

TRANSCRIPT

ROAD SAFETY COMMITTEE

Inquiry into serious injury

Melbourne — 22 July 2013

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 Y. Simmonds

Research Officer: Mr J. Aliferis

Witnesses

Mr B. Prosser, Director, Information and Funding Systems,

Mr P. Carver, Project Director, Health Strategy, and

Dr M. Lum, Medical Director, Hospital and Health Service Performance, Department of Health.

The CHAIR — I welcome you to the Victorian parliamentary Road Safety Committee inquiry in relation to serious injury. We thank you for your time. By way of general background, evidence given to the committee has the benefit of parliamentary privilege; however, statements made outside the room do not carry the same benefit. The transcript will become a matter of public record. If there are comments that you would like to make off the record, in camera, we have the ability to deliberate upon those matters as well should there be any additional remarks you would like to make. Hansard staff will prepare the transcript. You will have the opportunity in a couple of weeks to review what has been stated today and to make any corrections to typographical or factual errors and return the transcript to the committee. It is envisaged that the transcript from today will be put on the website as part of our public record of proceedings. I invite you to speak to your presentation.

Mr PROSSER — Thank you, Chair, and thank you for the invitation to appear today. We have prepared a short presentation, mostly to summarise the key elements of our submission to the inquiry. Just to introduce myself, I am the director of the Information and Funding Systems branch at the department. Dr Lum and I work for the Hospital and Health service Performance division, which is the division responsible for the management of the hospital system. I am responsible in particular for the datasets which are collected from hospitals and which are referred to in our submission. Dr Lum is the medical director in the division. He has a background in working with the Road Safety Management Group with VicRoads. He also has involvement in VSTORM and generally, in his previous role as senior medical adviser, he has expertise in clinical and epidemiological questions associated with road safety. Peter Carver works for another division in the department. He is a project director of Health Strategy. In that role and as part of that role he is responsible for the data linkages function, which is the part of the department which links our major datasets both within the department and with external datasets.

Overheads shown.

Mr PROSSER — Having given that brief introduction of who we are, I will turn to our submission, which is essentially related to particular aspects of the inquiry. The reason we made a submission to the inquiry was in relation to three areas. One is that we are the custodian of the major hospital datasets that are collected from hospitals in relation to emergency presentations and admissions. They are massive datasets. They collect millions of patient records each year, both for admissions, which is the Victorian Admitted Episode Dataset, and emergency presentations, which is the Victorian Emergency Minimum Dataset. That is a huge body of data on the activity of hospitals as well as the diagnostic profile and also the outcomes of patients treated in Victorian hospitals. They are critical sources of information for this inquiry's interest in the cost and burden of serious injury on the community as it is experienced by the hospital system.

We also have a particular role to play in data linkage. With the infrastructure of data linkage and the expertise in linking major datasets and by doing that linkage we believe we have a major contribution to make in understanding the costs and outcomes associated with particular interventions, because it is through that linkage that you can establish links to other datasets, including the cost of hospital treatment, which is another dataset that we manage within the department as well. Our submission also drew attention to the major work of the Victorian State Trauma System, and I understand you have just been speaking to representatives of that system. That has a major impact, from our point of view, on road and other trauma and tertiary prevention and in its impact on survival rates particularly. Our presentation today will basically make some observations about each of those points.

As I said, the major focus of our submission arising from those roles was, firstly, to make some points in our submission about the contribution that we believe the VSTS is making to best practice in managing long-term reductions in serious injury and, secondly, the role and capability that we have in linking hospital data to other collections and how that supports policy development, research and other reporting purposes for government and the public. In our submission we also made some observations on a range of methodological issues and on the assessment of cost-effective countermeasures, recognising nevertheless that there are other bodies that have specific roles and expertise in these areas. It is not a core function of the department to do that, but we have exposure to this data. We have a major public health and epidemiological role arising from those functions. We made some observations in our submission as well about those.

As you will have seen from our submission, we noted the improvement in major trauma care and outcomes as a result of the Victorian State Trauma System. On one of those graphs, if you are particularly methodologically

mindful, you will see it shows that there is quite good evidence that survival rates improve significantly as a result of people being treated in major trauma centres. There is a range of research that has confirmed this. Dr Lum might want to comment in more detail about this following the presentation, but from the department's point of view the role of the VSTS in assisting in reducing the trauma associated with serious injury is significant. There are a range of achievements which are pointed out in our submission which we believe the state trauma system has delivered since it was established. I will not go into those in detail other than to say the focus that system has given to improvement of the outcomes of people as a result of major trauma is significant, and is certainly one that the department strongly supports.

Another issue that we understood the committee wanted to hear more about is the issue of the process of data linkage and what it is. We are happy to talk to you in more detail today, and I will ask Peter to do that. Just by way of introduction, it is a method of clearly bringing data together from a range of sources and doing it in a way that protects privacy. But it is also highly dependent upon collaboration across agencies and tight governance of the process, particularly to ensure that the privacy of individuals is protected and the identity of individuals is protected. I will hand over to Peter to say more about data linkage as it relates to our submission to the committee.

Mr CARVER — As Bruce said, data linkage is a way of bringing together a set of disparate datasets, and it does it not only for individual events but on a longitudinal basis. So this could be particularly relevant in terms of some of the terms of reference of your inquiry and understanding what may be happening to individuals over a period of time in terms of their care and recovery and outcomes and all those sorts of things. I will try to explain what the various roles are. It is important to talk this through because one of the key things is to understand what parties are involved in this and how we go about also protecting the privacy of an individual, which is quite critical in terms of our privacy regimes, which are particularly strong in Victoria.

We have data custodians. The term is just essentially those people who are responsible for the collection, management and cleansing of those datasets within individual agencies. So Bruce, for example, is one of the major data custodians within the Department of Health, in our biggest datasets, as he mentioned, in terms of hospital information. We also have a range of data custodians. For example, the TAC and WorkSafe are what we would describe as data custodians.

The data linkers are within a government agency — I am talking in general terms, and then I will talk about what Victorian Data Linkages is and how it fits in — but they are people who specifically work and use a set of algorithms to link data. One of the key things they do is that they use a set of identifying data to create encrypted linkage IDs that enable data to be linked across systems. They do not actually have access to content data — that is part of the security, and I will explain that a little further.

