

# TRANSCRIPT

## ROAD SAFETY COMMITTEE

### Inquiry into motorcycle safety

Melbourne — 18 October 2011

#### Members

Mr A. Elsbury

Mr T. Languiller

Mr J. Perera

Mr M. Thompson

Mr B. Tilley

Chair: Mr M. Thompson  
Deputy Chair: Mr T. Languiller

#### Staff

Executive Officer: Ms K Jenkins

Research Officer: Mr J Aliferis

#### Witness

Professor R. Gruen, director, National Trauma Research Institute, professor, surgery and public health, Monash University, general and trauma surgeon, and head, trauma quality assurance, Alfred Health.

**The CHAIR** — Ladies and gentlemen, welcome to the next session of the Victorian Parliament's Road Safety Committee public hearing inquiring into motorcycle safety. Our next witness is Professor Russell Gruen, general surgeon and director of the National Trauma Research Institute. I would like to thank you very much for coming along today. I point out for the record that Hansard will be recording your commentary. Statements made in this room have the benefit of parliamentary privilege. Documents and statements delivered outside this arena do not have like protection. You will get a copy of the Hansard transcript in due course to correct the typos and send it back, following which they will be published on the net. Also feel free if there is any commentary you would like to make in camera, either on this occasion or another day, we can make arrangements for that as well. If you have any keen-minded insights that might be more controversial, we are happy to take it on board but on an in-camera basis.

We are the beneficiaries of some 68 submissions. We thank all participants for their work. This forum enables the opportunity for there to be a viva voce presentation or an audiovisual presentation, after which we will have a number of questions. We invite you to contribute now.

**Prof. GRUEN** — Thank you, Chair. On behalf of Alfred Health, thank you very much for the opportunity to contribute to the committee's deliberations. Motorcycle safety is a serious issue for us at the Alfred, the reason being we are the recipient of the majority of the injuries of motorcycle victims on Victoria's roads. I have a short audiovisual presentation to put to you. You have our written submission with a fair bit of factual information in it. The purpose of our PowerPoint presentation is to bring some of the human side to it, and I would be pleased to answer any questions related to the written or the PowerPoint submission.

**Overheads shown.**

**Prof. GRUEN** — This is a typical day in the Alfred emergency department with a road trauma victim. This is the sort of scene that we are talking about — the scene of one of our customers, if you like to call it that. The Alfred has been a trauma service in Victoria for 20 years. It is the largest, most advanced trauma service in Australasia and one of the leading trauma care institutions in the world. As you know, it is embedded within the Victorian state trauma system, which is arguably the best organised functioning trauma system in the world, with results to prove it, both pre-hospital and hospital and rehabilitation care that leads to both better survival and better quality survival — that is, functional outcomes measured down the track being the key thing.

This graph just shows the change in our major trauma patient numbers, the majority of which is road trauma, compared to Royal Melbourne, the Royal Children's and the Austin, which are the other designated trauma centres within the state.

Motorcycle driver injuries are now our third highest cause of trauma behind motor vehicle drivers and low falls — the typical older patient with a fractured hip or other relatively minor injury. We receive more motorcycle drivers with injuries than we do motor vehicle passengers or pedestrians or assaults, blunt or penetrating.

Motorcycle riders are big business for the Alfred, unfortunately, and we would desperately love to find ways to both reduce the severity and improve outcomes for these patients. I thought I would just give you a snapshot of our last two weeks. This is the list of injuries. I will not go through them all, but they are all serious injuries in the 12 patients involved in motorcycle crashes who came to the Alfred in just a two-week period. Typically on a weekend we will receive four or five very severely injured patients from motorcycle crashes, and that is amongst all the motor vehicle trauma that we get. CHI is serious — that is closed head injury. There are spinal injuries and so on. We have detailed in the written submission the fact that in all body regions motorcyclists have more severe injuries than do car drivers and other causes of injury, and in particular there are spinal and head injuries, which for us as a health service pose special challenges and for us as a community are the most costly of all patients.

Access Economics has estimated the lifetime cost of a spinal injured patient to be between \$5 million and \$10 million, and of a head injured patient to be between \$2.5 million and \$5 million on average. The total cost which is detailed in the Access Economics report done for the Victorian neuro trauma initiative two years ago, which I can submit to you if you are unable to get a copy, gives a very good outline for the economic and social costs of head injuries and spinal cord injuries. It is a special issue for motorcycle drivers.

