

# TRANSCRIPT

## ROAD SAFETY COMMITTEE

### Inquiry into motorcycle safety

Melbourne — 7 March 2012

#### Members

Mr A. Elsbury

Mr T. Languiller

Mr J. Perera

Mr M. Thompson

Mr B. Tilley

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#### Witness

Associate Professor S. Liew, director, orthopaedic surgery, The Alfred hospital.

**The CHAIR** — I would like to welcome Associate Professor Susan Liew to our hearing today. Thank you very much for your attendance. The committee has received 74 written submissions in relation to our inquiry into motorcycle safety. The purpose of the hearings is to obtain evidence from selected witnesses covering our terms of reference.

Hansard will be recording today's proceedings and will provide a proof version transcript to witnesses so that any typographical errors can be corrected. Once you receive a copy of the transcript it would be appreciated if you could correct it and return it to our office. It will be placed on our website in the public domain. Should you have any comments you wish to make in camera — that is, confidentially to us — we can also do that if there are sensitive issues or comments you wish to make.

We have an eclectic range of abilities of members of the committee, prior to their entering the parliamentary arena, and we do value the opportunity to hear firsthand from the life and work experiences of the witnesses who bring their expertise to our inquiry. There has been a high incidence of road trauma in Victoria over the last 50 years, on a par with around the world, but in Victoria there have been some fine innovations such as the compulsory introduction of seatbelts and airbags and drink-driving and random-breath-testing legislation, which have seen Victoria regarded as a world leader in road safety. The work of trauma surgeons has contributed strongly to that process, and there has been a succession of surgeons who have given great advice to parliamentary committees. It is in that spirit and context that we welcome you here today.

We will ask you a number of questions on your observations of road trauma and the treatment of motorcycle accidents. We did have Dr Michael Leung here yesterday, and he gave us some graphic images of people who were the victims of motorcycle accidents, people who had amputations or significant plastic surgery work and post-trauma treatment, sometimes which lasted maybe 10 to 15 years. In commencing our dialogue today and before opening up to my colleagues shortly, do you have any observations on the range of trauma cases that you have had to deal with as a surgeon at the Alfred hospital?

**Assoc. Prof. LIEW** — Yes, and thank you for asking me to come down. I guess it was in response to the Alfred Health submission earlier, and I understand Russell Gruen asked me to come along in terms of spinal surgery. First of all, though, just as an orthopaedic surgeon — because I am the director of orthopaedic surgery at the Alfred — I guess my main interest at the moment is to further the research work. But I have been in clinical practice as a spine surgeon since 1997. During that time I have seen a lot of changes to the treatment of orthopaedic injuries per se. I assume you have all the numbers that the Alfred Health submitted and, over time, just in regard to orthopaedic or bone injuries, I do not think there has been much of a change in the actual spectrum of injuries.

We are probably better at picking up a lot more injuries. I guess I would divide those injuries — and I had a think about this in terms of the spine — into what I would call minor injuries, which include bruising and soft tissue injuries such as you have seen with my colleague Dr Leung; then minor fractures that on the face of it do not necessarily require admission to hospital; and then there would be major injuries that require either ICU or general admission to hospital. In that group, of course, there is the full range of injuries there because you are dealing with limb injuries, pelvic injuries and spinal injuries. Within orthopaedics they would be the three broad groups that you need to look at. Then, within the orthopaedic realm as a spine surgeon, there is what I would call the devastating injuries, which is your spinal cord injuries, either in the form of paraplegia or quadriplegia.

First of all, in relation to limb injuries, which is the most common orthopaedic injury that you would see in motorcycle accidents, technology has come a long way in the last 10 years, and I think we have much better treatments for those. In particular I am thinking about what we call open or what people commonly know as compound tibial fractures. We have a new form of dressing that makes the treatment of these much better. My own personal observation, which is probably because people are in hospital for a shorter length of time, is that at least we do not see these problematic tibial fractures lying around in bed in traction taking up a lot of bed days. That has certainly been a terrific medical innovation.