The last group is researchers, and 'researchers' is used as a broad term and I think it includes the policy development people, the planning people, but also it involves large groups of people outside government in terms of universities and research institutes, which are looking to analyse and research particular questions. We take them through a rather extensive application process that requires approval from all the data custodians, and where we are looking in terms of broader research outside government, in terms of policy making there is a very carefully managed Human Research Ethics Committee process undertaken to ensure that any risks on re-identification of data are managed properly.

I talked broadly about what this does. I might give you in this sense a bit of background now as to what Victorian Data Linkages is. It is funded jointly by the Commonwealth and by the state of Victoria. The commonwealth funding comes from what is called the Australian government National Collaborative Research Infrastructure Strategy, which is focused on building major research infrastructure across Australia, and the question of looking at data linkage has been identified as one of the top 20 priorities across Australia nationally. The Department of Business and Innovation has also seen the benefit and use of this and so has substantially contributed to this, as has the Department of Health. So we have three principal funders supporting this.

The data linkages group — and this is where it fits in nationally — is part of what is called the Population Health Research Network. The national funding is aimed at establishing nodes in every state and territory across Australia. So it is not only focused on developing a capability and infrastructure and data linkage on a state-by-state basis, but also on working through how we can link data on a national basis, understanding that lots of people move across state and territory borders and all those sorts of things.

I think we will move on to the next slide, and I can be as non-technical or technical as you like, but I will leave that up to you. We talked before about data custodians, data linkage and data analysts. This slide is broadly explaining how we actually do this work. The very first step is that a policy or research question is identified, and then an application is made to access the datasets that might be able to answer those questions.

The data linkages unit operates as a front end to that system and works with the researchers, the policy analysts and the data custodians to firstly identify what datasets need to be linked and what are the relevant data elements that need to be extracted and then work with them collaboratively to say that if the sum of the datasets is brought together, what are the risks of individuals being identified inappropriately. We then work through a confidentialisation process with them so it is understood that what we are producing is information about a case, not information about an individual, and that is quite important.

The second thing we do is that what we receive from the data custodians is non content data. We actually just receive identifying information. That is usually name, age, address any other information that will help link. That is assuming that there is no common identifying number between those datasets. We then use a linkage technology which in most cases is what we call a probabilistic linkage methodology, which basically assigns a weighting to every one of those identified fields to say, all things being equal, and as an example: if fields A and B are a match but there is a difference of a year in the birth date, what is the probability of that being the same individual? So they are scientifically applied weightings.

From that we then create a project case number, which is an encrypted ID. That information, along with the identifying information, is returned back to the data custodian and is attached to the content data; the data custodians then release the agreed fields — that is, the data extraction along with that unique encrypted linkage ID. They go to the policy analysts — the researcher — who then puts them together, and then you have a set of data that is appropriate for the question and is also appropriately protected in terms of the privacy, and that is a very strong process that it goes through. So each field is looked at. We ensure, for example, that if people are interested in age, we do not give birth dates; we might put them into age cohorts, but we do not give anything below, potentially, postcode information in terms of location.

Where necessary we also use things such as small cell suppression. So if you are out in a remote rural area, we make sure that there are not so few records that anyone could, if they had a chance, re-identify who that individual was.

Mr LANGUILLER — Can I just take you back to whether you register things like country of birth?

Mr CARVER — It depends on the dataset. Each dataset is different. Some will have information on country of birth, some will not.

Mr PROSSER — Country of birth is recorded on the hospital datasets.

Mr PERERA — When you say a ‘set’, what does that mean? How is one dataset different to another dataset? Is that one set for one case? When you say ‘datasets’, what does that mean?

Mr CARVER — In the case of, say, relevance to your inquiry, if you took information that is stored in the Transport Accident Commission’s data which will have information about an accident and payments and the various things that the TAC will record, they will have ways of recording the identification of that individual — they might have their own IDs — and we can link it with hospital data, and that will contain a whole lot of information about treatment and what occurred in the hospital. Then if we are looking at the trauma registry, that will have similar information. So you bring all those fields together and you have a dataset that could in fact track from the point of injury through to treatment and outcomes going over a number of years.

Mr PERERA — Thank you.

Mr CARVER — If you are really interested, there is a video that you could look at. It basically just explains how the process works and also the deep level of security protocols that are put in place to ensure that individuals do not get access to data that could be re-identified and put — —

The CHAIR — Mr Carver, are you suggesting we could look at it now?

Mr CARVER — No; only if you are interested.

The CHAIR — How long does it go for?

Mr CARVER — About 10 minutes. I would not say it is a riveting — —

The CHAIR — We could look at it at one of our meetings. We will just program it for one of our committee meetings. Thank you.

Mr CARVER — What I come next to is just an attempt to give you a subset of what we call the Victorian Data Linkages map. What we are working towards is identifying across the health, human services and education systems the range of datasets that we believe should be linked on a regular basis to help inform policy and practice. What Kaye has developed is trying to give to you in that circumstance, ‘These are the key datasets that we have identified in the service continuum and outcome continuum that we believe could inform policy practice in terms of prevention, care, outcomes and those sorts of things’. I think that was in the submission, so I do not think I will talk to that in any particular detail, except to say that a number of or some of those linkages occur already. We have an agreement with the Registrar of Births, Deaths and Marriages, and we link death data. We have just received an agreement from our secretary — an in-principle agreement from TAC, WorkSafe and the custodians of the Victorian State Trauma Registry — to go ahead and acquire their data into the data linkage unit to start to do some trial linkages to answer some specific questions.

I will go to the next one. What is involved in that? This has just been placed in a diagrammatic arrangement to understand how we protect individual privacy, how we ensure that the linked files are only provided to specific researchers under very strict conditions that have been approved. Research, or policy projects where they are researched, must be approved by an NHMRC-standard Human Research Ethics Committee. We ensure that we do not provide researchers with any more than they do need, and we need to make sure that the custodians are comfortable — that how we do this, how we deliver it, ensures that their requirements around privacy are protected. We do that simply by establishing memorandums of understanding and making sure that we have ethics approval. We do the back-end linkage work and we make sure that all the various project approvals are in place, and then we extract the data for each project and we leave the people to go and do their work. The protections include: they must destroy the data after it is done, and they are not allowed to distribute it or publish it without approval. Those are the protections. I am happy to answer more questions about it as we go.

