REPORT OF PROCEEDINGS BEFORE

STANDING COMMITTEE ON SOCIAL ISSUES

INQUIRY INTO DENTAL SERVICES IN NEW SOUTH WALES

At Sydney on Wednesday 29 June 2005

The Committee met at 1.30 p.m.

PRESENT

The Hon. J. C. Burnswoods (Chair)

The Hon. Dr A. Chesterfield-Evans
The Hon. K. F. Griffin
The Hon. C. J. S. Lynn
The Hon. R. M. Parker
The Hon. I. W. West

HANS FREDERICK ARTHUR ZOELLNER, Associate Professor and Chairman, Association for the Promotion of Oral Health, Westmead Centre for Oral Health, Westmead Hospital, Westmead, affirmed and examined:

CHAIR: I declare open the Standing Committee on Social issues inquiry into dental services in New South Wales. Welcome, Associate Professor Zoellner. In what capacity are you appearing before the Committee?

Associate Professor ZOELLNER: I am here in my capacity not as an associate professor at the University of Sydney but as Chairman of the Association for the Promotion of Oral Health.

CHAIR: Have you received the questions that we drafted for you?

Associate Professor ZOELLNER: I have seen some, yes.

CHAIR: They are probably fairly obvious and many of them are based on your submission. But my apologies if you have not received them. Sometimes we are in a bit of a rush to get these things ready.

Associate Professor ZOELLNER: That is fine.

CHAIR: Would you like to make an opening statement? You will note that our first question is: What is the role of the Association for the Promotion of Oral Health? You may have planned to start with that but you may like to make a statement before we turn to questions.

Associate Professor ZOELLNER: That is good. It is probably sensible to start by explaining who we are and whom I represent. Our association is a recently formed think tank and advocacy group for improved dental services, health and education. We formed in response to what, in the first instance, a handful of us perceived—in fact, everyone perceived—as a developing crisis in dental health. What was most concerning to many of us was that the underlying infrastructure required not only to treat current community needs but also to be capable of treating future community needs was being severely eroded.

At first we were just a handful of academics and public health dentists. We were concerned so we got together and thought, "What's required?" We decided that it was probably important for there to be a group independent of the major stakeholders in oral health but nonetheless composed of and drawn from members of those very stakeholders. Within dentistry we have had all sorts of unfortunate and unhelpful fractures and divisions—I suppose internal warfare—and we thought that it was important to establish neutral ground, where people from different backgrounds and different stakeholders, public health, the private sector, specialists, general practitioners and people outside dentistry, from medicine, industry, consumer groups, academics and the insurance industry, could come together and try to think through what the global problems are in oral health, act as a think tank and then advocate strongly for whatever models we thought we would develop.

So we are now an association of about 270 members. Our council is effectively a think tank, comprising about 38 people. We have prepared a range of documents within which we outline our analysis of the current problems and within which we also outline what we believe is a rational strategy for dealing with these problems. We are very grateful that the upper House has shown such a strong interest in dental health.

CHAIR: Thank you. You have answered the first question that we prepared. Would you like to add anything before we turn to specific questions?

Associate Professor ZOELLNER: Yes, I should probably outline briefly an overview of what we perceive is the problem. Essentially, there seems to have been an increase in dental disease in the community. There is an increase in caries and even in things such as oral cancer. By every reasonable measure of oral health, things have been getting progressively worse. While things are getting worse, our capacity to treat is going down. Particularly, the number of clinicians available to treat patients who have any form of dental disease is dropping. It has been dropping slowly and

steadily. We see that in the future it will not only drop slowly and steadily but crash. The number of dental clinicians available to treat disease in New South Wales and throughout the rest of the country will crash. That is simply because many of the clinicians are ageing. We are training fewer dentists than we have in the past and the population is increasing. On top of that, the number of teeth in the community because of the effect of fluoride—fluoride has been very successful in reducing caries and dental decay—has increased. So of course we now have more teeth. They can still become decayed, albeit at a much slower rate, and they can develop other problems, such as periodontitis and so forth.

CHAIR: When you say that there are more teeth in the community do you mean that there are fewer dentures?

Associate Professor ZOELLNER: Yes, that is true.

CHAIR: Or are fewer teeth being extracted from relatively young people?

Associate Professor ZOELLNER: That is right. When I was a student 25 years ago we saw many patients. I learned to make full dentures—that was an important part of my training. These days patients who are middle-aged and older have their teeth. So there are simply more teeth in the community that require servicing and patients living to old age and requiring treatment. So there is in fact a significant increase in demand in the community for dental services and yet a significant reduction in the capacity to manage this.

That in itself would not be so worrying because you could say, "Well, we'll simply train more dentists to meet this demand". That is fine, but the educational infrastructure required to train the work force is also degrading and is severely degraded relative to the past. Many of us are concerned that it will fail. We feel it is failing now and once it has failed—once it is gone—we will have to wait generations to rebuild the dental infrastructure of the State. You cannot depend upon people to fly in from somewhere else—from Melbourne, Adelaide, perhaps overseas or anywhere—to work in a State that has destroyed its own dental infrastructure. We do not believe in the cargo cult; we believe we must rescue what we have got, repair it, improve it, strengthen it and serve the community properly.

CHAIR: I want to get straight a couple of definitions. When you refer to "clinicians" or "dental clinicians" do you mean what most of us mean when we say "dentists"?

Associate Professor ZOELLNER: Yes. That is a very good question and I am glad you asked it. Dental clinicians includes dentists, who are, I suppose, the core of the work force and, if you will, the leaders in the area of dental care. But it also includes groups such as dental therapists, who work within the public system and are trained to manage fairly routine restorative work and basic treatment for children. They work exclusively in the public system. It also includes dental hygienists, who are trained to manage and assist in oral hygiene instruction, planning and the management of oral hygiene, usually in adults. We have very few dental hygienists in New South Wales. It also includes dental prosthetists, who are trained initially as dental technicians and then go on to do additional training to enable them to treat patients directly for the manufacture of dentures. I suppose we also must include dental assistants, who you could call dental nurses.

In addition, we now have a new classification of dental clinician. They would be called Bachelor of Oral Health graduates and oral health therapists. A new course was recently established at Newcastle university as well as at the University of Sydney for the training of oral health therapists. They will have the skills of therapists and hygienists. In fact, that is one of the very few really positive things that is happening. But I hasten to say that within the public system, although we have all these different classifications of dental clinicians, there is no State award and no arrangement for payment of dental hygienists, no arrangement for payment of dental prosthetists and no arrangement for payment of Bachelor of Oral Health graduates yet. That is a matter of importance for the State to instigate quickly because these professionals have the capacity to significantly improve treatment, increase treatment levels and deliver a significant amount of services to the community. But there is simply no award; there is no arrangement for paying these people.

CHAIR: You commented on increasing disease but decreasing clinicians. Does that comment apply to all those groups, except for the partial exception you made for the new course at the University of Newcastle? Would the decrease in training and so on apply to each of those categories?

Associate Professor ZOELLNER: Yes, that is right. We have recently discontinued dental therapy training entirely in anticipation of the new Bachelor of Oral Health course. So that is not irrational; it is quite sensible. We have never trained dental hygienists in New South Wales. That is one of the reasons why we have the lowest number per capita of dental hygienists in Australia relative to any other State. We also have the lowest number of therapists relative to any other State because we have simply not been training enough. But, having said that, we are not providing enough employment positions for these people. Quite a number of therapists from the last graduating group last year still have not found employment although they are trained. They have been trained at State expense. I have to admit that I do not really know how the numbers of prosthetists are changing.

The Hon. ROBYN PARKER: Could you clarify that last point? You said that there are not enough dental therapists but there are not enough jobs for them either.

Associate Professor ZOELLNER: Yes, it is confusing. There is plenty of work for dental therapists. There is a crying need. Innumerable children have significant decay that therapists are trained to treat but there are not the jobs available for therapists to go to and work. It is not that there is no need; it is just that there is no employment position for them.

The Hon. ROBYN PARKER: Where would they normally work?

Associate Professor ZOELLNER: They would work exclusively in the public system, in the school dental service.

CHAIR: So there is insufficient establishment of jobs in the public system? The need is there but because the jobs are not provided—

Associate Professor ZOELLNER: That is exactly right. There is also the distribution of positions between rural and metropolitan areas. There are enough positions for therapists in rural areas but not in metropolitan areas. There is a very high vacancy rate for all dental clinicians in the public system. About 20 per cent of all currently established positions for dentists are unfilled because you cannot possibly attract dentists to such low-paying jobs in the public system, particularly in the country areas.

The Hon. ROBYN PARKER: Who determines the salaries for these people? You said that there are no payment arrangements, no awards. Is a figure plucked out of the air or—

Associate Professor ZOELLNER: There is a structure for developing particular State awards. It is somewhat confusing for me: I do not really understand it. For every designated employee of the State of New South Wales there is a State award which determines what their wages should be, progression and so forth. There is no arrangement for these people.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You say there is parity of dentists and doctors in the British National Health Service but there is not in Australia. There is a big gap between the salary rates for dentists and doctors within the hospital system.

Associate Professor ZOELLNER: Yes, that is true. For some reason there is a lack of parity in the hospital system, but also in the universities as well. As a dental academic with similar clinical training and responsibilities I am not entitled to the same level of clinical loading as a medical graduate at the University of Sydney. So there is a lack of parity across the system, yes.

CHAIR: Forgive us if we are asking questions that range widely. It is probably because you are our first witness in this inquiry. We will obviously be asking some of these questions of others as well. I know that some of them go a bit beyond your submission. You have referred to the demand for dental services being greater and more complex than in past years. We wanted to know why, and you have explained some of that as well. Can you be more specific about the time span and the reasons demand has outstripped supply?

Associate Professor ZOELLNER: Unfortunately, the data on the rate at which these things have happened is rather patchy but we can say that there has been a significant increase in some areas.

I was just jotting down some notes. There has been a threefold increase in the number of carious, untreated teeth, amongst public patients between 18 and 24 years of age in a six-year period and a twofold increase in other age groups over the same time. In the 20-year period before that there was about a twofold increase. So there seems to be an acceleration in this. In large part it is simply because fluoride has been wonderfully successful: teeth are being retained. But also the complexity of the work that is required has increased. As I mentioned earlier, patients are living into old age with their own teeth, so there is more work to do. But not only that, a patient coming to the dentist now may be aged, frail, taking a whole cocktail of medications. So that patient is surgically compromised. A patient who has a dicky heart and a clapped-out kidney is quite delicate to treat. It takes some care to manage such patients safely. So the complexity of the work has increased. It is harder to treat even the patients that we have. We are not just treating teeth; we are treating whole patients.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: In your submission you also say that there has been a 58 percent increase in the hospitalisations of children under five for dental care and an 80 per cent rise in hospitalisations for children five to fourteen. Why is that? Surely they are getting fluoride?

Associate Professor ZOELLNER: They are getting fluoride but it is a combination of things. Fluoride certainly reduces dental decay. It reduces the incidence of decay and it reduces the severity of disease in any population group that is exposed to it. But dental decay is caused by lots of things. It is described as multifactorial. If a patient has a very low buffering capacity in the saliva, has acidic saliva, for example, has a very poor diet, they will still get caries. If they have particular tooth morphologies it makes them more susceptible to—

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But why is this increasing in young people? Why are they going to hospital?

Associate Professor ZOELLNER: If you are looking for the real causal root of that I cannot give you a good answer other than to say that it probably reflects the fact that they are simply not getting treatment at an earlier stage. There is no proper control for these patients. So, of course, if your capacity to treat has gone down you cannot help these patients before they accumulate so much disease and have such severe problems that they require hospitalisation.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So the reason that there is more hospitalisation is that there is less treatment available earlier?

Associate Professor ZOELLNER: Yes, I think so.

CHAIR: Is it also that parents think that young children do not have tooth problems any more because they think fluoride and other things have improved that and things are not picked up as early as perhaps they used to be?

Associate Professor ZOELLNER: Yes, that might be true. I think that people have developed a false sense of security: there is all this fluoride in the water and the kids are fine. It is certainly true that compared with previous generations—two or three generations ago—we have much better teeth. But there is a false sense of security there. Of course, if patients are denied treatment early their problems simply get worse.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You have said that the database about procedures which allows planning for oral health is inadequate. Does that mean that we do not know what is going on? Is that another way of saying the same thing?

Associate Professor ZOELLNER: That is absolutely right. We simply do not have an adequate monitoring system to track the incidence of any oral disease. This is not just for decay; this is for any oral disease: how many cystic lesions are there in New South Wales that require treatment; how many granulomas are there; how many impacted wisdom teeth are there; how many white mucosal patches; how many precancers are there?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Does this matter? We have never had this data, have we?

Associate Professor ZOELLNER: We have never had this data and we have never established the mechanisms for tracking community disease. So in a way it is not surprising that this has sneaked up on us. But at the moment we are dependent upon occasional surveys that we purchase in from outside the State. Even though surveys are important and very valuable, they are not adequate for planning real work force needs and the distribution of resources within the State. So we need to develop a mechanism for that.

The Hon. CHARLIE LYNN: Do other States have it?

Associate Professor ZOELLNER: Some States do it much better than we do it. Again, many of the things that we are talking about are national-level problems. New South Wales is exceptional in that we do it worse than anyone. We have the lowest level of funding of all other States and Territories. So we are exceptionally bad, but I would not say that everything is great in the other States. We should try to lead the other States. We have pretensions to be the premier State. We should be premier in more ways than having more decay; we should be premier in having the best dental service available. We are the wealthiest, largest State. Let us do it better.

CHAIR: Is the data, the survey stuff, more available in other States than it is in New South Wales?

Associate Professor ZOELLNER: There is more data in South Australia. The main group which is doing these surveys, which tends to be contacted out to other areas, is based in South Australia—some really good work. I think there might be better monitoring there but I am not exactly certain where the data is best. I will say that it is pretty poor here.

The Hon. ROBYN PARKER: Has there been professional agitation about this, representation to government? I would have thought that would be—

Associate Professor ZOELLNER: Yes, there has been. The Government has received numerous reports and commissioned numerous reports. On page 49 of our submission we list only seven reports but there have been many others. Of those seven reports, there have been 86 separate recommendations that we counted—maybe we have got the number wrong; it does not really matter. Of those 86 recommendations only seven have been acted upon.

