation performed by [Dr C] was done for neurological dysfunction and was not an operation to improve back pain. Therefore [Ms A] did not appear to have attended ED with recurrence of any symptom that the operation 2 months prior had been trying to improve."

54. On 30 July 2013, Ms A received a letter from the DHB advising that her follow-up review appointment was scheduled for 12 August 2013.

Orthopaedic review, 12 August

55. On 12 August 2013, Ms A was reviewed at the orthopaedic clinic by RN D, a specialist orthopaedic nurse, on behalf of Dr C. Dr C did not review Ms A in person. RN D said that first she reviewed the previous clinic letters.

56. The dictated clinic note by RN D reports:

> "… On discussion with [Ms A] today she is complaining of left leg pain in the same distribution as prior to her operative intervention. She is not complaining of any bowel or bladder disturbance as of today. She feels her left leg pain is getting worse sequentially …"

57. RN D said that, as per her normal routine, she then requested that Dr C review Ms A's MRI scan and radiology report.

58. RN D clarified that it was outside her scope of nursing practice to review or interpret an MRI scan, and that the responsibility for that lies with the surgeon, and that the MRI and radiology report are accessed by the surgeon electronically.

59. RN D told HDC that she cannot remember the precise details of her conversation with Dr C, but said that she always discussed new imaging with Dr C after seeing every patient.

Review of postoperative MRI

60. Dr C told HDC that on 12 August 2013 he reviewed the 21 June 2013 MRI scan and the associated radiology report, and that he was "shocked" to find that it noted that L4/5, which was the pathological stenotic level, was unchanged.

61. Dr C stated:

> "I found it difficult to comprehend that I may have operated at the wrong level because the level L4/5 had been marked under image intensifier prior to the incision and, significantly, [Ms A] had reported improvement in her symptoms post-operatively."

62. Dr C told HDC that he did not consider the radiology report as definitive at that stage. He did not discuss the MRI report content with the reporting radiologist.

63. Dr C stated:

> "I therefore did not contact [Dr E] to discuss the report, as the clinical recovery of [Ms A] post operation, as well as my interpretation of the MRI scan made me feel that clinical clarification with the aid of spinal steroid injections would be useful in the face of this ambiguity."

64. Dr C did not discuss the MRI report findings of 21 June 2013 with Ms A on 12 August 2013. Dr C stated:

> "In light of this uncertainty, I did not feel it was appropriate to inform [Ms A] of my concerns. From my point of view I thought it was important to confirm the situation clinically before advising and discussing the situation with [Ms A]."

65. RN D told HDC that she was not aware at any point that the radiologist's report had raised uncertainty about the level of Ms A's discectomy performed in May 2013.

66. The DHB[18] stated:

> "Interpretation of the MRI scan images in this case was particularly difficult given the recent and previous surgery. Difficult or complex cases are often discussed at our weekly radiology meeting that all consultants attend and offer opinions and advice. Given the complexities of this case, we would argue that it was not at all clear cut that an error had occurred but that perhaps it would have been prudent to discuss the scan images with the reporting radiologist or another experienced musculo-skeletal radiologist should a significant difference of opinion [have] been identified. Our weekly radiology meeting would also have been a useful forum to discuss the case. Alternatively the case could have been discussed with another spinal surgeon …"

Further management plan

67. Dr C told HDC that on 12 August he recommended to RN D a management plan of Ms A proceeding to having diagnostic foraminal epidural steroid injection therapy.[19] He told HDC that this would give him some guidance as to whether he had operated at the incorrect level. Dr C did not document this rationale, or his intentions depending on the findings.

68. RN D stated:

> "[Dr C] reviewed the scan and comments, and in light of the patient's current symptoms which I relayed to him, he decided diagnostic/therapeutic injections around the nerves would be appropriate, firstly to relieve pain and secondly to provide further diagnostic information."

69. Dr C said that his rationale for this plan was that had Ms A's symptoms improved after the steroid injections, it would have confirmed that he had operated at the L3/4 level. He said:

> "If that were the case, it was [my] intention to immediately inform [Ms A] of this and advise that we needed to decompress the correct level."

70. The DHB told HDC that it understood that Dr C "did not agree with the radiologist's opinion but felt that spinal injection would be helpful to determine the nature of the symptoms".

71. Dr C stated that he "discussed [Ms A's] symptoms and signs from her clinic assessment and how it related to the MRI scan and the report with [RN D]".

[18] Via the Clinical Leader, Orthopaedic Service, the public hospital.
[19] An injection of a long-acting steroid for pain relief.

72. RN D's dictated clinic note of the outcome of the 12 August 2013 review makes some reference to the 21 June MRI report. Her note states:

> "… [The MRI] has shown she has a small facet cyst on the right side at the L4/5 level in her back but there is no obvious foraminal compression of the nerve roots …"

73. RN D was aware that injection therapy is offered to provide symptomatic relief to the patient and to provide some further diagnostic information.

74. Dr C told HDC that the spinal injection in question "is very often done as a diagnostic injection as well as hopefully a therapeutic one". He stated: "This is a concept that I instil in all my trainees as well as [RN D] … the underlying concept is certainly something that was put forward in [Ms A] specific case."

75. RN D told HDC:

> "[Dr C] has always taught me that the foraminal epidural injections (indeed most spinal injections) can be used for diagnostic purposes as well as potentially therapeutic purposes … Foraminal epidural injections are routinely used for both purposes and it would not be usual for [Dr C] to discuss the purposes of the injection with respect to individual patients as he is aware that I am familiar with them."

Discussion with Ms A

76. RN D discussed Dr C's management plan with Ms A. RN D's 12 August clinic note states:

> "Today I have had a lengthy discussion with [Ms A] and explained to her that at this point of time it would not be advisable [to] perform further surgery for her left leg pain. At most we are happy to perform a left L4/5 and left L5/S1 foraminal epidural steroid injection to try and alleviate her left leg symptoms. She is still taking Gabapentin 300 mg tds and feels that this gives her a small amount of relief. She has therefore been listed for the above injections and will receive an appointment from us in due course."

77. Ms A was placed on the elective surgery wait list and was advised by RN D that later she would receive an appointment for foraminal epidural steroid injections.

78. Ms A made some notes of her own shortly afterwards. Ms A recorded that she was told that there was no point in doing further X-rays or an MRI or surgery, and that for her symptoms of nerve pain down her leg it was planned to inject that nerve with an anaesthetic to deaden the pain. Ms A's notes do not contain any reference to being told that the injection was also being used to determine whether the wrong level of the spine had been operated on.

79. Ms A said: "I was only told what I wrote [in her notes] at the time and that there was nothing else that could or should be done. The foraminal injections were to reduce the pain."

