REPORT ON PROCEEDINGS BEFORE

PORTFOLIO COMMITTEE NO. 1 – PREMIER AND FINANCE

INQUIRY INTO THE IMPACT OF THE REGULATORY FRAMEWORK FOR CANNABIS IN NEW SOUTH WALES

CORRECTED

At Macquarie Room, Parliament House, Sydney, on Wednesday 11 December 2024

The Committee met at 9:15.

PRESENT

The Hon. Jeremy Buckingham (Chair)

The Hon. Dr Sarah Kaine
The Hon. Stephen Lawrence
The Hon. Natasha Maclaren-Jones
The Hon. Jacqui Munro
The Hon. Cameron Murphy

CORRECTED

The CHAIR: Good morning, everyone. Welcome to the fourth public hearing of the inquiry into the impact of the regulatory framework for cannabis in New South Wales. Firstly, I acknowledge the Gadigal people of the Eora nation, the traditional custodians of the lands on which we are meeting today. I pay my respects to Elders past and present, and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of New South Wales. I also acknowledge and pay my respect to any Aboriginal and Torres Strait Islander people joining us today. My name is Jeremy Buckingham, and I am the Chair of the Committee.

I ask everyone in the room to please turn their mobile phones to silent. Parliamentary privilege applies to witnesses in relation to the evidence they give today. However, it does not apply to what witnesses say outside of the hearing. I urge witnesses to be careful about making comments to the media or to others after completing their evidence. In addition, the Legislative Council has adopted rules to provide procedural fairness for inquiry participants. I encourage Committee members and witnesses to be mindful of these procedures.

Commissioner MICHAEL BARNES, NSW Crime Commission, affirmed and examined

Mr DARREN BENNETT, Executive Director, Operations, NSW Crime Commission, affirmed and examined

The CHAIR: Welcome and thank you very much for making the time to give evidence, especially at the end of the year and at a busy time. Do either of you or does the commission have any introductory remarks that you'd like to make?

MICHAEL BARNES: I would like to make a few remarks, Chair. First of all, I'd like to thank you and the Committee for inviting Mr Bennett and I to address you this morning. We're happy to provide any assistance that we are able to. I should note, though, that the terms of reference of this inquiry extend far beyond the jurisdiction of the Crime Commission, which focuses on preventing, disrupting and reducing serious and organised crime and confiscating the proceeds of crime. Accordingly, we should focus only on term of reference 1 (d), in particular the impact of the current regulatory framework on crime. We won't be submitting or making any suggestions in relation to the socio-economic impact or health impacts of the current regulatory regime or the effects of any relaxation of restrictions that will increase the use of marijuana.

Cannabis is by far the most consumed illicit substance. It's estimated that about 14 tonnes are consumed annually, with a street value of approximately $340 million. A significant proportion of that total is produced by people who either consume it all themselves or distribute it in a small way to friends and associates. Another significant amount of the total produced each year is grown and distributed by small-time commercial operators. However, the remainder, which is very significant in volume, is produced by serious organised crime figures and distributed by organised crime networks.

It's impossible to accurately apportion the total between those three categories of growers and distributors. However, we can say with certainty that serious organised crime produces huge amounts of marijuana, which is sold for tens, if not hundreds, of millions of dollars each year. We can also say that last year, 120 people were charged with producing a commercial quantity or a large commercial quantity, which involved 250 and 1,000 plants respectively. In one case, a single organised crime network was charged with producing 15,000 plants, with an estimated street value of $53 million. Mr Bennett can provide further details in relation to those operations if you wish.

These operatives are responsible for significant harm. They engage in extreme violence to maintain the security of their production facilities and their market share. They launder their profits using professional money launderers, avoiding tax and other financial regulations. They abuse migrant worker schemes and the workers themselves. They occupy productive farmland that could otherwise be used for food production. Their profits distort the economy by competing unfairly with the lawful producers of other products.

Those brief observations might lead some to suggest that the current regulatory framework is not working. With respect, I don't accept that, although it's true that no criminal law results in the complete cessation of the proscribed conduct. The prosecutions and proceeds applications that we initiate demonstrate that the law is being enforced against high-level traffickers whenever possible. Further, with respect, there's no basis to assume that legalising cannabis would lead to the eradication of these industrial-scale producers, who are our primary concern. For example, tobacco has been legally produced and sold in Australia since the British arrived, but the involvement of organised crime in its distribution, and the extreme violence they engage in to extend the control of different sectors of the market, continues to increase, as we see in the news media almost weekly. There's no reason to think that the trafficking of marijuana would follow any different course. That's all I wish to say at this stage.

