Medical Centre

General Practitioner, Dr B

A Report by the

Deputy Health and Disability Commissioner

(Case 16HDC00594)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

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Executive summary

1. Mrs A, aged 78 years at the time of these events, had been a patient of Dr B at a medical centre for over 25 years. She was not on any regular medications, and had no significant medical problems.

2. On 22 August 2013, Mrs A consulted with Dr D, complaining of a painful right knee. She was prescribed paracetamol for pain relief and 200mg ibuprofen to be taken on an "as needed" basis. Mrs A consulted with Dr D on two further occasions and was prescribed 200mg ibuprofen.

3. Results of a blood test carried out in August 2013 showed that Mrs A had raised uric acid and creatinine levels. Her estimated glomerular filtration rate (eGFR) represented a moderate decrease in renal function, considered outside the range expected as "normal for aging".

4. From 30 September 2013 Mrs A consulted with Dr B, her usual GP, for her knee pain, and Dr B continued to prescribe ibuprofen. From November 2013 Dr B increased Mrs A's ibuprofen prescription to 800mg (modified release) two tablets once daily.

5. From September 2014 to April 2016, Dr B continued to prescribe ibuprofen at this strength and dosage to Mrs A without appropriate monitoring and without a consultation.

6. In April 2016, Mrs A consulted Dr B complaining that she was feeling very weak. A blood test showed that Mrs A had severe renal impairment. She was admitted to hospital and diagnosed with chronic interstitial nephritis.

Findings

7. By not monitoring Mrs A's renal function after August 2013, and by continuing to prescribe ibuprofen to Mrs A, Dr B did not follow the basic principles of pain management when prescribing NSAIDs (ibuprofen), and did not prescribe it in a form that she could titrate easily. In addition, Dr B provided Mrs A with repeat prescriptions from September 2014 to January 2016 without a face-to-face consultation in relation to her condition. For these reasons, Dr B did not provide Mrs A services with reasonable care and skill and, therefore, was found to have breached Right 4(1) of the Code of Health and Disability Services Consumers' Rights (the Code).[1]

8. By failing to record the information he provided to Mrs A, Dr B did not provide services that complied with professional standards and, therefore, he was found to have breached Right 4(2)[2] of the Code.

[1] Right 4(1) of the Code states: "Every consumer has the right to have services provided with reasonable care and skill."
[2] Right 4(2) of the Code states: "Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards."

9. Dr B's actions in prescribing medication were within authority granted to him by the medical centre. Accordingly, it was found that the medical centre was vicariously liable for Dr B's breach of Rights 4(1) and 4(2) of the Code.

Recommendation

10. It was recommended that the medical centre notify HDC of the date of its annual NSAID audit for 2017, and provide the results of the audit to HDC.

Complaint and investigation

11. Mr C complained about the services provided to his mother, Mrs A, by Dr B.

12. The following issues were identified for investigation:

- *Whether Dr B provided Mrs A with an appropriate standard of care between 2013 and 2016.*
- *Whether the medical centre provided Mrs A with an appropriate standard of care between 2013 and 2016.*

13. This report is the opinion of Meenal Duggal, Deputy Commissioner, and is made in accordance with the power delegated to her by the Commissioner.

14. The parties directly involved in the investigation were:

Mrs A	Consumer
Dr B	General practitioner/provider
Mr C	Complainant/consumer's son
Dr D	General practitioner/provider
Medical centre	Provider

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

Information gathered during investigation

Introduction

16. In April 2016 Mrs A suffered acute renal failure. She was admitted to hospital, and a renal biopsy showed that she had chronic interstitial nephritis.[3] This opinion relates to the care provided to Mrs A between September 2013 and April 2016 by GP Dr B, and the medical centre.

[3] Interstitial nephritis is inflammation and swelling between the tubules in the kidneys.

Background

17. Mrs A, aged 78 years at the time of these events, had been a patient of Dr B[4] at the medical centre for over 25 years. She was not on any regular medications, and had no significant medical problems.

Consultation with Dr D

18. On 22 August 2013, Mrs A consulted Dr D,[5] another GP at the medical centre, complaining of a painful right knee. Following an examination, Dr D documented in Mrs A's medical notes that her knee was "puffy" and she had had pain and swelling for over one week, but that there was no pain on keeping the knee still. He also documented that the knee pain had just come on, that there had been no preceding accident or trauma, but that she had had it previously. Dr D documented that it was likely to be "housemaids knee[6]".

19. Dr D ordered a blood test, and an X-ray in two weeks' time if there was no improvement. He prescribed paracetamol for pain relief, and 60 tablets of ibuprofen[7] 200mg to be taken on an "as-needed" basis.

20. Mrs A's blood test showed that her uric acid[8] level was raised at 0.52mmol/L (the normal range is 0.15–0.36mmol/L). Her creatinine[9] level was 93mmmol/L (the normal range is 45–90mmol/L), and her estimated glomerular filtration rate (eGFR)[10] was 51ml/min.[11]

21. On 28 August 2013, Mrs A consulted Dr D again with ongoing pain in her knee. Because of the raised uric acid result, Dr D documented that Mrs A's symptoms were likely due to gout. Dr D started Mrs A on prednisone.[12] She was given a further prescription for 50 ibuprofen 200mg tablets, to be taken regularly for 72 hours, then to be taken on an as-needed basis if Mrs A experienced further attacks of gout. Dr D also prescribed omeprazole,[13] and requested that an X-ray be carried out within the next four weeks.

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[4] Dr B is a vocationally registered GP. He is engaged as an independent contractor by the medical centre.
[5] Dr D is a vocationally registered GP.
[6] Bursitis is joint inflammation.
[7] Ibuprofen is a non-steroidal anti-inflammatory drug (NSAID). It works by reducing hormones that cause inflammation and pain in the body. Ibuprofen is used to reduce fever and treat pain or inflammation caused by many conditions such as headache, toothache, back pain, arthritis, menstrual cramps, or minor injury.
[8] Uric acid is a chemical produced when the body breaks down foods that contain organic compounds called purines. Purines are also created through the natural process of cell breakdown in the body.
[9] Creatinine is a normal waste product from the breakdown of protein in muscles, and is removed from the body by the kidneys.
[10] eGFR (estimated glomerular filtration rate) is a measure of how well the kidneys are working.
[11] Normal eGFR is above 90, but eGFR decreases with age. Below 15 indicates kidney damage at any age, and an eGFR below 60 for three months or more indicates kidney disease.
[12] A synthetic corticosteroid drug that is particularly effective as an immunosuppressant drug. It is used to treat certain inflammatory diseases.
[13] Omeprazole is used to treat symptoms of gastro-oesophageal reflux disease (GERD) and other conditions caused by excess stomach acid.