Mr PROSSER — Just to finish up, we also made some observations in our submission around evaluating cost-effective countermeasures. Again, they are really just observations based on our broader work in looking at health interventions more generally, but we believe they apply also to the approaches to serious injury. With countermeasure evaluation, basically we are recommending that we take a comprehensive approach to identifying, measuring and valuing the costs and benefits of intervention so that you get an understanding of the full societal impact of health and safety interventions, including ones directed particularly at injury reduction. We think that is the basis on which we should be prioritising new countermeasures, because you are looking at the full range of impacts and benefits.

For example, a lot of work is done just to measure the burden of disease or the cost of illness. They are valuable analytical tools for understanding the cost of disease particularly and what burden that carries on society generally, on health expenditures in particular. But when you are looking at actually evaluating countermeasures to have an impact on either disease or, in this case, injury, you would need to be able to link that to a broader understanding of the cost-effectiveness of a particular intervention — what it is going to take to make a change and to make an impact on a particular problem.

At the end of the day that requires a systematic analysis, we believe, to identify what the costs of particular alternatives are, particularly if the government is measuring or deciding where to put its resources to best effect. Our general advice to the committee is that that should be the approach of the road safety space as well. The broadest comprehensive analysis of costs and benefits of interventions should be favoured.

To sum up our recommendations that you will have seen from our submission: firstly, we acknowledge the contribution of the Victorian state trauma system to improving trauma outcomes and its role in tertiary prevention as a significant element of this inquiry’s work; look to the state trauma committee for advice on things such as classifications of measures of severe injury et cetera according to the immediacy of the purpose for which they are needed; and then use economic evaluations, cost-benefit evaluations, in the broadest sense, as

well as burden of injury and cost-of-illness approaches to inform the allocation of funding to road-related serious injury countermeasures or interventions.

Finally, on the data linkage area we are recommending a collaboration of agencies around the development of a data map across agencies, similar to the one we have submitted in our submission, and involving agencies with policy-relevant road injury data collections. One way to take that forward would be to identify pilot linkage projects which could begin to draw on the capability of the department as it exists and the Victorian Data Linkages program to demonstrate what sort of policy insights you can gain from using datasets in that way, as they are held by particular agencies. That is the conclusion of our presentation. I am happy to take questions about our presentation or the submission, more specifically.

The CHAIR — Thank you. I will invite Mr Languiller to open the bowling.

Mr LANGUILLER — Thank you for your submission and for coming today. Can I start with a general question: how do you think Victoria could implement an improved crash injury data system?

Mr PROSSER — With reference to what we have said there at the end, information is very powerful in this space, and the ability to link the datasets from across the different agencies in ways that enable us to understand, as Peter said, the full history of an injury event leading to treatment, leading to recovery and leading to outcomes is a critical part of any approach to serious injury amelioration. We think we certainly have a contribution to make in building the data map in itself and then, as we have said, supporting pilot projects which we could undertake with other agencies to explore the capability that particular linkages might create in that area.

Mr LANGUILLER — Thank you. That leads on to my second question, which you have kind of addressed but which is worth putting anyway. We are interested to hear about the potential use of the Victorian Data Linkages unit to link crash data here in Victoria. Specifically, the committee would like to hear about how this unit would carry out data linkage and what arrangements would be needed between the Department of Health and other agencies to facilitate such linkage.

Mr CARVER — There are two barriers that we face, I think, in doing this. One is ensuring that we get agreement and cooperation between agencies — that is, a willingness to share data — and that can be more complicated than you would think, in that a number of the agencies may have their own legislation in terms of how they can share and utilise data. That does take a level of negotiation and working through. As I mentioned, we have received agreement from our secretary to collect accident data from the TAC, as a first off. We have had some initial discussions with Victoria Police. All those things will be ongoing, and we need to work within the privacy legislation and ensure that we can do that — that we can satisfy all their conditions that they have around the release and use of data. We are a self-contained area within the Department of Health, and we treat other areas of the department as our clients in that sense. We just provide a service and we then treat other agencies in the same way.

In my view the second bit is that we have the technology and the expertise to link and mine data and analyse it. Where I think we need to develop further is seeing what all the data is and working out what are the right questions to ask. We find that with researchers and policy-makers, until they see the wealth of data they struggle to work out what are the right questions to ask to inform government about the various initiatives that should be taken.

Mr LANGUILLER — How would data linked by the VDL be an improvement on the current situation?

Mr CARVER — There is some level of sharing of data that goes on at the moment, but I think, as we put on that data map, there is a wealth of data that is not linked and a lot of that is what is understood. We have developed what we would consider first grade technology to actually do the work that enables it, so I suppose that is where the improvements would be. We have the protocols in place to work this through with various agencies. They are not only government registries; there are registries that are kept elsewhere and whole sets of datasets that we work through with custodians about the use of those.

Mr PROSSER — Can I just add to that? There would obviously be a huge cost involved if every agency tried to collect the range of information you would need to answer the broadest range of potential questions you

might want to ask about a particular government function. Every agency historically concentrates on the data it needs to perform its core functions and to deliver the policy objectives of government at the time.

What data linkage offers is the ability to combine those core information requirements of different government functions without having to reproduce the detail of another function of government. For example, there is no point in the hospital system trying to acquire data that is related specifically to traffic accidents. Our data captures whether an injury coming into an emergency department is caused by a traffic accident. We do not have the time to inquire about the detail of that accident. That is something that another dataset and another government function really needs to collect. The ability to link those data fields avoids the need for us to collect more information to try to answer more complicated or extensive questions.

Data linkage is ultimately an efficient way to do that. It is not easy, though, in the sense that, as Peter says, datasets get established over time, they have their own rationale, their own characteristics of data and their own legislative backing. We have to be very careful about how we actually link data so that it is linked correctly and in a way that protects privacy and does not offend any legislative restrictions on how it might be used and shared.