This is where I want to give you a vignette of a patient that I have been looking after over the weekend, who on Friday was a 50-year-old father of three, all university students. His wife is a nurse, and he is self-employed, owns a fertiliser spreading company. His name is Peter. He is an avid motorcyclist and was on the way to the grand prix at Phillip Island with a group of other motorcyclists. He lost his brother in a motor car accident five years ago and he promised his family that he would be safe on the roads. On Friday he was travelling around a corner at around 80 kilometres an hour. He was clipped by a car, was airborne for a period of time and ejected for 20 metres, landing on his left side and on his face. There was significant helmet damage. There was immediate paralysis and loss of sensation and movement below the waist.

I tell you his story with his wife's permission. He came to the Alfred by helicopter, as is often the case, and his list of injuries is there. I will not go through all the codes, but most significantly he is now still on a ventilator — life support — in the Alfred ICU. This is a special CT reconstruction of his rib cage showing the right side is pretty normal; the left side has cracks all the way down all the ribs, with a large defect at about the 3 o'clock position on the window side on this image, with a caved-in chest where he hit the ground, and the CT scan of his spine on the left shows two vertebra that are completely smashed, and the MRI scan, which is pretty impossible to see in this room with the light, shows the spinal cord injury, which is an irreparable injury. Essentially what has happened is those bones have smashed, been forced backwards into the spinal cord and permanently damaged the spinal cord, such that he will be now paraplegic for the rest of his life. That happens in an instant, regardless of whether he has a head injury or not. He had surgery to stabilise that spine. This is the sort of metal work that he had inserted over the weekend, and he remains now still in a critical condition in the Alfred ICU.

I am happy to talk to you about any aspect of the report and answer any of your questions that you wish, but I thought it was valuable to show that, because one of the unique perspectives that we as trauma surgeons and as a trauma service have is of a major community problem that changes the lives of people in an instant. It is not always due to their own carelessness, and it may or may not be prevented by protective gear or different rider habits. For this guy, who is a fine upstanding Victorian who was just doing the right thing on a motorbike, and now his life is forever changed, and so is that of his family.

**The CHAIR** — Before we move to questions, could you outline your qualifications and the specific areas you have worked in since graduating that are germane to your current role?

**Prof. GRUEN** — Sure. I am a medical practitioner. I graduated MBBS from Melbourne University in 1992. I am a trained general surgeon through the college of surgeons in Australia. I got my fellowship in 2004 and underwent post-fellowship training in trauma and surgical critical care at Harborview Medical Centre in Seattle, one of America's leading trauma centres, in 2005 and 2006. I have a PhD in health services research. I spent a year at Harvard doing a fellowship in health policy, and I have been a specialist trauma and general surgeon since 2006 at the Royal Melbourne Hospital and the Alfred hospital. I direct the National Trauma Research Institute, which is an institute devoted to improving care of injured people through better and more effective treatments, higher quality care and better trauma systems.

**The CHAIR** — Before we ask any specific questions, do my colleagues have any general questions they would like to cover?

**Mr LANGUILLER** — Thank you so much for your submission and contributions and for what you do in terms of the Alfred hospital. Your submission indicated that 12 per cent of motorcycle-related trauma occurred interstate. Do the figures stated by you from VSTORM data include riders injured outside Victoria?

**Prof. GRUEN** — That is a very good question. The Alfred and the Royal Melbourne hospitals receive patients mostly from Tasmania and a few from across the New South Wales border. They are few in number, but the most seriously injured ones come to us. Regarding the Victorian state trauma registry, rather than giving you a wrong answer I will find out and come back to you

**Mr LANGUILLER** — Further, what do you think has driven increased trauma numbers in Gippsland, Barwon south-west and Hume? Is there any comment that you would be able to make on that?

**Prof. GRUEN** — The increased numbers from the registry or from the Alfred's experience? This is VSTORM. This is whole-of-state data. This is a real increase in those regions; it is not a referral pattern. What we have seen is that many more patients are now referred to the city by helicopter to the Alfred or Royal

Melbourne rather than going to regional hospital centres, but VSTORM takes that into account. So you have asked a good question. What is the cause of an increase in those regions? I have no idea.

**Mr LANGUILLER** — Just further and separately from that, I understand you had a partnership with Hadassah hospital in Israel. Do you still have that?

**Prof. GRUEN** — Yes, we have a number of partnerships with Israel too.

**Mr LANGUILLER** — Given their experience in dealing with trauma, are there any lessons there that might be applicable to us?

**Prof. GRUEN** — Israel's lessons are outstanding in the field of disaster and mass casualty learning. I think the lessons go more the other way for trauma system effectiveness and for treatment of individual injuries. They have tremendous experience with blasts and those sorts of things, but road trauma, which we see as a majority of our patient population, is something distinct in more peaceful, less violent communities such as a portion of the United States, a lot of Canada and a lot of the UK.

