THE HIGH COURT OF NEW ZEALAND
NEW PLYMOUTH REGISTRY

CIV-2013-443-107

UNDER THE	Judicature Amendment Act 1972 and Declaratory Judgements Act 1908
IN THE MATTER	of an application for judicial review and an application for declaration
BETWEEN	**NEW HEALTH NEW ZEALAND INC**
	Plaintiff
AND	**SOUTH TARANAKI DISTRICT COUNCIL**
	Defendant

AFFIDAVIT OF SANDRA ELIZABETH PRYOR ON BEHALF OF THE DEFENDANT

AFFIRMED 4th October 2013

Simpson Grierson
Barristers & Solicitors

D J S Laing/H P Harwood
Telephone: +64-4-499 4599
Facsimile: +64-4-472 6986
Email: duncan.laing@simpsongrierson.com
DX SX11174
P O Box 2402
Wellington

I, Sandra Elizabeth Pryor, of Hawera, Dental Surgeon, solemnly and sincerely affirm:

1. I am a Dental Surgeon based in Patea and Hawera. I have owned and operated a private dental practice in Patea for the past 18 years, treating patients from mainly Hawera and Patea, and some from Waverley (Waverley has a part time dentist). I am also a hospital dentist at the Hawera Hospital.

2. I summarise my relevant experience and qualifications below:

(a) I graduated from the University of Otago with a Bachelor of Dental Surgery (BDS) on 10 December 1982.

(b) After graduating, I worked at McLeod and Evans' dental surgery in Hawera and then purchased that practice in 1986. I sold the practice in 1991 after the birth of my second child.

(c) I started a part-time dental practice in Patea in 1995 from where I still practice all aspects of general dentistry.

(d) I have worked as a locum dentist in Wellington, Hutt Valley, Wanganui, New Plymouth, Stratford, Eltham, Inglewood and Greymouth at various times.

(e) For the past 11 years, I have also worked part-time as a hospital dentist at the Hawera Hospital.

(f) I have contracts with the Ministry of Health to treat adolescents under the Dental Benefit Scheme and I see children under 12 years old when the School Dental Clinics refer them to me.

(g) I also hold a District Health Board contract to treat adults with Community Services Cards who present with pain or infection where I provide relief from pain for a very small fee.

(h) I was recently involved in a Ministry of Health Survey to determine the oral health status and needs of people aged over 65 years old.

(i) I am a member of the New Zealand Dental Association (**NZDA**) and the Taranaki Branch of the NZDA.

(j) I have held office as Secretary and Treasurer of the Taranaki Branch of NZDA and am the Consumer Advisory Officer.

3. In my thirty years of practice, I have experienced a wide range of dental needs of children and adults ranging from 1 year olds to 96 year olds, from low income and high income backgrounds, and in non-fluoridated and fluoridated areas.

4. I confirm that I have read and am familiar with the Code of Conduct for expert witnesses in Schedule 4 to the High Court Rules and agree to comply with it. This evidence is within my area of expertise and I have personal knowledge of the facts and matters set out below.

5. I have read the affidavits of:

(a) Associate Professor David Menkes;
(b) Emeritus Professor Martin Ferguson; and
(c) Patrick Sloan.

filed on behalf of the plaintiff in these proceedings.

6. I have also read the affidavits of Dr Greg Simmons, and a draft affidavit of Dr Robin Whyman on behalf of the Defendant.

7. I describe below my observations of the dental health issues in Patea and Waverley. My observations focus on Patea, which is where my current practice is located. However, I also treat patients from Waverley, so I am familiar with state of oral health in Waverley as well. Waverley and Patea face the same oral health issues. They are very similar towns demographically.

8. I also briefly describe two informal comparative studies that I carried out which, in my view, demonstrate the benefits Patea and Waverley would gain from fluoridation.

9. The first study compared differences in the level of tooth decay between Patea and Hawera for 15 and 17 year olds. The water supply in Hawera has been fluoridated for 40 years, whereas Patea and Waverleys' water supplies are yet to be fluoridated. The study confirmed my observations that decay in teenagers is two to three times worse in Patea than it is in Hawera.