The opportunities are certainly there. There is a general willingness and interest across departments now to do that. As Peter said, we have the technology to do that. It does take time, and it is a complicated and quite complex business, as some of the diagrams would indicate.

Mr PERERA — What is the key to link the data? Is a particular name used as a key or is there a hospital number?

Mr CARVER — No. Assuming that we are looking at datasets that are quite separate, generally the information that we would use would be name, address, age, nationality — if it exists — those sorts of things. But it entirely depends on what identifying information is in each dataset, so that is why you do it that way. You also track history, so for example, where the dataset records where someone has changed their name or address you can continue to follow that record through. It is not always perfect, because not all datasets keep that information.

Mr LANGUILLER — If I may, and I do apologise as I am not an IT or technology person, but does the system have capacity? Is the technology available? Is it initially restricted by technology? Can you actually do it?

Mr CARVER — We can do it. There are a range of products that have a set of algorithms that do this work automatically, because we are talking about huge datasets with millions of records. We have that technology and we are in the process, as part of this project, of implementing and using it.

Mr LANGUILLER — So the linkages can be done in a technical sense?

Mr CARVER — Yes, and they are done now. We have done a number of pieces of work — not in this area as yet, but part of the work and part of the reason for the funding is we are looking towards creating an infrastructure that can work for a range of departments. We have trailed linkages in education. We are looking at the justice department as well and those sorts of things because we believe that it is better value for the Victorian government to create an expert group. It reduces overheads and costs as opposed to putting them all over the place.

Mr LANGUILLER — Through the Chair, with indulgence, just to be clear in my mind, what stops the linkages fundamentally? Is it protocols, understanding or privacy legislation and not necessarily any technical aspects? Is that a fair summary?

Mr CARVER — I think it would be, yes. Also, the quality of identifying information in each dataset will also impact on the ability to do it.

Mr LANGUILLER — The quality?

Mr CARVER — Yes. A number of datasets we have identified — and I do not believe this is the case for the major datasets we have shown on our map — do not have good quality identifying information in them. But I do not think that will be the case for these particular ones

Mr LANGUILLER — Thank you.

Mr PROSSER — If I could just add to that, there are no barriers to actually doing that other than the physical challenge of doing the work to make sure we are able to get the correct identifiers. That is why we are talking about some pilot studies to actually test the linkage between particular datasets. There is a significant amount of work involved in technically achieving the linkage between datasets. I think there is more interest contemporarily than there has ever been in doing that. I do not think this is something that people were so aware of even 5 or 10 years ago.

There has always been a background privacy concern around large datasets and how they are protected and managed. I think we are probably moving to a position where there is more confidence in our ability to link datasets and preserve privacy. We have not moved too far ahead of public concern about how government departments manage big datasets and transfer and share information between them. Part of the reason we are making slow but steady progress is that we want to make sure we do not get too far ahead of what the public expects us to do in terms of protecting the privacy of the records we hold.

Mr PERERA — The committee is aware that Western Australia has been an early adopter of data linkage of medical and crash datasets. The committee understands the Office of Road Safety WA has begun working on integrating medical, police and insurance datasets with the aim of housing that data in the one dataset. The committee is keenly interested to hear your views on the WA experience with linked road crash datasets and integrating these datasets, and particularly on the similarities between the WA linking unit and your department's VDL.

Mr CARVER — Western Australia data linkage is considered best practice in Australia. They have been doing it for longer than Victoria. We have been over to look at them and work through with them as to how they do their work, and we are adopting elements of their model and their intent to hold things in an integrated database for certain key areas of public policy. That is what I was talking about before in our data linkage map where we see there is a need to continue to link datasets on a regular basis. That is what they are doing. I would be a strong supporter of adopting their model and following the things that they do.

Mr PERERA — What, if any, elements could Victoria borrow from other jurisdictions such as WA, New Zealand or any other jurisdiction?

Mr CARVER — There are a couple of things. We have spent a good 12 months researching different data linkage technology across Australia and overseas. For a period of time we have been using a model developed in Ontario. We are now moving to a proprietary product that is being developed internationally by a company called SAS. The Population Health Research Network that I talked about regularly meets and shares information and developments about how they do things and what the barriers are that they face. It is also working on developing consistent policies and processes. There is progressive development of a national data integration policy being considered by health ministers as part of the Standing Council on Health. One of the key elements we would like to include in that is Medicare and pharmaceutical benefits data. The commonwealth has slightly different privacy requirements to us, so we need to work very carefully through those so we can gain access to them.

Mr PERERA — Do you believe that integrating medical, TAC claims and police crash data would ultimately be the most beneficial way of monitoring road safety in Victoria?

Mr CARVER — I do not know whether I am best placed to answer that because I am not familiar with the content of some of those datasets. I do not know whether Martin or Bruce have any comments.

Dr LUM — I think it goes back to your earlier questions about the capacity to link that exists. The next question is when you have done that linkage you have to be able to define what other specific research questions you can actually interrogate that link data with. I think at one level, once you have the linkage that produces some value, the next level of value that you extract is being able to undertake the research and ask the specific questions. That is a bit of a general response, but I think that is probably where we are at this stage of development.

Mr PROSSER — One of the issues for us is: at what point do you look at an option which brings together a whole lot of data and stores it in one place? I am not sure whether that is the Western Australian model or not,

but certainly it is the national model at the moment in terms of hospital data. The commonwealth is establishing what it has called an enterprise data warehouse to hold massive amounts of Medicare, PBS and state hospital data and potentially a range of other data. That is one model where you put all the datasets in one place and then you link them within that dataset.

Or do you have protocols or methods of identifying data within datasets and then providing particular kinds of data to share with other agencies so they can link it with their data? So you are not actually setting up a massive central data repository in order to do what you are wanting to do with crash data, but you can potentially do that by having the sorts of data linkage and data sharing arrangements that Peter is talking about. There is a bit of a choice to make there. I do not know; I think the jury is really out as to what is potentially the best way to do that.

Certainly with the national model there have been a lot of concerns about how states will access it. For example, a lot of state data is being stored in the commonwealth's enterprise data warehouse, but it is not clear how we will ultimately get access to it and whether you can access and use it in the same way that you can access and use your own datasets when they have linked data added to them.