**The CHAIR** — What is the difference in treatment? Are they able to be wired up at home and put in traction at home?

**Assoc. Prof. LIEW** — No. We do not use traction as much any more. We are able to internally fix people and get them out of bed. We can either pass a rod down the middle of the bone or plate it or put on some other

form of external fixation, whereas we were too scared to do that before, because with open wounds over a broken bone the propensity for infection was very high. It is still very high because, as you can imagine, we have got road dirt, et cetera, in these wounds, but we know if we clean them properly and if we put this special what is called a vacuum dressing on it, it decreases the risk of infection with putting a foreign body in these fractures. It has changed the way we can manage patients, and we can manage them in a more ambulant fashion.

**The CHAIR** — A minor technical point: how are the wounds cleaned? Someone suggested earlier on it was a wire brush, but then that was amended to a plastic brush. How do you get the road dirt out of a wound?

**Mr LANGUILLER** — And a supplementary: what proportion of patients do actually contract an infection arising out of dirt and dust and various other elements that they might pick up on their way of contact with the road?

**Assoc. Prof. LIEW** — What we call surgical debridement is most important — I guess that is what you are talking about with the wire brush — except to say that you can scrub a certain amount of dirt out, but you do not want damage the tissues. Often we are forced to physically cut out some of that tissue, because the dirt is so ingrained into the tissue. Also if the tissue is devitalised and you know it is not going to heal or die, you want to cut that out as well. That is surgical debridement.

The next part of it is what we call irrigation, and that is exactly what it is. It is just washing it with copious amounts of fluid. The standard for that is at least 6 litres through a given wound. I am involved in a multi-centre international trial at the moment to try and prove some of the detail in there as to what sort of irrigation and under what sort of pressure. It is just like your pressurised hose for cleaning the car, but we do not put quite so much pressure in the human body, because that can wash out some of the bacteria as well. However, the other contentious issue is that it actually pushes some of the bacteria into the tissue. The current gold standard of care is that, if you can, you use these pressure devices; however, nobody quite knows what is the right pressure.

The other thing is there is also a very pure soap called Castile soap, which has been shown in animal experiments might help decrease the infection rate as well. We do not know whether that might be a big bonus as well. My own hypothesis — which is the hypothesis of the project; I am on the steering committee, which is based out of Canada — is that a lower pressure and the Castile soap will decrease our infection rate. We are looking for about 2500 patients worldwide. We are currently the lead recruiter in this trial. The very exciting thing about it is if it is proven that that is the gold standard of treatment, orthopaedic and plastic surgeons will take this up around the world and will probably largely get rid of these high-pressure machines, which means we drop the cost and we make it available to the Third World, so we are right in the middle of that.

To go to the second question, in terms of the rate of infection of these fractures that have a wound over them, there have been quite a number of papers looking at that. You have some oranges and apples in the same basket, so you have rates of at least 50 per cent infection, which I suspect has been lessened with this device.

**Mr LANGUILLER** — What does it mean to that patient effectively and in the long term? What is the long-term impact of that?

**Assoc. Prof. LIEW** — If you get an infected fracture it may mean that you cannot ever get skin covering or tissue covering the bone. My colleague will have spoken about some of these wounds and the problems just with wound care. If you go to the bone, the bone will not heal, and you obviously get a problem. If you have a tibia or a femur — a bone in your leg — that does not heal, you have to have some sort of supporting implant in there which may break with time. It causes infection and systemic or whole body effects, such as fever and illness, long-term antibiotics, long-term treatment. Yes, I have seen some of these injuries — and fortunately they are not as many as the bulk that present to us — go on for years.

**Mr LANGUILLER** — Is there any correlation between infections and amputations, for example?

**Assoc. Prof. LIEW** — Yes.

**Mr LANGUILLER** — Any numbers? Do you have any percentages that you might think of the 50 per cent that you estimate are likely to contract infections — or whatever percentage of that — is likely to have an amputation arising out of that?

**Assoc. Prof. LIEW** — With our current treatment, the percentage of patients who get these devastating complications that may require treatment for years or may require amputation is probably under 5 per cent. It is low, but it is terrible for these patients who have their treatment and association with hospitals drawn out for years, not to mention the physical disability and discomfort that they would suffer from that.

**Mr LANGUILLER** — And that could have been prevented had the rider been wearing protective gear?

**Assoc. Prof. LIEW** — If they had not suffered the injury, yes.

**Mr LANGUILLER** — Because they probably would only have had bone damage or orthopaedic work, but not necessarily the tissue, the skin, the tendons.