22. Dr D asked Mrs A to return if she had any worries or concerns, and gave her a letter with the following instructions:

> "1.) Take the prednisone tablets as instructed. You will be on a dose of 40mg for 5 days, then 20mg for 5 days then 10mg for 5 days
>
> 2.) Take the ibuprofen pain relief regularly for the next 72 hours, then after that only as need be
>
> 3.) Because you are on steroids and ibuprofen we want you to take the omeprazole to protect your stomach."

23. On 18 September 2013, Mrs A consulted Dr D again. Dr D carried out an aspiration of Mrs A's right knee joint.[14] He prescribed prednisone and ibuprofen (a further 50 x 200mg tablets) to be taken three times a day as needed, and flucloxacillin in case of infection. Dr D told HDC that he asked Mrs A to return for another consultation in 10 days' time. Nothing unusual was found following the joint aspiration.

Consultations with usual GP, Dr B

24. On 30 September 2013, Mrs A consulted with her usual GP at the medical centre, Dr B. He documented that her X-ray results were suggestive of osteoarthritis. He asked Mrs A to try regular ibuprofen for 10–14 days then as needed. He also recorded: "Review if not settling ? steroid injection."

25. On 6 November 2013, Mrs A consulted Dr B again. He documented that her knee pain was being "reasonably well controlled" with ibuprofen, and that options for on-going care were discussed. Dr B informed HDC that this would have been a discussion about the pros and cons of using ibuprofen as opposed to other medications such as codeine or another opiate.

26. Dr B documented that Mrs A was happy "at this stage" to continue with ibuprofen and paracetamol top-up when in pain. Her ibuprofen prescription was increased to 800mg two tablets once daily (modified release), for three months (180 tablets). She was also prescribed paracetamol, with directions to take two tablets as required up to four hourly. Dr B informed Mrs A that she could consider an orthopaedic referral if she felt she needed it.

27. Dr B told HDC:

> "At that time I was aware that [Mrs A] had been taking ibuprofen without problems since August 2013. At this stage, her renal function was reasonable for her age. My usual advice when prescribing ibuprofen is to advise [the] patient to cease taking the medicine if they become at all unwell."

28. On 26 May 2014, six months since her last presentation, Mrs A saw Dr B for low back pain and right hip pain. Dr B documented: "R[ight] knee also remains quite sore

[14] Fluid was removed from the space around the knee joint using a needle and syringe to obtain fluid for analysis to help with diagnosing the problem.

… Suggest going back to trying ibuprofen at night and reassured that she can take Paracetamol as well." No prescription was provided at this time.

29. As recorded in the medical notes on 11 September 2014, Mrs A rang the medical centre for a repeat prescription of ibuprofen 800mg (two tablets once daily). The reception assigned the call as a task for the nurse, who allocated the request to Dr B. Mrs A was given a prescription for a three-month course (180 tablets).

30. Dr B told HDC:

> "[As at 11 September 2014] [Mrs A] had been seen by me approximately three months earlier. She had not been prescribed any ibuprofen since the three-month course given about 10 months earlier on 6 November 2013."

31. As recorded in the medical notes on 16 December 2014, just over six months since her last consultation with Dr B, Mrs A rang the medical centre again for a repeat prescription. The reception assigned the call as a task for the nurse, who allocated the request to another doctor, who then provided Mrs A with a prescription for 800mg ibuprofen (two tablets once daily).

32. Also as recorded in the medical notes, on 9 April and 9 July 2015 Mrs A was again given repeat prescriptions for 800mg ibuprofen (two tablets once daily) by Dr B. The medical centre has informed HDC that it is unable to explain how Dr B raised these prescriptions, because it has no records of these requests and no allocations were made to Dr B for these prescriptions.

33. By 9 April 2015, Mrs A had been prescribed 800mg ibuprofen two tablets once daily for 17 months. Dr B had not reviewed her pain management for 11 months, and it had been 19 months since her renal function was tested.

34. Again, on 15 October 2015 and 20 January 2016, Mrs A rang the medical centre for repeat prescriptions of ibuprofen 800mg (two tablets once daily). On each of these occasions the reception assigned the task to the nurse, who allocated the request to Dr B. Each time, Dr B gave Mrs A a prescription for a three-month course (180 tablets).

35. Between 5 December 2014 and 11 March 2016, Mrs A was seen by other medical practitioners at the medical centre for various other health concerns unrelated to knee pain. At this stage, 21 months had elapsed since Mrs A was last seen by Dr B for knee pain.

36. The only occasion on which Mrs A consulted Dr B during this period was on 11 June 2015 for a chest infection. The medical notes for this consultation do not refer to any discussion about her osteoarthritis, NSAID use, or renal monitoring.

37. On 4 April 2016, Mrs A saw Dr B complaining of feeling very weak. Dr B recorded:

> "Has been feeling very weak over last 3 weeks. Seemed to come on relatively suddenly. Chesty cough — probably over much the same length of time."

38. An examination showed a likely chest infection, and Mrs A was started on a course of antibiotics. She was also given a further prescription for 180 tablets of ibuprofen 800mg (modified release, two tablets once daily). Dr B also arranged for Mrs A to have a blood test and a chest X-ray. On 5 April 2016, the blood tests showed an elevated neutrophil count,[15] elevated CRP,[16] and quite severe renal impairment. Mrs A's eGFR was 13mL/min/1.73m,[2] and her creatinine was 287mmol/L.

39. Dr B was away from the medical centre that day, but another doctor arranged for Mrs A to be admitted to hospital, where it was found that she had acute renal failure. A renal biopsy performed after Mrs A's admission to hospital showed that she had chronic interstitial nephritis.

40. On 5 April 2016, when Mrs A was found to have severe renal impairment, she had been prescribed 800mg ibuprofen (two tablets once a day) for 29 months, with intermittent use prior to this from the time the drug was first prescribed in August 2013.

Further information

41. Dr B told HDC that he has reflected on what caused him to prescribe ibuprofen to Mrs A, an elderly patient, without follow-up. He stated that there was a period when he saw Mrs A's husband on a regular basis, which would have given him the impression that he was also seeing Mrs A because she attended those consultations with her husband. Dr B thought that Mrs A's husband's consultations provided a route for repeat prescriptions to be requested.