As I said, we are not yet clear on what the right model is to support data linkage, but we would certainly want to have a good look at any option which looked at concentrating whole datasets in one place and holding them in a big bank of information, as opposed to people maintaining their own data warehouse with their own datasets but having the ability to link particular data for particular policy and research purposes.

Mr CARVER — If I could just finish that, you can have just as adequate a model where you do a regular linkage between two datasets and the linkage key is held and any time that an agency or a researcher wants to access it, the linkage key is provided. It is a simple matter of just taking the content and putting it together in 5 or 6 hours. It just depends on the security model and what is most appropriate in terms of need.

Mr PERERA — So at one stage you established a linkage key, identifying the name, spelling, everything?

Mr CARVER — Yes, and then you remove all the identifying data. That key exists and a new key is created for a new individual or a new case that comes on and so on and so forth.

Mr PERERA — What issues would decision-makers need to consider — or have considered when you were referring to that software package — when deciding whether Victoria should link or integrate crash and injury datasets with reference to, for example, resources or technical requirements?

Mr CARVER — Apologies if I am not answering the question correctly, but from a technical side we have been through a very detailed assessment of what is the best quality linkage software available. We have chosen that. That is based on the understanding that we have a range of disparate datasets that have different ways of collecting information. On the second part of that question, in a world of big data the amount of linkage work we can do is limited by the amount of resources we have to do it. What we are aiming to do is work within the department and across departments looking at the cost-benefit and the value of doing all of this and seeking to share resources wherever we can.

Mr PERERA — What about a cost-benefit analysis?

Mr CARVER — To be frank, as Bruce mentioned, data linkages are relatively new. Part of what we do is try to promote the benefit so that we can get agreement about the investment and resources and what this information can provide.

Mr PERERA — I have one more question. Your submission notes that an important issue to consider when linking datasets is privacy. Could you explain to the committee what the current legislative information disclosure requirements are, particularly with reference to the Health Records Act 2001, and how these can affect the collection and linking of information about road crash injuries.

Mr CARVER — I can answer that to a point — —

Mr PERERA — As to pretty much whether it is a barrier, the process in the legislation.

Mr CARVER — No. We are able to do it under the Health Records Act, providing it is within the purpose of the objectives of the Health Services Act. We have consulted with both the privacy commissioner and the

health services commissioner, and they are in agreement with what we are doing. The health services commissioner releases a set of guidelines around what can be done in terms of individual health records. They are prepared to look at that should we require it. We are also taking further legal advice about whether or not to improve the protections we need to establish a statutory function within the Health Records Act or the Health Services Act that carves out data linkage as a specific statutory function with defined responsibilities. That is a work in progress.

Mr ELSBURY — The committee is interested to know whether you believe that multiple measures of trauma should be implemented — for example, having threat to life and burden of injury measures using both the ICD-based injury severity score and the disability adjusted life years measure to monitor road trauma, and whether that would improve decision-making in policy development?

Mr PROSSER — By way of answering that I should say that in making some observations in that area we accepted that there were others with specific expertise to advise you on it. We simply made the observation that some of those measures are imperfect and there is work being done to improve how we measure injury and trauma. It is not something that we do, as in my function in the department as part of my core responsibilities. As I said, we produce the data, and we make it available for researchers. It is an ICD-based data system in hospital data collection. Certainly it lent itself to the development of appropriate methodologies for measuring the severity of injury. Martin, do you have any observations to make on the specific measures of injuries?

Dr LUM — It is like the datasets themselves, each type of definition set, whether it is ICD or it is designed around specific purposes to measure something from a specific perspective, and there are lots of different perspectives by which you want to look at single things. With an injury, you might want to look at the threat of life of their injury at a point in time. You might want to see what the outcome is. So the ICD is kind of like a measure of the injury from that perspective. There might be also another perspective: when you have someone with an injury right in front of you, what is their physical risk right at that moment? So you do need to have multimodal classification systems for trauma. The important thing is to understand the reason and rationale for why they are designed and what the limitations are of the design of those specifications so that when you do the linkages you are drawing the right conclusions when you are interrogating that linked data. I think that is an important perspective. You are not going to have one perfect classification system for injuries, because there are many different ways that you want to look at it — —

Mr ELSBURY — Different injuries.

Dr LUM — That is right.

Mr ELSBURY — Section 87 of the Health Records Act 2001 includes a function for the health services commissioner to be involved in situations where developments in data processing, particularly data linkage, may affect personal privacy. What involvement would the commissioner have in a project to link health and other road crash data, particularly if personal identifiers are used?

Mr CARVER — That is me. I am trying to remember that particular provision.

The CHAIR — We have a copy of it here.

Mr CARVER — That probably will not help. We are doing close work with the health services commissioner on all of these pieces of work, and the appropriate use of the data and the appropriate protection of the data. So the intention is that for anything, particularly major things like this, we will work through it with them. The overall objective is that there is also — and I cannot remember exactly what section of the act it is — —

Mr ELSBURY — There are quite a number of provisions within that section.

Mr CARVER — There is a set of guidelines that the health services commissioner — —

The CHAIR — And on the reverse as well.

Mr CARVER — Goodness! Perhaps we could provide that reference.

Mr ELSBURY — That would be nice.

Mr CARVER — The health services commissioner produces a set of guidelines that we need to comply with, and we are in ongoing discussions with them about whether there are any modifications required to those guidelines to ensure that we do comply with the privacy requirements. But the absolutely clear message that we have received from the health services commissioner to date is that we should be doing this. It has a benefit to Victorians and Australians, as long as we can give them adequate assurance that we are protecting an individual's privacy in how any records are used.

Mr ELSBURY — According to the Victoria Police submission, the privacy act inhibits the collection of injury information by police officers from hospital staff. Additionally the interaction between legislation, such as the privacy and human rights laws, makes the collection of data difficult. Do you think the data linkage of road crash datasets would require amendments to the existing law? I am just putting it out there.