**Assoc. Prof. LIEW** — Undoubtedly. Talking among my trauma colleagues — including Mark Fitzgerald, who is the director of trauma there — we all believe and we have all seen that people with protective clothing do seem to get less severe soft-tissue wound issues.

**The CHAIR** — Do you see the patients when they come in when they are still in their motorbike gear at the point of first admission?

**Assoc. Prof. LIEW** — Not any more.

**The CHAIR** — Do you have any experience in observing them when they came in with Kevlar trousers — the reinforced trousers — or spinal protection with the jacket, elbow protection or gloves and the state of the equipment when they present to hospital?

**Assoc. Prof. LIEW** — I see them very rarely in the trauma centre like that these days. The way the Alfred works is we have trauma surgeons, who are general surgeons who receive the patient — —

**The CHAIR** — Yes, but perhaps what I am looking for is any direct insight that you have even from yesteryear of presenting accident victims.

**Assoc. Prof. LIEW** — Exactly what I have said. Protective clothing anecdotally certainly does make a difference to the types of injuries they get — that is, the soft tissue. I might say that I have held a motorbike licence since 1986, and I am certainly a strong believer. I have seen the evolution of the clothing that has come through. The materials that you can get these days are absolutely terrific. If you look at some of the states in the US, they make it mandatory that you have to have a certain amount of protective gear on, and that is protective clothing.

**The CHAIR** — Do we know which states in the US?

**Assoc. Prof. LIEW** — I was discussing it with one of my other motorcycling colleagues; I cannot remember.

**The CHAIR** — That is all right; we can track it down.

**Assoc. Prof. LIEW** — Yes, I would double-check that, but I believe that is so. Helmets have been an absolutely fantastic innovation. However, they may be a double-edged sword, speaking as a spine surgeon and having seen a number of neck injuries and quadriplegia. Helmets are fantastic for preventing the devastating head injuries that are behind the highest mortality. But in terms of neck injury — there are no papers and there is really no proof of this — intuitively a helmet, while it may protect the head, will possibly make the neck more vulnerable to a devastating injury just because of its weight and influence on lever arms.

**Mr ELSBURY** — Just in relation to that, as a motorcyclist yourself, what do you do? Do you just wear your helmet or you have some sort of neck protection?

**Assoc. Prof. LIEW** — No, I do not protect my neck because I think, again intuitively, any of these neck shields are probably a double-edged sword because they restrict what you can do. You need to be able to look around and look out for traffic as well — —

**Mr LANGUILLER** — If I might interrupt you, I saw a helmet with an airbag on Spanish television. Have you seen that? Effectively on impact, as I understood it, the airbag inflates and the neck cannot do that movement.

**Assoc. Prof. LIEW** — Like an airbag containing the neck?

**Mr LANGUILLER** — It is effectively an airbag and it works as fast as anything. Bang!

**Mr ELSBURY** — I have seen them as a jacket as well where the collar actually inflates and pushes the helmet up slightly. It also provides a run along your spine so that should you come off, it inflates. However, some of the motorcyclists I have spoken to about it say, 'What happens if it goes off accidentally?'. Suddenly you are the Michelin Man, sitting on a motorcycle without any ability to move.

**Mr LANGUILLER** — From a professional point of view, what do you think of either of those two mechanisms?

**Assoc. Prof. LIEW** — I guess I am a bit dubious, simply because I have seen injuries caused by airbags in cars. I think it needs to be thoroughly tested first because we just do not know what the offshoot is. It could cause something else that we are just not aware of at the moment, and that is exactly what I was talking about. As you say, that timing is just so crucial and it is just so incredibly difficult to get it exactly right. And if it is not exactly right, I can see the potential for it to cause different injuries.

**Mr TILLEY** — I want to ask you about your area of expertise specifically in relation to spinal injuries. When it comes to motorcycle trauma there are a number of different injuries. Is there anything in your experience or anything you have been made aware of that at that vital time, the point of impact, when you first get services to them, makes things better or worse when people are given treatment or brought into the trauma centre? Are there things that people may or may not be doing at the crash scene that exacerbate spinal injuries? We have just heard evidence from a number of people through this inquiry, some of whom have a nursing background, and they have demonstrated some different manoeuvres in relation to stabilising patients and things like that at the scene. Are there things that maybe Ambulance Victoria could do? Are there different treatments that, if implemented before the patient gets to the trauma centre, could either assist or exacerbate the injury?

