WORKERS COMPENSATION COMMISSION

CERTIFICATE OF DETERMINATION

Issued in accordance with section 294 of the *Workplace Injury Management and Workers Compensation Act 1998*

Matter Number:	**5559/19 and 5567/19**
applicant:	**Andrew Victor Nicholls**
respondent:	**Bellingen Shire Council**
Date of Determination:	**8 January 2020**
Citation:	**[2020] NSWWCC 15**

The Commission determines:

FINDINGS

1. The proposed L3/4 surgery is reasonably necessary as a result of the injuries to L4/5 on each of 1 April 2011, 23 August 2012 and 13 January 2000 and 13 January 2014 (deemed).

ORDERS

1. The matter is remitted to the Registrar for referral to an Approved Medical Specialist assessment according to the following:

   (a) Date of Injury: 1 April 2011; 23 August 2012; and 13 January 2014.

   (b) Purpose: Assessment as to whether the degree of permanent impairment is fully ascertainable.

   (c) Body Systems: Lumbar spine.

   (d) Documents to be provided to Approved Medical Specialist (with attachments unless excluded):

      (i) Application to Resolve a Dispute in 5559/19;
      (ii) Reply in 5559/19;
      (iii) Application to Admit Late Documents dated 6 December 2019 in 5559/19, and
      (iv) Copy of this Certificate of Determination and the attached Reasons.

2. Matter 5567/19 will be determined by the conclusive nature of the Medical Assessment Certificate by the Approved Medical Specialist.

3. Matter 5559/19 involves a claim for weekly benefits pursuant to s 39 and/or s 38A of the *Workers Compensation Act* 1987. If this issue is not resolved beforehand, there should be a further teleconference on the expiration of the medical appeal period.

A brief statement is attached setting out the Commission's reasons for the determination.

Gerard Egan

Arbitrator

I CERTIFY THAT THIS PAGE AND THE FOLLOWING PAGES IS A TRUE AND ACCURATE RECORD OF THE CERTIFICATE OF DETERMINATION AND REASONS FOR DECISION OF GERARD EGAN, ARBITRATOR, WORKERS COMPENSATION COMMISSION.

A MacLeod

Ann MacLeod
Acting Senior Dispute Services Officer
As delegate of the Registrar

STATEMENT OF REASONS

BACKGROUND

1. Andrew Nicholls (the applicant) has filed two applications in the Commission. In matter 5559/19 he seeks an order that the respondent pay weekly compensation from 27 September 2019 to date in continuing, invoking s 38A or 39 of the *Workers Compensation Act 1987* (the 1987 Act). He also seeks a finding or a declaration pursuant to s 60(5) that proposed surgery by way of L3/4 spinal fusion is reasonably necessary as a result of one or more of lower back injuries sustained on 1 April 2011, 23 August 2012 and/or 13 January 2014 during the course of his employment with Bellingen Shire Council (the respondent).

2. Matter 5567/19 is an application for referral to an Approved Medical Specialist (AMS) to determine whether or not his permanent impairment is fully ascertainable. This is for the purpose of potential rights pursuant to s 39 of the 1987 Act.

3. The applicant's entitlement to weekly compensation will depend on whether or not, in the circumstances of this case, he is assessed by an AMS as having permanent impairment resulting from an injury that is not fully ascertainable. Accordingly, weekly payments cannot be determined until other matters are dealt with. This, in turn, depends upon whether proposed surgery is reasonably necessary due to his injury.

4. For the purpose of these proceedings, therefore, the applicant only seeks the finding or declaration pursuant to s 60(5) the reasonable necessity of the surgery as a result of one or more of the injuries.

ISSUES FOR DETERMINATION

5. The parties agree that the only issue is whether or not the proposed L3/4 fusion is reasonably necessary on the facts of this case. If so, the respondent urges (and I accept), for the purpose of s 60 of the 1987 Act, that the determination must include a finding that the surgery results from one or more of the claimed injuries.

PROCEDURE BEFORE THE COMMISSION

6. The matter proceeded to hearing in Coffs Harbour on 16 December 2019. The applicant was represented by Mr Inglis of Counsel, instructed by Mr Langler. Mr Tanner of Counsel instructed by Ms Ulmer appeared for the respondent.

EVIDENCE

Documentary evidence

7. The following documents were in evidence before the Commission and taken into account in making this determination:

    (a) Application to Resolve a Dispute in matter 5559/19;

    (b) Reply in matter 5559/19;

    (c) Application to Admit Late Documents dated 6 December 2019.