Mr CARVER — Not being familiar with the relevant police legislation, I am fairly confident that we do not and we cannot provide to police that particular data. I think the challenge for us is to negotiate with the various agencies an agreed position about what are the various pieces of legislation and what is an acceptable arrangement that would enable the linking of data. We have initially been having discussions with the police. We need to progress that further and agree in terms of the various pieces of legislation. In health we can do it. I am not sure, as I said, in relation to the police. A lot of it depends on the extent to which identifying data is required in any policy analysis and those sorts of things. Our focus is on taking information, de-identifying it and giving it to policy analysts to do the appropriate work. We would need to take further advice in terms of the various pieces of legislation that protect data about what may need to be — —

Mr ELSBURY — But considering you are talking to VicPol, that would suggest that you see a day where there is a possibility of data being shared across agencies with police, possibly even TAC, so that we have this dataset sitting there available for policy-makers to actually make an informed decision with all of the information in front of them, except for identifying data, of course.

Mr CARVER — Yes. Just to reiterate, we have in-principle agreement and authority from our departmental secretary. We have in-principle agreement with TAC, WorkSafe and the state trauma registry to acquire those datasets and link them. There are more to go, as you saw in that map. There is a heap that we would need to work through. It will be a continued work in progress, I would think, to achieve this.

Mr PROSSER — We can certainly take on notice the request to clarify the legal advice that our legal services people could provide on that, just to fully answer that question.

Mr ELSBURY — That would be good. Thank you.

The CHAIR — If you could note when reading the transcript that it be a follow-up point.

Mr ELSBURY — Going back to injury definitions, the EU has just recently adopted a maximum abbreviated injury score. What are your views on the MAIS 3+ definition that it is now using?

Dr LUM — I will not offer an opinion on that. From an operational perspective, those datasets we will leave to the experts, like those you were speaking to previously, to provide a position on those specific datasets. That is a good example of where different definitions apply from different perspectives. I think the clinicians at field are the best to be able to provide that advice rather than us defining which other classifications are the most appropriate.

Mr PROSSER — That said, though, I think again we should take on notice that question. The department is a broad church of functions, including people who will have views about specific classifications and indicators. They are not all sitting here today, but we are happy to follow that up.

Mr ELSBURY — Many of the submitters have stated, and would you agree with them, that the best measure for serious injuries is the ICISS, or does the current major trauma definition work best for monitoring road crash trauma in Victoria?

Mr PROSSER — I think that is ditto.

Mr ELSBURY — The same story?

Dr LUM — Yes. We have been debating this at the road safety committee. It flagged that what is serious for one person is of different seriousness to another, and I guess at an agency level it is trying to understand what is the threshold of seriousness for the trauma practitioners who were interviewed previously. What is serious to them is probably quite different to someone else. For example, the police definition of a serious accident is a different threshold. There is some debate that is required to be able to come to a common understanding of what the characteristic of that seriousness is that you are wanting to describe.

Mr ELSBURY — I am gathering that this last question I am about to ask will probably be put on notice as well, and we will await the response. A number of submitters have canvassed the burden-of-injury measures, such as DALYs and quality-adjusted life years, to monitor road safety in Victoria; however, these submitters have suggested that we should be cautious in that approach and in adopting those measures on the basis that they are competing methodologies. Do you agree with those sentiments? I think we are going to take that on notice, really, aren't we? Yes. We just would not mind the answer, just for our — —

Mr PROSSER — I will offer an observation, though. As we were saying, we support a broad, comprehensive tool to evaluate cost-benefit and cost-effectiveness. Disability-adjusted life years and cost-of-illness measures measure a particular dimension of injury or illness, and they are frequently used in health. For example, people calculate the impact of diabetes on hospital treatment and therefore the cost to the community of diabetes. It is many millions of dollars, obviously, because many thousands of patients are treated. You can work out the disability-adjusted life year burden of disease, effectively, by that calculation. It will give you a very big number and tell you that, if you could prevent diabetes tomorrow, you would obviously save a very large amount of money.

Knowing that you will save that very large amount of money does not necessarily tell you what the best and most effective or cost-effective interventions are to prevent diabetes — or, in this case, serious injury. Knowing that there is a large volume of potential cost to be saved does not tell you what the best alternative is — the next investment, if you like — for a countermeasure and to some extent may even be a bit misleading because it implies that any amount of money might be spent up to that volume of cost in dollars and be justified. In fact it is bound to be a much more complicated and difficult judgement about whether a particular countermeasure is effective and what the costs of implementing that measure are. In road safety we can separate all bicycle riders from cars at a very big expense, and it would have a clear impact on road safety — the safety of cyclists obviously — but the cost of doing that is enormous, and you would have to make a very big call about whether that was the best next use of the safety dollar in that space.

The issue about how you measure the cost of illness or the burden of disease is only one dimension of understanding what you potentially will gain if you successfully develop countermeasures to impact it. It does not actually help you particularly choose the countermeasures. You need a broader look at the cost of alternatives and the cost of implementing particular alternatives. You need the evidence base to tell you that something is going to be effective for that particular volume of investment. So, in general, yes, DALYs and cost-of-illness measures are quite important, but they are part of the broader assessment you obviously have to make about what the particular interventions cost and, therefore, what the cost-benefit or cost-effectiveness of those decisions is.

Mr ELSBURY — Just on that, would you say that it is useful to collect, assess and report on a range of different injury measures? Do you think that that would increase knowledge about injuries that we are having to deal with?

Mr PROSSER — The data we are talking about today would support a range of measures being calculated using that data. So long as you are able to calculate the raw data at some point, it will probably lend itself to a range of evaluative measures, whether it is disability-adjusted life years or other measures. So long as you have the basic data you can obviously calculate various indicators from that. You do not have to just collect the indicators, if you know what I mean; the data is broad enough to support a range of indicators, and I presume you would want to always be looking at a problem from a range of potential perspectives because they will be measuring slightly different aspects of the problem, probably.

The CHAIR — Yes. We have a number of more questions we would like to seek a response to, if that is okay.

Mr LANGUILLER — In your submission you make a recommendation in relation to term of reference (c), which I am happy to remind you of:

consider best practice definitions and measures of road-related serious injury and injury severity, and recommend how road-related serious injuries and their severity should be identified and reported in Victoria ...