**Assoc. Prof. LIEW** — At the moment I think the retrieval people do a great job of immobilising and bundling up people in terms of spinal injuries. It depends whether you are talking about cord injuries or just a plain unstable bone injury that may or may not have the potential to cause some neurological injury. The point where I think we can do better at the moment is actual spinal cord injury services and that is with the Victorian Spinal Cord Service at the Austin. I do not know; what I am about to say might be a bit controversial.

**Mr TILLEY** — Please be.

**Assoc. Prof. LIEW** — Looking back at the state trauma plan itself, I think it was a mistake that the second trauma centre did not go to the Austin; that is where the spinal cord service was. There were a lot of reasons, some of which I am not privy to, as to why that did not occur. Although it is for a small proportion of patients, spinal cord injuries obviously take up a huge amount of resources and are a big burden of disability for patients.

**The CHAIR** — Just for my understanding, where did the second trauma centre go?

**Assoc. Prof. LIEW** — To the Royal Melbourne. That being said, I understand there was some discussion to move the spinal cord service maybe to one of the major trauma centres — that is, the Alfred or the Royal Melbourne, which sort of makes sense. Their specialty has been the rehabilitation of spinal cord injuries. Again, do not get me wrong; we are talking about a very small proportion of the spinal injuries. In fact what we are seeing now is that the Austin is very keen to receive spinal cord injuries straight away. If they are multi-trauma, they will not get them; they come to the Alfred or the Royal Melbourne. We all know — we have seen the figures — that having a centralised trauma service improves outcomes and survival rates.

However, for your spinal cord injury patients, that is still a very contentious issue. If they need surgery, how soon do you get them to surgery? Obviously the Austin, with its spinal cord unit, would prefer that any patients who require surgery would go to the Austin. You can see the sorts of scenarios that evolve. I was involved in

one last week and I am just about to meet with the Austin to see if we can improve our processes. But a patient came in, off a motorbike actually, with a spinal injury. He was what we call completely quadriparetic. When a patient is completely quadriparetic we know from the start that their prognosis is quite poor for any recovery.

**The CHAIR** — What does ‘quadriparetic’ mean as opposed to ‘quadriplegic’?

**Assoc. Prof. LIEW** — Yes, sorry, it is the same thing. It was a low quadriplegia, so there was no movement in his legs and a certain number of limitations of movements in his arms below that level. He came in and we determined that he was not multi-trauma as such, so according to our memorandum of understanding I rang the Austin and although we had facilities and I am a spinal surgeon who is able to operate on this chap straight away, they wanted him to be transferred to the Austin — which is a reasonable thing — and they could continue on with his care. But things unfortunately cannot happen at the snap of a finger and there was some delay. To cut a long story short, because of various discussions and delays he ended up staying at the Alfred and I ended up doing his operation at 12.30 at night. Did it make a difference to that patient? I do not know. But again, it is a very emotive issue because if you are that patient with that devastating neck injury you would probably want to go to theatre as soon as possible, so that is probably an area that needs looking at — that part of the acute treatment of the paralysed patient.

**Mr PERERA** — You said that airbags in cars have caused accidents. Is that right; is that what I heard?

**Assoc. Prof. LIEW** — They cause other injuries. They may prevent death, which is great, obviously, but they can cause devastating facial injuries — for example, if you are the wrong height. That is why children should not sit in the front seat. If you are not the right shape for the airbag either, you might theoretically end up worse off. The problem is that with a lot of these things we do not have a crystal ball and nothing is ideal. There is nothing that is going to prevent an accident, full stop, which is what you would want. What you have got to decide is would you rather have this injury or that injury and make a decision on which is the lesser of two evils, essentially.

**Mr PERERA** — It is a matter of research and time, I guess.

**Assoc. Prof. LIEW** — Yes. All I am trying to do is use that to illustrate that until it is looked at in a practical sense, I cannot come out and say that is a terrific thing. In theory it sounds good. The problem is that you always have those freak accidents or freak things that happen which turn out to be incredibly devastating for that one person, and then a whole series of chain reactions may flow on from that.