80. In relation to what she discussed with Ms A, RN D stated:

> "… I can't remember the precise details of my conversation. However, it is a standard of my practice to inform the patient of both purposes of the injection. The advice I give to patients is that the injection will give the surgeon more information about other treatment options and will hopefully also give some relief from clinical symptoms specific to the patient's symptomology, in [Ms A's] case this was leg pain. Before I practised in New Zealand I was a Spinal Nurse Practitioner and performed these injections myself so have a lot of experience in their use."

Second opinion sought

81. In the interim, Ms A approached her GP for a referral for a second orthopaedic opinion. Ms A received a letter from the DHB dated 23 October 2013, indicating that she would be seen for her (second opinion) referral within 12–20 weeks.

82. On 30 October 2013, Ms A received a letter from the DHB advising that her day surgery appointment (for the epidural injections) was scheduled for 14 November 2013.

Epidural injections

83. On 14 November 2013, Ms A was admitted to hospital for the epidural injections of steroids at the L4/5 and L5/S1 foramina, under local anaesthesia. Ms A completed the consent form for the procedure ("L4/5 and L5/S1 foraminal epidural steroid injection") on 14 November 2013.

84. The day surgery (assisted by Dr C) took place at 2pm. Ms A said that she found the procedure incredibly painful. She was discharged the same day with an outpatient clinic review planned for six weeks' time.

85. The day-stay surgery documentation on file notes that a follow-up appointment was "TBA" (to be advised).

86. On 15 November 2013, Ms A received a day theatre nursing follow-up telephone call to check on her. The nursing documentation states: "[S]till utilising pain relief [and] some numbness in legs. But ok." In the space marked "follow-up appointment" is written "?6/52 [query in six weeks' time]. To be posted."

87. Ms A told HDC that when the six-week follow-up appointment did not arrive (after her epidural injections) she assumed that Dr C had heard that she was seeking a second opinion, and she said that she felt he had "washed his hands of me, ergo, I wasn't sent a 6 week check up appointment".

88. Dr C told HDC:

> "[14 November 2013] was my last attendance with [Ms A] and I was therefore not able to confirm the situation clinically, nor was I able to discuss a further decompression had I decided it was appropriate post the steroid injection."

89. Dr C later clarified to HDC:

> "It is my routine practice after injections to see the patient at 6 weeks or thereabouts post the injection to assess their response to the injection, and whether further treatment is required. [Ms A] would have been given an appointment at around the 6 week mark, post the injections. She unfortunately did not attend the appointment … I did not become aware of [Ms A's] situation until I received a telephone call from [Dr H] [orthopaedic surgeon, another hospital].
>
> If [Ms A] had attended her appointment I would have established that she was experiencing some difficulties which would have led me to make further inquiries with regard to the MRI. However as she had no bowel or bladder disturbance at her last clinic visit, I would not have expected there were problems in that regard unless she had attended clinic. If I had seen her, it is likely I would have discussed her case with my colleagues in radiology and orthopaedic spines."

90. The DHB reviewed its clinical records and confirmed to HDC that no follow-up appointment had been scheduled for Ms A following her epidural injections of steroids on 14 November 2013.

91. The DHB told HDC that the procedure governing the appointment process is covered in the document "Post-operative orthopaedic surgery".[20] This includes the following step: "… [D]ocument when Outpatient appointment required and leave with Receptionist. Appointments will be posted out."

92. The DHB stated:

> "The normal process for booking these appointments is that the Day Surgery Unit sends a request on behalf of the consultant to the booking administrator to book the appointment, it appears that this step has been missed in [Ms A's] case."

Subsequent events

Second opinion

93. On 18 March 2014, Ms A saw Dr H and his orthopaedic registrar at another hospital.

94. The orthopaedic registrar's resulting clinic letter to GP Dr F documents that he reviewed Ms A's clinical history and performed an examination. The letter states:

> "MRI scan taken following her second surgery on the 21st of June shows a laminectomy site which appears to be L3/4 on the left with persistent quite marked focal spinal stenosis at L4/5 with facet degeneration and a facet cyst noticed …"

95. Ms A was noted still to have pathology at L4/5 causing left-sided nerve impingement. It was unclear whether Ms A's faecal symptoms were stemming from her back. Dr H recommended a left-sided L4/5 decompression and a posterior instrumented fusion.

[20] The public hospital Day Surgery Unit.

Nerve studies — including electromyography (EMG)[21] testing of the sphincter — were arranged in the interim to help clarify the cause of Ms A's faecal incontinence.

96. Dr H informed Ms A of the clinical situation. On 1 April 2014, in a letter to GP Dr F, Dr H commented:

> "On review of the scan, her notes and the operation note from [the public hospital] I believe that the surgeon has undertaken wrong level surgery for [Ms A] having assumed the level he has operated on was L4/5 when in fact it was L3/4 … I have discussed [by phone] my assessment and second opinion of [Ms A] with [Dr C], I have suggested that he would like to review the MRI scan to confirm my suspicions. I am not exactly sure why this finding was not apparent to the reviewer earlier than my assessment as this MRI scan was undertaken in June 2013, this has been recorded by the Radiologist and is clearly apparent on my assessment of these images …"

97. On 29 May 2014, it was reported that electromyography showed some neurological evidence of denervation of the left anal sphincter.

98. On 11 June 2014, after reviewing the records, Dr C responded to Dr H's comments in an internal letter to a Service Improvement Manager. Dr C stated in the letter that he had not been able to discuss the intricacies of the case with Dr H at the time of Dr H's telephone call, as he [Dr C] did not have the notes and MRI scans in front of him at the time of the call. Upon reviewing the MRI scans, Dr C made reference in the internal letter to Ms A having had long-standing problems since 2005, and stated in the letter that he did not believe that the wrong level was operated on.

Consideration of Serious Adverse Event (SAE)

99. The DHB awaited the outcome of an ACC treatment injury claim facilitated and lodged on 8 April 2014 by Dr H on behalf of Ms A after his review of Ms A.

100. The DHB advised HDC that in April 2014, when it was aware of an ACC claim being lodged, it gave some consideration to whether this matter constituted an SAE. The DHB told HDC that a conflict of clinical opinion had existed, and it was therefore considered not to be an SAE.

101. The DHB also stated:

> "At the time of [Ms A's] follow-up after surgery, [Dr C] did not believe that an error had occurred, in good faith he had followed all precautions during the surgical procedure to avoid such an occurrence. Subsequently the matter was considered a complication rather than an incident and not managed through our incident management system."

[21] Motor neurons transmit electrical signals that cause muscle contraction. Electromyography (EMG) translates the electrical signals into numerical values or graphs that specialists can interpret.

ACC claim

102. ACC obtained clinical advice dated 12 June 2014 from an orthopaedic surgeon. In short, the orthopaedic surgeon was of the view that MRI scanning confirmed that the surgery carried out on 9 May 2013 was at the L3/4 level and not the intended L4/5.