42. Dr B told HDC that he accepts that he should have monitored Mrs A more closely. He has acknowledged his oversight, and says that he has taken steps to ensure that this does not happen again in the future. Dr B stated:

> "The outcome for [Mrs A] is regrettable and I accept that she should have been more closely monitored while on the regular ibuprofen. This should have included an updated renal function on at least an annual basis and advice to stop the ibuprofen if she became otherwise unwell to reduce the risk of AKI.[17]"

43. Dr B told HDC that he discussed Mrs A's case at his next peer group meeting with a view to raising awareness generally, and more specifically of the policy, for educational purposes, and for reminding colleagues of the risks.

44. Dr B advised HDC:

> "The practice has a protocol for repeat prescribing, usually requiring at least 6 monthly review of patients who are stable on long term medication … This was not properly adhered to in this case."

[15] Any infection or acute stress increases the number of white blood cells. An abnormal increase in one type of white blood cell can cause a decrease in the percentage of other types of white blood cells. An increased percentage of neutrophils may be an indication of an acute infection.
[16] C-reactive protein (CRP) is a substance produced by the liver in response to inflammation. A high level of CRP in the blood is a marker of any condition that causes inflammation.
[17] Acute kidney injury (AKI) — this is a sudden episode of kidney failure or kidney damage that happens within a few hours or a few days.

45. Dr B said:

> "Upon my own review I have reached the view that the care fell below the standard that I would have set for myself and for the Practice — the key issue being on-going monitoring of the prescribing of ibuprofen."

46. In May 2016, Dr B completed a practice audit on all elderly patients on long-term NSAID therapy to find out whether the medical centre complied with the biochemical and general monitoring. Dr B has stated that he found Mrs A's case to be an aberration.

47. Dr B has provided a written apology to Mrs A.

Prescription policy

48. The medical centre has provided its "Prescription Policy", which includes information on prescribing in the absence of a consultation. The "Prescription Policy" in place at the time of these events stated:

> "All patients are reviewed six monthly unless otherwise stated to ensure medication is reviewed and complies with legal, professional, ethical and other relevant standards.
>
> It is the policy of this practice that all requests for repeat prescriptions in the absence of a consultation will be reviewed by a practice nurse and then referred to a doctor.
>
> All patients have the opportunity to request repeat medication using a dedicated line to the administration nurse, send an email to the Practice nurse … or via the medical centre website …
>
> The responsibilities of the receptionist:
>
> - … If a patient phones in with a request for a repeat prescription either transfer the call to the nurse, or record the request along with the patient's name and contact phone number for later review by the admin nurse.
>
> The responsibilities of the medical centre nurse:
>
> The Admin Nurse will check the medical centre nurse task list when first comes on duty and regularly through out the shift. The Nurse will also check the email twice in a shift for new requests as well as taking the calls and messages via telephone. When a request is received, the Nurse will:
>
> - Review the patient's consultation & prescription history. Check they are requesting a current medication. When were they last assessed by the Doctor? …
>
> - Assess: Is their repeat timely? What are your instincts? Is this an appropriate script? (Make an appointment if necessary).

- Note: A repeat prescription will **not** be given if the patient has not consulted their GP for 6 months … In principle, patients should be reviewed 6 monthly for stable conditions e.g …"

49. The medical centre told HDC that although Dr B had provided Mrs A prescriptions on 9 April and 9 July 2015, it had no records of a task to any doctor for a repeat prescription for those requests. He had provided Mrs A prescriptions on these occasions with no apparent consultation, and these dates also happened to coincide with dates on which Mrs A's husband had consulted Dr B.

50. The medical centre also informed HDC:

> "For the subsequent two repeat prescriptions raised (15/10/15 and 18/1–20/1/16), regrettably there is no record of whether the Practice Nurse checked [Mrs A's] records to determine when she was last seen before asking [Dr B] to raise the script. There is also no record as to whether the Practice Nurse instructed the patient, or reminded the doctor that the patient needed to be seen. We are unable to explain why the Practice Nurse seems not to have checked the notes and follow our policy. We are also unable to explain why the doctor did not check the notes and follow the policy."

51. The medical centre has acknowledged that it made a mistake by enabling Mrs A to obtain prescriptions repeatedly over a period longer than six months without a consultation. A subsequent audit conducted after receiving the complaint has confirmed Mrs A's case to be an "outlier".

52. The medical centre advised that Mrs A's case was discussed:

- At the medical centre's monthly Nurse Team meeting with a view to raise awareness, remind and educate. The need to enforce the policy was emphasised. The nurses were asked to enforce the requirement for at least six-monthly reviews with patients requesting repeat prescriptions.

- At the medical centre's monthly Reception Team meeting for the same purposes as above.

- By the medical centre's Clinical Committee, which recommended that an annual internal audit be completed to make sure that patients prescribed NSAIDs have had a blood test to check their renal function.

53. The medical centre has reviewed its repeat prescription policy and made a minor amendment clarifying that "the consultation within 6 months must be relevant to the medication requested and not for an unrelated consultation". The medical centre has stated that it is now particularly careful to make sure that the policy is followed when providing repeat prescriptions.

Responses to provisional opinion

54. The family was provided with the opportunity to comment on the "Information gathered" part of my provisional opinion. Their responses have been incorporated where appropriate.

55. The medical centre and Dr B were provided with a copy of the relevant sections of my provisional opinion. A number of changes were made in light of their submissions.

Opinion: Dr B — breach

Prescribing and monitoring for ibuprofen

56. On 30 September 2013, at his initial review of Mrs A for her ongoing knee pain, Dr B made a diagnosis of osteoarthritis and advised her to take regular ibuprofen for 10–14 days and then only as required. On 6 November 2013, Dr B reviewed Mrs A and prescribed 180 x 800mg ibuprofen tablets, with instructions to take two tablets once daily. Previously Mrs A had been prescribed 200mg ibuprofen to be taken three times a day as needed. Dr B advised Mrs A to continue to take paracetamol as needed because this was giving her good pain relief.

57. Dr B was aware that Mrs A had been taking ibuprofen without problem since August 2013. He said he thought that her renal function was reasonable for her age, at that stage. At this time it was over two months since Mrs A's renal function had been tested.