The Hon. ROBYN PARKER: What has been the explanation for the rest of them not being acted on?

Associate Professor ZOELLNER: I think that there is a lack of political will. I do not think that there has been an understanding that this is a real problem and that it has a real impact upon patients' lives. There is a sense that fluoride has done the trick, dentistry is a cosmetic sort of thing, it does not much matter. There is no understanding. There are many diseases of the mouth. There is no-one dealing with diseases of the mouth other than dentists. Medical training does not particularly include all those mucosal lesions, all those bony lesions that dentists are responsible for treating. There is a political perception that dentistry is tooth carpentry and a cosmetic service, and it is not. So we have been cut out of the health system. There is not an appreciation by our senior leaders in Parliament of the range, scope and importance of dentistry. It has just slipped under the radar. That is why we are really delighted that at this time you are showing interest in this matter and that we have a chance to inform you of the situation.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You have said that there is a shortage of dentists. Do you know what the number of dentists needed is and how do you calculate this? Who is responsible for this? Does the market calculate it or is there some academic thrusting through statistics somewhere? How do you work out how many dentists are needed and then look at the migration patterns and say what the universities ought to be doing? Is this done properly?

Associate Professor ZOELLNER: I wish that I could say that our planning for work force was rational and based upon some sort of sense and formula. As far as I can see it is not. We trained 120 dentists per year 25 years ago. We went down to about 45 a few years ago. We have gone up to 80 now. About 20 of those are international students who will clear out of the country when they are

finished. I am not too sure whether there is any sort of plan at all. I do not think there is a plan. How do we know how many dentists we need? As I said, some work, surveys and careful calculation have been done—primarily by John Spencer's group in Adelaide; he has done some really good stuff on this—and he has calculated, using formulas, looking at the age distribution of dentists. It is quite interesting looking at the curve of age distribution amongst dentists. You can see that we are all going to retire and throw ourselves upon the mercy of the public health system. Unfortunately, there will not be any dentists there to treat us because the generations before they were training up were relatively small in number. There is a careful analysis of the age distribution of dentists, the sex distribution of dentists—and increased feminisation of the dental population.

There has been an assessment of the number of hours worked by different people, different ages and genders, and then an analysis of how many teeth there are in the community, the rates of edentulism, the rates of caries and adding all that together into some sort of a very complex formula they have come up with numbers. It is projected that nationwide there will be 1,500 dental personnel short by 2010. In New South Wales that is meant to be 391 dentists, 13 hygienists, 26 therapists and 32 prosthetists less than were required to deliver levels of service that were already inadequate when those calculations were performed a few years ago.

CHAIR: You made that comment about a perception of dentists having solved a lot of problems, but also the comment about dentistry is now much more cosmetic. How much truth is there in that perception? I am not sure how you measure it, but the average dentist or the average percentage of workload of each dentist, how much has it moved towards, perhaps, the more cosmetic and more expensive sort of stuff rather than the more basic stuff?

Associate Professor ZOELLNER: I think it is a wonderful question. I do not know how to answer it other than to say that if you are in the eastern suburbs of Sydney probably there is a lot of cosmetic dentistry done.

The Hon. CHARLIE LYNN: Is that because they need it more?

Associate Professor ZOELLNER: I would not know that, but I would say that if you are in a rural area you are just grateful to find a dentist anywhere. You are not going to be worried about cosmetic dentistry. You can drive for hours to find a dentist—you can have your toothache and your abscess—and rural dentists are rather busy doing real dentistry.

CHAIR: But in richer areas—the cosmetic dentistry areas, the cosmetic surgery areas—depending on the affluence of the area?

Associate Professor ZOELLNER: That is right.

CHAIR: Dentists are more concentrated in, for instance, the eastern suburbs?

Associate Professor ZOELLNER: Absolutely. It is the highest concentration of dentists in New South Wales. It goes up to, I think, about 80 per 100,000, but if you are living in the Macquarie area—I have the numbers on page 32—it is in the order of about 17 dentists per 100,000 patients.

CHAIR: In the Macquarie Area Health Service?

Associate Professor ZOELLNER: West of the ranges people are just desperate for any sort of service at all there. Do not get me wrong, I am not saying that cosmetic dentistry has no value, but what I am saying is that dentistry is not a cosmetic service, it is a health service and it is an area that is failing.

The Hon. CHARLIE LYNN: Is there any incentive for dentists to go to rural areas?

Associate Professor ZOELLNER: Very little. And I think this is something that needs to be understood, there is this sort of idea that the problems we are talking about are problems of the poor and that is true, that these diseases are most prevalent in the poorest people and the most dependent people of the community, but it is also true that you can have as much money as you like but if you are in a rural area and there is no dentist and you have a toothache, who are you going to pay? There is

no-one there. The reason there is a shortage of dentists in rural areas and the reason that there is a shortage of dentists in the public service is that it is not as lucrative and not as pleasant to work in either of those two settings. As the work force dries up, as you have fewer and fewer dentists available that is where you will feel the pinch first. You will see the shortfall in the work force first in those places that are less lucrative, less comfortable to work in—country areas and the public system. However, it is only a matter of time until it starts to affect people in the cities. This is a middle-class problem for the people in the country now and it is going to be a middle-class problem for the people in the cities soon. It might be that the eastern suburbs, you will still be able to find someone, but they are not going to be able to treat the whole population of New South Wales.

CHAIR: Mr Lynn's question was are there incentives and what incentives are needed, I guess.

The Hon. CHARLIE LYNN: Yes, that is right.

Associate Professor ZOELLNER: Yes, there are really no incentives for private practice in rural areas, and I think that is a major problem we have been agonising within the association trying to think what could be done to try to make private practice more viable in rural areas and make improved taxation arrangements, improved arrangements for continuing education, some formal arrangements to ensure that rural private practitioners can have a holiday, we can find a locum. I do not know. There must be ways to deal with this. In the public system there are a couple schemes. There are a couple of rural incentive schemes to encourage dentists who are in the public system to work in rural areas. They are probably a little bit effective, but there is nonetheless a very high rate, I think it is 28 per cent—I would have to check, it is in the figures in the document I have given you—vacancy in rural public health places. The incentives are not sufficient. Generally, wages are too low in the public system to attract dentists at all, and much harder in the country.

The Hon. KAYEE GRIFFIN: You mentioned a couple of times research being done in South Australia.

Associate Professor ZOELLNER: Yes.

The Hon. KAYEE GRIFFIN: Is there a particular reason why there seems to be—I do not mean to put words into your mouth and whether this is exactly what you are saying—a better body of research occurring in South Australia as opposed to anywhere else?

Associate Professor ZOELLNER: Yes. We neglected it. That is why. We neglected it here in New South Wales and we allowed ourselves to become dependent upon someone else and that is fine, there is nothing wrong with that. But the outcome has been that we do not have our own data, and the data we have is not tailored to our needs in our State.

The Hon. KAYEE GRIFFIN: Given that there are shortages in terms of dentists and all the other people who make up that section of dental health, to fill some of the gaps at the moment where are the people coming from? Are there any specific areas that they are coming from? Are they coming from other States or are they coming from overseas or anything like that at the moment?

Associate Professor ZOELLNER: Yes. We are fortunate in that we are getting some dentists coming from interstate already. There is probably a limit on how much of that we can expect. Also, there are some international dentists coming to Australia, but we have not really got the formal mechanisms in place to facilitate their introduction to the system. Everyone is very nervous since Dr Death, and we do not want to recreate that sort of scenario here. But I think there are certainly quite a few very highly trained and very competent internationally trained dentists currently working in the public system, but it is actually very difficult for them to remain in the system. We have not really got good pathways to attract more international dentists and ensure at the same time the quality of their work. Something needs to be done to help that. But at the end of the day we cannot become a cargo-cult state. I do not really believe that people will flock to New South Wales to save us if we do not train our own. Why would you come? Where is the continuing education? Where is the opportunity for further training? Where is the specialist backup going to be? You would not come. I would not come.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: When you say we have to train our own, what is the state of dental infrastructure? Is there enough equipment? What is the state of dental education?

Associate Professor ZOELLNER: The physical infrastructure for public dentistry is degrading. It is very patchy. There is no consistency throughout the public health system and in different area health service areas with regard to distribution/use of dental money. Each area health service defines its own priorities, has its own treatment philosophy and does more or less their own sort of thing so that in some area health services equipment is probably better maintained than in others. I was talking with somebody the other day from a rural area health service. He said, "You've got no idea what it's like." And I am sure he is right. He was saying, "I've got chairs that don't work. I've got drills—"

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The ones with a bit of string around them?

Associate Professor ZOELLNER: You could have a foot pedal one, perhaps, or a hand-driven drill. We do not really have those, but that would be preferable to something that does not work at all, probably. It is pretty grim, actually. Having said that, some area health services are probably well equipped, but there is no consistency. It seems to me that you should not be punished if you are a public patient who has the misfortune to live in an area health service that does not have quite the same priority as another. With regard to dental education infrastructure, the level of education infrastructure in New South Wales is severely degraded. The Dental academic workforce is much smaller than it was. There is only one faculty of dentistry in this State. There is also now the Newcastle School, which teaches bachelor of all health graduates. They do not teach the full range of dental professionals and specialties. But in this school we have had a dramatic reduction in academic staff, significant reduction in the number of specialist academics from specialist areas such that now areas such as endodontics—crown and bridge—periodontics and paediatrics have no full-time academics.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: At all?

Associate Professor ZOELLNER: At all. Surgery we have somebody half time. Actually, no, I think we might have 1½ staff now. But it is dangerous because when I was a student those departments were reasonably well represented. Operative dentistry, the bread and butter of dentistry, drilling holes, filling them, we used to have around about 10 full-time academic staff. We are down to two now. We are pretty degraded.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But you cannot train students, presumably, when it has to be one to one for at least a period to see what they are doing. They cannot learn out of a book and then go straight into some person's mouth. You cannot increase student numbers if you do not have any demonstrators or teachers or tutors, whatever you want to call them.

Associate Professor ZOELLNER: You are absolutely right. That is a huge problem and the level of supervision required for dental students during training is very very high. As you say, these students are handling high-speed drills, high-speed rotary instruments wielding scalpels and chipping bone out with bone chisels in patients. These are undergraduate students. They have to be very carefully supervised whilst working on patients. Medical students, and I mean no offence to the medical profession, walk around looking wise whilst being undergraduate students. They are not responsible for treating patients. They do not have to do interventions. Our students are doing irreversible interventions every day. You have to stand over them and watch them like a hawk to look after the interests of the patients. It is very intensive. It requires very high levels of manpower, and we do not have the manpower at the moment. We are able to employ some tutors coming from outside to help us with supervision. Of course, that is the only way we could possibly operate at the moment. But we do not have enough money to pay the tutors to come in. For a long time they were on a purely honorary basis in our faculty. Now they are being paid, but nowhere near enough to attract the number of quality tutors that we need to supervise our students. It is a huge problem—not enough resource.

The Hon. IAN WEST: We live in a global economy now. Can we not just buy in what we need?

Associate Professor ZOELLNER: I think a lot of people think that. There is a sense that we could just buy them in. But I tell you that there is a worldwide shortage of dentists. This is not just a problem with New South Wales or Australia, this is everywhere. These problems are sneaking up on everyone. I would say that you simply would not come. If you have enough get up and go to go somewhere you would not get up and go where everything is being degraded. That would be really silly. Why would you come to New South Wales to develop your clinical career when there is no opportunity for further development? Why would you come to New South Wales to develop your academic career when there is no opportunity for research or development? You would not do that. No, you will not be able to buy them. You could try. Recently we had an applicant from South Africa for a professorial position at the University of Sydney. He came from a small provincial university, a tiny little town in the middle of nowhere in South Africa. Lovely guy. He was offered a professorial position in our faculty, but felt that he could not possibly take the drop in wages. It was actually better for him to stay in a small provincial university in South Africa than to come to Sydney. That sort of gives you an impression of where we stand. If you cannot attract somebody from South Africa to a professorial position—our best paying, most prestigious, best supported position—you are not go to get a whole army of people to save you.

CHAIR: Is the implication of that that there is a worldwide shortage? Presumably, if New South Wales were the only place that was lacking then people would flock here because of the supply and demand equation.

Associate Professor ZOELLNER: Yes. You are absolutely right, there is a worldwide shortage, a worldwide shortage of dental clinicians, and particularly a worldwide shortage of dental academics.

The Hon. IAN WEST: You indicate on page 5 of your submission that when you were an undergraduate student there were a number of academics who were not only wonderful role models but that you envied their jobs. However, as time went by that changed and now you say that your students do not necessarily see you in that position and you lament that change. Can you track that a bit for us as to why that has occurred?

Associate Professor ZOELLNER: [You are referring to my personal submission separate to that of SPOH, but I am happy to speak to the point.] I think it reflects the fact that resourcing for the faculty has reduced. Steadily there has been a reduction in resources available to fund positions in the faculty. Working hours have become extraordinarily long, and teaching loads are very, very high. As we have fewer and fewer full-time academics, the responsibility for planning programs, planning classes, and academic administration increases. The opportunity for research decreases as the resources in the faculty become fewer, and the support to do research has gone. If you want to go to a conference, you pay yourself. Indeed, you can spend a fortune just trying to do your work. I will not go into the details, but my wife certainly gets rather cross with me about the amount of money I spend just staying at work.

Students see this. They see that they are dealing with an academic work force that is stressed and stretched, and they look at us and say, "For goodness sake, there is no way I would want to do that." Junior academics are coming in to work at about half the pay of the students they have been teaching.

The Hon. IAN WEST: Can you not just ask for more money?

Associate Professor ZOELLNER: Well, yes, we have. But, strangely enough, it has not worked. We have all asked for more money, but I think there has to be some broader understanding of the need to invest in dental education. But you are right: more money would be a very good start.