8. There was no oral evidence.

BACKGROUND AND THE EVIDENCE

9. As the applicant's injuries are not in dispute, the background facts may be relatively briefly set out. He suffered injury on 1 April 2011 when releasing clamps under a heavy vehicle trailer, feeling severe pain in his back and a shooting pain down his left leg. He was off work for a period of time, underwent physiotherapy and was paid workers compensation. He came under the care of Dr Siu, neurosurgeon, in April 2011. After CTs and MRI scans of his spine disc abnormality was identified at L4/5. Dr Siu performed an L4/5 laminectomy on 24 June 2011.

10. After a period off work he returned to work gradually in about August 2011 but he says he continued to experience "significant pain in my back" affecting his ability to function normally. He remained on restricted work capacity certificates for some time, eventually returning to pre-injury duties in about April 2012.

11. On 23 August 2012 he aggravated his back injury while at work. He was reaching up using a broom to clean an area over his head and said he "felt immediate intense pain in my back, and it felt like I had an electric current shooting down my left leg". He was again put off work and further radiological investigations ensued. He saw Dr Siu again in October 2012 who this time recommended further surgery. This was a second L4/5 micro-discectomy on 10 October 2012.

12. Again, the applicant returned to work with some restrictions over a considerable period of time.

13. In January 2014, he says he was required to travel in a vehicle at work that didn't cushion his back. Eventually, due to pain, he stopped work on 13 January 2015. This is the date on which the third of the injuries relied upon by the applicant is deemed to have occurred.

14. Again, the applicant made a claim for workers compensation which was accepted. He again saw Dr Siu and after an MRI scan, repeat L4/5 fusion surgery occurred. After various independent medical examinations on behalf of the respondent, surgery proceeded on 23 June 2014 by Dr Siu. There were complications during this surgery requiring extended hospitalisation. This time, the applicant had 12 months off work and underwent pain management.

15. It is clear the applicant continued to experience difficulties with his back-related symptoms based on the continuing restriction for work and multiple further radiological investigations over the following several years. The applicant was also examined by further independent medical examiners on behalf of the respondent during this period.

16. His employment with the respondent was terminated in September 2016. He had attended Dr Siu again in June 2016 with increasing back pain and numbness.

17. In 2017, he was treated by Dr Shaun Clarke who recommended a nerve block in his lumbar spine for pain reduction, but approval for this was declined. Numerous further radiological investigations continued over the subsequent years until late 2019.

THE TREATING NEUROSURGEON, DR SIU

18. I will not recount the earlier reports of Dr Siu concerning the micro-discectomies and repeat fusions in 2014. However, on 16 June 2016 Dr Siu noted the applicant continued to experience "quite bothersome lower back pain with radiation down the whole left leg all the way to the foot", particularly aggravated by prolonged sitting and standing. He noted a recent CT of the lumbar spine in June 2016 confirming satisfactory bone fusion at L4/5 but noted that "there appears to be some increase in the degree of L3/4 disc bulging when compared with his previous CT scan". Dr Siu believed the applicant had reached a plateau and that his residual pain and limitations would likely be ongoing. He wanted an updated MRI, particularly with reference to L3/4 to finally advise.

19. However, there does not appear to be any further consultation reports from Dr Siu in evidence until early 2019. On 22 January 2019, Dr Siu reported a gradual worsening lower back pain over the previous seven months, with pain being in the mid-back, radiating towards the buttocks and sometimes down the whole of the legs, right worse than left. There was paraesthesia sensation in the legs and the back pain was more marked than the leg pain. On reviewing an MRI scan on 19 November 2018, Dr Siu said there was canal stenosis at L3/4 and "a far lateral left L3/4 extraforaminal disc protrusion with a suggestive annular tear. The protrusion was contacting the exiting left L3 nerve root". He also noted some disc bulging at L5/S1 and said comparing to the 2016 study there was progression at L3/4. He said this deterioration was "related to adjacent segment disc disease at L3/4" and sought a further CT scan and bone scan to qualify the pathology.

20. On further review on 19 February 2019 Dr Siu noted "a very high level of lower back pain" since previously seen in January. There was pain and paraesthesia down both legs and feet. The bone scan was unremarkable. The CT scan "demonstrates again some retrolisthesis at L3/4 and L5/S1". He concluded:

> "I think collectively his worsening pain is secondary to his progressive adjacent segment disease at L3/4. I think consideration for surgery in the form of a lumbar fusion is warranted given the severe and debilitating nature of his symptoms. . . "

21. Dr Siu explained that the applicant had undergone a prolonged course of various conservative treatment without success. He sought approval for the procedure from the insurer, saying that he would "appreciate very much your early approval for him to undergo an L3/4 fusion".