Your recommendation is that:

Advice is sought from the state trauma committee regarding useful classifications of measures of severe injury according to the immediacy of the purpose for which they are needed.

Can you expand on your recommendation, particularly the reference to ‘immediacy of the purpose’?

Dr LUM — Yes. I think that question reflects what I mentioned earlier, that the definition of what is a severe injury would differ according to the particular context in which you are trying to describe seriousness. The state trauma committee and the VSTORM trauma registry have a long heritage of measuring outcomes of all types of serious trauma, and their whole purpose is to look at serious trauma. In the context of road safety, our recommendation really is to ask for advice from that particular committee, which has extensive expertise in the area of defining serious injury. In my view, road injury should have a similar basis for defining what a serious road injury is for the generic trauma-type classification of seriousness. So the recommendation is to ask the state trauma committee to provide advice on that.

Mr LANGUILLER — The issues associated with road crash data in Victoria have been the subject of several investigations in the past few years. In 2011 the Victorian Auditor-General’s Office, in the report *Motorcycle and Scooter Safety Programs*, referred to a discrepancy of almost 50 per cent between motorcycle crash data provided by the Department of Health and that provided by the road safety agencies — namely, VicRoads, VicPol and the TAC. It made a number of data recommendations to help improve that situation. This committee’s previous inquiry into motorcycle safety also dealt with this issue, recommending that:

... an immediate program to improve interagency data cooperation and collaboration on motorcycle crash data be instituted by government agencies.

Given these recommendations, what work, if any, has the Department of Health undertaken to improve the sharing of data between yourselves and road safety agencies and vice versa?

Mr PROSSER — I think our response to that is the general advice we have provided today about the data linkage initiative. That will obviously establish our capability to link data with that particular agency. I am not personally aware of that inquiry recommendation specifically. We can get back to the committee about the specific actions that have been taken to follow that up. I think there is a process of regular reporting back to Parliament about progress arising from committee findings. I am assuming that part of that will obviously include response to that particular recommendation. But in general the work that we are doing on data linkage is the progress that we most need to make in order to be able to link road crash data more effectively, in relation to motorcycles or more generally.

Mr LANGUILLER — Thank you. We appreciate that. A key recommendation of the Victorian Auditor-General’s report *Motorcycle and Scooter Safety Programs* was that road safety agencies — VicRoads, Victoria Police and the TAC — expand the membership of the interagency data committee by involving, among others, the Department of Health so that it was able to resolve or recommend the actions needed to address data limitations. Has the department been invited to join the interagency data committee and, if so, what has your involvement consisted of?

Mr PROSSER — I am not able to answer that. From my perspective, I have not been involved in any negotiations, but that may only indicate that there is another part of the department that has been involved. I will follow that up in reply to the committee out of session, if that is all right.

The CHAIR — Thank you.

Mr PERERA — The committee has received 36 submissions as part of this inquiry. A recurring theme in most submissions is the lack of information about term of reference (d), the correlation between different countermeasures and reductions in trauma. In your submission, you refer to the important trauma reduction

outcomes achieved since the establishment of the Victorian State Trauma System. Can you expand on the performance of the trauma system in terms of reducing crash trauma and improving injury outcomes?

Dr LUM — Since the RoTES report that kind of defines the system for a statewide systematic approach to trauma care, that has involved the establishment of major trauma services that specialise in major trauma treatments. So there are the two: there are the Alfred and Melbourne, and the Royal Children's Hospital. Not only that, but it is about defining the role of all the other hospitals, where they sit within the trauma system and what types of trauma cases are appropriate for them to be treating. When any particular type of trauma event occurs, it is about getting that patient appropriately triaged and transported to the right place to get the right care. That system of appropriate placement and appropriate transport of those patients to where they get the best care is what underlies the design and outcomes of the Victorian trauma system.

Mr PERERA — Do you think the rapid developments in medical care and treatment and the impact of the VSTS, the Victorian state trauma system, can explain the reduction in road trauma over the last decade or so?

Dr LUM — I think the data that we have presented in the submission goes to indicate that since the development of the Victorian trauma system the mortality has decreased. I can draw the conclusion that it has a role, but many of these things are multifactorial, such as to what extent it is specifically the medical treatment or the systems design and implementation versus other safety mechanisms that have been implemented and whether it is vehicular design or road design or other interventions that contribute to trauma.

Mr PERERA — In your opinion, which, if any, road safety countermeasures have reduced trauma? Are you aware of any research conducted using the Victorian state trauma registry into injury outcomes arising from different types of road crashes or involving different countermeasures — for example, improved safety outcomes for those involved in a crash in a vehicle fitted with airbags?

Dr LUM — We should take that on notice. That is a question we would put to the trauma registry.

Mr PERERA — Thank you. I have one more question. What in your view is best practice in terms of evaluating countermeasures that reduce or prevent road crashes? Do you want to take it on notice? Do you want me to read the question again?

Dr LUM — Yes.

Mr PERERA — What in your view is best practice in terms of evaluating countermeasures that reduce or prevent road crashes?

Dr LUM — Evaluation methodology? That is your question?

Mr PERERA — What is best practice in terms of evaluating countermeasures that reduce or prevent road crashes?

Mr PROSSER — I think our general presentation and the submission refer to the preference for a comprehensive approach to cost-effectiveness and cost-benefit evaluation using things like burden of disease and cost of illness as part of that equation, but essentially understanding the total cost and benefit of an intervention and not looking at a narrow element of that equation, but trying to get as full an understanding of the benefits as established by some other work that says that this is effective, either proven in Australia or proven in other jurisdictions, other parts of the world, then having got an understanding of what it costs to implement that initiative and that countermeasure and what the full range of costs are and potentially what the full range of social benefits are as well. People living longer is a social benefit which can be measured.

It is probably not going to be expressed in government budgets. It will be expressed in people staying longer in the workforce, living longer, having a productive workforce longer. The range of potential benefits you can measure in any health intervention is quite broad, and I guess we favour a broad approach because it is not just about whether intervention A simply reduces the cost to a hospital of a particular quantum but whether it reduces over the stream of a person's life a whole lot of costs that you might experience as a society and a whole lot of benefits that will flow to society as a result of that intervention.