The Hon. ROBYN PARKER: The whole thing is quite alarming. It is certainly an eye-opener already, and we are only at the beginning of this inquiry. I wonder whether you have some solutions with regard to where the priorities lie with health funding for dentistry and how we raise that priority with the Government. Obviously, dentistry is lagging way behind in terms of other health services, and they are probably lagging behind in terms of other States as well.

Associate Professor ZOELLNER: That is right. We do have some suggested approaches and strategies to deal with this. One idea we have developed is the idea of a dental team model of both education and training. This is to expand the capacity to deliver service by properly engaging dental therapists, hygienists, prosthetists, technicians and dentists in teams so that now you can deliver potentially much more treatment for significantly less money.

Under the current treatment model, it does become probably unnecessarily expensive to deliver full levels of treatment to the community. But we can see that if you build teams properly, structure them well, and fund them in a sensible way, you can safely deliver more service to the community and start to address these problems.

Also we see that the development of an internship program for dental graduates would be very important. This will improve the quality of our graduates. It will improve their academic training as undergraduates, but it will also improve their clinical training when they graduate, because they have a structured program to work through. As they acquire skill, they then become free to be released into the community without that support.

From the public service perspective, you then have an increased population of dentists in the public health system who are available to serve where the disease is. So that senior interns—obviously, properly supported with proper mentorship, and proper supervision and equipment—are available to serve communities wherever they are needed, whether it be in south-western Sydney, Dubbo, Boggabilla, or anywhere else. Wherever the service is needed, you then have more dentists available in the public system. We believe that that will also improve the attractiveness of the public system for dentists to stay in the system because you are part of this educational process. People enjoy the idea of helping young people to get up in their careers and professions. We think it will make it more attractive for dentists.

Obviously, it all has to be much better funded. You need a lot more money at all levels of the system, including more pay and more careful structuring of awards. People have to look carefully at how we can make private practices and private insurance more effective. There are serious concerns about the effectiveness of the private insurance system, and about the funding of private dentistry. In particular, rural practice is an issue. There are things that we can do there.

There is a need for the development of conjoint specialist appointments in hospitals and a decent registrar system, to start to develop stronger specialty areas in dentistry. In turn, that would improve the situation in training in the faculty because you then have specialists who have a formal responsibility to train undergraduate students. So that in those specialty areas, we suddenly have a pool of expertise available, dedicated to teaching, and at the same time there is responsibility for delivering service in the public system so you can start to deliver specialist services where required.

Senior registrars, when they have enough skill, could then rotate to regional and rural areas to start to deliver specialist services where really at the moment there are none. If you need a specialist service in a rural area, you either come to Sydney or you pray that someone will drop in. In some areas there are specialists who go out and rotate occasionally, but quite often that is not the case. In many areas there are simply no services.

So there are solutions; it is possible to fix this problem. I think it is dire. We believe that the dental services in health and educational infrastructure are severely degraded. We believe we are in dire straits, but we also believe it can be fixed, and it can be fixed for a reasonable sum of money; it does not have to cost a fortune. But we have to start doing something soon.

I know that, unfortunately, upper House inquiries and Senate inquiries have had really bad press recently. I would like to see this inquiry prove that wrong and show that indeed these inquiries can be very effective. So I challenge you to make sure that, instead of having 86 recommendations not responded to, in fact action is taken, because this is a serious health matter.

There has also been a lot of discussion recently about universities and university funding. Everyone would have seen the *Four Corners* report. This is an example of how a whole area of healthcare can fail quite dramatically just because of a lack of very little funding.

The Hon. ROBYN PARKER: You referred to some problems with health insurance. Can you expand on that?

Associate Professor ZOELLNER: The reports I get from our members are that quite often patients are able to receive a measure of support for health insurance for dental treatment but there are usually limitations on how much money can be awarded per year for different types of treatment. If you are talking about bridgework, for example, which involves three or four units or whatever, and you receive payment for one per year, you cannot really get much out of that because you cannot do one little bit of it, you have to do the whole lot. It is a question of conditions and the detailed structure. I cannot say that it is sensible for me to try to go into that in great depth. But what I hear pretty consistently across the board is that private health insurance in dentistry is not really fully satisfying need.

CHAIR: Could you argue that the private health insurance system for dentistry has helped skew whether the money is going to the areas of greatest need?

Associate Professor ZOELLNER: Yes, that is an interesting argument that, again, John Spencer, who has been the leading person in this country in this area, has developed fairly extensively. It seems at the moment that significantly more government money is devoted to supporting dentistry via private insurance than is now being spent on directly supporting public health dentistry. Tony Abbott was saying the other day—and apparently his calculation is about right—that the Federal Government is now spending four times more on dental services than ever before. But, of course, all of that is going into the private insurance system.

CHAIR: The whole lot?

Associate Professor ZOELLNER: I think so, yes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: That shows that it is a very inefficient way of funding things, because they are getting a large percentage of cosmetic work in that—

Associate Professor ZOELLNER: Yes. It is not really dealing with community need. In the same way, you would have to say that it is quite strange that Medicare, for example, does not seem to have any real role in supporting dentistry. If you have a face full of pus, that is not considered to be a medical problem. Whereas, if you have a boil on your backside, that is considered to be a serious medical problem, there is a Medicare number for it, you can get your antibiotics and medical treatment, and it is all covered. But if you have a face full of pus, you are told, "I am sorry, that is dentistry"; it is not really an issue.

The Hon. ROBYN PARKER: Is that not because dentists have resisted coming into the Medicare scheme? Have they not seen what has happened to doctors and said, "I'm not touching that"?

Associate Professor ZOELLNER: I do not know for sure. These are very long historical roots, a bit before my time in the profession actually. But I suspect that that may have been the case. I think that now there is perhaps a growing understanding that that may not have been very wise. The same applies to basic control of caries; I do not see why that should not be included in Medicare. These are important insurance issues.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: How much would it cost to fix the dental health system? The Australian Dental Association suggests that between one-quarter and one-fifth of what is needed is being put in by the State Government. I notice that the Queenslanders, who are spending more than twice what we are spending, want to put in more. Clearly, doubling it would seem to be only the beginning. What do you think it would cost to fix the dental health system, and where should that money come from?

Associate Professor ZOELLNER: I think that is a really good question, but it is a tough question for a group like ours to answer. We have done some sort of calculations; we have tried to have a rough guess. We are not really well placed to give a decent costing on anything like this. But certainly we can see that you could easily and sensibly spend at least a doubling in funding, to really

cater for all the issues we face, including improved infrastructure for academia, improved funding of academic activity, research and health surveillance.

With regard to the Queenslanders, if you did that you would be substantially improving health, especially if you moved to the team-based health model. How much it would cost exactly, there is no way to tell. We do not even know how much disease there is, because we do not have a proper monitoring system. We cannot tell you exactly. No one could tell you what the real community needs are. All we know now is that they are significant and they are getting worse.

CHAIR: Could we, for example, extrapolate from the extra level of knowledge we seem to have in South Australia?

Associate Professor ZOELLNER: You could. But you have to recognise that, for example, in South Australia, they are not really happy either. They are better funded than we are—they are better funded everywhere than we are—but they are also complaining. About two months ago I was contacted by somebody from the *Adelaide Advertiser* who said, "We are about to run a story on dental health and the appalling state of dental health in South Australia. What can you tell us?" I said, "Well, all I can tell you is that they are better off than we are."

More money does have to be spent. Why should this be free? Why would we expect dental health to cost nothing? I do not understand why we would expect that. It is a very small percentage of total health expenses anyway. But it will cost something, and quibbling about the total investment in public dental health in New South Wales—which is about $106 million or $107 million a year—I know it sounds like a lot of money, but it is not when compared with the total health budget of about $9 billion. The extra $1 billion was awarded in the last health budget. Out of that, just a bit would have made one hell of a difference to dentistry. So yes, I do not expect it should be free. Why would it be free? It is going to cost money, but it should not cost an absolute fortune; it is possible to do it.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You have talked about a team approach. What are the limitations of the current approaches to oral health surveillance?

Associate Professor ZOELLNER: The limitation is that at the moment we are dependent upon surveys that are carried out sort of on request, if you will. At the moment, for example, there is a national oral health survey which is just taking place in New South Wales right now. The nature of that sort of survey is that a sampling has to be taken from a few selected areas because there is not the resource or the manpower to sample the whole State completely, so a rational decision has to be made that, "We will survey here, here and here. We will define these few questions that we have got a fair chance of answering fairly sensibly and that will give us a snapshot of the situation in New South Wales".

The limitation of that, of course, is that although it is very helpful information and very useful, it will not allow you to say, "There is a real pocket of decay in Bega", and, "We notice that there are more impacted wisdom teeth in Dubbo. So we need more oral surgeons here and we need some therapists down here and we need to rotate some orthodontists out to Wagga". We do not have anything like the sort of detail that we need to do that, and yet that is just simple planning, it is what the public would reasonably expect of us—to know what the community needs are and plan for that.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You are talking about surveillance as an academic tool almost, not checking kids or checking people to say what kids are not getting treated. Presumably you want to go and catch them in the playground or wherever and get them to a dentist. What about systems like that?

Associate Professor ZOELLNER: Sorry, I perhaps have not conveyed that very well.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Maybe I have got a problem with the definition of what I am talking about.

Associate Professor ZOELLNER: What we mean by surveillance is to monitor the disease process in the community, use that information to plan how we are going to fix that and then to monitor how effective that is so that we have a constant feedback into the health system to control

how many dentists we produce, how we use them, how we distribute our resources and how effectively those resources are addressing the community needs. So we see surveillance not as an academic tool but as a very practical tool to make sure that the money that we spend is spent wisely and has a real effect.

If we find that, okay, we have suggested a particular strategy, we are implementing a certain strategy, we try and we find that, actually, our surveillance is showing us that it is not working; we have got more decay than we ever had: rethink; do it differently; do a better job. We see that as a feedback mechanism. So that it is not an academic exercise, as you say; it is a tool for treating the population.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: What is the best way of surveying the schoolkids? My experience in the medical field was that people who had been unemployed for a long time had very bad teeth. When I said to them, "You have got very bad teeth; as soon as you get some money you had better spend it on fixing your teeth", they would look at me as if to say, "Are you on the right planet, mate? I have got a lot of other priorities when I get some money".

Associate Professor ZOELLNER: That is right. A few of our council members are experts in public health dentistry and they have a lot of experience basically in oral health surveys and in public health dentistry, and the advice from them is that really you need to establish a defined surveillance unit of some sort as a functionality in some context within the Department of Health; that this unit would have to comprise—I cannot remember the number of staff now; I think it was about 10 or 12 full-time staff, I cannot remember exactly; I could look it up for you. They saw the surveillance team as actually being dental and paradental professionals who are calibrated against each other and that they would then have a role in going out and collecting data in the field, that you would require so many mobile dental chairs and so many mobile dental units that you would set up in different places to survey the population; you would have to have an oral health epidemiologist in the team, and a statistician and a computer programmer; you would modify the current ISOH computer program system which collects data anyway. So there is a strategy that I will not pretend to know personally, but there are rational strategies and ways of doing this, yes.

The Hon. IAN WEST: Those strategies sound very expensive but, without going into that issue, can you give us a little bit more information about the concept of the mouth as, I suppose, a window to the body and what sort of information is there on the related diseases that come from bad oral health in terms of cardiovascular disease, et cetera?

Associate Professor ZOELLNER: One of the things to recognise in the training of our students in the role of dentists is that we train our students to be alert to serious and systemic disease. Many systemic diseases have oral manifestations, some of which come before the systemic changes. In anaemia, for example, with B12 deficiency and folate deficiency, the earliest changes are usually in the mouth. Patients with Pemphigus Vulgaris—a condition which, if untreated, is 100 per cent lethal—usually presents with lesions in the mouth first. Things like that.

So there are oral changes that patients with many systemic diseases present with and one of the roles of the dentist is to detect those and make sure the patients are directed to the appropriate medical services to have this systemic disease managed. Separate to that, there is increasing evidence, primarily statistical in nature, which indicates that there is an association between periodontal disease, chronic dental infection, heart disease, strokes and vascular disease generally. So there seems to be a developing relationship there; low preterm birth weight of children, and so forth. There is increasing evidence that there are wider systemic effects of dental disease.

But I would say that dental disease in itself, just in terms of being disfiguring and intensely painful chronically, is an acutely painful condition and can be life-threatening. Severe dental infection can and will kill you if you have bad luck. So in its own right dental disease is well worth treating.

The Hon. IAN WEST: In terms of the preventative side in trying to assess the money that is put into that oral hygiene area, I am sure that it would be exponential—whatever the correct word is—in terms of the health effects of the population. It is not just the oral hygiene, is it?

Associate Professor ZOELLNER: Yes, I think you are right. I think that there would be a significant improvement. For example, patients who are in nursing homes have poorly maintained mouths, I have been advised, and are much more likely to suffer with aspirational pneumonia. That is likely to kill you. So that is an example of how oral hygiene can very directly improve your health. If you have a good dentition you can have a broader range of foods and eat more comfortably; you have far better nutrition generally. So there are pretty direct impacts of that. I would agree with you entirely.

Just in terms of patient welfare and self-image, you would never think that unemployment would be related to oral health, but the number of patients, particularly in the public health system that I hear of, who come in and are missing front teeth or have badly decayed front teeth, they have great difficulty getting a job because they just look terrible. They have their teeth fixed; they have a denture put in and all of a sudden they are employable again. The impact of this sort of thing upon a patient's life is fantastic.

CHAIR: There is one question here that we have not asked you and that is the one about the approximate number of people on dental waiting lists and how that may be a slightly artificial figure from a lot of what else you have said. But the other thing I wanted to ask you which came out of a question that Arthur asked about—oral health surveillance—was if you could give us something of a picture of whether, for instance, certain sorts of specialists are always going to be needed but very few of them will be needed because of the kinds of conditions they specialise in are not very common in the community and therefore almost inevitably, I suppose, someone who lives in a rural area is going to have to, for instance, come to the dental hospital?

That is an extreme example but I am not sure that we have a picture of the sort of balance between the ordinary sort of common or garden local dentist and the range of more complex sorts of specialties that are needed and the issues about where they would be located, given how many people they might treat in a week or a month or a year.