22. The respondent refused to approve the surgery on behalf of the respondent on 7 March 2019 as they wanted further information. This led to an examination medico-legally by Dr John Bentivoglio (see below).

23. Dr Siu provided a further report on 11 September 2019 addressed to the applicant's solicitors. He referred only to the injury in 2011 and a recurrence in 2013 and said "due to these repeat episodes, he eventually underwent an L4/5 fusion in 2014 to definitively address his L4/5 discopathy". He confirmed that the series of investigations over the last 12 months "concordantly indicates the development of significant adjacent segment disc disease at L3/4 as the cause of his decline". Dr Siu expressed his views thus:

> "I think collectively it is quite clear that Mr Nicholls' new L3/4 segment disease is significantly contributed by his previous L4/5 fusion. This is indeed a well-recognised sequel of lumbar fusion, in which fixation of one spinal motion segment could accelerate degeneration in the adjacent motion segments. However, the development of spinal degeneration is indeed often multi-factorial and his ongoing physical work after his initial injury would also be a significant contributing factor.
>
> Mr Nicholls has been suffering from persistent disabling pain, despite the use of narcotic analgesia. He has also undergone a prolonged course of conservative treatment including physiotherapy and acupuncture without success. In view of these, I think surgery in the form of extending his L4/5 fusion cephalad to L3 would be the reasonable next step."

FORENSIC REPORTS

Dr A G Hopcroft (General Surgeon) Orthopaedics

24. Dr Hopcroft has examined the applicant at the request of his solicitors a number of times. The earlier reports are of little relevance to the particular issue before me in 2019, as there is no dispute regarding the medical history of the matter. On 14 November 2018 after further examination, Dr Hopcroft again reported. He noted the gradual increasing sciatic symptoms with pain, paraesthesia and numbness down both legs, worse on the left than the right and involving both feet. He noted significant muscle tremors in his lower limbs especially at night,

and various side effects of the medications which he was taking for the pain. He also noted the development of occasional urinary incontinence “as a result of his back pain problem and nerve deficit situation”.

25. On examination Dr Hopcroft noted that the applicant was “obviously unaware of the deterioration which is occurring clinically in the L5/S1 disc and possibly also in the L3/4 disc”.

26. Significant signs were noted on examination indicating neurological involvement from the lumbar area. Dr Hopcroft concluded that investigations were required to determine whether there was progression of the pathology at L5/S1 and possibly at L3/4. He noted Dr Siu’s suggestions previously that the applicant may come to L5/S1 fusion. On review of Dr Siu’s reports I am unable to identify any recommendation for L5/S1 surgery.

27. Dr Hopcroft concluded:

> “. . . (the) injury or injuries has caused an aggravation, an acceleration and deterioration of his disease process.”
>
> I believe the injuries of 1 April 2011, 23 August 2012 and 13 January 2014 are all concerning the same pathology.”

28. Dr Hopcroft expressed a guarded prognosis and that it was increasingly likely if the applicant continued working (as a security guard) that the fusion procedure was likely to be extended to L5/S1 after discectomy and disc spacer insertion. Dr Hopcroft believed the applicant was unfit for even modified duties and even his then 20 hours per week as a security guard.

29. On 29 November 2018 after reviewing an MRI scan on 19 November 2018, Dr Hopcroft concluded that it should be reviewed neurosurgically (which ultimately occurred by Dr Siu in January 2019 as detailed above). He said there should be a detailed discussion about possible improvement in lumbar spine pain levels by surgery to the L3/4 and L5/S1 discussions, although even that would not enable him to remain in the workplace “but it would significantly improve his pain syndrome to a degree that necessary analgesics would be minimal in the long term. . .”

30. On 16 April 2019 Dr Hopcroft provided a supplementary report. After reviewing the nature of the injuries he concluded that the first injury on 1 April 2011 was “the primary and most significant of the three injuries” and led to his first surgery of L4/5 laminectomy discectomy. Dr Hopcroft believed the 23 August 2012 injury was “simply an aggravation of his first injury and would not have been a problem had it not been for the first injury”. He noted that the progress radiology suggested that the L4/5 disc had extruded further after that incident, leading to the second micro-discectomy at L4/5.

31. Dr Hopcroft also believed the third injury in January 2019 was once again an aggravation of the primary pathology and not of itself a new injury.