10. The second study compared treatment requirements in Hawera during a three year period when Hawera's water supply was not fluoridated. During that period, the number of Hawera children who required treatment under general anaesthetic nearly doubled. Additionally, many more children required crowns as opposed to small fillings, which indicates tooth decay increased during the three year period Hawera was without fluoridated water.

Dental decay in Patea and Waverley

Demographics of Patea and Waverley

11. Patea and Waverley are rural towns with populations of approximately 1100 and 850 residents respectively. The 2006 census reported that in Patea:

(a) 47% of over 15 year olds have no formal qualifications;
(b) 11.3% are unemployed (compared with 4.7% in the Taranaki region);
(c) 'labourer' is the most common occupational group;
(d) 64% of the population earn less than $20,000;
(e) 35% of households are one parent families (compared with 18% in the Taranaki region);
(f) 18% of households have no transport;
(g) nearly 10% of households have no access to phones of any description; and
(h) 51% of the population are Maori (compared with 15.8% in the Taranaki region).

12. Patea Area School is classified as Decile 1 (compared to Hawera High School which is Decile 5).

13. The demographics in Waverley are similar to Patea.[1]

My experience of dental health in Patea

14. I was invited to practice in Patea 18 years ago by the Principal Dental Officer of the Taranaki School Dental Service, who identified the huge need for a dentist in Patea. I had already witnessed that need through the severe cases of dental decay in the adolescents from Patea that I saw in my Hawera practice. I was under no illusion as to what I would be faced with.

15. Patea was without a dentist from 1983 until 1995. During that time, it was up to parents to get their adolescents to a Hawera dentist, which was difficult for many people who do not have access to cars. As mentioned above, the 2006 census indicated that 18% of the Patea households had no form of transport. When I retire from my Patea practice, it is most likely that Patea will not get another dentist and adolescents will once again have to travel to Hawera to visit a dentist.

16. Many people in Patea suffer significant dental decay. The majority of the community does not have the same ability or inclination to access oral health care as other, more prosperous, and better educated parts of New Zealand. As indicated above, 64% of households in Patea earn less than $20,000 and 35% of families are single parent families. It is perhaps unsurprising that there are a lot of children and adults who do not have access to a toothbrush or toothpaste, and why adults do not attend regular dental care.

17. As an example of the state of dental decay in Patea, in 2010 I treated approximately 398 individuals (not including multiple visits). Of these, 86 were for Community Service Card Holders presenting with pain or infection, generally requiring extraction, 83 were adolescents, and 179 were private patients (of those, less than half are from the Patea township).

[1] 2006 Census.

18. The local Doctor also refers adult patients with severe toothache directly to the Hospital. As I work at the Hawera hospital I am aware of these referrals – they would amount to approximately 10 per year.

19. I also refer approximately 10 to 15 low income adults each year to the Hospital for full dental clearances (due to extensive decay).

20. Occasionally I will see an adolescent for their first dental assessment at the ages of 15/16/17 (they are supposed to enrol at the age of 13) due to advanced decay and pain.

21. Despite treatment being free for children up to the age of 18, there are some Patea adolescents who do not take up the service or if they do enrol, choose not to attend appointments on a regular basis. For example, I currently have 95 adolescents enrolled with me and 21 of them either repeatedly failed to turn up for their annual check or failed to complete their treatement for the year to date.

22. Considerable time and effort by myself, my staff and the school is put in to getting these teenagers to their appointments which sometimes means personally collecting them in my car.

23. Contacting some Patea children (and parents) is often difficult too – 10% have no access to any form of phone, and so I cannot ring them. Some houses do not have letterboxes, and so I cannot mail them appointments. Often the children move around from one home to another.

24. I have discussed the difference in decay between pre-schoolers and primary school children from Patea and Hawera with School Dental Therapists who work in both towns. They agree that decay is significantly worse in Patea than in Hawera. The dental therapists also have noted the decay rate in Waverley children is worse than in Hawera. Waverley has a part time dentist (Dianne Lance) and she also has commented on the high rate of dental decay in Waverley children and adolescents. This accords with my own experience treating children and adolescents from Waverley.

My two informal studies

Background

25. In 2009, I made a submission to the South Taranaki District Council recommending fluoridation of the Patea and Waverley water supplies to help prevent the high incidence and severity of tooth decay in those towns. I submitted again in 2011, when I learned that the Council was considering upgrading the water treatment plants for Patea and Waverley.