**Mr TILLEY** — Firstly, based on my experience in a previous career I thank the Alfred for its ongoing work, particularly in the trauma centre. I have been on the pad numerous times when a rotary wing aircraft has brought clients into the trauma centre and I have seen how hardworking all the staff are and how it works like clockwork in there. I hope it continues.

**Prof. GRUEN** — Thank you.

**Mr TILLEY** — The question is in relation to injuries. We saw an extensive list in your submission. In particular is there any data about why rope safety barriers pose additional problems compared to other road barriers?

**Prof. GRUEN** — The rope barriers?

**Mr TILLEY** — Yes.

**Prof. GRUEN** — I am not a road safety expert; I am a trauma surgeon. There would be people probably better qualified than I am to answer that question. From a logical point of view what we are seeing here is every region of the body being more seriously injured with motorcyclists than with passengers of other vehicles, largely because there is not the shell around them so they are less protected. How they impact against an object, whether it be the road, a tree or a rope barrier, will determine their pattern of injuries. All I can say is that a high-speed impact, particularly with a barrier that causes sudden flexion of the body around it, is liable to lead to significant soft tissue and probably spinal injuries more than a solid barrier would. That is probably as much as I would be comfortable saying.

**Mr TILLEY** — Does the specific data in relation to the patient's complaint go into detail about the object that was struck or the circumstances of the accident?

**Prof. GRUEN** — I do not have access to that data. Again, it is something that is a good question to ask, and I could check with, for example, my colleagues at the Monash University Accident Research Centre. They may have some more information about the relative safety of different types of barriers.

**Mr TILLEY** — Great; I appreciate that. I now move to another subject. We have experienced advances in treatment and in the quality of health care. Does that explain the increases in treatment costs? Are we better able to keep riders alive today than, say, 10 years ago? Would this explain treatment costs at all?

**Prof. GRUEN** — There are a number of points to make here. The investment in the trauma system has been considerable by this state, and the ongoing investment is considerable. A couple of million dollars a year is required to run the system in terms of monitoring and governance. While they are infrequently compiled and measured, the data we now have demonstrates that the returns are many times over, because we are not just leading to better survival. I will give you some statistics. We are improving return to work and return to normal activities as well. It is not just that we are converting the dead into severely injured, dependent people who are high cost to society. It is actually that everybody is doing better. We have more survivors, and the survivors are doing better.

The data is staggering. The Victorian trauma system came into inception in 2001 — that is 10 years ago this year — after a concerted effort by a whole lot of people and a bipartisan approach from Parliament. Five years later those patients who arrived at hospital with a major trauma had a 37 per cent less chance of dying. There is virtually no medical treatment that has ever been as successful as that. What we are talking about is the first five years of the Victorian state trauma system's results on survival. We have now got data on the non-mortality outcomes — that is, the quality of life, functioning and return to work — going out to two years that shows an equally impressive improvement in outcomes.

I think these are things that the state of Victoria should be proud of. We are still doing the economic analysis of what that actually means. The National Trauma Research Institute and the Monash University department of epidemiology are working on this together at the moment with the Victorian State Trauma Committee, but I think it is a very impressive story to tell.

**Mr TILLEY** — Just moving on to the riders and the question of survivability once they have made it to hospital and have received treatment, we have just heard evidence about protective clothing. Is the reduction in road deaths due to protective clothing, the environment or hospital treatment, or is it a combination of all three things?

**Prof. GRUEN** — Yes. There has been a reduction in road deaths over 20 or 30 years in Victoria. I think some of us will remember the Declare War on 1034 campaign, which was at the peak of Victoria's road toll. Now it is at 300. It is an unbelievable change. That is not just because there is a better health-care system; that is part of the story, but a lot of that is better road safety, better vehicle safety, better condition of roads and better driver behaviour, and a substantial proportion of that, as we can see, is motorcyclists. We have better car design that offers the driver better protection. The big challenge for us as a community and as a scientific community is: are there better motorcycle and clothing designs that offer better protection than we currently have?

**Mr TILLEY** — You do not really appreciate it until such time as you see the prepping of a wound from a road trauma scraping along the road.

**Prof. GRUEN** — Right. I was going to show that, and I thought, 'You guys do not want to see that'.

**Mr TILLEY** — You never forget it once you have seen it, do you?

**Prof. GRUEN** — No. Soft-tissue injuries can be pretty disabling for people even without broken bones.

**Mr PERERA** — Thank you for very much for your valuable presentation and the good work you do over there. In terms of injuries, could you provide examples of what a functional limitation may include?