32. When dealing with the development of the pathology at levels other than L4/5, Dr Hopcroft made these points:

    (a) The superimposed L5/S1 changes came about because of the surgery at L4/5 and would not have occurred were it not for the L4/5 pathology.

    (b) Suggestions for L3/4 fusion was “directly because of the loss of movement of the patient’s lumbar spine at L4/5”.

    (c) Changes at L3/4 are described explicitly on MRI radiology.

    (d) However, there are also changes with “mild disc desiccation with minimal posterior annular bulging” and prominent facet joint arthropathy at L5/S1.

33. The views as to the proposed surgery are expressed as follows:

> "It is my opinion if the patient proceeds to an L3/4 fusion surgery for the symptoms arising at that level with a solid block fusion to include L3/4 and 5, then the L5/S1 disc will be put at increased pressures and will prematurely fail and develop even further pathological changes likely rendering the changes necessary for further intervention".

34. In a further report dated 30 September 2019, Dr Hopcroft observed that the MRI scan report dated 19 November 2018 suggested the most significant pathology was the disc protrusion at L3/4 producing a moderate degree of spinal stenosis and moderate right L3 foraminal stenosis. There were also paracentral disc protrusions at L5/S1 producing moderate right L5 foraminal stenosis.

35. Dr Hopcroft then said:

> "In advising whether this patient's planned L3/4 intervertebral disc fusion is reasonably necessary the answer is decidedly yes, but with the rider that pathology at the L5/S1 level will be accelerated by the two intervertebral disc levels proximate to that being fused successfully.
>
> Therefore, in proceeding to an L3/4 intervertebral disc fusion the patient should be made aware that he will not have a pain-free lumbar spine, and in fact the pain emanating from the L5/S1 level may be accelerated both in time and intensity, and he may well face in the future the possibility of fusion at the L5/S1 level."

36. He expressed the view that as there was the inevitably of some form of surgery, he could no longer be considered at maximal medical improvement.

Dr John Bentivoglio, Orthopaedic Surgeon

37. Dr Bentivoglio examined the applicant at the request of the respondent's solicitors in January 2019. He recorded the history reasonably accurately and fully. He found considerable abnormal signs emanating from the lumbar spine in examination, particularly altered sensation "approximating the L5 dermatome in his left lower limb", as well as grossly diminished knee, ankle and both hamstring jerks in both legs. When reviewing investigations over some time, Dr Bentivoglio noted the original disc bulge at L4/5, and further evidences at L3/4 and L5/S1 in December 2014. The advent of degenerative changes was noted. He noted the most recently MRI scan showed evidence of degenerative disc bulge at L3/4, but did not comment on those images in relation to L5/S1.

38. Dr Bentivoglio described the surgery he had undergone as appropriate. However, there were significant residual symptoms which were likely to remain indefinitely. He said he didn't believe further surgery would make any difference to his symptoms. When expressing that opinion, he did not identify specifically whether surgery to levels other than originally injured L4/5 would be appropriate. Similarly, when answering questions about prognosis and further treatment, none of the levels other than L4/5 were identified by way of comment or observation.

39. In a supplementary report on 23 January 2019, in response to specific questions Dr Bentivoglio was asked to comment on the "pathology" in relation to each of the three separate injuries. He had previously apportioned assessed permanent impairment as being attributable to 50% to the first injury and 25% to each of the further injuries. He said this:

> "I considered with the initial injury he sustained a disc prolapse at the L4/5 level of his lumbar spine. He obtained a good result following the surgery. He would have had permanent weakness at the L4/5 level of his lumbar spine as a result of the surgical procedure. Unfortunately, he developed a further disc prolapse at the same level requiring a further surgical procedure. He would have had ongoing permanent weakness at the L4/5 level of his lumbar spine secondary to the second surgical procedure and eventually had a spinal fusion.

I would consider the diagnosis as being with the first injury an L4/5 disc prolapse requiring surgical procedure, the second injury a recurrent L4/5 disc prolapse and for the third injury an instability syndrome at the L4/5 level of his lumbar spine.

I would therefore consider that this gentleman's impairment does not result from the same injury (the same pathology). I consider that the initial injury had rendered him more susceptible to having further problems at the L4/5 level of his lumbar spine but it would be as a result of different pathology."