Associate Professor ZOELLNER: That is a very complex and hard question to answer. Put it this way, at the moment there is a recognised significant shortage of all specialties in the public system, in the private system, in academia. Probably the specialty that requires the least number of clinicians, I would guess, would probably be oral medicine and oral pathology—the area within which I teach. At the moment we could be producing oral medicine and oral pathology specialists at a pretty constant rate and they would all find work. You could really use an oral medicine specialist in most major hospitals; there is probably enough work there.

Most major pathology centres could probably use an oral pathologist, but at the moment we have in New South Wales two oral medicine specialists for the whole State—they are both based at Westmead hospital—and we have one oral pathologist who flies down once a week for one day from Queensland. But, happily, he is now going to be taking up an appointment with the faculty and with the hospital, so he will be here full-time but working half-time in oral pathology. But there is a desperate need for all these specialties. I cannot give you a decent number because there is really no analysis.

With regard to the question of surveillance, the comment was made that it sounds very expensive. The real expense is not having decent surveillance because at the moment you can spend a fortune and have no idea that you have done anything, or try not treating disease and see what the cost of that is. I think that surveillance—of course it costs something, but not that much compared with non-surveillance. Ignorance is going to be much more expensive than finding out what the real needs are.

CHAIR: Would some of those kinds of issues be resolved if Medicare was extended to some of the more common and more basic dental procedures?

Associate Professor ZOELLNER: I think so. I think that would be very helpful. I think that would be very sensible and rational and it would start to have an impact, yes. A proper economic model of how that would be funded and how much money that would cost I would only be guessing.

CHAIR: That is something we could take up with other people as well. As I said earlier, we are conscious that we have fired a lot of questions at you because you are our first witness, but that will help us in taking up things with later witnesses as well.

Associate Professor ZOELLNER: I am grateful for the opportunity to answer your questions. It is really very important that at this time the upper House looks at this issue. Many of us, myself included, really believe that this area of health is on the verge of collapse; that it is failing. There was a time when we could say it is not sustainable, we cannot sustain it. Well, not sustainable means that it is not being sustained, it is just about to fail now, and we think action is needed now to fix it.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Could I just ask a last question about waiting lists?

Associate Professor ZOELLNER: As you know, we have solved the problem of waiting lists in New South Wales by not having them. It is much better now that we do not actually keep track; it is not a problem.

The Hon. IAN WEST: Very efficient.

Associate Professor ZOELLNER: It is very efficient. Numbers are bandied about, which are completely unofficial. I have heard that at Westmead, for example, there might be a waiting list of around 20,000 people. That is an area that actually has a major dental teaching hospital where we have a large number of dentists available to treat those patients. In other area health services there is really nowhere to register, I suppose, your concern or your need for treatment, so I suppose the waiting list is totally academic in those areas.

Another figure I have heard used is a statewide waiting list of 160, 000, but I have no way of knowing how real that is. I am only passing on hearsay. The waiting lists are going to be significant. The waiting times are going to be very important and they will vary enormously from area to area. As I said, each area health service has its own policy, its own way of doing it. There is a lack of consistency in governance in this area of health across area health services, and so that does cause us some problems.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is there anything you need to add?

Associate Professor ZOELLNER: I just urge you to please speak to your parliamentary colleagues and find ways of dealing with this problem. I think this is above politics. I think this is a major area of public health and that all sides of politics need to work together to repair this.

CHAIR: Apart from thanking you very much for answering the questions that arose out of your submission and all the others, I think there were a couple of areas where you said you could probably get information to us. It would probably make sense if we have a look at the transcript and contact you about areas where you suggested you may be able to help us. If that is all right with you, we will do that.

Associate Professor ZOELLNER: Of course. Yes, I would be very happy to do that. If there is anything else at any time in the future that the inquiry wishes to know or any additional information the Committee wishes to have, I will be very happy to find it out for you. I may not know something but we have a team of experts in the association who can be drawn upon at any time.

CHAIR: As I said earlier, the Committee needs to have a brief deliberative meeting. I must ask people in the gallery, including our next witnesses, to leave for a short time.

(Short adjournment)

BARBARA ANNE TAYLOR, Staff Specialist in Periodontics and Head of the Department of Periodontics, Sydney Dental Hospital, 2 Chalmers Street, Surry Hills, 2010, and

GEOFFREY HAROLD TOFLER, Professor of Preventive Cardiology and Senior Staff Specialist, Cardiology Department, Royal North Shore Hospital, St Leonards, 2065, sworn and examined:

CHAIR: In what capacity are you appearing before the Committee?

Dr TAYLOR: I am here to speak as a public servant and clinician and researcher. I am not here to specifically represent the Sydney Dental Hospital, although our submission was approved by the area health service.

CHAIR: Are you appearing in a private capacity?

Professor TOFLER: I am appearing in a private capacity as a researcher and clinician.

CHAIR: Did you receive the questions that we prepared?

Professor TOFLER: Yes, we did.

CHAIR: Would you like to make an opening statement, either or both of you, before we get into questions? You probably heard a little bit of the previous witness's evidence. Partly because it is the first day, we may have all kinds of questions that may appear slightly odd to you, but we find that on the first day we ask questions of people, as you are our best source of information, that we might not ask if they had come along later. First of all, if you would like to make an opening statement, by all means do so.

Dr TAYLOR: We thank you, Madam Chairman, and members of the Committee for the opportunity to appear and present a submission today. We would like to make a short opening statement. In support of that statement, you have all received a manila folder. If you open it and turn to the first page, there is a picture of healthy gums. A lot of people wonder how periodontal disease or gum disease could impact on systemic health. I want to start off with a healthy person because it is hard to recognise what disease looks like if you do not know what normal looks like. I realise that, to people who are not dentists, teeth look quite unusual close up.

If you turn the second page, this is a young person with gingivitis which is one of the main periodontal diseases. This person has inflammation of the edge of the gum, the gingival margin, that is largely caused by plaque made out of bacteria and food debris growing on the teeth. You can see when you look at this person that the gum is red and swollen in between the teeth and that on the tooth surface there is some little discolouration, there is some brownness, there is some plaque and some staining on this person. Underneath that picture of gingivitis, there is a picture of my hand holding a post-it note.

The red area on that post-it note is the area of chronic, untreated inflammation in the mouth of the person with gingivitis. I should go back a step. If a dentist or a hygienist were to treat this person and show them how to clean their teeth and remove any debris that is there, the disease would resolve and you would never know that they had had gingivitis. We could easily prevent further breakdown in this person.

If you turn to the next page, there is a picture of a person with periodontitis. If you look at the fifth tooth from the left in your picture, the fifth tooth from the top, if you look between those two teeth, you can see some dark staining, and that is blood that which is ceaselessly dripping between this person's teeth because they have periodontitis which is caused by plaque and may or may not develop, depending on an individual person's susceptibility. If you look directly below that, you can see some creamy coloured deposits around the teeth, and that it is pus exuding or suppurating from the gums around the person's tooth.

If you look slightly to the right to the bottom teeth, you can see a gap. That is because that tooth has already spontaneously fallen out in this 35-year-old woman. If you look to the bottom left you will notice that she is actually missing her bottom left back teeth as well. So here we have a person who is swallowing pus and blood all the time. If you look at the bottom picture she has a wound as large as I am indicating with this post-it note, which is untreated inflammation in her mouth. That is the area of inflammation in moderate periodontitis in an adult with most of their teeth.

If the person has more advanced disease, then the area of that wound will be bigger. This person has a considerable amount of inflammation present. Now, because she is missing teeth, she also has a cosmetic deficit. Only last week a patient said to me that because he is missing a top front tooth, there is an implication of criminality. People look at him and think he is a thug. It makes it difficult for him to get a job. He is on the waiting list to get another denture. He is not going to go for job interviews until that space is filled. But this person is also missing back teeth, which are used to chew and, therefore, her nutrition is compromised as well. I think I should leave my dental lecture now and let Professor Tofler continue with our statement.

Professor TOFLER: In cardiology, there are well-recognised risk factors for heart disease, but we also know that many people can have heart disease, heart attacks and stroke without high levels of what we call traditional risk factors. One of my big interests has been non-traditional risk factors, and there inflammation plays an important role. When I was in Boston working at Harvard University I was working in a study called the Framingham Heart Study, which is involved in identifying many of the risk factors for heart disease. My interest was in inflammation and thrombotic factors—factors which might increase the risk of a thrombosis.

When I returned to Sydney to my current position, I was eager to pursue that aspect of inflammation and was aware of the links that have been described between periodontal disease and cardiovascular risk. For example, a doubling in risk of heart attack and stroke has been seen in people with periodontal disease compared to those without. I actually wrote an article in one of the New South Wales health bulletins, which was co-ordinated by Barbara, entitled "Cupid and the Tooth Fairy", to look at the link between the two. Another link has been described called "Plaque attack and heart attack". So there is this interest in the relationship.

In fact, there are several reasons why there might be a link between periodontal disease and cardiovascular risk. One is that people who have the same risk factors, for example smoking or diabetes, may have a higher risk of periodontal disease and heart disease. Also, the psychological aspects of poor dentition may also affect cardiac risk but, in addition, I was interested in the fact that inflammation that is present in the periodontal area could well have systemic effects and actually affect what happens in the bloodstream.

Barbara had very similar interests so the two of us combined and, in fact, have had an NHMRC-funded study that has looked into this. Rather than just associations between the two, Barbara, with her colleagues at the United Dental Hospital, have treated people with severe periodontal disease, who have actually shown improvements in levels of inflammation factors that we know are risk factors for heart disease. In fact, improvement in periodontal care will lower the risk of these factors.

It is not that we have done studies that say that half of 5,000 people got care and half did not and those that received care had fewer heart attacks. I think such a study would be very difficult in terms of burden of proof but, nonetheless, I think there is strong suggestive evidence that improvements in periodontal care will improve the risks for cardiovascular disease, heart attack and stroke. In terms of improvements of periodontal care, we could say that it is likely that this would be leveraged in terms of also reducing the risk of what are the key causes of morbidity and mortality—heart attack and stroke.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I am interested in the magnitude of this factor. How much periodontal disease is there? If you compare the risk of periodontal disease to, say, smoking, cholesterol, diabetes, obesity—the standard cardiovascular risk factors—how does periodontal disease compare?

Professor TOFLER: I think there are probably two aspects to it. One is if we think about the attributable risk that is related to how common they are in society and, so, if there is a doubling of risk of an event in someone with periodontal disease compared to without, and then you factor in that periodontal disease is extremely common in our society, it makes this doubling factor more important than if it was, say, a doubling of a factor that was not common at all.

In terms of the relative risk, it would be hard to say. I could not give you an exact estimate on that, particularly from a causative point of view, but my feeling is that it is likely to be playing a significant role in terms of both the commonality and the fact there is this doubling of risk.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You are saying that there is a doubling of risk in cases of periodontal disease?

Professor TOFLER: That is right.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Compared to non-periodontal disease?

Professor TOFLER: Correct.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is that controlled for all the other variables, like smoking, poverty, and other things like that?

Professor TOFLER: That is controlled for all these other factors. One of the problems is that it still is longitudinal data; it is not actually the same level of evidence, for example, of giving people with high cholesterol either a lipid-lowering drug or not. It is not that people have been randomised to 10,000 people with periodontal disease and 5,000 will get good treatment and 5,000 will not, and then you know that you are balancing for all these factors that you are suggesting, like poverty, smoking, and other psychosocial factors. I think it would be nice if we could do further studies, but one of the things we have at least done is to randomise people. We initially did treat them and saw what happened to their levels before and after treatment, so it is not that we are just doing association between the two.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: It is probably not a fair question to ask you, but presumably you are suggesting some sort of thrombotic mechanism similar to inflammation; you rack up the chance of thrombosis and therefore you get all the thrombosis conditions. Is that the mechanism you are suggesting?

Professor TOFLER: Yes, when there are inflammatory cells that can happen with inflammation or a infection, that part of these inflammatory cells—their role also is to increase the risk of a thrombosis or blood clot, so the key factors would be that fibrinogen, which we studied, has increased with inflammation and that increases the risk of conversion to fibrin and thrombus and, also, C-reactive protein that has emerged as an important risk factor, with inflammation that may also attack the integrity of the plaques that are present in the coronary arteries and other parts. Von Willebrand factor is another factor that is increased with inflammation and also increases the risk of thrombosis.

Part of the analogy could be extended to the seasonal variation in heart disease where there is a 40 per cent to 50 per cent increased risk of heart attack in the winter months compared to summer months and part of that is tied in with the link between inflammation that may happen with a viral infection, for example, and thrombosis.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So could you attribute a number of deaths to this, if you extrapolate the figures and the probabilities? It is a bit like the smoking one where you subtract all of variables and end up with what you say are attributable populations. Can you give us any numbers?

Professor TOFLER: I think that is an important question. I must admit I have not considered it. I do not know if Barbara has, but we could certainly come back to you with an estimate as to what that might be.

CHAIR: Barbara, did you want to comment on any of those questions?

Dr TAYLOR: There is a good deal of research, obviously, in cardiovascular medicine, but throughout the world there are actually very few people who have studied the effect that treating periodontal disease might have on cardiovascular risk. A lot of researchers have done observational studies, which are basically surveys, of periodontal disease and looked at cardiovascular disease and dental disease in those people.

But finding that a person has worse gums or fewer teeth and also has higher blood pressure or is more likely to have a heart attack does not prove that one affects the other; it only proves that they both occur in the same populations. It could be, for example, that smoking is causing both problems—and smoking does contribute to both diseases.

So when Dr Chesterfield Evans wants to know the quantum of the effect—how many deaths there are from it—at this stage we are depending on hearsay and extrapolation from very limited data. There are probably only maybe half a dozen groups in the world that have attempted to conduct intervention studies where we take people with periodontal disease, treat the periodontal disease and then examine cardiovascular markers. So if I was to tell you how many deaths might occur that is not from published evidence in the scientific literature; that is from my discussions around the world with other clinical researchers. I have spoken to people overseas and we are all about the same ballpark figure in terms of the quantum of the effect, but I am really reluctant to say to you, "It's this much of an effect" because, as a scientist, I cannot say that it has been proven yet, although we do think that there is an effect. I would agree with Professor Tofler that we think the effect is significant and that it is worthwhile improving dental services to achieve that health effect. It is not an insignificant effect.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So you are saying that if you sorted out the other variables or the common factors, such as smoking, you would be reluctant to then go on to say that the difference in fibrinogen levels or the von Willebrand factor or whatever is then consistent with having more heart attacks and therefore this difference in fibrinogen levels and the von Willebrand factor is likely to produce this many heart attacks and thus this many deaths.