58. On 26 May 2014, Mrs A saw Dr B for low back pain and right hip pain. Dr B recorded: "R knee also remains quite sore …" He advised Mrs A to go back onto nightly ibuprofen and to take paracetamol in combination. No prescription was given at this consultation.

59. Repeat prescriptions (without a consultation) of ibuprofen (180 tablets of 800mg, two tablets taken once daily) were provided to Mrs A from 11 September 2014 until 20 January 2016 as follows:

- 11 September 2014, 9 April 2015, 9 July 2015, 15 October 2015, 20 January 2016 — by Dr B.
- 16 December 2014 — by another doctor at the medical centre.

60. On 4 April 2016, Mrs A saw Dr B. Dr B made a provisional diagnosis of respiratory infection and prescribed antibiotics plus ibuprofen at the usual dosage.

61. On 5 April 2016, when Mrs A was found to have severe renal impairment, her renal function had not been monitored since August 2013, when ibuprofen was first prescribed, and Dr B had not reviewed her pain management since May 2014. Repeat prescriptions for ibuprofen had been provided without face-to-face consultations over 18 months between September 2014 and April 2016.

62. Upon reflection, Dr B thought that there was a period when he saw Mrs A's husband on a regular basis, which would have given him the impression that he was also seeing Mrs A, because she attended those consultations with her husband. Dr B thought that Mrs A's husband's consultations provided a route for repeats to be requested.

63. Dr B accepts that he should have monitored Mrs A more closely. He acknowledges his oversight and says that he has taken steps to ensure that this does not happen again in the future. He stated:

> "The outcome for [Mrs A] is regrettable and I accept that she should have been more closely monitored while on the regular ibuprofen. This should have included an updated renal function on at least an annual basis and advice to stop the ibuprofen if she became otherwise unwell to reduce the risk of AKI."

64. In-house clinical advisor GP Dr David Maplesden advised me that it was reasonable to trial Mrs A on a low dose of ibuprofen to be taken intermittently, as initially intended in August 2013. In his view, the degree of renal impairment shown by the baseline blood tests undertaken at that time may have been representative of age-related kidney changes and/or a degree of CKD.[18] This finding, taken with Mrs A's age, placed her at higher risk of suffering from adverse effects of renal function associated with NSAID (ibuprofen) use. There was a need to monitor Mrs A's renal function on a regular basis if she was to continue with regular use of ibuprofen, and to monitor her overall pain management.

65. Dr Maplesden advised that he is critical of the following aspects of care provided by Dr B to Mrs A on 6 November 2013:

- Not following basic principles of pain management and prescribing regular simple analgesia as first-line treatment with NSAID as a second-line adjunct.
- Increasing Mrs A's dose of ibuprofen from (a maximum of) 600mg per day in a form that she could titrate more easily according to pain levels to a modified release form at 1600mg per day.
- Not undertaking, or at least scheduling the monitoring of, Mrs A's renal function, given that she was an elderly patient with a degree of renal impairment, who was being prescribed a significant dose of NSAID (ibuprofen) for a prolonged period.

66. In addition, the medical centre had a "Prescription Policy", which stated that a repeat prescription must not be given to a patient if the patient had not had a consultation with a GP for six months. In Mrs A's situation, Dr B did not adhere to the policy properly.

67. The Medical Council of New Zealand publication *Good Prescribing Practice* (Wellington, Medical Council of New Zealand, 2010) states:

[18] Chronic kidney disease — a condition characterised by a gradual loss of kidney function over time.

> "You should only prescribe medicines or treatment when you have adequately assessed the patient's condition, and/or have adequate knowledge of the patient's needs and are therefore satisfied that the medicines or treatment are in the patient's best interests. Doctors should be familiar with the indications, side effects, contraindications, major drug interactions, appropriate dosages, effectiveness and cost-effectiveness of the medicines that you prescribe.
>
> Be familiar with the indications, adverse effects, contraindications, major drug interactions, appropriate dosages, monitoring requirements, effectiveness and cost-effectiveness of the medicines that you prescribe."

68. I am concerned that in light of Mrs A's renal impairment Dr B did not monitor Mrs A's renal function after August 2013, given that he continued to prescribe ibuprofen to Mrs A. Dr B did not follow the basic principles of pain management when prescribing NSAIDs (ibuprofen), and did not prescribe it in a form that she could titrate easily. In addition, Dr B provided Mrs A with repeat prescriptions from September 2014 to January 2016 without a face-to-face consultation in relation to her condition. For these reasons, Dr B did not provide Mrs A services with reasonable care and skill and, therefore, breached Right 4(1) of the Code.

69. I note that since receiving the complaint Dr B has undertaken an audit of all patients of the medical centre over the age of 80 years who are taking regular or semi-regular NSAIDs. He has also re-read the BPAC guidelines for NSAID prescribing and reviewed the American Geriatric Society guidelines for pain management in the elderly.

70. Dr B has also discussed Mrs A's case at a peer group meeting. The aim was to promote discussion, raise awareness, and educate colleagues on lessons learnt and on the prescription policy.

Documentation

71. The Medical Council of New Zealand publication *The maintenance and retention of patients records* (Wellington, Medical Council of New Zealand, 2008) states:

> "(a) You must keep clear and accurate patient records that report:
>
> - relevant clinical findings
> - decisions made
> - information given to patients
> - any drugs or other treatment prescribed
>
> (b) Make these records at the same time as the events you are recording or as soon as possible afterwards."

72. Although in his response to HDC Dr B stated that his usual advice to patients when prescribing ibuprofen is to cease taking the medicine if they become at all unwell, there is no record that he provided this advice to Mrs A, as it is not documented in the medical notes.

73. Between September 2013 and April 2016, Mrs A consulted Dr B at the medical centre on four occasions. During this period, Dr B prescribed ibuprofen to Mrs A on eight occasions.

74. At Mrs A's consultation on 6 November 2013, Dr B recorded in the medical notes: "Discussed options for ongoing care. Happy at this stage to continue with NSAID and Paracetamol top up prn. Offered orthopaedic referral prn." In his response to HDC, Dr B explained that "discussed options for ongoing care" at this consultation was "discussion about the pros and cons of using ibuprofen, as opposed to other medications (probably codeine or another opiate) as well as the option of orthopaedic referral". Dr B did not document this discussion in Mrs A's medical notes.