40. In a further supplementary report dated 28 November 2019, Dr Bentivoglio was directed to Dr Siu's proposal for an L3/4 fusion. He said:

> "I have certain reservations regarding this. Firstly, as there is a fused segment at the L4/5 level of his lumbar spine and the sacrum also does not have any movement there has to be far more likelihood of adjacent segment disease occurring at the L5/S1 level rather than the L3/4 level. At any case – if it is coming from the L3/4 level – as there is abnormality seen in the L5/S1 level, with only one mobile segment and two fused segments above it, the L5/S1 level will undoubtably break down. I believe the fusion at the L3/4 level will not give him any significant improvement in his symptoms and possibly would make his symptoms worse."

41. Dr Bentivoglio said that whilst he believed the proposed surgery by Dr Siu "is possibly reasonably necessary" he was "doubtful that it would be successful". He also expressed as the "chance of success is very small".

42. As to the cause for the surgery if it is to occur, Dr Bentivoglio said:

> "It is impossible to determine which injury would be responsible for the need for the surgery, as all of them are contributing to his current spinal *disability*. It is more likely, however, that the injury on 13 January 2014 caused him to undergo the spinal fusion that is responsible for the adjacent segment diseases, that would be the one that would be more likely to be the cause of his current *disability*." (my emphasis)

SUBMISSIONS

43. Both counsel made detailed submissions for which I thank them. As they were recorded, I will only outline the submissions here.

Applicant's submissions

44. Mr Inglis submitted that I would provide most weight to the opinion of the treating neurosurgeon, Dr Siu. I would except that the most pressing pain source is that at L3/4, as it beggars belief that a neurosurgeon would proceed to surgery without a conviction that the applicant's symptoms would be improved.

45. The fact that adjacent spinal segments to a fused segment become vulnerable to accelerated degeneration is something all experts agree on and is a well-known phenomenon in this Commission.

46. Dr Hopcroft has expressed his opinion that the proposed surgery is "decidedly" reasonable. The "rider" he places on it is that the above phenomenon may again come into play. That is unsurprising because it has already occurred as a result of the initial L4/five fusion. His opinion is that it is not inevitable that the generation of L5/S1 would occur, but it is likely. That is obviously accepted by all parties, including Dr Siu.

47. Dr Bentivoglio expresses the same opinion – that is (consistent with the above phenomenon) a fusion at L3/4, given the existing fusion at L4/5 is likely to increase the rate of degeneration at L5/S1. Although he expresses doubt that the surgery will be "successful", apart from the acknowledged adjacent segment syndrome, he does not identify what criteria he is using to determine success. Accordingly, his opinion is neither persuasive nor probative. The same can be said for his conclusion that the surgery will "possibly" make things worse.

Respondent's submissions

48. Mr Tanner's submissions, unsurprisingly, traverse the same ground with different emphasis. By "making things worse" it is clear that both Dr Hopcroft in Dr Bentivoglio consider the increased risk of accelerated degeneration at L5/S1 is the danger. Further, Dr Hopcroft expressly notes that the applicant should be advised that he will not have a pain-free lumbar spine with the proposed surgery. This, when considering the authorities below means I would not be satisfied that the surgery is reasonably necessary.

49. Mr Tanner directed me to the principles concerning reasonable necessity in *Rose v Health Commission* (1986) 2 NSWCCR 32 (*Rose*); and *Diab v NRMA Ltd* [2014] NSWWCCPD 72 (*Diab*) at [76] to [91]. An important consideration is the risk of adverse consequences, and given the consensus between Dr Hopcroft and Dr Bentivoglio in that regard, the applicant has not discharged his onus.

FINDINGS AND REASONS

50. The applicant carries the onus to establish that the treatment is reasonably necessary, and that it 'results' from' one or more of the injuries: s 60.

51. The test as to whether any treatment is reasonably necessary developed in a series of decisions, including *Bartolo v Western Sydney Area Health Service* [1997] NSWCC 1 (*Bartolo*); *Rose*; *Ajay Fibreglass v Yee* [2012] NSWWCCDP 431; and *Sunrise T&D Pty Ltd v Le* [2012] NSWWCCPD 47. Factors to be considered include the medical opinions involved as to the reasonable necessity of the treatment concerned, the range of alternative treatments, the costs of the relevant and alternative treatments, the actual or potential effects of the relevant treatment, and the place of the relevant treatments amongst the armoury of all treatments available for the condition.

52. In *Bartolo,* at 238, Burke CCJ approached the issue with the proposition: "If in reason it should be said that the patient not do without this treatment, then it satisfies the test of being reasonably necessary".