Dr TAYLOR: We think that periodontal inflammation by itself—eliminating the effect of smoking, for example—has an effect on cardiovascular risk. We conducted analyses in our first study, of smokers versus non-smokers. From the point of view of cardiovascular risk markers, smokers start out worse than non-smokers and showed less improvement—some improvement, but less improvement—as a result of the intervention that we carried out. The mean value of non-smokers' levels was better and healthier—if you can call it healthy—than that of smokers and they showed a greater improvement as a result of their periodontal treatment.

The Hon. IAN WEST: I would have thought it would be rather academic to look at gingivitis and periodontal disease in isolation because I would assume that the vast majority of people who smoke would have a bad diet, bad oral health and so on—those conditions tend to go together—so periodontal disease and gingivitis on their own would account for a small percentage of people who go on to suffer from cardiovascular disease. In terms of conducting an academic or statistical exercise, the real issue would be dealing with all those oral health problems together, would it not?

Professor TOFLER: That is certainly true. The statistical analysis must take into account any difference between the people with and without periodontal disease. In some but not all studies, the statistical differences in the studies do remain after adjustment, as best as can be done for all these other confounding factors. The other argument that I suppose one could make is that the people with periodontal disease in fact are at higher risk for having a heart attack and stroke than those without. So they are being identified themselves as being at higher risk—and it may not be just because of the periodontal disease but because of these other factors. I think the question of what is the attributable risk to the periodontal disease alone is a good question. I do not think there is a clear-cut answer but I would be happy to give the Committee at least an estimate if we could work that out.

CHAIR: If you would take that on notice it would be great.

The Hon. IAN WEST: Anecdotally, how many people would come to you who have only periodontal disease or gingivitis? That is all they have; they have no other associated diseases.

Dr TAYLOR: So the question is how many people come to see us who have some disease and no other medical issues?

The Hon. IAN WEST: Yes. They do not smoke, for example.

Dr TAYLOR: I would be answering that from a skewed population because, since I am the only staff specialist in periodontics in New South Wales, I tend to be referred people who have extremely complex medical problems. Sometimes I feel that the world is full of people with gum disease and that there are no healthy people around. I am sure that is not the situation in the world but it is the situation in my world. I could not tell you that a certain percentage only has periodontal disease and no other factor. I suspect that many people who have periodontal disease have systemic, whole body, comorbidities—other illnesses—and I think we should draw from that that dental care should be integrated into general medical services. The mouth is not separate from the rest of the body.

CHAIR: Would most people with periodontal disease be poor?

Dr TAYLOR: Some of my colleagues think they are rich because they are practising in private practice. Forgive me. I know that periodontal disease is more likely to be present and untreated in poor people simply because in Australia they cannot afford dental treatment.

CHAIR: That leads me to another question. When you draw links between that and cardiovascular conditions are you talking about a reasonably advanced or serious stage of periodontal disease?

Dr TAYLOR: In the observational studies—the surveys—that have been done it is hard to tell which level of the disease, whether it was mild, moderate or severe, resulted in the effect that is seen, in people's mouths. For example, if somebody has lost several teeth due to gum disease we do not know whether the effect of the inflammation on cardiovascular risk started when they were, say, a teenager and developed atherosclerotic plaques or whether most of the damage was done when the disease was advanced. In the first study that we conducted we took a group of people who had generalised advanced disease—they were about to lose all of their teeth. We studied the most severe cases you could imagine because we thought that if there was an effect we would see it in the people who had the worst disease. I think, from my reading of the literature and from our research observations, that the problem might be inflammation itself rather than the extent of gum disease. If that is the situation then whether you have gingivitis, the milder disease, or periodontitis, the more severe disease, is irrelevant; the question is the presence of inflammation and how long it is present for.

CHAIR: We have dealt with our first question. Are there conditions other than cardiovascular that either of you want to mention that are associated with periodontal disease or other aspects of oral health?

Dr TAYLOR: There are a number of diseases in the body that manifest in the mouth and they are well recognised in dentistry. I think Dr Zoellner might have spoken a little about that. Our research concern is whether disease in the mouth can impact on the rest of the body. There is good evidence and a significant body of evidence in relation to diabetes. We already knew that diabetic people are more prone to periodontal disease but in recent years it has become apparent that inflammation itself can impact on diabetic disease. As you would know, diabetic people are more prone to microvascular and macrovascular disease—that is, disease affecting the small blood vessels and the big blood vessels. So that is things like diseases of the eyes, diseases of the kidneys, and macrovascular is outcomes such as strokes, heart attacks and hypertension. That is one disease where we think periodontal disease is impacting on the population.

There is limited research available in that area. I am involved in another study with the George Institute for International Health at Royal Prince Alfred Hospital and the University of Sydney that is studying 11,000 adult-onset diabetic patients around the world. That will be the biggest study

that actually has dental data in it that has been done. That study is a five-year longitudinal study and it will finish in about three years. So that is diabetes. With diabetes, we have the same situation as when Professor Tofler talked about cardiovascular disease—periodontal disease and cardiovascular disease are both extremely common. Diabetes is also a relatively common disease.

The other area where there is a good deal of evidence is a condition or health outcome that is rarer than cardiovascular disease and diabetes and that is pre-term delivery, early delivery, of underweight infants. You will see from our submission that the rate of pre-term delivery is about 4 per cent in the developed world and that has not changed, despite improvements in antenatal care, over the past 40 years. About 80 per cent of neonatal morbidity spending is on these children. There is good evidence to suggest that the mother's periodontal condition may favour the delivery of an early, underweight baby. So the corollary of that is that it would be wise to increase dental spending on pregnant women. You can improve the mother's health but you can improve the baby's health while it is still *in utero*.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: This may not be your research area, but how does this compare in magnitude with nutritional problems if people have bad teeth? My understanding is that older people with bad teeth may change their diet—eat more liquefied food and not so many fresh vegetables, for example—or not eat because their mouth is sore. Are these nutritional effects of a larger magnitude than the inflammatory effects? Perhaps you have not studied that area particularly? I understand that it is not preventive cardiology and it may not be periodontics either. So if you do not want to answer I will not be offended.

Professor TOFLER: It is certainly one of the mechanisms as to how periodontal health may impact on cardiovascular risk when people are eating poorly and are not having the adequate vitamins, oxidants, that would be helpful. I take your point: What is the magnitude of the comparison? I could not give you a good estimate other than to say that I think it is a contributing factor.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Of all the nutritional problems, cardiovascular disease is only one of the problems that nutritional deficiencies might produce. There might be other diseases of nutritional inadequacy that are in magnitude greater than cardiological diseases, or may or may not?

Professor TOFLER: If we are talking about things like vitamin B deficiency or vitamin C deficiency, things like that, I do not think—again, not through a lot of knowledge—that they themselves would have such a key role in terms of other cardiovascular health. Often, even in people who do not eat well, their level of nutrition is not disastrous, whereas there is some evidence that up to perhaps 30 per cent of cardiovascular events are not well explained by traditional risk factors. And there is good evidence that inflammatory markers such as fibrinogen seroactive protein are as strong a predictor of subsequent disease as cholesterol. For example, a large English study, the Northwick Park heart study, showed that fibrinogen was as strong a predictor of cardiovascular events—heart attack and stroke—in five years as was cholesterol. I suspect that the inflammation has more of an important role than nutritional deficiency alone.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So the study done by Dr Taylor would suggest that if that is the case, that if the fibrinogen is as important as the cholesterol, then it is really quite major in magnitude?

Professor TOFLER: Yes. The difference there is that there are not drugs that specifically treat fibrinogen as there are for cholesterol. We do not want to overstate the case because we have not done the causative studies that have been done for cholesterol. Nonetheless, the evidence would suggest that it may play a sizeable role.

Dr TAYLOR: I have had conversations with clinical researchers within the same subject area overseas. This is entirely hearsay and it is not supported by the scientific literature at this stage because the research has not been done. They are thinking that the effect is in the order of that of cholesterol lowering agents.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So it is pretty considerable. What you are saying is that it is a very plausible hypothesis, with some evidence about lowering fibrinogen

levels when you have extracted all the teeth, which obviously is fairly extreme treatment, but you did get fibrinogen levels dropping. If that does match with cholesterol as a risk factor then it is highly significant, is it not?

Professor TOFLER: That is right.

Dr TAYLOR: Yes.

Professor TOFLER: In answer to one of the questions about whether we see it in poor people, the issues for periodontal disease as well as cardiovascular involve procrastination as well. I see lots of people who are educated who procrastinate with regard to cardiovascular symptoms, and I suspect that a lot of it is the case with periodontal disease as well.

CHAIR: Moving onto the second area taken up in our questions, the need for a more preventive approach, which you are stressing as a need, what are the barriers? Is the barrier lack of money or are there a whole variety of things? What are the barriers to more preventive work?

Dr TAYLOR: You could speak about it relative to the characteristics of the organisation of the delivery of dental care and you could speak about it from the point of view of the characteristics of the population that is seeking public dental care. I would emphasise that I am not speaking as a representative of my organisation. My role is as a clinical researcher and a clinical practitioner. So these are my personal observations. From the point of view of dental health delivery in New South Wales, I suspect that in the past there may have been limited planning, whether it is with respect to work force planning or the location of clinics. I think that we have tended to adopt an ad hoc approach. We should also acknowledge that even if New South Wales Health had been able to plan that we needed X number of dentists, hygienists or therapists to treat the population, the salary profile offered, by and large, would not attract or retain staff.

There has also been a lack of information about the characteristics of the population that the public health system sought to treat. We should not just sit here and wait and do some more surveys before we decide to do anything, but it might be a good idea to plan to collect data about the population that we treat, as we treat them, and use that data in an informed way for our future policy planning.

With limited staff and limited funding for dental services, there has been an emphasis on emergency care and on repairing disease that has already happened. That is partly because we have a never-ending procession of individuals with discomfort and pain and suffering that they want alleviated. But also dentists like to do something to help their patients. We feel uncomfortable—I do not want to offend the medicos here—giving somebody a prescription. We want to do something. So dentists like to repair a tooth or do a filling or something like that. There is more short-term reward, professionally, in doing something.

CHAIR: Dentists are hands-on people.

Dr TAYLOR: I have done something. I might not have made a difference to population health but I did something for that person.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Surgical as opposed to medical.

Dr TAYLOR: An increase in funding is essential but that increase in funding has to be targeted in an ordered and planned way. Just throwing money at a problem does not resolve the problem. It might just make somebody, somewhere, rich. It might not improve health outcomes. Planning for New South Wales should also incorporate strategies to collect evidence from the New South Wales population on the extent of disease. Fortunately, there is a survey of Australia going on at the moment, but not specifically New South Wales. We should recognise also that in dentistry there is some evidence-based care but not a huge amount. We have the population here in New South Wales to do that.

On the second area, the barriers to prevention, we need to look at the population that we are treating. In the public health service we are treating people who are poor or marginalised and who

may not necessarily know their rights, with poor access and ability to access health services. You cannot go to the dentist if you do not know where the dentist is or if you cannot read the signs to get there. We also have to consider the population that we are dealing with.

CHAIR: In terms of some of those points you made about planning and lack of information and so on, do we need to do a lot of work specifically in New South Wales or are there good models elsewhere to adopt that would pretty much match the needs of New South Wales?

Dr TAYLOR: Do you mean in collecting information or delivering care?

CHAIR: Both. Thinking of some of the points you made about planning, lack of information, salaries and so on, I would have thought that if some people are doing it better than New South Wales is doing it then some of the things we should be doing might be fairly obvious by adopting other people's models.

Dr TAYLOR: In terms of the delivery of dental care—once again, I am not a health care administrator—in the developed world there are quite differing models. For example, in the United States there is extremely limited public dental care, and I hope that we do not move towards a model like that. In England there is a National Health Service wherein dentists are remunerated for the tasks that they do. So they are essentially working on a fee-for-service basis. Dentists are, if you will, procedural specialists. In medicine there are physicians like my colleague here who think and plan carefully and there are procedural specialists who do operations, who do procedures. They get paid for the number of procedures that they do. In England the more fillings you do, the more crowns you do, the more interventions you do, the more money you get.

CHAIR: But you do not get paid for prevention.

Dr TAYLOR: You might get paid but you might not get paid as much as you would get for delivering a lot of fillings. That is a short-term gain for the dentist. Even the patient might think that it is pretty good to get a filling. But in terms of population health outcomes that is not necessarily the best action to take.

The Hon. IAN WEST: Especially if you do not need it.

Dr TAYLOR: That is correct. It is possible to overtreat. It seems to me that if you just increased funding vastly and said, "You can use this money for dental care," you might end up with a lot of people with a lot of treatment but without necessarily better population health outcomes. This is my third model. I will stop with the models after this. In the Scandinavian systems there is public dental care and private dental care as well. Within public dental care within the Scandinavian countries a certain amount of dental treatment or certain defined dental interventions are provided by the state.

If I were a health care administrator, which I am not, I would probably specify the interventions that would be funded and then be quite plain in saying that this will be funded in this circumstances and this will not. I would be saying that we have a certain amount of money for procedures and a certain pool of money that we are going to use for prevention.

In regard to the second part of the question about models overseas—I asked whether that was concerning collection of research information—a good deal of research has been done overseas in various countries and you can extrapolate to a certain extent about the Australian environment but I think we should recognise that the population in New South Wales is not the same as the population in, for example, Greater London or Scandinavia.