The Hon. STEPHEN LAWRENCE: Thanks, Mr Barnes and Mr Bennett, for coming along. On that last point, Mr Barnes, you talked about the illegal tobacco industry. That's obviously an interesting counterpoint and analogy when thinking about cannabis issues. Is that something in terms of the illicit tobacco market that has changed over the years and perhaps has changed in relation to the price of legal tobacco?

MICHAEL BARNES: Mr Bennett is probably better placed to answer that question.

DARREN BENNETT: Yes, that's definitely the case. The price point has gone up and up due to regulatory costs and tax, and that's led to a thriving black market that's operating both in terms of illegally imported cigarettes and basically homemade cigarettes. We've all seen in recent times that competition for both territory and markets in Victoria—and, to a lesser extent, in New South Wales—is clearly being controlled by criminal networks. They're using violence and essentially burning each other out to establish those markets. At the back of that is illicitly produced and sold tobacco products and vapes that are being sold through legitimate tobacconists.

The Hon. STEPHEN LAWRENCE: I'm not sure exactly when the price point of tobacco significantly accelerated to the point where a black market is encouraged and expands. If you go back, say, three decades or so—I can't remember the exact price—you could pick up a packet of twenties for $1 or something.

The CHAIR: It was $1.10.

The Hon. STEPHEN LAWRENCE: At that point, would there have been a big illegal tobacco market?

DARREN BENNETT: Not that I would be aware of. I think the price point has reached a point now where a lot of people can't afford to smoke legally. I think that's the difference. I saw a graph recently; I can't remember where we are, but we're like the second most expensive in the world for legal tobacco products. You can still get a packet for a buck in a lot of the South-East Asian countries. So that's certainly a driver of what's going on; there's no doubt about that.

The Hon. STEPHEN LAWRENCE: It seems on my understanding that the policy rationale for continually increasing the taxation on tobacco is a health one. But even though it's not the intention, it seems to have a direct relationship with the creation of a black market. Would you agree with that?

DARREN BENNETT: Yes. I assume it is a health-related initiative. From the contact I've had with police in California as well, with their legalisation of cannabis over there, it's a similar theme. There's still a thriving black market because the compliance and regulatory costs of selling it legally are so high. And the fact that possession is no longer an offence means that there are more and more users, so the black market is actually bigger now, according to the police I speak to, than it was before it was legalised. So it's a similar theme.

The Hon. STEPHEN LAWRENCE: Mr Barnes, I'm not sure if you said that if there was decriminalisation or legalisation, you wouldn't necessarily expect to see a decrease in the organised crime involvement. Going back to that comment that I think you made, is that depending on the regulatory system that accompanies legalisation or decriminalisation, and the price point, I suppose, that cannabis is set at? Would that largely depend—

MICHAEL BARNES: I think that would have a lot to do with it. I can't envision a government setting up a regime where they undercut the price of tobacco cigarettes by marijuana cigarettes. That would be a strange outcome. But were that the case, if they were sufficiently cheap, there would be less reason to resort to illegal supplies.

The CHAIR: Can I just ask a question there, if you don't mind me interrupting. Has the commission seen an increase in people cultivating tobacco? As the pricepoint has gone up and demand has remained, has that emerged as an issue—an increase in domestic production, in actual fact, of tobacco in terms of cultivation?

DARREN BENNETT: That's Commonwealth offending. It's not something we focus on in terms of our day-to-day business. I'm not aware of an increase or a decrease in cultivation. I'm aware of cultivation in some parts of New South Wales, but it's not something we focus on; it's AFP, Border Force.

MICHAEL BARNES: And the vast majority of illegal tobacco is imported rather than grown locally.

The Hon. STEPHEN LAWRENCE: Going back to the comment that you made, Mr Bennett, about some international police counterparts of yours talking about an increase in use that is brought about as a consequence of law reform, do you recall if that was decriminalisation in those jurisdictions or full-scale legalisation that they thought had led to the increase in use and therefore more of a market?

DARREN BENNETT: I'm not sure. I tend to think it's legalisation. A mayor from Portland spoke at the Drug Summit last week about this as well, about the exponential increase in users when they decriminalised in Oregon, and how it emaciated the authority of the police around the place and they couldn't really control where the drugs were being used—libraries, schools, places like that—and then the police essentially just give up on enforcement because they're overwhelmed. That's a similar theme to what I spoke to with police overseas.