53. In *Clampett v WorkCover Authority (NSW)* [2003] NSWCA 52; (2003) 25 NSWCCR 99, (*Clampett*) Grove J (Meagher and Santow JJA agreeing) noted that the trial judge had sought guidance from the principles discussed by Burke CCJ in *Rose.* Grove J referred to the dictionary definitions of "necessary" as being "indispensable, requisite, needful, that cannot be done without" (Shorter Oxford English Dictionary, 3rd ed) and "that cannot be dispensed with" (Macquarie Dictionary). His Honour added, at [23]:

> "23. The essential issue is what effect flows from conditioning such qualities as 'reasonably'. The consequence is to moderate any sense of the absolute which might otherwise be conveyed by the word 'necessary' if it stood alone. In order to contemplate such moderation, it is apt to consider surrounding circumstances, but the question to be addressed is whether modification of a worker's home, having regard to the nature of the worker's incapacity, is reasonably necessary. In contemplation of what might be 'reasonably necessary' there is this statutory obligation specifically to have regard to the nature of the worker's incapacity. It provides emphasis towards moderating the meaning of 'necessary' in this context."

54. The requirement for statutory attention to incapacity arose on the facts of *Clampett,* but does not arise in this case. In this case, the question is whether the proposed L3/4 fusion is reasonably necessary as a result of one or more of the injuries.

55. This series of cases was revisited by Roche DP in *Diab* at [76] to [91]. After reviewing the authorities, the Deputy President concluded at [88] to [90] (referring to the matters for consideration identified by Burke CCJ in *Rose*):

> "88. In the context of s 60, the relevant matters, according to the criteria of reasonableness, include, but are not necessarily limited to, the matters noted by Burke CCJ at point (5) in *Rose* (see [76] above), namely:
>
> (a) the appropriateness of the particular treatment;
> (b) the availability of alternative treatment, and its potential effectiveness;
> (c) the cost of the treatment;
> (d) the actual or potential effectiveness of the treatment, and
> (e) the acceptance by medical experts of the treatment as being appropriate and likely to be effective.
>
> 89. With respect to point (d), it should be noted that while the effectiveness of the treatment is relevant to whether the treatment was reasonably necessary, it is certainly not determinative. The evidence may show that the same outcome could be achieved by a different treatment, but at a much lower cost. Similarly, bearing in mind that all treatment, especially surgery, carries a risk of a less than ideal result, a poor outcome does not necessarily mean that the treatment was not reasonably necessary.
> As always, each case will depend on its facts.
>
> 90. While the above matters are "useful heads for consideration", the "essential question remains whether the treatment was reasonably necessary" (*Margaroff v Cordon Bleu Cookware Pty Ltd* [1997] NSWCC 13; (1997) 15 NSWCCR 204 at 208C). Thus, it is not simply a matter of asking, as was suggested in *Bartolo*, is it better that the worker have the treatment or not. As noted by French CJ and Gummow J at [58] in *Spencer v Commonwealth of Australia* [2010] HCA 28, when dealing with how the expression "no reasonable prospect" should be understood, "[n]o paraphrase of the expression can be adopted as a sufficient explanation of its operation, let alone definition of its content"."

56. Roche DP also noted that "reasonably necessary" does not mean absolutely necessary: *Diab,* at [86].

57. It is unfortunate that there is no evidence from Dr Siu regarding his opinions as to the comments by both Dr Hopcroft and Dr Bentivoglio as to the magnitude of the risk of additional stresses at L5/S1. However, it can be said with confidence that Dr Siu is clearly alive to the "adjacent segment syndrome". He recognises it when explaining the reason for the degeneration of L3/4, and implicitly L5/S1 (the reason being the existence of the L4/5 fusion in the first place).

58. I read Dr Siu's opinions expressed in various letters as a whole *(Hancock v East Coast Timbers Products Pty Ltd* [2011] NSWCA 11 (*Hancock*)). I have viewed his opinions with the appropriate weight that should be afforded him as the treating neurosurgeon, who has treated the applicant over many years, including the performance of the several surgical procedures at L4/5 to date. I note that Dr Siu identified his view that the pain generator was likely L3/4 well before his identification of the actual pathology at that level. I note that after the identification of pathology at L3/4 and also L5/S1, he maintained his view that the pain generator remained at L3/4. It is clear to me that he did considered L5/S1 pathology and attributed the existing L4/5 fusion as the cause (amongst other causes). Ultimately, I interpret

his approach is that it is best to treat the probable pain generator by way of surgical fusion first, that is, treat the overall problem in a stepwise manner.

59. My observation would be that would be more difficult to unfused L5/S1 than it would be to perform an additional procedure in the future if the applicant fails to obtain adequate relief from the proposed L3/4 fusion.