26. Before I made my 2011 submission, I wanted to compare the decay rates between Patea and Hawera to see if there was any difference between two South Taranaki towns where one had access to fluoridated water and the other did not. I also wanted to analyse the effect of the temporary closure of the Hawera fluoridation facility between 2006 and 2009 due to a breakdown at the Water Treatment Plant.

27. To do this, I undertook two informal comparative studies in 2011. I note that my studies were not published nor peer reviewed and should be viewed in that light. However, I consider that the results of my studies were informative.

First study: a comparison between decay rates of 15 to 17 year olds in Patea and Hawera

28. In my first study, I compared the decayed, missing, or filled teeth (**DMFT**) scores in 15 and 17 year olds for the years of 2007 and 2010 in both Hawera and Patea. I chose 15 and 17 year olds because the Ministry of Health claim forms required the DMFT scores to be recorded at these two ages. I used the claim forms from my practice in Patea and a colleague's practise in Hawera to produce average DMFT scores for my samples.

29. For the 2007 study, I had DMFT scores from 26 patients from Patea and 260 patients from Hawera. For the 2010 study, I had 40 patients from Patea and 305 from Hawera. Even though the Patea sample sizes were small compared to those of Hawera, the Taranaki District Health Board

(**TDHB**) statisticians informed me that the data was statistically significant and able to be used.

30. I note that not all adolescents from Patea are enrolled in my practice as some Patea students attend Hawera High School and attend a Hawera dentist. There may be some students who are not enrolled with any dentist at all. Some are enrolled but never attend.

31. There are some limitations with the information provided by the DMFT scores. DMFT scores count the number of teeth that have decay, are missing, or have been filled. But, a tooth can be decayed on more than one surface. So, a DMFT score of one could be a tooth that has anywhere from one filled or decayed surface to five, or the tooth could be missing as a result of an extraction due to extensive decay. A study counting the actual decayed or filled surfaces and their extent would be superior. A range of DMFT scores would also give a better picture of the distribution of decay experience amongst individuals as some adolescents have considerably more than others.

32. However, my comparison showed that the average DMFT scores for 15 to 17 year olds in Patea were two to three times worse than those in Hawera.

33. In 2007, the average DMFT score for 15 year olds in Patea was 5.1, whereas in Hawera it was 3. The average DMFT scores for 17 year olds in Patea was 8.6, and in Hawera it was 3.9.

34. In 2010, the average DMFT score for 15 year olds was 6.4 in Patea and 2.7 in Hawera. For 17 year olds, the average DMFT score was 10.4 in Patea and 3.6 in Hawera.

35. I noted that the Hawera DMFT scores were slightly lower in 2010 compared to 2007. As I have already mentioned, Hawera's water supply was not fluoridated from some time in 2006 until January 2009 due to a breakdown of the fluoride facility at the water treatment plant in Kapuni. I believe that the small improvement in the average 2010 DMFT score was because Hawera children were once again receiving

fluoridated water for one to two years (depending on the time of the year their DMFT scores were recorded).

36. I accept that my study does not account for other factors, such as the differences in socio-economic conditions between the two towns. But I note that the comparative study by TDBH in full discussed at paragraphs 19 to 22 of Dr Simmons' affidavit compared decay rates between very similar communities in Taranaki. The outcome of that study also demonstrated the potential benefits that fluoridation could have for Patea and Waverley.

37. However, all limitations of my study aside, I consider based on my own experiences that the results indicate that tooth decay is very high in teenagers from Patea, and tooth decay in Patea is considerably worse than Hawera, where the water is fluoridated. My view is that fluoridation contributes to the lower average DMFT scores in Hawera.

38. The average DMFT scores for 17 year olds in Patea of 8.6 and 10.4 indicates extremely high incidence of tooth decay. 17 year olds have 28 teeth (not counting wisdom teeth, which generally erupt later) and so 8.6 and 10.4 DMFT represents 30-37% of their adult teeth being affected by decay. The 2009 NZ Oral Health Survey stated that the average DMFT scores for 12-17 year olds was 1.9 (6% of their dentition).