75. In his response to HDC, Dr B also stated:

> "The choice of medication for the treatment of chronic musculoskeletal pain should be discussed with the patient and they should be able to make an informed choice after discussion of the risks and benefits of the different medications. With other patients I regularly discuss the potential risk of kidney effects and would have done so with [Mrs A] had she had a consultation during that time."

76. Dr Maplesden advised me that the findings from the blood test carried out in August 2013 — the results of which were available to Dr B — together with Mrs A's age, placed her at a higher risk of suffering from adverse effects on renal function associated with ibuprofen use. This indicated a need for discussion with Mrs A of those potential risks, and documentation of such discussions.

77. The only written record Dr B made of any discussion he had with Mrs A on the use of ibuprofen was on 6 November 2013, when he stated: "Discussed options for ongoing care."

78. Whilst Dr B may have provided information to Mrs A about the use of ibuprofen, he did not record the information he provided on 6 November 2013. This omission by Dr B raises questions about what information he provided to Mrs A.

79. Accordingly, I find that Dr B did not provide Mrs A services that complied with professional standards and, therefore, he breached Right 4(2) of the Code.

Opinion: Medical centre — breach

80. Section 72 of the Health and Disability Commissioner Act 1994 (the Act) states that an employing authority is vicariously liable for any actions or omissions of its agents unless they are done or omitted without that employing authority's express or implied authority. In these circumstances, as an independent contractor, Dr B was acting as an agent of the medical centre.

81. I consider that Dr B's actions in prescribing medication were within the medical centre's authority. Therefore, the medical centre is vicariously liable for Dr B's breach of Rights 4(1) and 4(2) of the Code.

82. The medical centre had policies in place to ensure continuity of care, six-monthly reviews of all patients and medications prescribed, and safeguards when prescribing in the absence of a consultation.

83. The medical centre's "Prescription Policy" described the process to be followed when a patient requested a repeat prescription over the telephone. The policy stated that the medical centre nurse should review the patient's consultation and prescription history, check that the patient is requesting a current medication, and ascertain when the patient was last reviewed by the doctor. The policy also stated: "A repeat prescription will **not** be given if the patient has not consulted their GP for 6 months …"

84. Mrs A telephoned the medical centre and was given repeat prescriptions by Dr B without consultations on 11 September 2014, 9 April 2015, 9 July 2015, 15 October 2015, and 20 January 2016.

85. The medical centre stated that in relation to the last two prescriptions, there is no record of whether the Practice Nurse checked Mrs A's records to determine when she was last seen before asking Dr B to raise the script, or whether anyone spoke to Mrs A or Dr B about a consultation.

86. The medical centre has acknowledged that it made a mistake by enabling Mrs A to obtain prescriptions repeatedly over a period longer than six months without a consultation.

87. A subsequent audit conducted by the medical centre, after receiving the complaint, has confirmed Mrs A's case to be an "outlier". A minor change has been made to the policy to ensure that appropriate monitoring is in place. The medical centre stated that it is now particularly careful to make sure the policy is followed when providing repeat prescriptions.

88. In my view, it was the responsibility of the medical centre to have had adequate systems in place and appropriate oversight of staff in order to ensure that Mrs A received appropriate care. I am critical that staff at the medical centre did not follow the policy regarding repeat prescriptions.

Recommendation

89. I recommend that the medical centre notify HDC of the date of its annual NSAID audit for 2017, and provide the results of that audit to HDC within three weeks of completion of the audit.

Follow-up actions

90. 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 B's name.

91. 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 New Zealand College of General Practitioners and the district health board, and they will be advised of Dr B's name.

92. 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 & Safety Commission (HQSC) and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Appendix A: Advice to the Commissioner

The following expert advice was obtained from Dr David Maplesden:

"1. Thank you for providing this file for advice. To the best of my knowledge I have no conflict of interest in providing this advice. I have reviewed the available information: complaint from [Mr C], son of [Mrs A]; response from [Dr B]; GP notes [the medical centre]. [Mr C] complains that [Dr B] prescribed his mother ibuprofen for an extended period and without appropriate monitoring, and that this caused marked deterioration in his mother's renal function which was not detected until an acute hospital admission in April 2016. At that point a diagnosis was made of chronic interstitial nephritis, assumed to be related to [Mrs A's] long-term use of ibuprofen.

2. [Dr B] has provided a response which accurately reflects the content of the clinical notes and I will not reproduce the notes summary in detail here. He acknowledges [the medical centre's] 'Repeat Prescribing' policy was not adhered to in [Mrs A's] case but a recent audit of compliance with the policy shows [Mrs A's] case was an isolated incident. [Dr B] acknowledges he should have undertaken more intensive biochemical monitoring of [Mrs A] while she was on long-term ibuprofen treatment and advised her to stop the medication should she become unwell. A practice audit has been undertaken on all elderly patients on long-term NSAID therapy to determine compliance with recommended biochemical and general monitoring and all but one patient were being monitored in a satisfactory fashion. This patient's GP has since been contacted to ensure appropriate monitoring is undertaken. [Dr B] has reflected on his practice and re-reviewed relevant guidelines in relation to pain management in the elderly and use of NSAIDs in the elderly.

3. The comments below should be read in conjunction with the subsequent supporting documentation in sections

(i) [Mrs A] appears to have been in generally good health in 2013 (when she was first prescribed ibuprofen) and I cannot see that she had any absolute contraindications to use of NSAIDs on the basis of her medical history. She did not appear to be taking any regular medications that might have interacted with NSAIDs. She was aged 78 years at the time she was prescribed ibuprofen.

(ii) On 22 August 2013 [Mrs A] presented to provider [Dr D] with acute right knee pain and symptoms of a respiratory infection. An appropriate physical examination is documented. Plan was for blood tests, trial of ibuprofen and paracetamol and X-ray in two weeks if no better. A prescription was provided for ibuprofen 200mg TDS PRN x60 together with paracetamol.

Comment: Management on this occasion I feel was consistent with expected standards. [Mrs A] had an acute inflammatory condition of her knee which was impairing her quality of life. Paracetamol was prescribed for pain relief with PRN ibuprofen as an adjunct. The ibuprofen was prescribed at a modest dose and for a limited period (up to three weeks if used regularly). Renal function was assessed and there was structured follow-up if the symptoms persisted. Best practice would

have been to document any discussion undertaken on risks and benefits of NSAID prescribing in this instance.