**Prof. GRUEN** — In Peter's example, which I have just shown you, he is paraplegic now. What does that mean? It means he will never walk again, he will never feel below his waist again and he will not have control of his bowels or his bladder. Just think about the consequences of that for a minute. He will not have the pleasure of sexual intercourse or any sexual feeling again, and he will now be dependent for access to everything according to what his wheelchair, his carers and his mobility aids are able to achieve for him. For Peter, fortunately, he has preserved his head so we can lighten him up on the ventilator and he responds to demands, which means his brain is intact. He will have a relatively good chance of returning to a participatory life, with those disabilities in mind. Clearly he is not going to go back to his former employment, clearly he is not going to ride motorcycles again and clearly he is not going to do many of the other things he enjoyed.

**Mr PERERA** — No quality of life.

**Prof. GRUEN** — Yes, but he will be able to, physically at least, participate in his rehabilitation. That is different to the other unfortunate, often sequelae, of motorcycle injuries. Even with helmets on, there is head injury. Patients with head injury often require prolonged supportive rehabilitative care, and some never reach a point where they are able to participate in rehabilitation again and have long-term dependency issues which are terribly distressing for the families and incredibly costly for our community.

There is some data on page 8 of our submission which I think is helpful. Again, this is taken from the Victorian State Trauma Registry. At 12 months after injury, 80 per cent of motorcycle-related major trauma victims

continue to experience functional limitations, 34 per cent have not returned to work and 25 per cent continue to have moderate to severe pain.

**Mr PERERA** — Talking about data, what kind of data does the Alfred collect, who will you share the data with, what are the issues with data collection and use in Victoria, and how could data collection be improved?

**Prof. GRUEN** — Good question. Victoria has done a very good job with data collection. The major point I would make here is that we need to maintain the high quality of data collection, because only with good data collection can we monitor and know what is happening, make policy changes based on good information and most importantly work out whether policy changes have had any effect or not. For me, part of my plea is that we need to maintain these data collection sources that allow us to monitor what is happening in our community.

The Alfred has a trauma registry that collects 170 data points. That is 170 different types of information on each injured patient who comes to the Alfred. There are about 6000 per year, with about 1200 major traumas. We submit a subset of that information to VSTORM, the Victorian State Trauma Outcomes Registry, as does every other major institution around the state. VSTORM is responsible for organising that data, cleaning the data, checking any missing data points, analysing the data, reporting that to the State Trauma Committee, which ultimately reports to the minister, and using the data to monitor system performance, change the system and look for errors and outliers in the process. For example, if this man had been transferred to a local hospital rather than directly to the Alfred, that would be an outlier in the system. This happens for a variety of reasons, but it could have a serious effect on his outcome. It is only with good monitoring that we are able to follow those events and follow them up.

The collection of data requires three full-time staff at the Alfred hospital, and that is replicated around the state.

**Mr TILLEY** — With the collection of data, does it differentiate between on-road and off-road — unsealed roads, parks, forests and the like?

**Prof. GRUEN** — Does the Alfred trauma database differentiate that?

**The CHAIR** — Take it on notice, perhaps.

**Prof. GRUEN** — I will find that out.

**Mr LANGUILLER** — Can I just make a comment and ask a question? I am personally reasonably happy with the data collection arising out of the Department of Health and the TAC to some extent. I am not sure I will necessarily go beyond that. I have a sense that there is not much coordination between the agencies in terms of data collection at a central point. I am certainly not confident that that data is necessarily made publicly available, which I think would help and benefit the community. I particularly commend your data collection in terms of the Alfred hospital, which I have known not just in relation to this particular submission but in terms of previous work that I have done with the Alfred.

However, can I ask you a question? Do you have partners in terms of data collection in relation to road safety? Does the Alfred sit on committees? I believe and certainly the committee would believe that agencies, the government and the community would benefit enormously from your experience in terms of the kind of work you do. Do you work with the Coroners Court, with VicRoads, with TAC and so on? How do we institutionalise and how do we share the extraordinary amount of good information you have and ensure that there is corporate memory amongst the institutions — that is, proper coordination that is shared by the community so that everybody benefits from what is being done and there is not necessarily a sense of secrecy, if you like, in terms of people who have vested interests not being able to access that information.