39. I note that the average DMFT scores do not fully reflect the true extent of decay in individual mouths. Some of my patients have little or no decay, and lower individual DMFT scores, whereas others have more prevalent decay and higher individual DMFT scores.

40. Unless the teenagers take steps to treat the existing decay and prevent further decay, their teeth will continue to decay causing unnecessary pain and disruption to their lives. The rate of increase in decayed teeth between the ages of 15 to 17 is significant as seen by the difference between the DMFT scores for 15 and 17 year olds in both samples.[2]

[2] The DMFT scores for 15 years olds was 5.1 and 6.4 in 2007 and 2010 respectively, whereas for 17 years olds the average DMFT scores was to 8.6 and 10.4.

41. I also note that my study does not take into account teenagers who have never seen a dentist. The presence or absence of the other factors which contribute to good oral and dental health will determine their caries risk, but generally you would expect if early dental care is avoided then the consequences would be a significant amount of decay.

42. My study also does not differentiate between different socioeconomic groups or which school Patea students attend. The 'Patea town' students tend to be lower socioeconomic groups and the 'out of Patea town' students tend to be a mixture of low and high.

43. Also, some of my students attend Hawera High School or the New Plymouth boarding schools. Some of these students, although from a non fluoridated area, were exposed to some fluoridated water in Hawera and New Plymouth at the time of the study (New Plymouth removed fluoride from its water in 2011). The students who receive some fluoridated water appear to have lower DMFT scores compared to those who live in Patea and attend school there. Interestingly, I have started to notice some increase in early decay in the past year in those attending New Plymouth schools (presumably due to the absence of fluoride).

Second study: the effect of a nearly three year absence of fluoride from the Hawera water supply on the treatment needs of children

44. My second study focused on a specific time period in Hawera alone. Hawera's fluoridation plant broke down in 2006 and Hawera went without fluoridation for nearly three years until it was reinstated in around January 2009. This provided an opportunity to compare the effects of fluoridation on the same population. I have included the town of Normanby in the results as it receives Hawera water.

45. I chose to review the number of children being referred for treatment under general anaesthetic (**GA**) in 2006 and 2010 because the sample would include Hawera children who had no exposure to fluoridated water. Children born in 2005, 2006, and 2007 and would be the 3, 4, 5 year olds in 2010 – which tend to be the age groups which most require GAs. I hypothesised that in 2006 the impact on dental health from a

lack of fluoride would not yet have taken effect, whereas by 2010 the effect of a nearly three year absence of fluoride in the water would be evident.

46. Data was provided by a Hawera dentist who performs dental treatment under GA on the Mobile Services Surgical Bus (**MSSB**) in South Taranaki. Dental treatment is done under GA for several reasons:

(a) children with behavioural management issues who may have single or multiple lesions and require treatment done in the least traumatic environment. Decay may involve few or multiple teeth, may be extensive or moderate in individual teeth, and the children may have abscessed teeth requiring extraction. A child who has behavioural issues, often will not be able to tolerate dental work being carried out in a normal clinic setting just with local anaesthetic.

(b) Well-behaved children are seen also if they have multiple cavities – it is very easy to lose a child's confidence if they have to have multiple treatments in a normal setting.

(c) Children requiring extractions for impacted teeth, or biopsies, and other surgeries – all unrelated to dental decay (these extractions were not included in the GA numbers)

(d) Intellectually compromised children are often best treated under GA – the decay can be of various degrees.

47. I also compared the types of treatment that the dentist was performing. Small decay requires a filling, whereas more advanced, multi surface decay, requires stainless steel crowns (**SSC**). Lastly, the worst decayed teeth require extraction.

48. Over this period, I became aware that there was anecdotal evidence from School Dental Therapists that decay was occurring at a younger age and that more children were being referred for dental treatment under GA on the MSSB.

49. In 2006, of the 17 South Taranaki children who required a GA on the MSSB, six of them were from Hawera and Normanby representing 35% of the sample. In comparison, in 2010, eleven of the twenty South Taranaki children who required a GA on the MSSB were from Hawera and Normanby, representing 55% of the sample.

50. The number of Hawera children who required GAs on the MSSB nearly doubled between 2006 and 2010, from six in 2006 to eleven in 2010.