(iii) Blood tests showed elevated uric acid (0.52 mmol/L — normal range 0.15–0.36). Serum creatinine was just over the upper limit of normal at 93 µmol/L (45–90). Estimated glomerular filtration rate (eGFR) was 51 mL/min/1.73 m^2. There is one set of older renal function results on file — the date of which is obscured. These do not record an eGFR but serum creatinine is 0.07 mmol/L (equivalent to 70 µmol/L). There is some debate over what represents 'normal' eGFR for older patients and it is known eGFR decreases with age even in the absence of chronic kidney disease (CKD). However, an eGFR of 51 does represent a moderate decrease in renal function, probably outside the range expected as 'normal for aging' (see section 4). The relative increase in serum creatinine between the two tests undertaken might also have raised minor concern in the face of a low eGFR, as might the increased uric acid level which also has an association with CKD. These observations all raise the possibility that [Mrs A] already had a degree of CKD at the time her ibuprofen was prescribed. While this was not an absolute contraindication to prescribing of an NSAID for a limited period, it heightened the need for biochemical monitoring if the drug was to be continued for any length of time and for consideration to be given to keeping the dose of the NSAID as low as possible (see section 5).

(iv) [Mrs A] was reviewed by [Dr D] on 28 August 2013 and a diagnosis of likely gout was made in relation to her ongoing knee symptoms. She was prescribed a course of prednisone and further ibuprofen 200mg TDS regularly for 72 hours then up to TDS PRN x 50 tabs. Omeprazole was also provided and referral made for knee X-ray.

Comment: Management I feel was consistent with expected standards assuming the additional ibuprofen was provided for PRN use if [Mrs A] experienced further attacks of gout.

(v) On 18 September 2013 [Mrs A] was reviewed by [Dr D] because of ongoing knee pain and joint aspiration was performed. She was treated for possible recurrent gout (prednisone and ibuprofen — further 50x200mg tabs prescribed) and flucloxacillin was prescribed in case of infection.

Comment: Management I feel was consistent with expected standards although consideration might have been given to rechecking renal function at this point given the prescribing pattern suggests [Mrs A] had been requiring and using the ibuprofen regularly for almost a month. Regular paracetamol was apparently not effective alone at controlling [Mrs A's] pain over this period.

(vi) On 30 September 2013 [Dr B] reviewed [Mrs A] because she had ongoing knee pain which was affecting her quality of life and mobility. Examination findings, aspirate results and X-ray results were all consistent with a diagnosis of osteoarthritis. Management was to be: *Try regular NSAID for 10–14 days then PRN. Review if not settling ?steroid injection.*

Comment: Management I feel was consistent with expected standards although consideration might have been given to rechecking renal function at this point given the NSAID intake pattern — actual and intended — which meant [Mrs A] was likely to be using the NSAID regularly for at least two months. However, there was no intention at this point for her to be taking the NSAID regularly for a more prolonged period and the current dosage was modest.

(vii) At review on 6 November 2013 [Dr B] recorded: *Knee pain reasonably well controlled with NSAID. Discussed options for ongoing care. Happy at this stage to continue with NSAID and Paracetamol top-up prn. Offered orthopaedic referral prn.* A prescription was provided for ibuprofen modified release 800mg tabs 2 tabs once daily x 180 together with paracetamol 500mg tabs x 200 with directions to take two tabs as required up to four-hourly.

Comment: I have made an assumption at this point that [Mrs A] had been taking ibuprofen regularly at the previously prescribed dose of 600mg per day as there is no documentation to suggest otherwise. It is unclear whether she had been taking paracetamol regularly. Her pain was apparently adequately controlled on this regime and she did not exhibit any obvious adverse effects from the medication. Options of care were discussed and [Dr B] states in his response that it is his usual practice to inform patients to stop their NSAID if they become unwell. It is not clear whether there was any discussion with [Mrs A] regarding the potential risks of long-term NSAID therapy and need for monitoring of renal function. I would be critical if such discussion did not take place. I am critical of three other aspects of care in relation to this consultation: the decision to use regular NSAID as the background pain control with paracetamol prescribed as the PRN 'top up' when basic principles of pain management suggest regular simple analgesia is first-line treatment with NSAID as a second-line adjunct; the decision to increase [Mrs A's] dose of ibuprofen from (presumably) 600mg per day in a form which she could titrate more easily according to pain levels to a modified release form at 1600mg per day; the failure to undertake, or at least schedule, monitoring of renal function in an elderly patient with a degree of renal impairment who was being prescribed a significant dose of NSAID for a prolonged period. However, I acknowledge that the subsequent prescribing pattern (see below) suggests [Mrs A] was taking much less than the prescribed amount of ibuprofen (probably at most 800mg per day and not every day) over the next ten months and the verbal instructions she was given regarding use of the medication may have differed from the written instructions recorded on the prescription.

(viii) [Mrs A's] next consultation was almost six months later (26 May 2014) when she saw [Dr B] with a complaint of low back pain and right hip pain. *R knee also remains quite sore …*appropriate assessment findings are recorded with diagnosis of likely degenerative back pain and lumbar spine X-ray requested. [Dr B] has recorded: *Suggest going back to trying ibuprofen at night and reassured that she can take Paracetamol as well.* No prescription was provided implying [Mrs A] still had supplies of paracetamol and ibuprofen from the prescription provided six months previously. On 11 September 2014 [Mrs A] requested a repeat prescription of ibuprofen per phone and this was supplied (800mg tabs, 2 tabs once daily x 180). On 5 and 12 December 2014 she was seen acutely for nose

bleeds. There is no reference to musculoskeletal or other symptoms at these consultations. Repeat prescriptions for ibuprofen were requested per phone on 16 December 2014 and 9 April 2015 and were provided as per the most recent prescribing (180 x 800mg tabs).

Comment: By the time of the prescription requested in April 2015 it was apparent [Mrs A] was using 1600mg ibuprofen per day fairly regularly over the preceding six months having used it somewhat irregularly prior to this. She had not been reviewed by [Dr B] in relation to her pain management for almost a year and it had been 20 months since her renal function was tested.