103. ACC wrote to Ms A accepting her treatment injury claim on 29 July 2014.

Associated ARTP application

104. A surgical ARTP (Assessment Report and Treatment Plan) was also sent to ACC by the DHB. This was a request to ACC for prior funding approval for elective lumbar spine surgery (decompression and posterolateral lumbar fusion), and was put forward by Dr H.

105. ACC wrote to the DHB on 11 August 2014 advising that it would fully fund the proposed lumbar fusion surgery. The surgery went ahead on 22 August 2014.[22]

Other reviews

Dr G

106. A postoperative review of the MRIs and Ms A's case was completed by Dr G,[23] which he undertook in response to requests for information from ACC.

107. Dr G said that he concluded the following:

- The surgery carried out by Dr C had not been successful.
- It was likely, in his opinion, that wrong level surgery had occurred.
- There had been a conflict of opinion between Dr C and the other treating surgeon (Dr H) that was not resolved on the information available.
- Dr C had used all the methods reasonably expected to identify the level for surgery at the time of the surgery.
- There was no added risk of patient harm within the DHB.

108. Dr G requested blind second readings of Ms A's relevant scans by a radiologist.

Dr I review, 3 June 2015

109. Dr I, a consultant diagnostic and interventional radiologist from the DHB, reviewed the preoperative MRI of 7 May 2013 and the postoperative MRI of 21 June 2013, and was asked to comment on signs suggesting the level of surgery.

110. On review, Dr I noted that the degree of narrowing at L4/5 is unchanged compared with the previous MRI, and that there had been a surgical decompression at the L3/4 level on the left.

111. Upon reviewing Dr I's review, Dr C accepted its finding and offered his apologies for the error. He stated:

[22] Under ACC. Ms A later reported to HDC that her condition improved, with less pain and restriction of movement, but that she continued to suffer from some incontinence.
[23] Dr G since retired.

> "[I go] to great lengths to clarify the correct level intra-operatively for each case such as this using image intensifier (X-ray) for accuracy … I apologise profusely for any physical or emotional discomfort and pain that [Ms A] has had to tolerate due to this error on my part."

Audit 2015

112. The DHB told HDC that Ms A's case was discussed at a spinal audit (by spinal surgeons across the DHB district). The DHB advised that this audit was a protected quality assurance activity under the Health Practitioners Competence Assurance (HPCA) Act 2003.[24]

Further information

Dr C

113. Dr C later told HDC that he had reflected at length on this case, and:

- He accepted, with the benefit of hindsight, that he unknowingly performed the wrong level surgery. There was a large amount of scar formation and he believed that he was operating at L4/5 at the time. He was extremely disappointed that this occurred and will endeavour to ensure that such a situation does not occur again.

- He considers that he did not, at the 12 August 2013 appointment, overlook the significance of the MRI scan. He recognised that he may have operated at L3/4, but that as Ms A reported improvement he could not reconcile this. He had no intention of not informing Ms A of this. He considered that it was important to confirm both clinically and radiologically that the mistake had in fact occurred, before needlessly worrying Ms A.

- In hindsight, he accepts that it may have been best practice to inform Ms A at the appointment that there was a possibility that he had operated at the wrong level, and to discuss the management plan. His intention was to clarify the situation before exposing Ms A to potential anxiety. He has familiarised himself with the Medical Council of New Zealand statement "Disclosure of harm following an adverse event",[25] and will ensure that his practice follows this.

The DHB

114. The DHB[26] told HDC that after careful assessment and review of all aspects of the clinical picture, it agreed that the spinal surgery performed by Dr C on 9 May 2013 was performed at the L3/4 level rather than the planned L4/5 level, which had been identified as the area of spinal stenosis causing Ms A's symptoms, and that unfortunately this had occurred despite Dr C taking adequate steps to identify the

[24] Protected Quality Assurance Activities under the HPCA Act 2003 (QAA) protect the confidentiality of information that becomes known as a result of the declared QAA and gives immunity from civil liability to people who carry out activities in good faith as part of a declared QAA. A protected QAA does not cover systemic investigation. Organisations may apply to the Ministry of Health to have a QAA protected.
[25] December 2010.
[26] Via the Clinical Leader, Orthopaedic Service, the public hospital.

correct level by marking the skin under image intensifier control, which is considered standard procedure.

115. The DHB agreed with HDC's expert adviser that wrong level surgery is not uncommon even amongst experienced surgeons such as Dr C, and is more common where there has been previous surgery on the spine or abnormal anatomy is present. The DHB also considered that this was a highly regrettable occurrence, but that it was not a significant departure from the accepted standard of care, as Dr C had followed standard procedure to identify the correct level.

116. The DHB did not consider that it should have been appreciated in the clinic on 12 August 2013 that the incorrect level had been operated on, given the difference of opinion between the radiologist and an experienced spinal surgeon. The DHB did feel that clarification should have been sought, but that the failure to do so immediately after the appointment on 12 August 2013 was not a serious departure from standard care.

Responses to provisional opinion

117. Feedback from Ms A has been incorporated into the "information gathered" section of the report where appropriate.

118. Dr C told HDC that he had spent considerable time reflecting on Ms A's care, and the matter had affected him considerably. He reiterated that he was of the view that it was important to confirm Ms A's clinical situation before advising of and discussing the situation with Ms A. He said:

> "I feel that I did my best at the time the matter came to light, however I accept in hindsight that I should have informed [Ms A] of my findings and the potential consequences at the earliest opportunity."

119. Dr C advised that in August 2016 he commenced 12 months of assessment by two surgeons accredited to the Royal Australasian College of Surgeons (RACS) in order to gain Fellowship of the College. He also now meets with colleagues every six months for spinal surgery audits, over and above local orthopaedic audits.

120. The DHB and RN D had no further comments to make in respect of the "information gathered" section of the report.

121. In response to the provisional report, the DHB told HDC:

a) It has established a district wide data integrity group to review data relating to outcomes from patient clinics. This will provide information to services for improvement in the management of clinic activity including "did not attends". Recommendations from the group will be implemented by the Orthopaedic service.

b) It has developed and implemented an "Electronic Acceptance Policy",[27] which outlines the requirements for acknowledgement of final results for laboratory and radiology tests and investigations.

Opinion: Dr C — breach

Standard of care

Identification of correct spinal level

122. Despite using an image intensifier to identify the correct level of the spine on which to operate, Dr C has accepted that on 9 May 2013 he performed the surgery at the wrong level of Ms A's spine.

123. Having considered the information gathered during the investigation, including the clinical peer reviews conducted, and advice from my expert advisor, orthopaedic surgeon Dr Alex Rutherford, the clinical consensus is that Dr C followed the correct procedure for identifying the level of the spine at which to operate.

124. Dr Rutherford advised:

> "While it is clearly regrettable that the wrong level was operated on in this case it is not in my opinion a significant departure from the standard care or accepted practice as [Dr C] has utilised the appropriate tools and care to ensure he was at the correct level."