60. It should also be said that the matters for consideration when dealing with the question of reasonable necessity as summarised in *Diab* are not criteria or factors to be weighed in a for and against counting exercise. As Roche DP said himself, the ultimate question is whether the treatment is reasonably necessary. It is not whether it is absolutely necessary. Similarly, it is not required that the proposed procedure carries no risk, or that it has chances of success greater than 50 per cent.

61. Dealing with the relevant principles in the context of the facts and opinions in this case, it seems to me that no doctor is suggesting with any vigour that proposed surgery (in general terms) is not appropriate in the circumstances. Although Dr Bentivoglio takes other issues up, he does not criticise the proposal for surgery in general. His difficulty lies in the fact that only one adjacent level is proposed to be fused. He does not identify alternatives to the proposal for surgery. In relation to the specific proposal for fusion at L3/4, I believe it is implicit in Dr Bentivoglio's opinion that in his opinion, it is not appropriate to leave the L5/S1 joint to handle the stresses from two fused levels above it. This suggests, although as no treating surgeon had offered the procedure, that his views may have been different had the proposal been to fuse both the adjacent segments above and below the currently fused L4/5. In any event, Dr Bentivoglio is silent on that point.

62. As for alternative treatments, it is clear from the evidence that the applicant has undergone protracted conservative management, prolonged medication and numerous surgical procedures at L4/5. As noted, Dr Bentivoglio cannot be explicitly suggesting the alternative of the additional fusion of L3/4 and L5/S1, but I consider it implicit in his opinions that, at least, his objection to the procedure would be considerably reduced in intensity. Dr Hopcroft, on the other hand, can be interpreted to the championing the two level additional fusion with more certainty. However, Dr Hopcroft still considers that the proposed L3/4 fusion is "decidedly" reasonable. Reading Dr Hopcroft's opinion as a whole I interpret his views to be that while he was prefer that both adjacent levels were being fused, there should be no barrier placed before the applicant and his treating neurosurgeon to carry out the treatment stepwise.

63. No issue has been raised regarding the cost of the procedure.

64. The actual or potential effectiveness, and the acceptance by medical experts of the treatment as being appropriate and likely to be effective are at the centre of this dispute. I do not consider any doctor takes the point that the L3/4 fusion would not provide some relief. The whole objection raised by the respondent is based on opinions that the procedure may give rise to accelerated degenerative changes at L5/S1. That is, the procedure may have consequences, but the fusion at L3/4 is not suggested to be detrimental of itself. That, of course is not irrelevant. However, the evidence of all doctors seems to tip the suggestion that the additional fusion at the two adjacent levels may provide more relief overall to the applicant. Dr Siu, however, by recommending the stepwise approach, is not ruling out further treatment in due course if needed.

65. I think Dr Siu's approach to determining the reasonableness of the surgery is addressed succinctly in his report of 11 September 2019 by considering the treatment that has occurred up to that time and expressing his view that the proposed surgery was the reasonable *next step*. That is, Dr Siu has not disregarded the pathology believes has been disclosed at L5/S1, but by referring to the *next step* he has implicitly acknowledged that further steps may be required but that he is of the view that they should be done step-wise – that is, not fuse all adjacent segments at once.

66. Overall, I consider a stepwise approach to offer reasonable chances of actual and effective reduction in symptoms, together with added benefits such as increased activity, reduced medication and quality of life. I also consider the incremental approach provides an advantage that the applicant may get adequate relief from a further fusion at one level rather than having a stiff and fused lower back at the bottom three levels of his lumbar spine. The fact that medical opinions may differ as to whether everything be done at once, or in a possibly incremental fashion does not mean that the incremental treatment is not reasonable (remembering at all times that the applicant carries the onus).

67. Therefore, in proceeding to an L3/4 intervertebral disc fusion the patient should be made aware that he will not have a pain-free lumbar spine, and in fact the pain emanating from the L5/S1 level may be accelerated both in time and intensity, and he may well face in the future the possibility of fusion at the L5/S1 level."

68. I conclude that the proposed L3/4 fusion is reasonably necessary. That is not to say, a procedure fusing L3/4 and L5/S1 also would not be reasonably necessary, but that alternative is not put before me.