I think essentially we are arguing for that broad approach to evaluation of countermeasures, recognising that some benefits are very immediate and very financial in terms of individuals to government, some benefits are

longer term and broader in terms of people living longer and contributing to society as workforce and contributing to the ability for the society to afford the health care of its other citizens, for example. I think in recent times people have understood that the benefits of health interventions are broader than just the immediate benefits for an individual and their families or for the health system itself — that there are broader benefits for society, which we want to try to measure and take account of.

Mr CARVER — If I could just make one comment from a data perspective, in my view what often does not happen when you create an initiative is that your evaluation criteria around cost-effective countermeasures is not set in concrete from the start. In doing that you need to make sure that, whatever you decide is the best way to evaluate the effectiveness, you collect the appropriate data. Quite often what happens in data is that you go back in two years time and think, ‘Rats! I should have been collecting that’, and I think that is something that is very important.

The CHAIR — Just while we are on the question of data, the Victorian Auditor-General has reviewed over the years a number of departmental IT projects that have been over time and over budget. Do you envisage significant difficulties in developing the linkages necessary to build the datasets?

Mr CARVER — No. We have the technology — that is a dreadful cliché; I apologise. We have the system; we have the platforms to do the work. I would see the only things that will cause delay as being working through with each individual data custodian and agency appropriate agreements to do the data linkage and making sure that we have enough resources to do that work. But the technological solutions are all available, from the software to do the linking to the software to securely transfer data between agencies — and the technical infrastructure is already in place to store the data and all those things. It is not like a big, major system. It is a relatively small operation that works with very large datasets, but it does not require massive IT investment to achieve it.

The CHAIR — In terms of the cost of delivery, is there any guesstimation of the cost involved, once the mapping is done, to build up an integrated or linked system? Take that as an open question, too. I do not necessarily expect an answer, because it would be subject to tender and other protocols.

Mr CARVER — We have purchased the technology already, so it is more about the physical resources to actually do the work because there are many datasets, as you would have seen from that map, to do the linkage work. That, in many ways, is more a question of how long is a piece of string, as more and more people are becoming interested in the big data. Can we resource all the level of demand that is coming through and support the work?

Mr PROSSER — I just have to say that a significant element of that cost will be resources that are already in place, with people managing their datasets. Certainly you will need some to complement some of those resources, but essentially you have people managing and supporting datasets in all those agencies, so it is about utilising some of that capacity obviously to do this work as well.

The CHAIR — Yes. Again I will just go back to some Auditor-General reports over the last couple of years that have highlighted delays in a number of projects. There would be a good six or eight of them across a number of government departments which were over time, over budget and, in the case of some, abandoned. I will not go into that subject.

Mr CARVER — Definitely I can assure you the software exists. It is a proprietary product that is bought and used internationally. We have the technical hardware already. In our view, it is operational at the moment. As I said, it is just a matter of the delays in acquiring the data, bringing it in and then actually processing it and providing the linkage.

The CHAIR — Thank you. I have four more questions, and Mr Elsbury has a brief comment to place on the record. We will start the final run. Do you believe that investment in the VSTS could be seen as a cost-effective countermeasure? If yes, why?

Mr PROSSER — For all the reasons that we have expressed in our submission, we think the VSTS is clearly achieving meaningful improvements in survival and reduction in the consequences of injury and has justified its investment.

The CHAIR — Turning now to term of reference (f), the committee is aware that some in the road safety community believe that a disproportionate emphasis has been placed on fatalities and fatality reduction targets. They contend that the focus needs to be realigned towards serious injuries, suggesting, for example, using a serious injury toll and focusing on serious injury reduction targets rather than fatality reduction targets. What are your thoughts on this approach?

Mr PROSSER — They would be my personal views, I suppose, given that it is not an area that we have a particular function in. I am happy to take that on notice. I think the answer would probably depend upon the extent to which there is a relationship between less serious and more serious injuries and whether in preventing one you prevent the other as well and whether it is meaningful to focus on one rather than the other, if there is not a meaningful distinction in terms of the causation of the injuries. I make that observation, but I will take the question on notice. We are happy to provide some comment from other parts of the department that will have a view there.

The CHAIR — In its submission, Alfred Health states that some of the core facilities of the VSTS, especially the operating theatres, require upgrading. In addition, it was noted in evidence given today that there is a transition of a patient from the helicopter to a lift, which operates as lifts might, then the transition or transfer of a bleeding patient along a corridor that is occupied by many people within the ED, I presume. This is the context for the statement that the operating theatres and related access facilities need upgrading. What are your thoughts in relation to this statement?

Mr PROSSER — Primarily that the Alfred hospital is responsible for managing those facilities and those requirements. We will take whatever advice and requests come from the hospital in relation to those matters, but essentially hospitals are semiautonomous bodies in a sense in terms of clinical management and management of their facilities. It is certainly up to the Alfred to identify what its requirements are and to make those requirements known to us, if that is the case.

The CHAIR — Thank you. Are the VSTS's existing facilities adversely impacting the capacity of the trauma services to continue being world leaders in responding to serious trauma?

Mr PROSSER — I will make the same observation that that would be something we would expect the Alfred to manage and identify any changes and requirements arising from those observations that it would make known to the department. Certainly we would be looking at its own operations to manage those as far as possible as well as identify additional issues or support that the department might be required to meet.

The CHAIR — All right. We have one other small point that we want to place on the record for possible follow-up.

Mr ELSBURY — I am just seeking your views on what the issues are with the existing DALY and QALY methodologies, in particular European approaches to burden of injury measures.

Mr PROSSER — I thought I had answered that before.

Ms SIMMONDS — You can take it on notice.

Mr PROSSER — I will take it on notice. I think it is very similar to an earlier question which I answered.

The CHAIR — On behalf of the committee I thank you for your forbearance under duress.

Mr PROSSER — I should say that in another life, many years ago — I told Yuki about this — I was Yuki in the child pedestrian and bicycle safety inquiry run by the Social Development Committee at the time in the 1980s, and subsequently the alcohol abuse and road safety inquiry as well. I commend your work and wish you well.

The CHAIR — Thank you.

Committee adjourned.