In Sydney's South West Area Health Service, for example, where I work, we have in the order of 10 per cent of the aboriginal population of New South Wales and most of the asylum seekers who come to New South Wales come to our area. We have an extremely high unemployment rate, so we have quite a poor population. It would be a mistake for us to extrapolate from a fairly wealthy area, say, to Sydney's South West Area Health Service. I think we could collect data that builds on information that has already been collected elsewhere.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You are suggesting that there are not enough periodontists. Presumably, they would be your preventive people and there would be a Medicare item for them, is that the way you would see it being done, so that they could do things prevention and get paid for it? Is that your approach, or there would be a dental nurse who would go to schools of nursing homes, or somewhere, and find this problem and treated? Is that what you are envisaging?

Dr TAYLOR: In short, no.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: How do the people with the disease who, presumably, have it smouldering along, recognise the problem and go and get it treated? How do they get there?

Dr TAYLOR: I think there should be an increase in the number of periodontists, but I do not think that is the only solution to the problem. The role of a dental specialist or medical specialist is to carry out advanced procedures that require advanced learning, but those procedures often are carried out in people who already have well-developed disease. That is the first part of the specialist role, and in Australian society I think that specialists are well remunerated in the private sector for doing procedures.

The second part of the specialist role is as keepers of the knowledge in the area. We have advanced knowledge in that area and we can use that knowledge to teach other people who might not need the advanced knowledge that we are holding, but we can pass it on. And people with less knowledge, such as hygienists, could easily carry out preventive interventions so that people do not need more advanced treatment later on. I think that we need more periodontists to fill an unmet need for tertiary or more advanced treatment, but I think we need more periodontists in the academic and public sector as keepers of the knowledge to pass on that knowledge to other people who can conduct preventive interventions.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The hygienists would be delivering guess at a more grassroots level for most cases, 80 per cent of the work or 90 per cent of the work or whatever, or other professionals, other than the periodontists, could do it?

Dr TAYLOR: That is correct, in relation to periodontal disease. Hygienists only manage periodontal disease.

CHAIR: Our question about the role a specific why the remuneration of hygienists should be enhanced, they undervalued at the moment or are they the subgroup within the dental profession?

Dr TAYLOR: Yes, they are under-remunerated. The current situation in New South Wales is that a hygienist can earn less in the public sector than a dental assistant. Dental hygiene is a three-year full-time degree training course and you can become a certified dental assistant doing a one-year course two nights a week. Currently they get paid more than a hygienist does, so a hygienist is quite sensibly, I would have thought, going to go and work in the private sector where they can get paid two or three times what they are paid by NSW Health.

CHAIR: Why is it so low? It seems so disproportionate.

Dr TAYLOR: Firstly, last year there was a change in the award for dental assistants and some other dental care workers and their salaries leapt ahead. But I also suspect that because there are so few employed in NSW Health, and because there has been such limited planning, they have neither the loud voice of a large health care workgroup to lobby for themselves and, because there has been limited planning amongst health care administrators, secondly, the health-care administrators would have had difficulty focusing on that very small group because they are just dealing with the *ad hoc* work that they are doing from day to day dealing with emergencies rather than prevention. You need activity at both levels. You need lobbying, but we also need planning at the high levels.

CHAIR: It sounds as if we need to look at the mix of different dental specialties, professionals and apparent professionals. It does, from what you are saying, as if no-one is particularly in charge of all planning what the mix is and how it is distributed. It all sounds very ad hoc.

Dr TAYLOR: I think the situation that is present at the moment is rather *ad hoc*, but I believe there are significant efforts being made in various places to try to determine what the workforce mix should be. But I am not necessarily part of that because I am a clinical specialist rather than being involved in that.

CHAIR: The only area we have not taken up with both of you is set in people's needs for dental health services rather than their wants. If further research work carried out on that sort of question would reveal more unmet need or less unmet need? This ties into some of the questions we are asking Associate Professor Zoellner about different emphasis on cosmetic dentistry, for instance, or different distribution of people in different parts of New South Wales. Do you have any comments on that?

Dr TAYLOR: Yes, I do. I would say that there are patient needs and patient wants, and there are dentist needs and dentist wants. The needs and wants in the private sector are not necessarily the same. There may be some overlap, but they are not necessarily the same as the needs and wants in the public sector. Patients might want something but it might not be a need. For example, to explain it in a completely different area, I have said to people, from time to time, that a concession transport ticket gets you a trip on a Mercedes bus, it does not get you a Mercedes. It gets you from A to B, but if you want to go in the Mercedes car buy it yourself.

In dentistry you might need certain interventions to get you healthier, whether it is in eating, appearance or speech but there might be wants that you want that, in my opinion, the public dental service does not necessarily have to provide. I think that in planning we have to look at that and define what we will provide and what where we not provide. We have to make measures of what is necessary for adequate function and adequate quality of life. But, unfortunately, we cannot provide everything a person wants. If I were running Housing we would give you a roof over your head, but it might not be a waterfront mansion in Vaucluse.

The Hon. IAN WEST: What do you say about a tooth out of a crown?

Dr TAYLOR: It would depend on the situation.

The Hon. IAN WEST: But in terms of your definition of want or need?

Dr TAYLOR: It depends on the tooth and the state of that tooth. It depends on the extent of the breakdown of that tooth. It depends on your periodontal condition. It depends on your dental hygiene. It depends on whether you are likely to be committed to attending for dental treatment. For example, if your history and your health behaviour suggest to me that you will not attend for further dental appointments—many complex dental interventions cannot be done in one appointment—it would be singularly unwise to embark on an endeavour like that when you might not want that complex treatment and you might want to have your tooth out.

The Hon. IAN WEST: In terms of the public purse the decision may be a little more complex than just want or trying to define want and need because what you appear to be saying to me there is that there would be a third person intervening to determine what is the need and what is the want.

Dr TAYLOR: I think that is a very good comment, and I do not think we can define precisely in every circumstance what treatment can be done. We cannot produce some sort of flowchart that answers every question that might arise in health care, but the problem with dental care at the moment, I believe, is that there is no definition at all of what we can or cannot provide and what should or should not be provided.

CHAIR: What determines whether you get on a waiting list and what your position is on it? Is it because you turn up and say, "I've obviously got a problem"? That is the needs end. Or is it because you say, "I want to have this done" and you go on a waiting list and you might eventually get to the top of it?

Dr TAYLOR: When you are discussing waiting lists at the front door of the organisation, if you will, my understanding is that different area health services have different strategies and I think that health care administrators might be better able to answer that question than me.

From the point of view of referrals to my department, the Department of Periodontics, we take referrals from all over New South Wales of individuals who are eligible for public dental care. Every referral that comes into the department is triaged, that is a senior clinician reads that referral. They do not look at the patient because the patient might be in Merimbula or Nowra or somewhere. We assess the urgency of that referral. Some patients who are referred to us will be seen as soon as they can come to see us. Many, many patients, unfortunately, will be placed on a waiting list and called up as clinical staffing permits.

Professor TOFLER: If I could just add something regarding the needs and wants issue, the aspect of preventive health is a struggle in all areas, certainly in cardiovascular disease, and there the funding is probably a lot better than it is in dental health. This issue with procrastination that people tend to not want to have dental work unless they really need it and I think that perhaps that gives a greater, I suppose, call to action for groups that can help to provide preventative health before it reaches that level as part of the aspect that would help is probably us getting some more high-quality information and data that would, for example, tie in with the links of cardiovascular disease as we have talked about to help to answer some of these questions.

(The witnesses withdrew)

ELI SCHWARZ, Dean, Faculty of Dentistry, University of Sydney, 109/9 Admiralty Drive, Breakfast Point, affirmed and examined:

CHAIR: The Committee has sent you some questions. Do you wish to make an opening statement before we get into those questions?

Professor SCHWARZ: I have brought with me a short introduction to the Faculty of Dentistry, together with information about our various programs. I have been in correspondence with your Committee previously and have received an extension for my formal submission until 31 July, and I am grateful for that. When I looked at the list of questions, I thought we were having a week's retreat or something like that, because it definitely takes care of all the business of dentistry.

CHAIR: If some of the questions would take a lot of time and detail to answer, perhaps you could cover them in your submission, or alternatively you may wish to take them on notice. Particularly as this is the first day of our inquiry, I think the previous witnesses found that we tended to ask them everything. Perhaps later on in the inquiry we will tailor our questions more specifically to the background and expertise of our witnesses. We have already heard a little about the University of Sydney being the only faculty of dentistry in New South Wales. How would you describe the role of the faculty?

Professor SCHWARZ: I would describe the role as the only place in New South Wales which produces the dental work force for this State and for the parts of the rest of the country where some of the graduates choose to go. It is also the only faculty of dentistry in the country that offers the graduate entry program in dentistry, meaning that our students come to dentistry with a previous bachelor's degree before they start dentistry. It is a four-year graduate entry program, which is parallel to the medical program at the University of Sydney. All the other schools in the country run five-year programs, which are traditional European-style programs, which takes students directly from high school and through the dental curriculum.

We are also the only faculty in the country that offers a true bachelor of oral health program, which we have just started in 2005, meaning that the graduates of that program will get a triple training, in oral health promotion, dental hygiene and dental therapy. There are other bachelor of oral health programs in the country, but they are mostly geared towards dental hygiene. Dental hygiene has not traditionally been taught in New South Wales—for reasons that I do not know because I have not been here very long—but there are other States that graduate dental hygienists, and the trend over the last couple of years has been to change the name to bachelors of oral health.

The faculty of dentistry has a role as a repository for oral health knowledge, and knowledge about dental care and the prevention of oral diseases. It has an important role as being the location for training specialists, together with the two teaching hospitals, Sydney Dental Hospital and Westmead Centre for Oral Health.

CHAIR: The university changed from perhaps the more traditional style to the graduate entry. Were you involved in that change?

Professor SCHWARZ: No. I arrived to this position nine months ago and took over a lot of fait accomplis, so to speak. So decisions had already been made on a number of different things, including the establishment of the bachelor of oral health program and the bachelor of dentistry program.

CHAIR: With regard to the people who come into the program as graduates, what have they done previously?

Professor SCHWARZ: A lot of them have done bachelor of medical sciences, some of them have done bachelor of health sciences, and a number of them come with quite an experience with masters degrees in a variety of different things. We do not really specify what type of bachelors degree. If you ask me what would be a really good bachelors degree if you wanted to study dentistry, I could probably say health sciences or medical sciences. But I must say that the program and the daily life of the students is enriched by the variety of people—from journalism to engineering, to

astronomy, and so on. Quite a number of students come with both masters degrees and PhDs and are students in our program now.

CHAIR: I think you have probably answered some of our second question, about the recent and quite major changes in the faculty. Do you have any other comments to make about why these changes were made, or what has been the rationale behind the bachelor of oral health and the switch to the graduate entry program?

Professor SCHWARZ: I think that what happens in the higher education, especially in the health professions, is that on and off throughout the life of a training program there is a need to assess how well the program meets the needs of the population and how well the program is being followed and standards of practice in the profession, and so on. I believe at the time when the decision was made there were two sets of parallel decision-making processes in the faculty of medicine and in the faculty of dentistry because these two programs changed at the same time. So that at this stage our dental students have a very close relationship to the medical program. In fact, the first two years of the dental program are spent in a considerable proportion of time together with the medical students in the faculty of medicine and then they have part of the week taken up by specific dental topics and then when they come to the third and fourth years they become much more clinically oriented towards the role that they will have as dental practitioners.

In regard to the Bachelor of Oral Health program that is now being developed, those are three-year graduates; they will come in with their high school background and they will study in a traditional bachelor's program, but, again, we have established this program in close collaboration with the faculty of health sciences which are training occupational therapists, physiotherapists, and so on and so forth, and our Bachelor of Oral Health students take several units of study in the faculty of health sciences, which are essentially the same units of study as other allied health professionals are getting.

CHAIR: Is that done for reasons of efficiency to suit the university or because it is believed that that is actually a better way of training them?

Professor SCHWARZ: I believe that when we look at the need of knowledge and the role of the practitioners at the later stage, the possibility to actually give them an approach to integrated healthcare is very, very valuable. Unfortunately, that does not necessarily mean that it gets replicated when they come out in practice because the rules or the standards of practice are a little bit different. However, you may know that the faculty of dentistry is part of the largest college of health sciences probably in the southern hemisphere at the University of Sydney where there are over 10,000 students, and some of the strategies of the college of health sciences is to promote interdisciplinary teaching programs, interdisciplinary research programs, and that is all made in order to, in a sense, better qualify the graduates to meet the needs of the population afterwards.

You just heard evidence from a combination of dentists and cardiovascular specialists, and I think that is a very good example of showing that a mouth is not an organ that sort of hangs by itself outside on the body but is actually sitting inside most people's faces and should be looked at in relation to what happens in the rest of the body. This is really what we try to get across to our students.

CHAIR: Question 3—I think most of the committee is as ill informed as I am on this. We are not clear, I am sure, what is the difference between hygienists—the oral health people, and you were talking about a change of name there—therapists, technicians, et cetera. That may be something your submission might help us with.

Professor SCHWARZ: I assume that this range of questions would be a good guideline for what you would like to see me submit. So I will probably try to address this in the submission and then there might be other things you have not asked about—rural things, for instance—in the submission. But I would probably add that in my submission. But question 3: A dentist, in the legislative terms, is usually called the supervisor of the dental team. That individual with that training is the one who has the highest level of training in the dental team. There are dental specialists, so to speak, who are dentists by training and then specialise into some kind of discipline afterwards. But in a sense, in the dental team that dentist would be the highest trained person.

If we sort of graded hygienists, dental hygienists would then be the next level, so to speak. They have a three-year education; they have not been trained in New South Wales, and our Bachelor of Oral Health program is the first endeavour to actually train graduates with the hygiene content. Dental hygienists are essentially professionals who look for preventive approaches to oral health problems. Dental hygienists traditionally were invented by dentists essentially, and the history of dental hygienists is that dentists never really did very well at preventive activities, they were more focused on filling teeth, pulling teeth out and so on, and as it became clear and clearer that prevention was the way to go about oral diseases it was realised that we needed a separate entity or group of people who could really do that. Dental hygienists in most places in the world work in dentists clinics and are usually allocated patients to treat before dentists may take them up to do the more advanced work.