**Mr PERERA** — To what extent has advancement in treatment produced a reduction in fatal accident rates?

**Assoc. Prof. LIEW** — Sorry?

**Mr PERERA** — To what extent do you think advances in treatment have reduced fatalities in accidents?

**Assoc. Prof. LIEW** — I think the advent of the state trauma system has been really good because we have seen the decrease in the mortality rate over the time that has been evolving; so retrieval has obviously come a long way, as has the emergency treatment in the hospital. By having the state trauma system you get people with an expertise in looking after these critically ill patients. There have been advances in a number of different specialties, and certainly there is ongoing research in these areas. You have probably heard about the hypothermia trials for brain injury that are going on — cooling the patient. You have probably heard about the trials where they fix ribs to help with ventilation.

We unfortunately have not come very far with spinal cord injury. There was a time when it was in vogue that we gave very high-dose steroids to those patients, but in the end there has been a lot of controversy and a lot of discussion about this. Now most centres around the world will not give it because of the extremely high complication rate and the dubiousness of some of those spinal cord populations benefiting from the high-dose steroids.

We have, however, come a long way with the technology for fixation for spinal implants. We no longer have, as we did when I was training as a resident, all those patients lying around in tongs and tractions, confined to bed for three months, only being able to lie flat, having to be held the whole time that they were rolled. We do not need to have plaster jackets. What we can do is operate, stabilise the spine and virtually get them going with

their rehab a lot faster. However, I would just temper that by saying that unfortunately our population of these severe types of injuries is getting older and there is going to be a limit to what we can actually fix that well. That, for the future, is going to be the real burden in terms of spine injuries. I just gave a talk at another conference, *Spine and Trauma — Easy as Falling Off a Ladder?*, and what we are seeing are these trends of —

**The CHAIR** — That was the title of your talk?

**Assoc. Prof. LIEW** — Yes. These trends of 50 to 60-year-olds, especially on the weekend, getting up a ladder, cleaning the gutters or chopping the trees. They already have a bit of an arthritic neck and they do not necessarily have to have a fracture, but if they, I guess, extend their neck too much they can ping the spinal cord and end up with a spinal cord injury. I think that is going to be the future problem.

**Mr TILLEY** — What sort of age group are you talking about?

**Assoc. Prof. LIEW** — Over 50s, and particularly over 60s, as people are retiring and they are still well and they can still do things. This is happening around the world. I was on a fellowship overseas visiting in Indonesia and talking to the president of the Indonesian society. He is also a spine surgeon and we were talking about the types of injuries we were getting and he said 'Ah, yes, the holiday fracture'. This is what we are seeing. Even in an underdeveloped country like Indonesia, when there is a public holiday or people stay home, there is this peak in people falling off things and having spine fractures.

**Mr LANGUILLER** — So the lesson there is that we should not have public holidays!

**The CHAIR** — Are you or your colleagues involved in data collection committees with VicRoads and Victoria Police? If not, would you see the benefits of being involved in data committees that may correlate a little bit with the trends that are observed and with other observations as well?

**Assoc. Prof. LIEW** — Yes, I am one of the investigators on the Victorian Orthopaedic Trauma Outcomes Registry, or VOTOR, which is based at the Alfred. It is run by the Monash department of epidemiology. Basically they collect data from all the hospitals on all the major trauma patients who have orthopaedic injuries. They also look at the outcomes — looking at quality-of-life scores, say, after 6 months and after 12 months. It is a semi-clinical database. They are also related to VSTORM, which you know about as well, which also collects the sort of data that is in the submission that originally came to you.

It would be fantastic if everybody just got on the same page, combined forces and directed all the resources there. Certainly VOTOR was originally seen as a research database for clinicians and of course there is a certain amount of protectiveness of data by different people for different reasons. I am also involved with a PhD student in trying to get a spinal registry hanging off that as well. Doug Brown out at the cord service has his own spinal cord registry. I am not sure exactly how it works, but he collects his own patients. The problem with the cord service at the Austin is that what they treat has remained at a sort of static level, so what we do not know is what is actually spilling over the edges and going to other hospitals. I know that I cannot get all spinal cord injuries to the Austin. I have to send them to Caulfield as well, which is our, I guess, rehabilitation hospital arm, simply because of a lack of availability. I do not know how many more are going to the Epworth, so where they go to depends on a lot of other things.