(ix) The next face to face review was 11 June 2015 when [Mrs A] presented to [Dr B] with a respiratory infection and/or possible dyspeptic symptoms. She was prescribed antibiotics and omeprazole. There is no reference to discussion regarding NSAID use or renal monitoring. Subsequently [Mrs A] requested repeat prescriptions per phone for her 'usual' dose of ibuprofen on 9 July 2015, 15 October 2015 and 20 January 2016 and these were provided for her without review. [Mrs A] then presented to [Dr B] on 4 April 2016 with symptoms recorded as: *Has been feeling very weak over last 3 weeks. Seemed to come on relatively suddenly. Chesty cough …*there were some localising chest signs on auscultation and a provisional diagnosis was made of respiratory infection and treatment provided with antibiotics. A repeat prescription for ibuprofen was also provided at this consultation at the 'usual' dose prescribed previously. On this occasion blood tests were ordered as was chest X-ray. Results showed some abnormalities in the blood count (mild anaemia, mild neutrophilia) and significant renal impairment with serum creatinine 287 µmol/L and eGFR 13 mL/min/1.73 m^2. Hospital admission was arranged and [Mrs A] was evidently diagnosed with interstitial nephritis felt to be related to her long-term use of ibuprofen.

Comment: By the time [Mrs A] was found to have severe renal impairment on blood testing she had been taking 1600mg ibuprofen per day regularly (as indicated by the prescribing pattern) for at least 18 months with intermittent use prior to this from the time the drug was first prescribed in August 2013. There had been no monitoring of renal function since August 2013 when ibuprofen was first prescribed but [Mrs A] had remained apparently well prior to mid-March 2016. Repeat prescriptions for ibuprofen had been provided without face-to-face review over the 10 months between June 2015 and April 2016. I have reviewed [the medical centre's] policy on Repeat Prescribing and this is robust and consistent with similar policies I have viewed from other practices. However, the policy was not followed in [Mrs A's] case.

(x) Taking into account the discussion above and the information provided below, I feel it was a reasonable decision to trial [Mrs A] on a low dose of ibuprofen taken intermittently as was originally intended in August 2013, and there were no absolute contraindications to such prescribing. Baseline blood tests were undertaken as was appropriate and showed a degree of renal impairment which may have represented age related kidney changes and/or a degree of CKD. This finding, together with [Mrs A's] age, placed her at higher risk of suffering from adverse effects on renal function associated with NSAID use and indicated a need

for discussion with [Mrs A] of these potential risks. It is not clear that such discussion ever took place. There was also a need to monitor [Mrs A's] renal function on a regular basis if she was to continue with regular use of ibuprofen, and to monitor her overall pain management. I think there were deficiencies in these aspects of [Mrs A's] management, particularly from the end of 2014 when it was apparent [Mrs A] was using 1600mg per day of ibuprofen on a regular basis. There were missed opportunities to initiate renal function monitoring when [Mrs A] attended for un-related issues over the time period in question, and she was also provided with repeat prescriptions for ibuprofen without timely review. Comment had been made in section 3 (vii) about the decisions made by [Dr B] in regard to ibuprofen dose, formulation, and instructions regarding the role of paracetamol in pain management. Mitigating factors are that [Mrs A] remained apparently well over the period in question until mid-March 2016 and she gained relief of her pain, and presumably improvement in her quality of life, from the medication prescribed. I note also from reviewing many sets of patient notes in my HDC role over the past few years, that NSAID use in the elderly is still prevalent despite the information provided to GPs regarding the risks associated with such prescribing. I believe [Dr B's] overall management of [Mrs A] would be met with moderate disapproval by my peers, taking into account the issues discussed and including the mitigating factors mentioned.

4. As discussed previously, despite having a robust repeat prescribing policy in place it is possible some nurses were not following [the medical centre] policy with regard to interval since patient last reviewed before being eligible for a repeat prescription. However, ultimately the decision whether or not it is clinically appropriate to provide a repeat prescription without reviewing the patient rests with the prescriber — the GP. I think the observation that [the medical centre] policy may not have been followed consistently by nursing staff (or GPs) is worthy of adverse comment, and a suitable remedial action would be for [the medical centre] to regularly audit compliance with [the] policy. I note there has been an audit undertaken since this complaint was received. I acknowledge that some patients are reluctant to accept a response that they must make a GP appointment to get a repeat prescription, and in such a situation it would be appropriate for the nurse to record the patient's wishes with provision of the prescription left up to the discretion of the GP.

5. *GFR declines gradually with age, even in people without chronic kidney disease (CKD). However, there appears to be substantial variation among individuals and the reasons for decline are not known. Although the age-related decline in GFR was formerly considered part of normal aging, decreased GFR in the elderly is an independent predictor of adverse outcomes, such as death and cardiovascular disease. In addition, decreased GFR in the elderly requires adjustment in drug dosages, as with other patients with CKD*[1]. Average eGFR for individuals > 70 years of age in patients without CKD is recorded in the cited publication as 75 mL/min/1.73 m^2.

[1] National Kidney Foundation (USA). Frequently Asked Questions About Gfr Estimates. 2014. https://www.kidney.org/sites/default/files/docs/12-10-4004_abe_faqs_aboutgfrrev1b_singleb.pdf Accessed 14 June 2016

6. Prescribing information for ibuprofen from the Medsafe database includes[2]:

(i) *After assessing the risk/benefit ratio in each individual patient, the lowest effective dose for the shortest duration should be used. Adults: The recommended initial daily dose of IBUPROFEN is 1200–1800mg per day in divided doses. Some patients can be maintained on 600–1200mg per day. In severe or acute conditions, it can be advantageous to increase the dosage until the acute phase is brought under control, providing that the total daily dose does not exceed 2400mg in divided doses. ...Elderly: Elderly patients are more prone to adverse effects. Caution must be taken with dosage in this group and also in patients with renal impairment or impaired liver function.*

(ii) Precaution: *Non-steroidal anti-inflammatory agents have been reported to cause nephrotoxicity in various forms; interstitial nephritis, nephrotic syndrome and renal failure. In patients with renal cardiac or hepatic impairment, caution is required since the use of non-steroidal anti-inflammatory agents may result in deterioration of renal function. The dose should be kept as low as possible and renal function should be monitored in these patients.*

7. Additional background information on precautions with NSAID use[3]:

(i) *Non-steroidal anti-inflammatory drugs (NSAIDs) are the most frequently prescribed medicines for analgesia in primary care, after paracetamol. However, NSAID use can be associated with a range of serious adverse effects including: cardiovascular events, gastrointestinal complications, renal failure and hypersensitivity reactions. Even if the risk of an individual patient experiencing an NSAID-related adverse event is relatively low, the frequent use of NSAIDs within the community means that the potential for NSAID-related adverse events to occur is a concern. NSAID use therefore requires careful consideration of individual patient risk factors. To maximise patient safety it is recommended that clinicians consider the following points before prescribing an NSAID:*