Then this part of the world has developed this professional that is not actually worldwide accepted, which is the dental therapist; that is a professional who has also had a three-year training program but in most places traditionally it has been done by health departments and they have had a limited scope of work in that they are allowed to work on children and young adults for specific dental procedures like filling teeth, pulling teeth out and a couple of other things. They are also being used in preventive activities.

So the major differences between the two groups are probably that you would say that the dental therapists are more focused on the restorative aspects of dentistry and the hygienists have been traditionally more focused on the preventive aspects, and their scope of work has not given them the possibility to do intrusive treatment, so to speak, even though some of the periodontal therapies today are pretty intrusive and the hygienists can do those. Technicians are a different animal because they have traditionally not been trained inside the university system. So you have hygienists that have traditionally been trained in the university environment, therapists who have been trained in a more vocational style environment and the technicians that have usually been trained in a TAFE environment, which is also really vocational training but, funny enough, like outside sort of professional reach almost. And it is pretty much the same all over the world, that that has been the development.

Technicians are really of two kinds. In some countries there are actually technicians who can work on patients, like my home country, Denmark. We have clinical technicians who were allowed to do dentures, for instance, and who were allowed to receive patients directly in their practices. In most countries that is not allowed; technicians would be assisting dentists in their laboratory procedures; like if you want a gold crown or something like that; the dentist does not sort of go out in his back room and make that, he sends an impression to a technician who will then work out all these things and send back the finished work.

So those are the main features, I believe, of this different group of people. I believe that one of the challenges of the profession as a whole is really to get these groups of people to work together in a team because they all have unique capabilities and the extent to which you can use these capabilities in a patient treatment situation you actually get a very efficient way of working.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: What percentage of the funding for dentistry is retained by the university as an overhead? In other words, of the money that comes from Canberra, or wherever funding comes from, how much do you actually get for your faculty?

Professor SCHWARZ: I do not think I can answer that question actually, not right on here.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Could you take it on notice? Would you be able to find the answer?

Professor SCHWARZ: Sure, but I just want to make you aware that that is not the way universities are funded and that is not the way the faculty of dentistry is funded. The way funding comes to dentistry is through a block grant that can be traced that comes from the Department of Education to the university as a whole. Then there is an internal funding mechanism in the university that then allows some money to be retained at various levels in the university for infrastructure and development, and then some of it will then come down to the faculty of dentistry. There is no line

item, if you will, that comes to the university which says, "This is for dentistry", and then they take off 30 per cent and then send the 70 per cent to me, or the other way around. That is not how the university gets its money.

It really gets its block grant on the number of HECS places. So on that basis I could say, okay, the HECS grant that comes to the faculty of dentistry—we have 45 HECS places in the Bachelor of Dentistry program, we have 20 HECS places in the Bachelor of Oral Health program, and those moneys I can track, so to speak, but that is not all the money I get from the university. So I will probably need to go home and think a little bit about it when I see the actual question spelled out. It is a very complex question; it is not easy.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: What criteria are set then for the number of HECS places that the Department of Education, Science and Technology will fund? What are the parameters that set your funding? What sets the number of students and does that set the amount of money you get?

Professor SCHWARZ: The different types of students—dental students are in a different band than science students and engineering students and so on. So when Canberra sends money down to the university they will obviously look at all the different HECS places in the different faculties and they will say 45 dental places—I mean, it is 45 times 4 really, being the four years, and 20 times 3 for the Bachelor of Oral Health. Then they will put all of this together, of course, but then there are a number of other things like research infrastructure, infrastructure development, research performance—there are just so many different things.

CHAIR: In terms of the students, who actually decides the 45 rather than 47, 42 or whatever?

Professor SCHWARZ: That is a good question. I know—because I was here when it happened—that, for instance, when the Bachelor of Oral Health program was established last year, what happened was that the program was described by the faculty, approved by all the university committees and so on and so forth, and then was put into the general request for HECS places to the Commonwealth Government and it was then approved that we could get 20 HECS places. That means that when the university overall got several thousand HECS places they knew that the Government had actually accepted that 20 of those HECS places were allocated to dentistry. So there would be an expectation that we would fill those 20 places.

Why it was 20 and not 30 or 40 is obviously a good question. I can say that when we make that kind of recommendation it is based on our assessment of how many students we can serve, so to speak, and that is, to a large extent, limited by the number of dental chairs that are available in the two teaching hospitals. The 45 higher education contribution scheme [HECS] places are not all the students that we have. We have another 35 students in the class. We accepted 80 Bachelor of Dentistry students last year but the 45 were the only ones that came from the Government, so to speak. The 35 were—

CHAIR: Private?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Private, effectively. Locally private, or international?

Professor SCHWARZ: Yes, both local fee payers and international fee payers.

CHAIR: We are asking these questions because the Association for the Promotion of Oral Health, for example, says that there is an insufficient number of people graduating each year.

Professor SCHWARZ: Yes, I noticed that question.

CHAIR: We have been told, for instance, that New South Wales tends to import, in effect, a number of South Australian graduates. It has been suggested that we are not actually producing enough to meet the demand. Therefore, it is a real question. But why are we not? Should we be? Who is stopping it?

Professor SCHWARZ: Let me give you a scenario. Let us say we accept another 100 students per year. Let us say that the hospitals could actually accommodate another 100 students per year. This question actually sort of says "insufficient number of dental professionals to provide satisfactory levels of dental care". Let us say that all those extra 100 graduates that we produce set up their practice in Macquarie Street, where most of the dentists are anyway. Would that actually produce a more satisfactory level of dental care in this State, or what would it do actually?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Surely the distribution would be where the market is. If they all set up in Macquarie Street, they would all go broke, whereas if they spread out, they would not.

Professor SCHWARZ: Well, I do not know. I do not think anybody knows, actually, because we do not have any place in this country or any other place, I believe, where there is a complete saturation of dentists. In certain cities in Scandinavia, there are 500 people per dentist, if you calculate the rate. Under normal circumstances you would say that that is definitely too few: I mean, no dentist can actually live on that kind of patient base. But that is not actually true. That actually happens, and it happens in a number of places. What I want to point out to you is that this question is actually much too simple. It is a very, very complex problem.

I cannot say that we should not produce more dentists. I mean, now I have the Productivity Commission which says there are too few health care workers. We have the National Oral Health Plan that says that there is a shortage of dental manpower and so on and so forth. I am just pointing out that it does not actually help us a lot just to add the numbers unless we look at diversity, distribution of health manpower and salary situations. As you probably have been told earlier in your inquiry, most of dentists would choose to work in private practice because the salaries in public health services are actually not competing. That is our problem in the Faculty of Dentistry as well.

So even if we produce more dentists, we may not be able to help the whole situation because we would need to ensure that some of those dentists come back to the faculty, for instance, to train new graduates, and some of the dentists need to go into public health service to provide services for the 50 per cent of the State's population that is eligible for service from the public health service.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I recognise that it is a complex problem of distribution but it does seem that there is an absolute shortage of dentists. I am interested in how the number is determined and if the problem of the university is that you do not have enough money to pay the staff to train the people. If that is so, then it will actually get worse because you have fewer and fewer dentists and the ones that you get are going to go more for the private sector and there will be fewer people working in the public sector and fewer people to train other people, and so it will go on.

Professor SCHWARZ: Sure.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: At some point, we have to determine how many dentists should there be.

Professor SCHWARZ: Exactly.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: And what is stopping the universities from graduating and training as well as getting the personnel to train and produce more dentists.

Professor SCHWARZ: Okay. At this stage I think in fact that the limitation for taking on more students—and it is now already relatively strenuous—is that we are actually training most of our dental students in the two teaching hospitals. Unless we find alternative ways of training our dental students—for instance, sending them out in extended rotations like they are doing in Queensland now in their fifth year—we will be very limited in terms of being able to provide a basis for more students, just in terms of numbers.

Of course, if we get more students, we also get more income because these students would be fee producing, one way or the other. Those fees can be used to convert into sort of salary expenses and

so on and so forth. Again, there are some issues that need to be looked at, but at the moment there are just not spaces in the two teaching hospitals that we actually use to produce more dentists.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But whether you are training them by sending them out to more extended residencies or attachments and paying dentists who train them, or whether you get more registrars in the dental hospitals, you still have to have more supervisors for more students.

Professor SCHWARZ: That is true.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: If there are not enough dentists, what is stopping the university from getting that increased number and the increased funding for that number? What is stopping you from expanding?

Professor SCHWARZ: At the moment I believe that there is a sense of staff shortage in the faculty. We would need teachers. I mean, we would need to have a properly consolidated group of teachers who could actually teach these students in the clinics or elsewhere. At the moment I do not think that we would be prepared to actually take on more students. We have a very intensive program with a very low rate of students per staff. That means, as I say, that if we need to take on 10 or 20 more students, we would actually need several more staff to actually be able to teach the students and to give the teaching program quality. I believe at the moment that would have to be planned very well and very thoroughly in order to achieve that goal.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Correct me if I am wrong, but you are having difficulty retaining staff and you are already seriously over budget consistently. Are those two statements not true?

Professor SCHWARZ: I would say probably not entirely. A lot of the staff has actually been in fact there for quite a while. I do not think it is retention as much as it is attraction.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But you have a few diehards who are presumably dedicated or habituated and are staying on your books, and you are not getting new ones, so that must mean that your salary is a problem.

Professor SCHWARZ: Well, of course: that is, I think, well known. To be salaried in public health or public service is not as good as being out in private practice. This is not simply an Australian problem. This is a worldwide problem. But an academic institution cannot compete with private practice. That is just not possible.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: The fact that you have a dedicated work force or a long-term work force needs to be recognised because they are all going to get old and eventually go away.

Professor SCHWARZ: Exactly.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So you will have to recruit new people.

Professor SCHWARZ: And that is what we are working very hard on right now—I mean, to actually create an academic staffing plan so that we will be able to recruit new persons. Again it obviously is a simplification to say that just because you get more money by being in a different place, you do not necessarily need to go to that place. I mean, there could be other benefits and other interests that you could get fulfilled by being in an academic environment or by being in a public health environment. That obviously is what we need to develop further and ensure that we market, so to speak, that to our dental graduates because these are the ones who eventually will be coming back to teach in the faculty in the future.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is your department running over budget, though, in endeavouring to pay staff that you have with your good teacher-student ratio that you are talking about?

Professor SCHWARZ: If you are asking me does the faculty have a deficit, then the answer is yes. But whether that is because we are over budget, I am not really sure.

CHAIR: I think perhaps that we should get onto some of the other questions. From where I sit, a lot of these questions could be asked of every faculty and every university in New South Wales.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: But they do not have as bad a shortage as in dentistry in terms of graduates.

CHAIR: Well, I am not sure that is true of some of them. It is getting very specific about internal issues in the faculty whereas I think a lot of the questions we have here we will need to get onto before Professor Schwarz leaves, and they relate more to the dental health services in New South Wales. Do you want to go onto some of those?

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Perhaps you could ask some of those and I will come back to mine.

CHAIR: It is connected, and perhaps that is one reason why I intervened. We are trying to establish what you think about the argument that the funding and infrastructure for professional dental education is unsustainable at present. If you agree, what do we do about the funding shortfalls? Is it the Commonwealth? Is it the State? Our next questions go on to talk about what might be the short and long term impact on actual dental services and any shortfalls in dental education.

Professor SCHWARZ: If we look at the way in fact that it gets funded or actually sustains itself at the moment, if it were sustainable, we would not be here or we would get compensated for it in other ways. We are working very hard on the issues mentioned by the previous member. What we are trying to work on is really to actually prove our value to the ones we collaborate with. The ones we collaborate most with are the two teaching hospitals and the Department of Health. I am happy to say that I believe that all around the two teaching hospitals and in the Department of Health there is a common sort of sense of the importance of being able to sustain the faculty and produce good quality graduates for the State and to meet the needs of the population.

The way I believe that we can go about it is by further collaborating with these other organisations. We have already started on a project or a process of having conjoint appointments. That means that a professor or a lecturer could be employed by the university but the salary could actually be paid by an outside source, not from the university's budgets. We have several examples of this where we see a third of the funding comes from the faculty funds, a third comes from one of the hospitals and a third comes from the other of the hospitals, which are, as you know, in two different area health services.

In a sense we kind of collaborate in order to be able to achieve the goal of sustaining the faculty and the work that we need to do. We also work with our other outside professional organisations, such as our position in orthodontics which is a discipline that treats malocclusions, which means teeth that are not aligned well. Those positions are funded by the Australian Society of Orthodontics, so that is another model that has been taken up by the faculty and that we are obviously very grateful for. There are a number of different ways that we can go about trying to further augment the funding that comes in direct allocations from the university.

CHAIR: If you take the question more generally to apply not just to the University of Sydney but to, say, Australian universities, I know we went a bit around the circle before about what are satisfactory levels of dental care, but what we are trying to establish is, leaving aside the issues that might face a particular faculty in Australia or in New South Wales, are we producing too few people to provide dental services? We heard earlier that the profession is ageing. Are we are facing in the future a really grave shortage, or a greater shortage of people than we currently have?

Professor SCHWARZ: No, I think it is relatively certain that we are facing a shortage. We have a certain shortage now. It is certainly going to be worse because there were quite a considerable number of people who were trained through the sixties, seventies and probably up to the eighties and then a much lower number of dentists were being trained. Of course, these are essentially my

generation who will be retiring in probably 10 years time or will start retiring in bigger numbers, and there will not be the same number of new graduates coming into the profession to take over.

At the same time, the population is increasing and the population is ageing as well, which creates different types of more complex treatments. Say a patient on average needs one hour of service a year and 20 years from now they have retained their teeth, they have more complex treatment needs and so on. These things have been looked at by our colleagues down in Adelaide, who are the place in the country that is a repository for data collections and so on. As you may know, John Spencer suggested some years ago that the country, as a whole, needed to produce 120 dentists more per year and that would then be distributed across the six dental schools.

I do not think that was generally accepted. The numbers were taken on advisement and nothing was done to try to approach that in an organised way. You will find the same things in Healthy Mouth, Healthy Lives—the national oral health plan—where a whole section is allocated to work force issues and there were the same recommendations in the same direction without any action plan.