**The CHAIR** — I have a few general questions that relate to our terms of reference. Firstly, do you have any understanding of trends that you have observed? One would be the falling off the ladder-type situation. What other trends might you have observed in relation to motorcycle accident victims presenting at hospitals?

**Assoc. Prof. LIEW** — In terms of something like that, I think the rider population that actually get into trouble has remained fairly static. Of course that is the young male, because you have got the combination of alcohol, speed and then the other thing, which I am not so sure is a good thing, is this power-to-weight ratio — that is, now it is okay to get a big bike, providing that it does not have much power. I am not so sure that is a good thing. I have not studied the actual science of it myself, but intuitively it does not make sense to give a big bike to a learner rider. I do not think that has changed, and I think that has probably been a detrimental thing. The other thing is the increasing population, again not just falling off ladders, but even for riders like myself — I stopped riding for a while and then returned to riding after having had children, getting a little bit more time and getting annoyed with the traffic, which is getting worse.

**The CHAIR** — You did not pass me on the way in today, did you?

**Assoc. Prof. LIEW** — No, but I was considering it. I thought I had to go up the stairs to the actual Parliament, and I was considering just riding straight up. But no, I did not bring in my bike today.

**The CHAIR** — You would have passed my colleague, Mr Elsbury.

**Assoc. Prof. LIEW** — But of course there will be a group of people having a midlife crisis or returning to riding who will be in that older age group. Again I think it is mentioned in the submission. They have disposable income, they are well, and they are not fixing up their house; but they want to go for a ride in the Dandenongs or down the Great Ocean Road. So I think there will be — perhaps not so many as the ladder group — a peak of people in their 50s and 60s. Again we are looking at that age where you have got more arthritis in the spine, which makes you susceptible to more devastating injuries. You are looking at osteoporosis, where your fixation equipment probably does not have quite as good a hold as you would like, and so you have to modify treatment a bit.

**The CHAIR** — If you were to address two different groups of people — one group of 18 to 20-year-olds going to look at a range of shining bikes at a local retailer in Melbourne or Dandenong, and the alternative, a group of legislators and others of that age — what advice would you give those two groups in relation to minimising the number of people on whom you might be having to undertake spinal surgery?

**Assoc. Prof. LIEW** — Funnily enough, this does not come from my medical experience but from my riding experience, but I guess for that younger group I would suggest that they get their car licence first. I am talking about the urban population — that is, those who live in the city, because you know that in terms of single vehicle accidents, it is a different demographic. In terms of being overseas, again that is a different demographic. They have different circumstances; their problem is that they have 10 people on a motorcycle, so speed is not their problem. Yet here in the city it is the interactions with cars and with other vehicles. I think getting people to understand how other road users think about things is paramount, and also to have a certain amount of paranoia, which unfortunately is already present in young males — but that is probably for the wrong reasons and it is not helpful — you know, that everybody is out to get you on the road. You have got to have that mentality, which if you put it in politically correct terms is a hyper alertness about what is going on in the environment around you.

**The CHAIR** — Would you recommend any legislative changes to the law that otherwise exists today, in terms of the wearing of clothing? Should we as a committee recommend the mandatory wearing of safety gear?

**Assoc. Prof. LIEW** — Yes. Helmets, which are already in. In relation to safety gear, certainly jackets that cover limbs, gloves and boots.

**Mr LANGUILLER** — I would like to pursue precisely that point. We received a submission yesterday from Dr Leung from the Alfred hospital. Based on his submission and photographic work, I personally walked away thinking that in terms of soft tissue injuries and all of that, in the name of safety, I would have to recommend the compulsory wearing of a full helmet, as distinct from a half-full helmet.

**Assoc. Prof. LIEW** — Yes, I agree.

**Mr LANGUILLER** — From your point of view as an orthopaedic surgeon, do you have a view in terms of a half versus a full helmet, and what is the likelihood of its reducing your work, preventing injury, death, and so on, if the rider were to wear a full helmet, as distinct from the half a helmet which they can now wear legally?

**Assoc. Prof. LIEW** — I guess in the ideal world, riders would wear a full helmet, because you have got to think about the entirety. One is the brain, and a half helmet will protect against injury to that. Second is the skin and facial bones, and you need a full helmet for that.