- *Prescribe all NSAIDs with caution, in all patient groups, even over short periods of time*
- *Prescribe the lowest effective NSAID dose, for the shortest possible time, and review the need for continued use at each consultation*
- *Older patients, patients with increased cardiovascular risk, patients with type 2 diabetes, and patients with reduced renal function or a history of renal problems are at increased risk of NSAID-related complications and should be advised about adverse effects and regularly monitored when taking NSAIDs*
- *Naproxen (up to 1000 mg per day) or ibuprofen (up to 1200 mg per day) are the recommended first-line choices for adults based on our current knowledge*

[2] http://www.medsafe.govt.nz/profs/datasheet/i/IbuprofenArrowcaretab.pdf Accessed 14 June 2016

[3] From: *BPAC. Non-steroidal anti-inflammatory drugs (NSAIDs): Making safer treatment choices. BPJ. Issue 55, October 2013* (this publication is sent to most NZ GPs and the article cited summarised recommendations contained in previous articles over the preceding few years). Accessed 14 June 2016 http://www.bpac.org.nz/BPJ/2013/October/nsaids.aspx

of NSAIDs and cardiovascular risk; ibuprofen is the most appropriate NSAID for children

- *Avoid prescribing long-acting formulations of NSAIDs, where possible, as these are associated with an increased risk of gastrointestinal adverse effects*

(ii) *If it is decided that NSAID treatment is appropriate, having weighed the risks versus benefits of treatment, ensure the patient's history is known before an NSAID is prescribed. In particular:*

- *Ensure the patient is aware which over-the-counter (OTC) products contain NSAIDs and that they know that they should not take any other NSAID-containing products while they are being treated with an NSAID*
- *Determine if the patient has any co-morbidities that may increase the risk of NSAID treatment, e.g. cardiovascular disease, CKD, diabetes, hypertension or duodenal ulcer*
- *Query if the patient is taking any medicines that may interact with NSAIDs, e.g. angiotensin converting enzyme (ACE) inhibitors, angiotensin-II receptor blockers (ARBs), diuretics, clopidogrel, warfarin, dabigatran or aspirin*
- *Discuss any history of NSAID-related adverse effects with the patient. Their preference may affect the dosing regimen. Some patients may prefer to tolerate adverse effects if a higher dose is likely to result in improved symptom control, while other patients may take the opposite view.*

(iii) *In New Zealand over 40% of all renal adverse reactions reported to the Centre for Adverse Reactions Monitoring (CARM)* [related to NSAID or COX II inhibitor use] *were associated with diclofenac* [Ibuprofen accounted for 10% of such reports[4]]. *The risk of AKI* [acute kidney injury] *in patients taking NSAIDs and other potentially nephrotoxic medicines is greatest at the start of treatment, therefore even short courses of NSAIDs should be avoided, if possible, in patients at increased risk. All people with CKD should avoid NSAIDs where possible. CKD* [chronic kidney disease] *is a risk factor for AKI and one-quarter to one-third of all people aged over 64 years have CKD …Patients who have had a previous acute decline in renal function should have their notes flagged and be identified as at risk of NSAID-related AKI.*

(iv) *NSAID nephrotoxicity can be exacerbated by ACE inhibitors or ARBs as these medicines impair the regulation of blood flow leaving the kidney. Renal function can be compromised even further if a patient is also taking a diuretic. The combined potential effect of these three medicines has been referred to as the 'triple whammy'. This can result in hyponatremia or hyperkalemia, AKI and cardiac failure. The risk of this occurring is greatest in the first 30 days of use. This combination of medicines should be prescribed with caution, particularly in people with CKD or diabetes. If patients develop an acute illness it may be appropriate to discontinue or reduce the dose of these medicines.* ***In patients with reduced renal function who are taking NSAIDs, or in patients at increased risk***

[4] http://www.medsafe.govt.nz/profs/PUArticles/June2013NSAIDS.htm Accessed 14 June 2016

of renal toxicity, serum creatinine and potassium should be measured after one to two weeks of treatment and then monitored regularly.

8. NZ Medical Council recommendations on prescribing[5] include:

(i) *You should only prescribe medicines or treatment when you have adequately assessed the patient's condition, and/or have adequate knowledge of the patient's needs and are therefore satisfied that the medicines or treatment are in the patient's best interests.*

(ii) *Be familiar with the indications, side effects, contraindications, major drug interactions, appropriate dosages, effectiveness and cost-effectiveness of the medicines that you prescribe.*

(iii) *Ensure that the patient (or other lawful authority) is fully informed and consents to the proposed treatment and that he or she receives appropriate information, in a way they can understand, about the options available; including an assessment of the expected risks, side effects, benefits and costs of each option.*

8. A 2011 article from a local journal includes the following points I feel are relevant to this case[6]:

(i) *There are times when a NSAID is unavoidable in an older person. When one is necessary start with a low dose, avoid long-acting (high dose) preparations, and monitor gastrointestinal, cardiovascular and renal adverse effects. Record risk mitigation strategies in the person's medical records.*

(ii) *Improved quality of life is the ultimate goal of medicines therapy.*

(iii) *For some elderly people regular paracetamol is inadequate, an opiate is not suitable/not tolerated and a NSAID is necessary to provide good pain relief, increase mobility, maintain independence, improve mood and generally improve quality of life.*

(iv) *If a NSAID is necessary for an older person then management of the potential adverse effects is essential.*

(v) *Prescribe low dosages e.g. naproxen 250 mg up to bd, or diclofenac 25 mg bd. For general inflammation/pain 'half doses' are usually adequate. High doses are mainly required for rheumatoid arthritis. You do not need to prescribe the slow release forms, which generally mean higher dosages.*

(vi) ***Renal adverse effects are dose-related. Check baseline renal function and repeat in one to two weeks, then one to three monthly depending on the baseline renal function.*** *Try to avoid the 'triple whammy' — a diuretic and ACE inhibitor or an angiotensin II antagonist, plus an NSAID. Warn the person not to become dehydrated. Keep fluid intake up to at least 1500 mL per day.*"

[5] From: NZMC statement *Good Prescribing Practice. 2010* Accessed 14 June 2016 http://www.mcnz.org.nz/assets/News-and-Publications/Statements/Good-prescribing-practice.pdf

[6] Bryant L. NSAIDs and risk mitigation — if you really must use them in the elderly. J Prim Healthcare. 2011;3(1):169