The Hon. STEPHEN LAWRENCE: We took evidence earlier in the inquiry from the Royal College of Psychiatrists who provided us with a summary of research, which basically suggested that, internationally, decriminalisation has not led to an increase in use, whereas legalisation has. That was basically the sum of what they said to us.

DARREN BENNETT: Yes.

The Hon. STEPHEN LAWRENCE: Just going back to Mr Barnes, I think you said earlier that you wouldn't expect that, if there was a legal market, the pricepoint would be lower than cigarettes.

MICHAEL BARNES: Yes.

The Hon. STEPHEN LAWRENCE: Was that a comment based on health issues, as you would perceive it, in terms of the weight the Legislature and the Executive might put on health issues?

MICHAEL BARNES: I would hope so. As I said, we're not equipped to give you evidence about the health impacts of marijuana use. But I'm sure you've heard from people that have told you that it's at least as dangerous as tobacco when it comes to health impacts.

The Hon. STEPHEN LAWRENCE: Yes. I think the evidence that we've had is to the effect that it depends on how it's consumed. If it's smoked, then it is carcinogenic, but in other forms it's not so. If we were to consider a recommendation that legalisation should be considered, would you be of the view that any such scheme should be tailored to not leave a role for organised crime in cultivation and distribution?

MICHAEL BARNES: That's our sole focus. We are concerned about any change of the laws if it makes it easier for organised crime to produce and distribute the product.

The Hon. STEPHEN LAWRENCE: Apart from the pricepoint, if we can put it that way, are there other factors that you see that would relate to that question of whether a black market would continue to exist?

DARREN BENNETT: Obviously selling it to children is one—a clear and obvious one. Pricepoint is another. Availability is another—ready availability is another. And established markets that exist now—why would they change?

The Hon. STEPHEN LAWRENCE: To your knowledge, is there a black market in the production and distribution of alcohol in New South Wales?

DARREN BENNETT: No. I've never seen any intelligence to suggest there is.

MICHAEL BARNES: Not large-scale commercial. There are individual ethnic groups who understandably and appropriately like to indulge, but I'm not aware of any commercial operations.

The Hon. STEPHEN LAWRENCE: Why do you think that is? If you compare it to tobacco, for example, why do you think that there is not a black market in alcohol? Is that just a pricepoint issue or is there some other?

MICHAEL BARNES: I'm not sure. I've never given it a lot of thought, I'm sorry.

The Hon. STEPHEN LAWRENCE: This question is about the role of cannabis in existing crime networks and organised crime. Are you able, on the basis of your intelligence and knowledge that you're able to share, to inform us about the role of cannabis in fuelling other types of organised crime activity? I suppose it's logical that if a crime network is doing one criminal thing that is profitable, they might then be investing in other areas or things of that nature?

MICHAEL BARNES: Yes, there is no brand loyalty in organised criminals. They'll go where a profit can be made. Mr Bennett can probably give you more detail on that.

DARREN BENNETT: We partner with the drug squad in the NSW Police Force. We've established a generic strike force over the course of a calendar year. This year it was called Heradale; last year it was called Winifred Bites. We partner in terms of intelligence, sourcing and identifying assets that we can seize on the back of police investigations. Those investigations relate solely to large commercial cannabis-growing, usually in greenhouses, in farms around Sydney and in rural areas. The ones we investigate are highly specialised operations, usually trans-national and serious organised criminals, mainly from Vietnam, and large-scale production, employing a lot of people and very sophisticated distribution. I wouldn't say there is specific intelligence to say that they branch off into other types of drug sales, but I know from my previous experience, motorcycle gangs and other criminal groups will sell anything if there's a buck in it.

The Hon. STEPHEN LAWRENCE: Are you able to give us a sense of how profitable that sort of large-scale cultivation is compared to other types of illicit drugs that are produced, whether methamphetamine or things like that?

DARREN BENNETT: We seized around $80 million worth of plants in the last year, charging 19 people. The set-up costs wouldn't be cheap, the greenhouses and the equipment wouldn't be cheap, but it's clear and obvious that production of cannabis on a grand scale is very lucrative, especially with high quality, and they do take a risk because they're large undertakings that are out in the open, so there's a chance you're going to get caught, and I would say the profit margin is extraordinarily high.

The Hon. STEPHEN LAWRENCE: In terms of the migrant worker issue that you talked about, is it people who are assisting in the cultivation who are either here on visas or not here with visas? Is that the situation?

MICHAEL BARNES: Yes.