**Mr LANGUILLER** — Do you wear a full helmet?

**Assoc. Prof. LIEW** — I wear a full helmet, and I would not wear a half, or open-faced, helmet. Even with things like gloves, finger injuries are devastating. In relation to spinal cord injuries, there is a particular spinal cord injury where the fingers and fine motor control are affected the most. But with any other finger injuries, even if you are in a chair, if you can use your hands, it makes an enormous difference; so I think it is the little

things that do make a difference. In relation to protective clothing, if you can get your wounds to be not so dirty, you give the broken bone underneath a better chance of healing.

**Mr ELSBURY** — Just in relation to your being a returned rider, how long did you say you were away from it?

**Assoc. Prof. LIEW** — It was 10 years.

**Mr ELSBURY** — Would you have thought twice — —

**Assoc. Prof. LIEW** — I would mandate a course.

**Mr ELSBURY** — You would mandate a course. Thank you for answering my question before my asking it.

**Assoc. Prof. LIEW** — Yes, because that is exactly what I went to do. I did a course before I got back on, even though I had my licence. I could easily have just ridden. I also bought a 250 cc bike, and one that I could comfortably manage. So as a rider I have a lot of strong opinions on that — that is, just as a riding member of the public. I do not belong to any groups at all.

**Mr ELSBURY** — Did you entertain any idea of just jumping on a Harley, straight off?

**Assoc. Prof. LIEW** — I actually did want to buy a Harley at one stage.

**Mr ELSBURY** — There we go — the dream!

**Assoc. Prof. LIEW** — However, interestingly enough, when I went to do this course after 10 years, I was not sure what bike I would want. Bikes have changed so much over 10 years. That is another thing; they really have changed so much. A 250 cc now is much more powerful than a 250 cc when I was learning and riding, and I think that is something that really needs to be looked at. I do not think it has been looked at thoroughly. I managed to try a range of bikes on this course, which was extremely helpful as well — being able to get your fit and how you feel. I just did not like the position of a Harley. I just went back to the traditional sport bike-type posture.

**The CHAIR** — Noting that a number of accidents are caused not through the negligence of the motorcycle rider but rather through the inadvertence of a motorist, are you able to reconcile your engagement as a motorcyclist with your work role as a spinal surgeon? Do you sometimes prevaricate on the judgements you make to continue to ride a motorbike when you see the end result of the negligence of others rather than that of a motorcycle rider?

**Assoc. Prof. LIEW** — I am paranoid when I am out riding, and I guess I rationalise it. We all think we are a bit immortal, don't we? I drove a car before getting a bike licence, and I think it actually does put a different frame of mind on you, because on the road on my bike I tend to sit where I know I can be seen in the mirror and by the car. I never sit in a car's blind spot, and I know where that is. So they are the things I think about on the road all the time, and I ride with that paranoia where I assume that the car cannot see me and that if they do, some of them might in fact be out to get me.

**Mr TILLEY** — If we could just go back to some of the clothing stuff, with the exception of motorcycle helmets, which have an Australian standard, by and large nothing else has any form of standard. With what we were discussing before, how would that affect your ideas on mandatory clothing by having a set of standards that could be quite variable?

**Assoc. Prof. LIEW** — If you put in a standard, that would be extremely unpopular — as in a stringent standard. I think that even just a descriptor would make a big difference. For leather, maybe a thickness, but not necessarily the material. Kevlar is expensive, that is the problem, but there is no doubt that it has great drag resistance. As you know, they advertise it as having a 7-second drag before it actually abrades, which is fantastic if you can afford that. To get it accepted first you would need to have a softer sort of approach and make it so that you mandate full covering of arms, legs, gloves and boots; even if in the first instance you made gloves and boots mandatory, that would make a difference.

With feet injuries you may think, for example, ‘Oh, well, a broken toe isn’t such a big thing’, but you would have somebody on crutches for six weeks who cannot work or get to work, who would have pain, and if it healed in the wrong position, they would have pain for the rest of their life because they would have to walk on their foot, so then you have got a problem. It is the same with the hands, as I was saying before; if you take out a thumb, for example, that is incredibly crippling. You cannot do anything with the rest of your hand. You do not think about those things until you see people and talk to people who actually have these injuries and who tell you how disabling it actually is. I guess the saddest thing is that some of the patients do not have the fine motor control in their hands and so they cannot feed themselves properly — you know, basic things that are just terrible.