125. Dr Rutherford also advised that incorrect level surgery on the spine is not an uncommon occurrence, particularly where there are anatomical abnormalities (such as spina bifida occulta, which Ms A has) and previous surgery with significant scar formation. I am therefore not critical of Dr C in this respect.

126. Rather, the crux of this case is the manner in which Dr C dealt with information he was provided with following the surgery, particularly his being alerted to the possibility that surgery had taken place on the wrong level of Ms A's spine, via the MRI report dated 21 June 2013, and the actions he took thereafter.

MRI report review

127. The MRI report of 21 June 2013 is date stamped as being received in the orthopaedic clinic on 27 June 2013.

128. The radiologist's report identified the possibility that the wrong level of Ms A's spine had been operated on:

> "… Comment
> *The current operative level appears to be at L3/4 with laminectomy on the left side* [emphasis added] and mid signal material on the left side of the thecal sac. *There is persistent quite marked focal spinal stenosis at L4/5* [emphasis added] with

[27] Copy provided to HDC.

> facet degeneration and a facet cyst noted. The mild forward shift of L4 on L5 is consistent with the degenerative change in the facet joints."

129. Dr C reviewed the MRI report on 12 August 2013. He told HDC that he was "shocked" by the report finding. Dr C stated that he found it "difficult to comprehend" that he might have operated at the wrong level, because the level 4/5 had been marked under image intensifier prior to the incision.

130. Dr C told HDC that he did not consider the radiology report as definitive at that stage, and he did not contact the reporting radiologist, as Ms A's recovery and his interpretation of the MRI made him feel that proceeding to clinical clarification with the aid of spinal steroid injections would be useful in the face of the "ambiguity".

131. Dr C told HDC that he considered it important to confirm both clinically and radiologically that the mistake had in fact occurred, before needlessly worrying Ms A.

132. Dr C did not discuss interpretation of the MRI report with the reporting radiologist or a colleague.

133. Following surgery, Dr C was aware that while Ms A's symptoms improved, she had begun to experience left leg pain in the same distribution as prior to her operative intervention, and experienced an episode of faecal incontinence.

134. Dr Rutherford advised:

> "I accept that it is not necessarily clear that the wrong level has been operated on in the post-operative scan of June 21st 2013, but it is certainly clear that the decompression of the L4–5 pathological level has not been performed."

135. Dr Rutherford also advised that at the stage where Ms A was clearly still symptomatic and had an MRI scan that did not show the desired postoperative spinal decompression, this should have led to Dr C asking for further advice from his colleagues and from the radiologists if he was concerned about the interpretation of the scan itself.

136. I accept that Dr C, having taken appropriate clinical measures prior to surgery to identify the appropriate spinal level on which to operate, considered that it was unclear from the MRI report whether the procedure had been carried out on the wrong level.

137. However, I am satisfied that it was clear from the MRI scan that decompression of the L4/5 pathological level had not been performed. In the circumstances, including Ms A's ongoing symptoms, I am critical that Dr C did not seek further advice from his colleagues and radiologists about the interpretation of the scan at that stage.

138. For this reason, in my view Dr C did not provide services to Ms A with reasonable care and skill and, accordingly, he breached Right 4(1) of the Code.[28]

Information provided to Ms A, and informed consent

139. Dr C has acknowledged that he did not discuss the MRI report findings of 21 June 2013 with Ms A on 12 August 2013. Dr C stated:

> "In light of [the uncertainty as to whether the wrong level of the spine had been operated on], I did not feel it was appropriate to inform [Ms A] of my concerns. From my point of view I thought it was important to confirm the situation clinically before advising and discussing the situation with [Ms A]."

140. Dr C said that he "discussed [Ms A's] symptoms and signs from her clinic assessment and how it related to the MRI scan and the report with [RN D]".

141. RN D advised that the report is accessed by the surgeon electronically. She said that at the 12 August 2013 review clinic, she was not aware that the radiologist's report raised uncertainty about the level of the spine on which surgery had been performed. The clinic note RN D dictated on the outcome of the 12 August 2013 review makes no reference to the suggestion in the MRI report that surgery had been carried out on the wrong level of Ms A's spine.

142. Dr C told HDC that he recommended to RN D a management plan of Ms A proceeding to having diagnostic foraminal epidural steroid injection therapy at the affected level. He said that this would give him some guidance as to whether he had operated at the incorrect level, and that if that were the case, he intended to inform Ms A of this immediately and advise her that decompressing the correct level would be needed. Dr C did not document this rationale, or his intentions depending on the findings.

143. RN D later told HDC that it would not be usual for Dr C to discuss the purposes of the injection with respect to individual patients with her, as he was aware that she was already very familiar with steroid injections. RN D said that she was aware that foraminal epidural injections can be used for diagnostic purposes as well as potentially therapeutic purposes, and her standard practice is to inform the patient of both purposes of the injections. The clinic note she dictated centres on the pain relief element of the proposed steroid injections.

144. Ms A said: "I was only told what I wrote [in my notes] at the time and that there was nothing else that could or should be done. The foraminal injections were to reduce the pain."

145. Having considered the information available, I find that Ms A was not informed of the findings of the MRI report, including in particular that it was possible that the wrong level of her spine had been operated on. I am satisfied, on the balance of probabilities,

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

that Ms A was not advised that the main purpose of the steroid injections was to determine whether Dr C had operated on the wrong level.

146. Under Right 6(2) of the Code, every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, needs to receive to make an informed choice or give informed consent.

147. I am highly critical that Dr C failed to advise Ms A that the MRI report indicated that it was possible that he had operated on the wrong level of her spine, and that he intended to use the steroid injections to seek clarification in this regard. This was information that a reasonable consumer in Ms A's circumstances would need to receive to make an informed choice or give informed consent to proposed further treatment. Accordingly, I find that Dr C breached Right 6(2) of the Code.

148. Except in limited circumstances, Right 7 of the Code provides that services may be provided to a consumer only if that consumer makes an informed choice and gives informed consent. Because Dr C failed to advise Ms A that the purpose of the injection was to give him some guidance as to whether he had operated at the wrong level, I am of the view that Ms A was unable to make an informed choice or give informed consent to receipt of the steroid injections. It follows, therefore, that Dr C also breached Right 7(1) of the Code.

Opinion: DHB — adverse comment

149. District health boards are responsible for the operation of the clinical services they provide, and are responsible for service failures.[29] DHBs have a responsibility for the actions of their staff, and an organisational duty to facilitate continuity of care.

Direct liability

Receipt of MRI

150. Dr E's report was sent to Dr C and date stamped as being received in the orthopaedic clinic on 27 June 2013. The DHB told HDC that the orthopaedic clinic practice at the time was for investigation results to be sent to the orthopaedic secretary, who then made an appointment for the patient to attend an outpatient clinic. The DHB's file copy of Dr E's report has an (undated) handwritten note on it — "?August Clinic is OK." The DHB could not identify who wrote this comment, so it is not clear whether the comment had clinical input.