51. In 2010, five of the Hawera children requiring GAs were 5 year olds, while in 2006, there were no five year olds, but three six year olds. This suggests that teeth were experiencing decay at a younger age during the period where the Hawera water supply lacked fluoride.

52. I found that in the two sample years, the number of Hawera and Normanby 3 year olds who required dental work under GA on the MSSB rose from 0 in 2006 to two in 2010. These children would have been born in 2006-2007 and would not have been exposed to fluoridated water in Hawera until 2009.

53. The difference in treatment needs for Hawera children between 2006 and 2010 in my view was also significant.

54. In 2006, for the six children from Hawera and Normandy, 27 fillings were placed, 9 SSCs and 13 extractions which represents 55%, 18%, 26% respectively of tooth treatments. In 2010, for the eleven children from Hawera and Normandy 13 fillings were placed, 51 SSCs and 20 extractions representing 15%, 60% and 23% of treatments required. The number of small fillings dropped from 2006 to 2010, but the multi-surface decay had increased resulting in an increase in the number of crowns from 9 to 51 needing to be placed – almost a perfect reversal of the percentage of fillings to crowns. Therefore, the extent of the decay on individual teeth was worse in 2010 than it was in 2006.

55. In my opinion, the absence of fluoride from drinking water appears to have had a harmful effect on the oral health of Hawera children during this period.

56. Not all South Taranaki children who require GAs are treated on the MSSB due to its limited visits to the region. Most of the dental GAs are performed at Taranaki Base Hospital in New Plymouth. However, from 2001-2005, 9% of the dental GAs in Taranaki were performed on the MSSB (Lyndie Foster-Page, 2009).[3] Unfortunately, GA records from the TDHB do not distinguish between South and North Taranaki and so I do not have access to complete numbers for South Taranaki children. The study also does not account for the number of children who go untreated – these can be children who are never assessed and who live with untreated dental disease and chronic pain, or children who are assessed but never turn up for their GA appointment.

Fluoridation would significantly reduce tooth decay in Patea and Waverley

57. My observations, over thirty years of practise, clearly indicate to me the benefits of fluoridated water. In fluoridated areas, decay, when present, is not as severe or prevalent. Having worked in a non-fluoridated area for 18 years, I particularly enjoy treating adolescents from a fluoridated area (regardless of social status) because their teeth are usually in far better condition.

58. Water fluoridation is only one of the many factors which influence dental health. Lifestyle and diet, home oral hygiene (frequency of tooth brushing and flossing, use of fluoride containing toothpastes) and regular dental checks all impact on dental health.

59. However, in my experience, water fluoridation is most beneficial to those who have less access to other dental health measures to prevent tooth decay (like many areas in Patea and Waverley).

60. There is a large portion of the Patea community who would only come to me when they have a problem – usually toothache – and unfortunately extractions are often the only option left available to them. These adults probably make up the majority of Patea and it is these people who are most at risk.

[3] Lyndie Foster-Page "Retrospective audit of Taranaki children undergoing dental care under general anaesthetic from 2001 to 2005" (2009) New Zealand Dental Journal 105: 8-12, page 10.

61. Fluoridated water is, in my view, the most effective and safe way that some of the inequalities in dental decay can be improved in communities like Patea and Waverley.

62. Fluoridated water will also benefit the rest of the community. Those who look after their teeth are generally keeping them for longer – however, an increasing number of people with medical conditions require medication that increases the risk of caries, especially where saliva flow is affected.

63. Root caries is an important issue that is evident with a lot of my elderly patients. Diseases like arthritis can seriously compromise the ability to brush properly. I often see that oral hygiene is more challenging for these patients and decay becomes more prevalent. Fluoridated water is one way of providing extra protection at minimal cost.

64. Diabetes and heart disease are also common medical conditions for the people of Patea and dental infections put them at risk of complications. It is in their interest to make the changes required to give them good oral and general health. Fluoridated water plays a significant part in contributing to those improvements.

S.E Pryor

Sandra Elizabeth Pryor

AFFIRMED at Hawera this 4th day of ~~October~~ 2013 before me:

A Solicitor of the
High Court of New Zealand

Ross Dunlop
Justice of the Peace
174 Ohawe Rd, Hawera
Ph: 06 278 5839