**Prof. GRUEN** — You raise a very important and very perceptive question. My view on this is that Victoria, from a trauma perspective, has had a very deliberate approach to the way it uses, collects and reports data. Some of that is publicly available, certainly through the VSTORM annual reports, which are publicly available on the internet. The Alfred has had a major role in both contributing the data, determining what the data is and interpreting the data through its role in setting up VSTORM and the State Trauma Committee and through its ongoing roles within the trauma committee. As I am here today, it is commonplace — usual — for the Alfred to be invited to conversations about significant issues in injury and trauma, whether it be around prevention or

around treatment and better systems. I do believe that we are probably better at it in trauma than in other aspects of health care in this state just because of the way the system has been set up.

One of the questions you ask is: how well do preventive efforts, treatment efforts and the broader stakeholder groups that include policymakers and the community that we serve work together, and could it be done better? I think it can always be done better, and I would dearly love it to be done as well as it possibly can be because in Victoria I do not think I am overstating it to say that we probably have the best combination of injury care expertise and injury prevention expertise in the world. We probably do not work together optimally in bringing our respective data sources together completely, and we probably do not make it as available as it could be. But I think we do it reasonably well, and certainly our colleagues at the Monash University Accident Research Centre and the Monash Injury Research Institute are the major injury prevention research arms. They have been doing a lot of work for VicRoads and the TAC over the years. The Alfred campus has been doing a lot of the injury care and system monitoring work over the years. Certainly we have a good relationship and a number of shared projects.

I think there is an opportunity for better public engagement and consultation around meaningful data presentation. Data is only one of the things that should contribute to such a conversation, but it is an important one, and I would hate there to be a conversation that is exclusive of the good data that we have for important decision making.

**Mr LANGUILLER** — Thank you.

**Mr ELSBURY** — I want to burrow down a little more about VSTORM and the data that is being collected. When there is a spike shown in places like Gippsland and Hume, do other government agencies interact with the Alfred in trying to determine why there has been an increase?

**Prof. GRUEN** — This is VSTORM data, which is the Victorian State Trauma Committee's domain or prerogative. The Alfred as a participant in the system would not necessarily get involved in that. The question is really around whether the regions get involved with the state committee on that. There are some regional representatives on the Victorian State Trauma Committee. Obviously there is not a regional representative who sits on the committee from every region, but there are regional representatives who report in to the committee. I imagine that would be the usual port of access and communication. How well do the departments interact? I do not know.

**Mr ELSBURY** — It is not really your problem, okay.

**Prof. GRUEN** — But I think it is an important question, because we are coming back to that whole issue of how well the data gets fed back to local decision-makers.

**Mr ELSBURY** — Cause and effect and how it then gets back.

**Prof. GRUEN** — Right.

**Mr ELSBURY** — Is the lower incidence of head injuries among riders compared to drivers due to wearing helmets, do you think?

**Prof. GRUEN** — Yes, I think that is a puzzling figure. I think some of that is probably because there are some lower speed accidents in there and the helmet use is protective. We know that helmets are protective and that the instituting of helmet laws everywhere in the world has instantly dropped the serious head injury rate.

**Mr ELSBURY** — Has there been any variation since curtain airbags were introduced in Victoria?

**Prof. GRUEN** — Undoubtedly some of the improvements in head injury outcomes that we have seen over the last few years have been due to the dramatic increase in the prevalence of airbags in the Victorian motor vehicle fleet. It was only seven or eight years ago that fewer than 5 per cent of Victorian cars had airbags; now it is well over 50 per cent, and we are seeing the benefits of that from a head injury point of view for car drivers and passengers.

**Mr ELSBURY** — Do you have any statistical information relating to how many of the riders treated by the Alfred were commuting or riding recreationally when the incident occurred?

**Prof. GRUEN** — We do not have that information. I have deliberately drilled into that information, and we just do not have it. It is not recorded in the ambulance systems, and therefore it is not handed over to us. It is not a question we ask routinely and record the answers to. I am sorry.

**The CHAIR** — A separate issue would be: when a patient arrives at the Alfred trauma centre, what is the nature of your own interventions as a trauma surgeon? Do you build a team of other specialists together — orthopods, plastic surgeons and general surgeons — which you supervise yourself? What is your own interaction with the patient on arrival?

**Prof. GRUEN** — We have a modern approach to trauma care, which is multidisciplinary. It involves a number of different specialties, and it is a very organised initial response, which I think you saw on the slide in the initial picture. Everyone was gowned up in protective clothing with a sticker on their chest that designated their role. There will be one person who is the team leader — it may or may not be me — and there will be an anaesthetist who is looking after the airway. There will be an anaesthetic nurse looking after the equipment up that end. There is a general surgeon and an emergency physician usually in attendance as well. The initial assessment of the patient is made. If they need urgent intervention with life-saving procedures, they will do that, and then the involvement of other specialty units like orthopaedics, plastics and neurosurgery will be done on an as-required basis. We run a 24/7 trauma service. You get a high level of organised care regardless of what time of day or night you come in, which is good for motorcyclists because, as you see, 50 per cent of them come in between 6.00 p.m. and 6.00 a.m. It is a lot of after-hours and weekend-type activity. We have fully functional radiology, angiography and operating suites that will go day or night to deal with whatever the problems might be.