DARREN BENNETT: Yes. It's often what people say at the time they're sentenced that forms the information base for it, so you can take it with a grain of salt, in my opinion. There seems to be a large proportion of people who didn't know what they were doing but seemed highly skilled at doing it. They say they're manipulated and taken advantage of. My personal view is that that's probably not the case on a lot of occasions, that they full well know what they're doing. They certainly know how to operate farm machinery and very sophisticated hydroponic and indoor cultivation. But they are usually on student visas or illegal immigrants, and mainly from Vietnam.

The Hon. Dr SARAH KAINE: Could I ask just about the visa issue: The visas that you're looking at are student visas, not other work visas?

DARREN BENNETT: No. There would be all types, but mainly they're illegally in Australia or on student visas. But I could get a breakdown of that.

The Hon. Dr SARAH KAINE: That would be really helpful, thank you.

The CHAIR: That has been taken on notice.

The Hon. CAMERON MURPHY: I want to tease out one issue. You were saying that the reason for organised crime remaining a presence in the market is because of their large scale. Is that right? It is the economies of scale that they operate in. We heard evidence earlier in the inquiry about jurisdictions overseas where they have set up cannabis cooperatives, which could achieve a similar sort of scale of production. Individuals sign up to a cooperative that is managed as a large-scale enterprise and then medicinal cannabis is distributed to people. Is that something that you think could be used as a mechanism to displace organised crime, if we moved to a model where there was that large-scale organised production that could effectively compete with the black market?

MICHAEL BARNES: I don't think I can offer an opinion on that without knowing more about it.

DARREN BENNETT: To usurp organised crime, you'd have to offer it at a cheaper cost and a higher quality than a black market could produce. I think they're always going to be here, to be honest.

The Hon. STEPHEN LAWRENCE: The ACT has recently decriminalised, effectively, small possession or cultivation. I know that there remains a Federal offence of possession that obviously applies through Australia, but I think somehow that's dealt with, and that's not enforced effectively, in the ACT. I'm just curious whether any intel, or other information you can share with us, has flown through in terms of any impact on organised crime activity in New South Wales as a consequence of this island inside New South Wales of decriminalisation.

MICHAEL BARNES: We're very grateful that ACT has agreed to pilot this brave program so the rest of us can watch. We know that OMCG—outlaw motorcycle gangs—that weren't previously extant in ACT have set up chapters there. Do you know more about that?

DARREN BENNETT: Yes, I mean, it's happened. I don't know the broader effect of the legalisation in the ACT. It's a completely different environment than the rest of Australia, I would submit.

The Hon. STEPHEN LAWRENCE: In terms of OMCG, Mr Barnes, you weren't suggesting that's as a consequence of decriminalisation, were you?

MICHAEL BARNES: It could just be coincidental. I haven't interrogated these people who made that decision.

The Hon. NATASHA MACLAREN-JONES: Thank you very much for coming today. I just wanted to start on the strike force that was reported late last month. I think it was called Strike Force Heradale. I'm interested to know the trends from that operation, maybe the last five or 10 years, in relation to cannabis supply or possession. Have we seen a significant increase in the work you're doing and organised crime here in New South Wales particularly?

DARREN BENNETT: We're not a policing agency. We're a support agency for the police. We can certainly say that consumption seems to be increasing. I think 17 per cent last year. The police are getting much better at detection and dismantling these organised criminal groups that are doing this, but the trend has been that the scale is getting bigger and bigger, and they're far more mobile.

The Hon. NATASHA MACLAREN-JONES: When you say you're a support agency, what role do you play particularly in these strike forces and also in targeting organised crime?

DARREN BENNETT: We focus on assets forfeiture, so we focus on the information that comes out of investigations that we can parlay into seizing assets from criminal groups. We also prove an intelligence function as the investigation goes on, so we assist the police in that.

The Hon. NATASHA MACLAREN-JONES: In relation to organised crime—you touched on this briefly—I'm interested to know where are the higher use or distribution areas, whether it's regional, rural areas, metro. Where are you finding those trends?

DARREN BENNETT: In terms of this operation, usually in rural areas in close proximity to Sydney, or in the far north-west of the State.

The Hon. NATASHA MACLAREN-JONES: The Victorian Parliament did a similar inquiry, and the police in one of their submissions stated that over the last five years, approximately 40 per cent of cannabis use and possession offences occurred in conjunction with another offence. The top four co-occurring offences over that five-year period were drug possession with another drug other than cannabis, receiving or handling stolen goods, weapons and explosives offences, drug trafficking and firearm offences. I'm wondering whether or not you have any research, or if any work's been done, around that same correlation between cannabis supply and other crime activity.