CHAIR: There are two sides to this. There is the side that says we probably need more dentists in private practice to meet a demand from one group of people but then there is the side that relates more to the need for planning by governments at different levels, which is more the public dentistry side of things and a more basic level of needs.

Professor SCHWARZ: I would probably not advise of more dentists in private practice as such. That is probably not what I am saying, because we need to look at the needs of the population because there will be some needs that will not be taken care of by private practitioners. The whole aged care area is really very badly described at the moment. It is unlikely that private practitioners would be taking care of elderly persons, who cannot actually leave their home and come to the dental practice. There are schoolchildren who would probably not be taken care of by that profession, so it is really dental professionals in general that we need to look at and what type of personnel would actually be best suited to meet the needs of those parts of the population.

CHAIR: Would it be true, as a generalisation, to say that the need is much more for public dentistry than private dentistry?

Professor SCHWARZ: As we have described the eligibilities at the moment, obviously the need in that part of the population that is eligible for public dental care is not being met to the same extent as it is in the other half of the population. It is, of course, an amazing situation because if you look at the two halves of the population, the one half that is eligible for public dental care, for one reason or another, and the other half that is not eligible and you look at the dental work force that is available for the two harves, you would probably get shocked because it is probably 10 times higher in the half that is not eligible compared to the one that is eligible.

Those inequities have been described in great detail in a number of reports and it goes back to the questioning before, that essentially you need to look at this as a whole, because if you give people a choice—if you come out of university with a loan debt burden of $150,000 that you need to pay back over a limited number of years, and you get an offer to be paid either $40,000 a year or $100,000 a year, my answer is usually, "Well, that's a no-brainer. I would take the $40,000 a year job, right!" That is essentially the choice that many of our graduates have and that is why it is important to look at all these relationships at the same time in context rather than looking only at this or that because they are very closely interlinked.

CHAIR: And if the funding is not available to remuneration doctors in the public side sufficiently, that in turn has an impact on the number of graduates that need to be produced because there is no point producing graduates if there is not the money to pay them in the areas of need?

Professor SCHWARZ: That, again, is an interesting thing because if you are eligible for public dental services and you cannot get access to dental services, you can choose two things: you can either choose to wait or you can choose to use the alternative ways of getting access to dental care, which is to go to private practice and pay for it. Quite considerable amounts of people who are eligible for dental care would choose the alternative, so you are kind of forcing people that you have defined

as eligible for dental public service to actually choose the alternative because you are not funding the public dental service sufficiently to provide the care that you promised to give people. That is one of these contradictions that is obviously complicating the picture.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I understand that the funding formula is about to change for funding of Higher Education Contribution Scheme [HECS] places, within the university system, is that correct? If so, what impact will that have on your faculty?

Professor SCHWARZ: I actually do not know because I do not know that there are changes in the funding formulas.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You do not know that they are coming or you do not know what they are?

Professor SCHWARZ: No, I do not know that they are coming. We had a forum in the faculty yesterday and I showed the staff the situation in the faculty of dentistry. If I look at the income of the faculty of dentistry in 1999 the HECS grant produced 70 per cent of my income. I looked at the HECS money last year; it produced 33 per cent of my income, so that means that 67 per cent came from somewhere else and that other income was produced by fee payers and other sources. They are the things I know and that might continue down, but we are not really sure. I have looked at this graph and it is continuing downwards.

What the overall policy background is for doing it this way, I am not really sure, except that we know from the Commonwealth Government that they want the universities to find funds somewhere else because the Government cannot fund more, but if you are talking about individual HECS places, I know that the HECS place is worth a certain amount—some thousand dollars—and I have not heard that that is changing.

CHAIR: We can take that matter up elsewhere.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Does the university have an advantage in funding cheaper courses than yours and do you think that is why you are being poorly funded?

CHAIR: Many of these questions are more to do with university funding than dental services.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: I am trying to get to the bottom of why the faculty is not getting enough money.

CHAIR: I think they are issues that go beyond dental services.

Professor SCHWARZ: The faculty gets money and we actually get extra help. The problem for the faculty of dentistry, which is unique in the university, is that we cannot put 80 students in my class in a lecture theatre and lecture to them from eight o'clock in the morning to five o'clock in the afternoon and then expect that after four years they will be able to go out and practise dentistry. I need to put each dental student at a dental chair with a patient who will actually train as a professional and be able to graduate as a safe dentist.

If they were medical students, they do not have the same requirement. Medical students will go through their curriculum and will not be able to go out and practise medicine individually, independently, after they finish the medical program. They have to go through several years of rotations, internships and so forth, but that is not my choice. I have to actually produce dentists who can go out in society and work as professionals. That is what makes the dental program unique in the university and, to a certain extent, it gets certain recognition because the band that we are in, in terms of what a student is worth, is actually at the highest level in the university. It is not at the lowest level. The lowest level is a law student.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Sure, but it may not be enough even still?

Professor SCHWARZ: That is true. It would be better to get more money, but I would hate to sit here and attack the university for not giving us enough money because I think that there are a number of factors in this whole relationship that is the reason why we seem to be struggling with the budget at the moment, which is not uniquely because of the funding formula in the university.

The Hon. IAN WEST: Can I suggest you put that in your submission if you wish?

Professor SCHWARZ: If I can.

CHAIR: Part of your answer links into question No. 8 about whether there is a need for dentists and other people in the dental team to participate in continuing education? You said you have to turn them out, fit to practise by themselves if necessary.

Professor SCHWARZ: For sure.

CHAIR: Presumably, there are all kinds of changes in practice, in medication, in techniques and so on. Is there a problem in terms of continuing education?

Professor SCHWARZ: No, I think that it is generally accepted in our profession that we are training graduates who can go out and work safely on patients and in the profession, but we are essentially training people for life-long learning. This is a concept that pretty much across the world is accepted as the notion: dentists in general can really only last a couple of years, then they really need to update themselves in terms of new materials, treating methodologies, a variety of things that happen and, of course, we hope that we induce in students that kind of philosophy.

CHAIR: Do we know whether they are doing it?

Professor SCHWARZ: Yes, to a certain extent I would say from what I know from other countries, in those countries where there are voluntary continuing education programs you would usually calculate that around half of the dentists would come back for continuing education and half would, essentially, not. The question whether this other half does not actually educate themselves rather than going for continuing education courses is unknown. But then there are other countries and one State in Australia as well that has established continuing education programs which are compulsory, where in order to retain your licence or your registration, you need a certain amount of continuing education points.

CHAIR: Which State is that?

Professor SCHWARZ: Victoria. Victoria has established compulsory continuing education and I actually believe that the Australian Capital Territory is going in that direction as well.

CHAIR: Do you know whether, in New South Wales, 50 per cent will take it up or you just do not know?

Professor SCHWARZ: I do not know. It may be that the Dental Association may know that, but there are really two main providers of continuing education in New South Wales and a third one would be nondescript because the faculty of dentistry has a continuing education organisation that provides continuing education courses for the profession and the Dental Association, the New South Wales Branch, has special continuing professional development as well.

Then there are a number of people and organisations that are not really related to either of the two organisations who can hire a room at Darling Harbour and invite dentists in the area to come and listen to some high-flyer from the United States who conducts a weekend course or something like that. That is also continuing education.

CHAIR: A high-fee conference of some sort.

Professor SCHWARZ: Yes, probably. But it is probably tax deductible so that is fine.

CHAIR: We have some further questions partly on the issue of needs and wants—I know that is a simplistic way of putting it—and the changes over the years in both practitioners' attitudes and in what clients seek. Do you have any comments to make at this stage on that issue?

Professor SCHWARZ: I heard that discussion with Dr Taylor. I thought it was very interesting. That is my specialty: I am actually a public health dentist by training. So of course looking at those issues has taken up a lot of my career. I think your discussion with Dr Taylor was actually quite relevant and very good. You usually see that what dentists assess to be patients' needs do not necessarily fit with what the patients think their needs are. Patients' needs—or wants, as you say; we also call them demands—may often times be related more to what is a fad out there, for instance, models, actors, cosmetic dentistry and so on and so forth. Patients may express the wish to look like Marlon Brando, Brad Pitt or something like that but that may not be possible for a dentist to do.

These issues have been with us for quite a while. They have always been something that was a little different and started out maybe as a fashion and then became more professionally accepted. Implantology, for instance, started out very early on as something that could be called experimental treatment. Today it is a very accepted way of replacing teeth by putting an implant into the bone and then attaching a crown to it.

CHAIR: Is it done for cosmetic reasons?

Professor SCHWARZ: No, it is usually not done for cosmetic reasons. It may be simply because a number of patients cannot accept having a piece of plastic running around in their mouth and that is obviously a very, very good alternative to that kind of treatment. Those possibilities were not there 20 years ago. Today they are well researched and a well-accepted part of the dental profession. To a certain extent, that pushes demand and our ability to meet that demand in a certain direction. I think the main limitations in terms of meeting people's demands very often are funding issues. For instance, today I do not think it would be very likely that the public dental service in New South Wales would be able to provide implant treatment to quite a large proportion of the population. Even though they may need it from an objective point of view, the funding would simply not be there to do that. That means that you have these inequities in the provision of dental services, where people who need things for professional objectives would not be able to get that kind of treatment.

CHAIR: Unless they could afford to pay for it.

Professor SCHWARZ: Yes.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Is there anything we have not covered?

CHAIR: We have answered some questions incidentally but Professor Schwarz's submission will also encompass some.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: Question No. 9—insufficient data on dental disease—has perhaps not been answered. Professor Schwarz, do you have the questions with you?

Professor SCHWARZ: Yes, I have them here. I saw that question.

CHAIR: We covered it in terms of future work force need. I think it was covered in question No. 4.

Professor SCHWARZ: There is a lot of data in Adelaide. To give a short answer, I think there is a lot of data that we have not even started to use yet. As researchers or professionals we sometimes say "We need more data, we need more data, we need more data", but if we accumulated the data we have and started to action that data I think it would be a huge step forward.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You would know enough to get going, as it were.

Professor SCHWARZ: Yes.

CHAIR: The only other thing I noted was that you pointed out at the beginning that we had overlooked rural areas in asking our questions. Do you want to make any particular comment about that?

Professor SCHWARZ: I will probably put it in my submission. But I will mention it so that it is on the table at least. You might want to get confirmation from other people who appear before you. It goes back to some of the other issues that we have discussed. Of course, distribution of manpower is definitely very, very inequitable in relation to rural areas. The problem is also that when you look at the map of New South Wales, how people are distributed and their socio-economic status, unfortunately you also find that there are inequities in relation to socio-economic status. The more affluent parts of the population are concentrated in the major cities and there are certain socio-economic challenges in faraway places in the State.

That has a very direct relationship to access to dental care at least, both in the public and private sectors. So you get this overlay of problems. You do not have many professionals out there but you also have extremely bad access out there. That has direct health implications. The little we know about the oral health situation is that there are these inequities in health as well. For instance, the oral health situation among children in rural areas is much worse off than in the major cities. This is also related to the fact that a lot of rural areas do not have water fluoridation as we have in Sydney and in a number of intermediate city areas. I looked at a very crude measure. I looked at the number of one- to four-year-olds admitted to hospitals for dental problems. That is the most frequent reason why one- to four-year-olds are admitted to hospitals in New South Wales. If you look at where they come from, you will find that the rates in those areas that do not have water fluoridation is 10 times higher than in those areas with water fluoridation.

CHAIR: Do you mean literally 10 times higher?

Professor SCHWARZ: It is probably more than 10 times but 10 times is enough. If you look at the rates, they are really dramatic. It is very scary. We are talking about entirely preventable disease.

CHAIR: Did you say that the greatest cause of hospital admission for one- to four-year-olds is dental problems?

Professor SCHWARZ: Yes. It is either the or one of the reasons—No.1, 2 or 3; something like that. It is in the chief health officer's report so it can be checked.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: You have a problem with few staff scattered over a number of locations in your faculty. Does the university provide you with many facilities?

Professor SCHWARZ: No.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So you have to send your staff to Westmead and the dental hospitals?

Professor SCHWARZ: The university does not have facilities for the dental faculty because we live in the two hospitals. So the area health services provide our facilities. We use facilities on the main campus of the university for especially the two first years of dental students' lives, when they go to lecture theatres and so on and so forth. But it is essentially the two area health services that provide the physical framework for the dental faculty.

The Hon. Dr ARTHUR CHESTERFIELD-EVANS: So presumably, in the sense that the faculty is a major player in public dentistry, those two area health services have far better public dentistry facilities than others. Is that right?

Professor SCHWARZ: They obviously have the two largest poli-clinics, if you will, in the State because Western Sydney and Sydney South West are the only two areas that have these huge

hospitals of centres for oral health. So in that respect, yes, it is true that they have the best facilities. You could ask: If the dental faculty was not there would Sydney Dental Hospital be there? That might be a question. But at the moment those are our facilities, essentially, to work in. There is co-funding. For instance—this is a small example—refurbishment of a lecture theatre in the Sydney Dental Hospital was paid for by the university. There are incidents when funding is needed. When it is purely for teaching purposes it is very difficult to go to the area health service and say, "We need this for teaching purposes only".

CHAIR: Thank you. You have offered to get us more information in a few areas. When we receive your submission we might ask you—over the telephone or in writing—about some issues that arise from it and seek some clarification if that is all right with you.

Professor SCHWARZ: Of course. I will be very happy to come back to you. If you run into problems or issues with other submissions I will be very happy to help you as much as I can. These were very difficult questions and I probably should have been a little better prepared. I apologise for that. But I was not sure exactly how detailed the questions would be.

CHAIR: We are sometimes not sure ourselves, particularly on the first day of an inquiry. It is always easier for people who come later because, at the very least, they can look at the transcript and see whether we asked good or bad or easy or difficult questions.

Professor SCHWARZ: These were tough—I felt like I was in a courthouse. Thank you very much.

CHAIR: But there is no penalty afterwards.

Professor SCHWARZ: I hope not.

CHAIR: Thank you, Professor Schwarz.

(The witnesses withdrew)

(The Committee adjourned at 5.12 p.m.)