**The CHAIR** — This particular parliamentary committee has a long history of working with trauma surgeons, going back to the work of the police surgeon John Birrell and other surgeons who have worked at different stages through the Alfred. I was just wondering whether there is a view among people such as yourself as to what might represent a further quantum leap or improvement in road safety outcomes in Victoria in relation to both accident and injury?

**Prof. GRUEN** — That is a fantastic question. This is the work of my research institute, the National Trauma Research Institute, which is about improving outcomes after injury. There are three main focuses of that. One is to find more effective treatments. We are still making substantial progress in better ways of looking after injured patients — for example, just in the last year publications out of the Alfred have shown that particular ways of operating on head-injured patients dramatically affect the outcome. It is a study published in the world's leading medical journal, the *New England Journal of Medicine*. It is the world's no. 1 medical journal, and Victoria's base study was published in that. Another one, comparing Victoria with the United Kingdom, shows that an organised system of care leads to better outcomes for head-injured patients.

**Mr LANGUILLER** — Can you explain that in plain English?

**Prof. GRUEN** — In English? Forgive me. That second study was a comparison between the organised approach to trauma care involving an assessment at the scene by ambulance, determination of what level of care that patient needs and getting them to that level of care immediately without going via second and third hospitals, and a helicopter system or a road MICA system that is able to deliver that care and then an organised high-performing trauma service, as exists at the Alfred, the Royal Melbourne or the Royal Children's Hospital, to receive patients, which leads to much better outcomes after head injury than a disorganised system such as is the current situation in the United Kingdom.

**Mr LANGUILLER** — And there is evidence to show that?

**Prof. GRUEN** — Absolutely. We have some very good studies, again published in leading medical journals, that display Victoria's successes in that. I use those illustrations to say that there is research being done here in Victoria to improve the care that patients receive. It is care in resuscitation, care in how head injuries are managed and care in how spines and spinal cord injuries are managed. There are major programs being supported by the National Health and Medical Research Council, the Transport Accident Commission and other bodies which deserve to be both celebrated and supported.

How else can we do better? I think every system faces challenges to get everyone performing at the highest level. It is all very well to know what the best treatment is, but to get everybody delivering it every time is what

any of you or I would want. If we are a patient, we want to be absolutely confident that we are going to get somebody who not just knows what to do but can actually do it and does it every time. If you think about what it is like at a roadside, it is a messy environment. The car is smashed up, you are pulling out a patient, there are people everywhere and there is an ambulance officer struggling to do what he can do in the rain et cetera. Delivering the highest quality care I think in every health system is probably the major challenge and where there is most room for improvement.

**The CHAIR** — Just digressing slightly, your comments have related in part, and nobly, to post-incident treatment and improving outcomes, which is a critical area.

**Prof. GRUEN** — Yes.

**The CHAIR** — From the nature of the work mix that comes onto the operating table, have you ever reflected upon what might mitigate the level of injury coming through and what might lead to an improved outcome before people land on your operating table?

**Prof. GRUEN** — We think about that all the time. Every time we are faced with somebody it is, ‘Why? Why is this poor guy left in this situation? It could have been different, if only x...’ For every person it is different. A lot of our patients come in after assaults outside nightclubs on Saturday nights, and the answer to that is obviously a different answer to what we are talking about here today.

Specifically for motorcyclists, the no. 1 thing that comes up in my mind is speed. So often we seem to be confronted with young males who enjoy the thrill of travelling very fast on a motorcycle, and something happens. It is not a matter of just losing control and not being able to do anything about it; it is a total wipe-out on a motorcycle, where the end is completely predetermined by the fact that they were travelling in excess of 150 kilometres an hour.

**Mr ELSBURY** — Just picking up on that, if you have a motorcyclist who is in an accident and you get them to the Alfred, they have a good chance of surviving compared to a car. Is that because, unfortunately for the motorcyclist, the incidence of immediate fatality is so much higher?

**Prof. GRUEN** — Yes, absolutely. I think you certainly see a higher at-the-scene death rate. This data that we presented here shows that fewer die, but more are left impaired at 6 to 12 months, which I think says to us that the car drivers who are dying are dying — they are badly injured, and they die. Motorcyclists have disabling injuries, and the ones who make it to hospital more often have permanent disabling injuries.