151. Dr C did not review the MRI report at the time it was first received in the orthopaedic clinic. He was on leave from 24 June until 8 July, with his first clinic on his return scheduled for 15 July 2013. On return from leave, his clinics were booked with ward and acute follow-up patients. Dr C was a part-time employee, and normally was scheduled only one clinic per week. Ms A was booked into the first available follow-up clinic on 12 August.

[29] Also see Opinion 14HDC01187 (30 June 2016).

152. Dr C told HDC that his understanding of the DHB's system in place for review was that it is the responsibility of the person ordering the test to review the test result/report and act on it as he or she sees appropriate.

153. Dr Rutherford advised that orthopaedic departments rarely deal with severe acute medical conditions, so the practice of arranging a follow-up at the first available clinic with a view that the test result would then be discussed with the patient would be routine in most orthopaedic practices in New Zealand, and that the time from the MRI scan report being received and then reviewed was not a significant departure from accepted practice.

154. Dr Rutherford also advised that the DHB not having a standard policy is probably not unusual, but "clearly there is a need for departments to have a recognised policy that all staff understand".

155. I note that the DHB stated that it "had no policy in place relevant to the public hospital for review and follow-up of test results at the time of these events". I consider that development of a written policy would be useful.

Follow-up appointment

156. On 14 November 2013, Ms A was admitted to hospital for the epidural injections of steroids at the L4/5 and L5/S1 foramina. Ms A was discharged the same day with an outpatient review planned for six weeks' time.

157. The day-stay surgery documentation on file notes that a follow-up appointment was "TBA".

158. On 15 November 2013, Ms A received a day theatre nursing follow-up telephone call to check on her. In the space marked "follow-up appointment" is written: "?6/52 [query in six weeks' time]. To be posted."

159. On review of its clinical records, the DHB confirmed that no appointment had actually been scheduled for Ms A. Despite having a procedure governing the appointment process (the Day Surgery Unit sends a request on behalf of the consultant to a booking administrator to book the appointment), that step was missed in Ms A's case.

160. Dr Rutherford advised that failure to arrange a follow-up appointment after Ms A's epidural injections is a failure of the standard of care or accepted practice, but that this is not an uncommon problem, reflecting the complexity of hospitals.

161. I am critical that the DHB failed to arrange a six-week follow-up appointment for Ms A after her 14 November 2013 epidural steroid injections. As a result of the follow-up appointment not being arranged, Ms A was subjected to further delay in her clinical situation being clarified.

Vicarious liability

162. I am highly critical of the care provided to Ms A by Dr C, as set out above.

163. In addition to any direct liability for a breach of the Code, under section 72(2) of the Health and Disability Commissioner Act 1994 (the Act), employing authorities are vicariously liable for any act or omission by an employee. However, a defence is available to an employing authority under section 72(5) of the Act, if it can prove that it took such steps as were reasonably practicable to prevent the act or omission.

164. In this case, Dr C's shortcomings related to individual clinical decision-making — in particular, seeking further advice from colleagues and radiologists in the face of perceived clinical ambiguity, and provision of information to Ms A to enable her to give informed consent to further treatment. In my view, the DHB were entitled to rely on Dr C in these regards. Overall, I do not consider that there were additional steps that would have been reasonably practicable for the DHB to have taken to prevent the acts and omissions by Dr C. Accordingly, I find that the DHB is not vicariously liable for Dr C's breach of the Code.

Opinion: RN D — other comment

165. I am mindful that it was not within RN D's clinical scope to review or interpret MRI scans, and she deferred to Dr C in this regard.

166. As described earlier, RN D advised that the MRI and radiology report are accessed by the surgeon electronically. She told HDC that, although she could not recall the details of the conversation she had with Dr C on 12 August 2013, she was not at any point aware that the 21 June 2013 MRI report had raised uncertainty about the spinal level at which Ms A's surgery had taken place. The clinic note she dictated on the outcome of the 12 August 2013 review makes no reference to the MRI report's suggestion of incorrect level surgery.

167. Dr C told HDC that he recommended to RN D a management plan of Ms A proceeding to having diagnostic foraminal epidural steroid injection therapy at the affected level.

168. RN D said that she was aware that foraminal epidural injections can be used for diagnostic purposes as well as potentially for therapeutic purposes. RN D told HDC that in relation to the diagnostic element of the use of epidural injections, it would not be usual for Dr C to discuss the purposes of the injection with respect to individual patients, as he was aware that she was very familiar with them.

169. Having considered the information available, I am satisfied that RN D was not aware that it was possible that the wrong level of the spine had been operated on, or that the main purpose of the injections was to determine whether this had occurred.

Recommendations

170. I recommend that Dr C:

a) Consult with orthopaedic peers and consider adding to his clinical regimen not only screening with image intensification prior to incision, but also screening again once down to the lamina — and report back to HDC within three months of the date of this report.

b) Undertake a review of his process for providing consumers with information during the surgical consent process and postoperatively, including his interaction with specialist orthopaedic nurses, to ensure that relevant clinical information is imparted and a clear and accurate record of this is kept and maintained.

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

Follow-up actions

171. 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 it will be advised of Dr C's name in covering correspondence.

172. A copy of this report with details identifying the parties removed, except the expert who advised on this case, will be sent to the Royal Australasian College of Surgeons (RACS).

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

Appendix A: Independent orthopaedic advice to the Commissioner

The following expert advice was obtained from an orthopaedic surgeon, Alex Rutherford:

"Your ref: C15HDC00312

Thank you for asking me to provide expert advice to the Health and Disability Commissioner. The Commissioner has asked my opinion on the care provided to [Ms A] by [Dr C] at [the public hospital].

I have been provided with a letter of complaint, [the DHB's] response, [DHB] clinical notes and the DHB imaging records.

Background to the complaint.

[Ms A] presented to [the public hospital] in May of 2013 with cauda equina like symptoms, back pain and pain radiating down her left leg and faecal incontinence. An urgent MRI scan was arranged for the following day which showed spinal canal narrowing and crowding of the cauda equina nerve roots. On this basis [Ms A] was advised to undergo L4–5 open discectomy and decompression which was carried out on the 9th of May 2013.

[Ms A] had had a previous L4–5 discectomy in 2005 [from] which she had made a complete recovery.

Following her surgery [Ms A] had a short lived improvement, but overall had no significant real improvement of her symptoms. She was reviewed by [Dr C] on the 17th of June and he requested a repeat MRI scan with contrast to see whether she had had adhesions or a recurrent disc protrusion. That MRI scan was performed on the 21st of June 2013 and this scan showed that the previous surgery had been at the L3–4 level and the L4–5 spinal stenosis was unaltered.