**Mr TILLEY** — I have to thank you for your frank and open evidence. It has been terrific. It has been a breath of fresh air for us.

**Assoc. Prof. LIEW** — Thank you. I hope it has been helpful.

**Mr TILLEY** — I apologise about us not concentrating specifically on your expertise in spinal injuries.

**Assoc. Prof. LIEW** — No. I guess to be fair that I was not quite sure what you wanted, because I knew that those submissions had been made and that was the basis. Apart from that I was told that I was wanted to attend as a spinal surgeon, but I was told that I would just be asked questions, and then I was not sure what I had to prepare. So I prepared a little thing, but that is quite all right.

**Mr TILLEY** — Whilst I am just having a little bit of a discussion with you — —

**Assoc. Prof. LIEW** — I am happy to talk about whatever you need to know about.

**Mr TILLEY** — Just protective clothing and being a rider. A great example is Australia with its varying climatic conditions and how the heat and fatigue affects us. What are your thoughts as a rider about how using different types of gear would affect fatigue and other heat-related illnesses and pressures?

**Assoc. Prof. LIEW** — Maybe this will answer your question as well, reconciling the fact that I work on the end result of some of these complications of motorcycle riding. If it is raining I do not take my bike. That is more about the fact that I do not like arriving at work wet, but again I may be tired. The other night when I was operating all night, I took the car in the morning. I know if I do not have all my wits about me, I should not and I cannot ride properly, because I do not have that alertness. Yes, there is no doubt that the wet makes a huge difference. You have to be extra careful, and that is not just extra careful of your actual machine, but extra careful of other people as well.

**The CHAIR** — Associate Professor Liew, we have allocated 45 minutes for your appearance today. We have a solid program with other witnesses coming forward. We really appreciate your time. With your formal submissions or your notes, are they something that you would feel free to pass on to us, or are they your own working notes?

**Assoc. Prof. LIEW** — If you wanted something, that is what I was going to — —

**The CHAIR** — To put it another way, could we have a copy and distribute what you have prepared amongst the committee?

**Assoc. Prof. LIEW** — If you think you are going to be interested in it. I am sorry that I did not bring any graphic pictures to keep you awake. Michael would have done that yesterday.

**Mr LANGUILLER** — We had a very good session yesterday.

**Assoc. Prof. LIEW** — By and large my work would be more sort of X-rays, which can be a bit boring. People do not quite understand them, and Michael would have had the good ones.

**The CHAIR** — Is your material in a format that we could incorporate into the Hansard record of our hearing for the wider world to have a look at, or is it more of a personal set of speaking notes? The call is yours. We can distribute it and our research staff could have the opportunity to access it without it being placed on the Web.

**Assoc. Prof. LIEW** — I am looking at them more as speaking notes, and I guess most of it is probably statistics. They are a bit dry, so I do not know whether you would want to look at them and see whether you would want to incorporate them. I could make them into a better format for you. I do not mind. You have probably got enough statistics.

**The CHAIR** — What I would suggest is if you felt free to make them available to us just to read privately, that would be helpful.

**Assoc. Prof. LIEW** — Yes, I am happy with that. Then if you really felt strongly that there ought to be —

**The CHAIR** — Your time is probably best spent looking after your patients, but any afterthoughts that you could provide us of ways in which we could take the law forward in Victoria that would improve safety outcomes and reduce your patient flow at one level and enable you to direct your expertise into other arenas of surgery would be a good outcome of our inquiry.

**Assoc. Prof. LIEW** — Yes, that would be excellent.

**The CHAIR** — There is one final comment that our committee staff have put forward, and that is on a broader point. How do you think stem cells could change trauma treatments?

**Assoc. Prof. LIEW** — That is being looked at in regard to injections into the spinal cord. I do not think I am going to see any treatment like that in my lifetime that is going to make any difference to spinal cord injuries. It has also been used in bone healing and so far all the results have been disappointing. So I am not hopeful that is going to be anything that we can sort of hang our hat on now or that we should necessarily support in a big way.

**The CHAIR** — Thank you very much for your time. We appreciate your expertise and your time.

**Assoc. Prof. LIEW** — Thank you.

**Witness withdrew.**