**Mr PERERA** — You say we are doing better than United Kingdom in that space — —

**Prof. GRUEN** — In the care space, yes.

**Mr PERERA** — Are we the best in the world?

**Prof. GRUEN** — Yes, we believe so.

**Mr LANGUILLER** — Just to be clear in my mind, speed is always a question of discussion and debate. From your point of view you see a direct correlation between the degree of injury, the seriousness of the injury and/or otherwise worse than that and speed. That is what your data — —

**Prof. GRUEN** — I would be happy to say that, yes, my experience attests the fact that those who are doing ridiculous speeds who come into the Alfred usually have very serious injuries. I think the majority of deaths from motorcyclists have had speed as a major contributor. For specific injuries like spinal injuries, no, you do not have to be travelling at 150 kilometres an hour to get a spine injury like Peter’s. But you can certainly get other very disabling injuries.

The other things that are issues for us are clothing. I am totally convinced that protective clothing helps, both in soft-tissue injuries — so the severe disruption of skin, muscle and tendons down to bones — as well as in open fractures, which can have very nasty complications. What we mean by an ‘open fracture’ is, for example, typically a fractured leg with bones sticking out. It usually implies significant force and a lack of protective clothing. I personally do not have any data to talk about the body armour suits, but there is some published data and I have included some of that in one of the articles in our submission. I think there is reasonable data around

that. We just do not have that data from our own system; we do not record who is wearing specific protective clothing or not, other than helmets.

The other thing I have to mention is alcohol and other drugs. The combination of speed and alcohol is as potent, if not more potent, for a motorcycle rider than it is for a car driver, and unfortunately we still see a significant proportion of motorcycle riders who have been drinking.

**Mr LANGUILLER** — Is there any distinction you would make in terms of scooters and other forms of two-wheelers in your data?

**Prof. GRUEN** — Yes. We obviously see the results of injuries from both vehicles. Scooters rarely travel at the sorts of speeds I am talking about that can lead to very serious injuries, but they are more often in high traffic-volume environments. We still see quite a lot of people living in the bayside suburbs taking a particular road to work.

**The CHAIR** — You mentioned other drugs. Are you able to nominate those other drugs?

**Prof. GRUEN** — Specifically other drugs? We see a whole range of drug use in our patient population. The common ones are ecstasy, ice — —

**The CHAIR** — As related to bike accidents.

**Prof. GRUEN** — I do not have the data to give you reliable incidence data around who is under the influence of what. Of our total motor vehicle accident population, about 40 per cent involve alcohol or other drugs.

**Mr TILLEY** — Is it still practice that if a patient is brought into the trauma centre owing to a motorcycle crash, there would be a member of Victoria Police there to ensure that samples would be taken? Is that still a continuing practice?

**Prof. GRUEN** — A member of Victoria Police is not always there, but the taking of a sample is a police requirement and one that we obviously comply with. But it is only alcohol.

**Mr TILLEY** — You only test for alcohol? No bloods?

**Prof. GRUEN** — We often do drug tests for other things, but we do not do it on all drivers routinely by law as we would for alcohol.

**Mr TILLEY** — But would this sort of testing create further problems as a requirement in treating patients at the time of trauma, so getting a sample for — —

**Prof. GRUEN** — No, it is often not a blood test; it is often a urine test, but there is no problem getting that sample.

**The CHAIR** — So there is an ability to do a drug test on an injured motor vehicle driver or motorbike rider that is not done for every patient coming through?

**Prof. GRUEN** — Correct.

**Mr ELSBURY** — Just again in relation to alcohol, you were saying that there was greater risk involved. So would you support a zero blood alcohol level for all motorcyclists so that we take that element of a drug which basically impedes balance, reflexes and general ability out of the equation completely?

**Prof. GRUEN** — My answer is a cautious no, actually. I believe that drivers should not be impaired and that they have a responsibility to themselves and to other road users to be unimpaired when they are driving. I think that as a community we have made a decision that a blood alcohol level of less than 0.05 results in no significant impairment and ability to drive, and I know of no evidence that says that that is different for a motorcyclist than it is for a car driver — but I have not done that research myself. I would be happy to look into it. I think we have a duty of safety to riders and to the community to make sure that people are not impaired when they are driving. That would be my stance on this issue.

**Mr TILLEY** — Just one final question, playing Santa Claus in a sense: in your submission you demonstrate that motorcycle riders are now getting close to the popular charts, no. 3. This reference is specifically about motorcycle riders. As a direct recommendation for this committee's report, is there a particular outcome coming from your submission and what we have discussed today that you would like to see at the top?