[Ms A] was reviewed on the 12th of August 2013 by [RN D] the Specialist Orthopaedic Nurse. She advised [Ms A] that her repeat MRI scan had shown that she had a small facet cyst on the right side of the L4–5 level in her back and that there was no obvious foraminal compression of the nerve roots and in particular there was no mention of the fact that the L3–4 level had been operated on rather than the L4–5 level or that the original problem of L4–5 spinal stenosis has not been corrected.

Issues.

You have asked me to review the documents and provide my opinion on the following issues:

1. Whether a wrong level surgery was performed.
2. Whether the correct procedures for identifying the correct level were undertaken.
3. The incident rate of wrong level spinal surgery.
4. The clinical documentation post-operatively.

5. Any other comments that I could make about the orthopaedic care provided to [Ms A].

You have also asked for each question I would advise:

a) What is the standard of care/accepted practice?
b) If there has been a departure from the standard of care or accepted practice and how significant a departure do I consider it?
c) How would it be reviewed by my peers?

Opinion:

[Ms A] presented with a cauda equina type syndrome and her MRI scan done in early May showed significant spinal compression at the L4–5 level. The procedure planned for her was a L4–5 spinal decompression. When [Ms A] failed to improve a follow up MRI scan in June has shown the L3–4 level has been decompressed and the L4–5 level remains unoperated. This has been accepted by [Dr C] and by [Dr H] who provided the second opinion. It is further confirmed by subsequent decompression surgery at the L4–5 level which has led to relief of symptoms for [Ms A].

[Dr C's] operation note on the 9th of May states that the skin was marked under image intensifier, following [which] there was a deep fascial incision, [and] an attempt at subperiosteal dissection. There was a large amount of scar tissue found and the L4–5 level was again identified on image intensifier. This would be standard procedure for identifying the level.

The incidence of wrong level spinal surgery is very high with approximately fifty per cent of Spine Surgeons stating that they will have operated on the wrong level at some stage in their career. It is more common [in] the cervical and lumbar region and is usually the level above the correct level when the problem is at the lumbar level. This mistake is more likely to happen when there is anatomical abnormalities such as spina bifida occulta or previous surgery with significant scar formation. It can occur despite the Surgeon using the standard method of identifying levels.

[Dr C] identified a significant amount of scar at the time of his spinal decompression which is what he would have expected to find at the L4–5 level as having been operated on previously and he would have not appreciated that there was any possibility of being at the wrong level at the time of this operation.

My opinion is that a wrong level surgery has been performed, but the correct procedures for identifying the correct level were undertaken. As the reported literature on wrong level spinal surgery shows … this is a relatively common problem which occurs in spinal surgery unrelated to experience. This problem is more likely to occur [with] anatomical abnormalities or difficulty getting adequate images. In most cases exploration of the wrong level is appreciated early when there is a failure to find the expected pathology. In [Ms A's] case the scar formation found would have led the Surgeon to believe that he was at the previously operated L4–5 level.

While it is clearly regrettable that the wrong level was operated on in this case it is not in my opinion a significant departure from the standard care or accepted practice as [Dr C] has utilised the appropriate tools and care to ensure he was at the correct level.

[Ms A] was again reviewed in June where it was apparent that her symptoms were not settling. [Dr C] requested a further MRI scan thinking that there might be a recurrent disc prolapse or adhesions. [Ms A] was reviewed on the 12th of August by [RN D], Specialist Orthopaedic Nurse on behalf of [Dr C]. It was clear from the clinic note that the significance of the repeat MRI scan has been overlooked. It is not clear from this record whether [Dr C] saw the scan himself or read the report. There is no information on how test results are dealt with and what systems are in place to ensure the results are acted upon appropriately.

At the appointment on the 12th of August it should have been appreciated that [Ms A] had had an operation at the wrong level and the original pathology causing what seemed to be a cauda equina type syndrome necessitating urgent L4–5 spinal decompression on the 9th of May still existed. There should have been at the very least an explanation to [Ms A] as to what had occurred and a treatment plan put in place to ensure that her ongoing pathology was dealt with in an expeditious manner. The failure to appreciate the significant of the post-operative MRI scan and to then provide [Ms A] with an explanation and ongoing appropriate care is a departure from the standard care which I would consider as serious.

Kind regards

Yours sincerely

Alex Rutherford"

On receipt of further information, Dr Rutherford provided the following further advice:

"Your ref: C15HDC00312

Thank you for your letter of the 10th of May requesting further expert advice to the Health and Disability Commissioner regarding the care provided by [Dr C] at [the public hospital].

I have previously given advice to the Health and Disability Commissioner on the 22nd of September 2015 regarding the following issues.

1. Whether the wrong level surgery was performed.
2. Whether the correct procedures for identifying the correct level were undertaken.
3. The incidence rates of wrong level spinal surgery.
4. The clinical documentation post-operatively.

You have now provided me with further documentation namely, [the DHB's] response and appendices dated 10th of December 2015. A response from [Dr C] dated the 10th of December 2015. A response from Registered Nurse [RN D] dated 7th of December 2015. The [DHB's] response dated 9th of March 2016. The [DHB's] clinical records. The [DHB's] records volumes 4, 5, and 6.

You have asked that I review the documents and provide my further opinion as to whether further information alters my earlier advice and any other comments I wish to make regarding the standard of care provided to [Ms A].

Background to the **Complaint.**
This has not changed mainly that [Ms A] presented to [the public hospital] in May 2013 with cauda equina like symptoms of back pain radiating down the left leg and fecal incontinence. An urgent MRI scan was arranged the following day which showed marked spinal canal narrowing and what looked to be a facet cyst at the L4–5 level. She was advised to undergo L4–5 open decompression. Surgery was carried out on the 9th of May 2013.

It was noted that [Ms A] had had a previous L4–5 discectomy in 2014 [from] which she had made a complete recovery.

Following her surgery [Ms A] had a short lived improvement, but overall no significant real improvement to her symptoms. She was reviewed by [Dr C] on the 17th of June and he requested a repeat MRI scan with contrast to see whether she had adhesions or a recurrent disc protrusion.

The MRI scan performed on the 21st of June showed that the L4–5 spinal stenosis was unaltered and it was reported that the previous surgery had been at the L3–4 level. [Ms A] was reviewed on the 12th of August 2013 by [RN D], Specialist Spinal Orthopedic Nurse and in her notes she advises [Ms A] that her repeat MRI scan has shown that she has a small facet cyst on the right side at L4–5 and there was no obvious foraminal compression. In particular, there is no mention of the fact that the original problem of the L4–5 spinal stenosis has not been corrected nor any mention that the L3–4 level may have been operated on.

I have reviewed the letter from [Dr C] to [HDC] on the 10th of December 2015 along with a letter from Registered Nurse [RN D] to [HDC] dated the 7th of December 2015. I have also reviewed the documents dated 10th of December again to [HDC] from [the] Clinical Leader, Orthopedic Department. I have also had the opportunity to review the pre-operative MRI scan dated 7th of May 2013, post-operative scan dated 21st of June 2013 along with a further scan done on March the 6th 2015.