Results from injury

69. Causation is a question of fact (*March v E & MH Stramare Pty Ltd* [1991] HCA 12; 171 CLR 506 (*March*) per Mason CJ at [16]). The worker need only establish, applying the commonsense test of causation (*Kooragang Cement Pty Ltd v Bates* (1994) 35 NSWLR 452; 10 NSWCCR 796; *March* per Mason CJ at 515 and Deane J at 522), that the treatment is reasonably necessary "as a result of" the injury (see *Taxis Combined Services (Victoria) Pty Ltd v Schokman* [2014] NSWWCCPD 18 at [40]–[55]). That is, she has to establish that the injury materially contributed to the need for the surgery (see the discussion on the test of causation in *Sutherland Shire Council v Baltica General Insurance Co Ltd* (1996) 12 NSWCCR 716).

70. *Murphy v Allity Management Services Pty Ltd* [2015] NSWWCCPD 49 is authority for the proposition that a work injury does not have to be the only, or even a substantial, cause of the need for the relevant treatment before the cost of that treatment is recoverable under s 60 of the 1987 Act.

71. In *March*, Mason CJ (at 509):

> "It has often been said that the legal concept of causation differs from philosophical and scientific notions of causation. That is because 'questions of cause and consequence are not the same for law as for philosophy and science', as Windeyer J. pointed out in *National Insurance Co. of New Zealand Ltd. v. Espagne* [(1961) [1961] HCA 15; 105 CLR 569, at p 591]. In philosophy and science, the concept of causation has been developed in the context of explaining phenomena by reference to the relationship between conditions and occurrences. In law, on the other hand, problems of causation arise in the context of ascertaining or apportioning legal responsibility for a given occurrence. The law does not accept John Stuart Mill's definition of cause as the sum of the conditions which are jointly sufficient to produce it. Thus, at law, a person may be responsible for damage when his or her wrongful conduct is one of a number of conditions sufficient to produce that damage: see *McLean v. Bell* [(1932) 147 LT 262 at p 264], per Lord Wright; *Sherman v. Nymboida Collieries Pty. Ltd*. [(1963) [1963] HCA 63; 109 CLR 580 at pp 590–591], per Windeyer J."

72. Accordingly, at law, a condition can have multiple causes by events over a long period: *Wretowska* at [110]; *Mercer; ACQ Pty Ltd v Cook* [2009] HCA 28. See also (*Migge v Wormald Bros Industries Ltd* (1973) 47 ALJR 236; *Pyrmont Publishing Co Pty Ltd v Peters* (1972) 46 WCR 27; *Cluff v Dorahy Bros (Wholesale) Pty Ltd* (1979) 53 WCR 167 (*Cluff*); *Calman v Commissioner of Police* [1999] HCA 60, 19 NSWCCR 40; *ACQ Pty Ltd v Cook* [2009] HCA 28; 237 CLR 656 (*Calman*) at [25] and [27]) [46].

73. Similarly, “incapacity may result from a work injury even though the...incapacity also results from a later, non-employment cause” (*Cluff*; *Calman*). The same applies to the need for medical treatment. This is relevant as Dr Siu notes the development of spinal degeneration is often multi-factorial and his post injury physical work would also be a significant contributing factor. That contribution does not mean that the surgery “results from” one or more of the claimed injuries.

74. Considering all of the evidence, I am persuaded by Dr Hopcroft’s views on causation, that the injury on 1 April 2011 was “the primary and most significant of the three injuries” and led to his first surgery of L4/5 laminectomy discectomy; that the August 2012 injury was “simply an aggravation of his first injury and would not have been a problem had it not been for the first injury”, leading to the second micro-discectomy at L4/5. I am also satisfied that the third injury in January 2019 was once again an aggravation of the primary pathology and not of itself “a new injury” (that is, it was a further aggravation of the same disc level).

75. Dr Bentivoglio provides a very similar analysis, even though he confusingly concludes that the impairment does not result from the same pathology. He concludes nonetheless that it “is impossible to determine which injury would be responsible for the need for the surgery, as all of them are contributing to his current spinal disability”, before nominating the most recent 2014 injury as the “more likely” cause for the surgery to adjacent segments, and his “current disability”.

76. I do not think this differs greatly from Dr Hopcroft’s conclusion, and I remain persuaded by Dr Hopcroft’s views. Similarly, Dr Siu refers to the current presentation of symptoms and causes “collectively”, as a result of the L4/5 fusion, which in turn was the result of the multiple insults the applicant experienced at the L4/5 levels in the three incidents, adding comfort for my ultimate conclusion.

77. I therefore conclude that the proposed L3/4 surgery is reasonably necessary as a result of the injuries to L4/5 on each of 1 April 2011, 23 August 2012 and 13 January 2000 and 13 January 2014 (deemed).