**Prof. GRUEN** — Yes. I would like to see Victoria aim exceptionally high, because I think we have done that already and we have reaped the benefits from being extremely ambitious in our goals and being determined in our methods of trying to get there. I would like to think that we can actually reduce both the incidence and the severity of motorcycle crashes across this state significantly. By significantly, I mean I am not the one to judge what those goalposts should be, but I think we can do it in a measurable fashion to be able to demonstrate to the community, just as we have for motor vehicle crashes in general and as we have done within the trauma care system — to be able to demonstrate to the public of Victoria that the work of this committee, just like the trauma system the roads committee in 1999 did, led to some very substantial change that was to the benefit of us all. That is my bird's eye comment.

Specifically I would like us to be able to demonstrate that those improvements have led to better outcomes for people and families and better economic outcomes for this state. To do that we have to know exactly what is going on in the system. We have to know what we have spent in our prevention and treatment efforts, and we have to be able to measure meaningfully the outcomes. We have to be able to measure what those outcomes are and then cost them out. There is a plea here for maintaining and improving the data systems which allow us to do that, because only with them will we be able to aim high and actually demonstrate that we have achieved highly.

No. 3 is, I think, that we can still do better in our clinical outcomes of patients once they have had an injury. I am sure we can improve prevention, but I am also sure that once people do have a crash and enter the system we can do better. There is still some work to be done at the front end with the ambulance and hospitals, but there is probably more work now to be done at the rehabilitation end as well. We must have a system that is an injury-through-to-long-term-recovery system that does not stop with the hospitals, because we know that patients continue to improve afterwards; it depends on their rehabilitation care. Those differences can really make very big human and financial differences down the track.

**The CHAIR** — Professor Gruen, noting your general skills, would you have any suggestions of any other medical personnel from whom we might happily and wisely gain some benefit for the work of the committee — plastic surgeons or any other orthopaedic surgeons who might have specialist insights and comments aligning with your own insights?

**Prof. GRUEN** — Do you want them to align or do you want them to differ? I am happy to provide contacts and connections in various aspects of this. I have deliberately tried to present to you what I think is not the view of a trauma surgeon per se but the view of somebody who works at the Alfred and works alongside a very good team of people that consists of all of those perspectives. I would be happy to refer to you —

**The CHAIR** — Specifically perhaps plastic surgeons who are repairing skin and presumably muscle, and any insights they may have on protective clothing. In some earlier evidence that we have been given today there is a debate between mandatory and non-mandatory protective clothing as to whether there might be some detailed insights from those people who are working at a very serious coalface and what insights there may be. Another witness who was before us just prior to the last break expressed something indicating where the best might be the enemy of the good — I think that was the way it was expressed — and so if we mandated something it may not necessarily ultimately be the best when there might be freedom of choice delivered, happy outcomes for different circumstances where riders can apply their own wisdom to what they wear at the time rather than the state mandating head-to-body gear in a Melbourne climate of 40 degrees Centigrade and what the counterpoint research might be to that as well.

**Prof. GRUEN** — To give a personal perspective, I sold my motorcycle when I moved to the Northern Territory for a few years because it was too hot and I was not going to ride without protective clothing on.

**The CHAIR** — Did you see after that experience many examples of severe trauma coming off the roads?

**Prof. GRUEN** — In the Northern Territory?

**The CHAIR** — Yes.

**Prof. GRUEN** — Yes, and always involving riders in thongs and shorts, which are usually horrendous lower-limb injuries. I would be pleased to point you to a plastic surgeon who can speak to that, and a spine surgeon, if you wish, or an orthopaedic surgeon who can speak to the bone injuries.

**The CHAIR** — As a committee too we would be happy to meet on site rather than in here as well just for informal uptake of observations.

**Mr LANGUILLER** — The challenge for the committee on Victoria reminded me of an important reflection of Michelangelo, who said the problem is not to aim high and fail; the problem is to aim too low and succeed. With those remarks I want to thank you for your exemplary contribution.

**Prof. GRUEN** — Thank you, Deputy Chair. I appreciate it.

**The CHAIR** — Just as a rejoinder to that, it would be an objective way to aim high and succeed.

**Mr LANGUILLER** — Yes, indeed. Absolutely.

**Prof. GRUEN** — Victoria has done it before, and I am sure we will do it again.

**The CHAIR** — We appreciate your time very much, Professor Gruen. Thank you.

**Prof. GRUEN** — Thank you, Chair, and thank you, panel.

**Witness withdrew.**