[Dr C] in his letter of the 10th of December advised that on the 12th of August 2013 he reviewed the MRI scan and report and was shocked to find that it noted that the L4–5 which was the pathological stenotic level was unchanged. He found it difficult to believe that he may have operated at the wrong level because he had done the appropriate measures to identify the level and found the scarring that he expected to find. Furthermore [Ms A] had reported improvement in her symptoms post-operatively. He then advises that he recommended proceeding with a foraminal epidural steroid injection and that this would give him some guidance as to whether he had operated at the incorrect level. He says that it was his intention to immediately inform [Ms A] of this after her injection. However, there is no documentation of this in the notes at the time.

[The Clinical Leader] in his report advises the interpretation of the MRI scan images in this case were particularly difficult given the recent previous surgery and he felt that it was not at all clear cut that an error had occurred. He considered it would have been prudent to discuss the scan images with the reporting Radiologist or another experienced Musculoskeletal Radiologist and disagreed that it should have been appreciated in clinic on the 12th of August that the incorrect level had been operated on.

Having reviewed the scans, it is quite clear that the pathological level leading to [Ms A's] symptoms is the L4–5 level. It is also quite clear that in the post-operative scan performed on the 21st of June that there has been no alteration in the findings at this level and furthermore in the scan of March 2015 it is clear that there has been a complete decompression. I accept that it is not necessarily clear that the wrong level has been operated on in the post-operative scan of June 21st 2013, but it is certainly clear that the decompression of the L4–5 pathological level has not been performed.

It may well have been [Dr C's] intention to carry out foraminal injections, to discuss the findings at a clinical meeting and then to discuss his management plan with [Ms A] in due course, however there is no documentation of that and in [RN D's] records at the Orthopaedic Fracture Clinic on the 12th of August she states the she had a lengthy discussion with [Ms A] and explained to her at this point of time that it would not be advisable to perform further surgery for her left leg pain and at most they were happy to perform a left L4–5 and left L5–S1 foramina epidural injection to try and relieve her left leg symptoms.

As I stated in my original report it is regrettable that the wrong level was operated on and that an inadequate decompression was performed, but that in itself in the presence of previous scarring and surgery does not in my opinion constitute a significant departure from the standard care or accepted practice. However it should have been appreciated and perhaps was appreciated that the original pathology causing the cauda equina type syndrome still existed, but there is no documentation of that and certainly the subsequent actions taken are not consistent with the open disclosure policy of being informed about the adverse event, receiving an apology or expression of regret or of receiving appropriate information such as an explanation of what happened, why it happened, what follow up would occur and what actions were to be taken to prevent it happening again.

Accordingly, I do not feel that the further information has altered my earlier advice. It is my belief that the standard of care or accepted practice in this situation would have been for [Dr C] to have spoken directly to [Ms A] and advised her that an inadequate decompression had been performed. He should have advised her that further surgery was likely to be required and that that should have been scheduled at an early opportunity.

Yours Sincerely

Alex Rutherford"

Dr Rutherford provided the following further comments:

"**Background to the complaint.**

[Ms A] presented to [the public hospital] in May of 2013 with cauda equina like symptoms, back pain and pain radiating down her left leg and feacal incontinence. An urgent MRI scan was arranged for the following day which showed spinal canal narrowing and crowding of the cauda equina nerve roots. On this basis [Ms A] was advised to undergo L4–5 open discectomy and decompression which was carried out on the 9th of May 2013.

[Ms A] had had a previous L4–5 discectomy in 2005 [from] which she had made a complete recovery.

Following her surgery [Ms A] had a short lived improvement, but overall had no significant real improvement of her symptoms. She was reviewed by [Dr C] on the 17th of June and he requested a repeat MRI scan with contrast to see whether she had had adhesions or a recurrent disc protrusion. That MRI scan was performed on the 21st of June 2013 and this scan showed that the previous surgery had been at the L3–4 level and the L4–5 spinal stenosis was unaltered.

[Ms A] was reviewed on the 12th of August 2013 by [RN D] the Specialist Orthopaedic Nurse. She advised [Ms A] that her repeat MRI scan had shown that she had a small facet cyst on the right side of the L4–5 level in her back and that there was no obvious foraminal compression of the nerve roots and in particular there was no mention of the fact that the L3–4 level had been operated on rather than the L4–5 level or that the original problem of L4–5 spinal stenosis has not been correct[ed].

Follow up of Investigations

[Ms A] underwent a repeat MRI scan because of failure of resolution of symptoms after a spinal decompression. That MRI scan was performed on the 21st June 2013 and the formal imaging report from [Dr E] the Radiologist was date stamped as being received in the orthopaedic/fracture clinic on the 27th June 2015. There has then been a file copy provided to the HDC which had a hand written note on it saying 'query August clinic is OK', the author is unknown.

Subsequently it has been advised that [the DHB] had no policy in place relevant to [the public hospital] for review and follow up of test results at the time of these events.

[Dr C] has advised that his understanding of [the DHB's] system in place for review of test results ordered by orthopaedic staff, was that if a particular member of staff ordered an investigation, it was that staff member's responsibility to review the test results and report and act on it as they see appropriate.

[The DHB] advised that the practice at the time was for the investigation results to be sent to the orthopaedic secretary who then made an appointment for the patient to attend an outpatient clinic where the results were reviewed and discussed with the patient with a subsequent management plan formulated.

[Dr C] did not review the MRI report at the time it was first received in the orthopaedic clinic as he was [on leave]. On return from leave his clinics were fully

booked with ward and acute follow up patients. [Ms A] was booked into the first available follow up clinic, which was the 12th August.

You have asked me to comment on [the DHB's] system in place for review and follow up of test results at the time **of these events and to the 21st June 2013 MRI scan report not being reviewed by [Dr C] until the 12th August 2013, 6 weeks after receipt by the orthopaedic clinic.**

Management of clinical investigations is a contentious issue which is still evolving as computer systems and clinical records evolve. I note in Cole's Medical Practice in New Zealand 2013 that the Commissioner's view was that when results are received by a Medical Centre or Department the patients must be informed, particularly if the results raise a clinical concern and need for follow up. The Doctor is responsible for having an efficient system for identifying and following up overdue test results.

The Medical Council canvassed advisory bodies on this and felt that good computer systems and software may be the best way to improve outcomes but that care should be taken not to put too great a burden on doctors and systems that are already over burdened. Provisional and final imaging reports need to be married and the differences flagged.

Within hospitals it is often difficult to identify who ordered a test so Doctors should always have a stamp with their name and Medical Council number on it. They have made the point that test results could be copied to patients as a matter of course.

There does remain a gap between what is practical and reasonable at the front line and what might be seen as ideal. Never the less the principle is that if you request a clinical investigation, you should tell your patient why the investigation is recommended and when and how they will learn the results and all parties should understand their responsibilities clearly.

Orthopaedic departments relatively rarely deal with cancer or severe acute medical conditions so the practice of arranging a follow up at the first available clinic with a view that the test result would then be discussed with the patient would be routine in most orthopaedic practices in New Zealand.

The time from the MRI scan report being received and then reviewed in the orthopaedic clinic was not a significant departure from accepted practice.

The fact that [the DHB] did not have a standard policy for follow up of test results in 2013 is probably not unusual but clearly there is the need for departments to have a recognised policy that all staff understand.

Discussion of MRI findings with Colleagues

You have advised [Dr C] was shocked to find that it noted the L4/5 level, which was the pathological stenotic level was unchanged when he reviewed the 1st June 2013 MRI scan. He found it difficult to comprehend that he may have operated at the wrong level because the L4/5 level had been marked under image intensifier prior to the incision and significantly [Ms A] had reported improvement in her symptoms post-operatively. Therefore he felt that he didn't consider the radiology

report as definitive at that stage and he did not discuss the MRI report content with the reporting radiologist. He decided to try a spinal epidural steroid injection in the hope that this would give some clinical clarification in view of that ambiguity.

[The DHB] has pointed out that there is a weekly radiology meeting that all consultants attend and offer opinions and advice and in a situation where there was some discrepancy between the perceived clinical response and the post-operative MRI scan, this would have been an appropriate forum for him to have discussed the case. Alternatively further advice could have been obtained from another spinal surgeon.

You have asked if I would give comments on [Dr C's] decision not to discuss the MRI findings with the reporting radiologist or a colleague.

A discussion with another colleague and/or a radiologist would have identified that the decompression was inadequate regardless of whether the wrong level had been operated on. It is likely that the need for further decompressive surgery would have been appreciated sooner.

[Dr C's] decision not to discuss the MRI findings with the reporting radiologist or a colleague again could not be construed as a departure from accepted practice. Despite that fact that had he done so he would have received the advice that the decompression was inadequate and that the appropriate course of events would be to redo the procedure.

ED presentation:

You have advised that in the interim on the 11th July 2013 [Ms A] attended the [public hospital's] Emergency Department with back pain. She was seen by [Dr J] who reviewed her and noted her spinal surgery two months previously. She was physically examined; the impression was formed of back pain aggravated by increased activity. She was given pain relief and discharged and the follow up was arranged at one month with [Dr C]. There is no evidence that either [Dr J] or [an ED Consultant] at the time spoke to [Dr C] at the time of her presentation to ED.

You have asked whether as an Orthopaedic Surgeon, would I be expected to be and whether it would be accepted practice to be contacted by ED Staff about one of your patients in such circumstances.

It is quite common for patients in the immediate few weeks after surgery to present either to their general practitioner or to ED with further pain, redness, swelling, concerns about their operation despite having been given clear instructions as to what to expect in the immediate post-operative period. Unless the condition was clearly one that was likely to require further intervention, such as high temperatures and signs of infection, signs of dural leak or other complications, I would normally expect the general practitioner or ED Dr dealing with the patient to provide the appropriate reassurance, pain relief as required and to arrange a follow up as required in the not too distant future as was arranged for [Ms A]. I would not expect to be called to be advised of every patient arriving at ED in the post operative period.

There has not been **a departure from accepted practice.**

Epidural injections:

[Ms A] was admitted to hospital on the 14th November 2013 for epidural injections of steroid in L4/5 and L5/S1. The Procedure was undertaken that day and she was discharged the same day with an outpatient clinic review planned for 6 weeks' time. However, there was no appointment made and as a result [Dr C] did not see [Ms A] subsequently and was not aware of her situation until he received a telephone call from [Dr H] the Orthopaedic Surgeon at [another] Hospital. He points out that had [Ms A] been followed up, it would have been clear that her condition had not improved he would have made further enquiries with regard to her MRI and if he had seen that it is likely he would have discussed her case with radiology and orthopaedic colleagues.

You have asked whether I would consider [Dr C] should have followed up with [Ms A] about the effectiveness and outcome of the epidural injections.

Epidural injections can be used to alleviate pain and also to provide help with diagnosis as to where or which nerves may be being pinched. Where the epidural injection is just being used for pain relief a follow up at an orthopaedic clinic would not necessarily be routine particularly if the patient was not expected to undergo a surgical procedure. However, when the epidural or nerve root injection is being used as a diagnostic manoeuvre which would seem to be the case with [Ms A] then a follow up is required. It seems as if a follow up was planned but there was a failure in the systems of organising that with the end result that [Ms A] was left feeling that she had been abandoned, hence the request for a second opinion in [another hospital].

Failure to arrange a follow up appointment after [Ms A's] epidural injections is a failure of the standard of care or accepted practice, however even in the best run hospitals this is not an uncommon problem reflecting the complexity of hospitals. I would not consider this to be a significant departure and I don't believe my peers would see that either.

Notwithstanding the fact that none of these issues in themselves have been seen to be significant departures of standard of care or accepted practice, each of them adds up to the failure of care that [Ms A] has received.

You have asked if there are any specific recommendations for improved processes that may help to prevent a similar occurrence in the future.

[Dr C] set out initially to relieve [Ms A] of a severe spinal stenosis of the L4/5 level. He used image intensification prior to the incision as one method of ensuring that he was at the right level. As I have pointed out operating at the wrong level is an event that will occur to most spinal surgeons in their career and that extra efforts need to be made to prevent this. I think that [Dr C] would be wise to add to his regime, not only to screen with image intensification prior to incision, but once he has retracted muscles and he is down to the lamina to screen again to confirm the level.

The initial improvement after surgery may be misleading and when patients complain of further symptoms, one has to be prepared to look critically to see whether or not some complication has occurred. [Dr C] arranged an MRI scan but

unfortunately a combination of leave and busy clinics meant that it was some time before [Ms A] was seen.

I think at the stage where she was clearly still symptomatic and had an MRI scan which did not show the desired post-operative spinal decompression should have led [Dr C] to ask for further advice from his colleagues and from the Radiologists if he was concerned about the interpretation of the scan itself.

Obtaining an epidural steroid injection to try and alleviate [Ms A's] symptoms was not an unreasonable thing to do but clearly a follow up afterwards to check whether or not her symptoms had improved is very important.

Overall the combination of a variety of errors have led to a significant departure of care and of the accepted practice of [Ms A].

The recommendations I would make **were to have:**

1. A more thorough method of identifying level during surgery.
2. To have clear policy of follow up of test results.
3. An audit of those results that are not received. (patient cancels test etc)
4. Similarly, there needs to be a clear policy of follow up appointments and flagging of those who are not attending so that the reasons can be ascertained.

Yours sincerely

Alex Rutherford
Orthopaedic Surgeon
HOD Orthopaedic Dept.
Nelson Hospital"