DARREN BENNETT: We focus on the serious organised crime aspect of it internally. It sounds to me like that data would be that most of their detections are as a result of search warrants in relation to other matters.

The Hon. NATASHA MACLAREN-JONES: You mentioned talking to counterparts in Canada.

DARREN BENNETT: Canada, California and other parts of the US. And I went to Vancouver a couple of years ago.

The Hon. NATASHA MACLAREN-JONES: We're seeing some research coming out now where, in a number of those countries, the stats are going in the opposite direction in the fact that legalising or decriminalising marijuana hasn't necessarily reduced crime activity. Can you elaborate any further? Is there any information or further research you may have in relation to that?

DARREN BENNETT: Not with any great expertise. I went to Vancouver some time ago and spoke to the police there about undercover operations but, in relation to this as well, it's a good story they impart. You notice from being there the significant shift in amenity, what the city's like compared to what it used to be like. I've been there many times over the last 20 years. It does make a significant change to both the authority of the police and the day-to-day amenity of the city. I've got no doubt about that.

The Hon. NATASHA MACLAREN-JONES: Have they seen a change with organised crime as well?

DARREN BENNETT: Not that I can provide evidence on.

The Hon. JACQUI MUNRO: I'm curious about whether you've seen changes in the trends around the types of manufactured cannabis products that are available. There's been a lot of talk recently about nitazenes coming into the market. They've either been associated with other substance products, or they've been replacing those other products on the markets. I'm just wondering if there's any intelligence about how nitazenes are entering the market and might be related to cannabis products.

DARREN BENNETT: I think the police would probably be able to comment on that better than us. I don't have any specifics. The only trend I can report from our investigation is that scale and scope is getting bigger and bigger, and the quality of the produced product is getting better and better.

The Hon. JACQUI MUNRO: With the legalisation of medicinal cannabis, has that changed the way that you are gathering intelligence or policing? Has that had any impact on your operations?

DARREN BENNETT: No.

The Hon. JACQUI MUNRO: Not at all?

DARREN BENNETT: Not from the Crime Commission's perspective.

The Hon. JACQUI MUNRO: It doesn't make it more difficult, for example, to determine who is producing cannabis products legally or illegally onshore?

DARREN BENNETT: No, the legal production is heavily regulated.

The Hon. JACQUI MUNRO: You've found the relationship between regulators and yourselves is adequate?

DARREN BENNETT: Yes, it's more with the police than with us, though.

The CHAIR: In your introductory remarks, you talked about the nature of the illegal production. You said that there were essentially individuals producing it for themselves, that there were significant small commercial operations distributing, and then this other sector, which is the significant commercial operations,

relate to organised crime. Without going into operational matters, can you give us some indication of who the people are that are involved in this organised crime? Traditionally, it was regional growers involved with the mafia in the 1970s. Has that changed in more recent times? Who are the people that are growing these commercial—is it purely domestic Australian organisations, or do they have links to other international organisations? Can you elaborate on that?

DARREN BENNETT: There's still intelligence around the Italians and the like in the Riverina. That intelligence still comes in, but it's not in any way dominant like it used to be. OMCGs are certainly heavily involved in this. Also, the trend of Vietnamese organised crime is ubiquitous through all of our investigations. There's a niche there. There are still the far North Coast growing operations in national parks and public places. There's also hydroponics in domestic houses. Every level of organised crime has a foothold in cannabis production and distribution.

The CHAIR: The main production and distribution—if I'm going off what you said previously—is moving to large greenhouses based in regional, rural and remote areas as opposed to opportunistic growing in public spaces or indoor hydroponic operations.

DARREN BENNETT: I would say that's the case, yes.

The CHAIR: There has been some commentary that illicit cannabis is, to paraphrase, a start-up or the rocket fuel for some organised crime—i.e. if you want to get involved in organised crime and you don't have $200 million sitting under the bed, it's a good way to get that illegal business going. You can go out relatively cheaply and produce a large quantity of very valuable product. Is that something that you've seen, that this could be a progenitor of other crimes?

DARREN BENNETT: Yes, I think so. I don't think it's as structured as that. I think cannabis cultivation and distribution is an industry of its own. I don't think it necessarily leads to anything else, but it might. It's just a cheaper drug to buy than MDMA, cocaine and the other drugs that are prolific, and it's seen as a lot less harmful, so the market's enormous for it. As the commissioner said, it's the most used illicit drug in the State.

The CHAIR: Would you say that it's also cheaper to, and a lower risk to, produce compared to importing meth from Burma or cocaine from Colombia?

DARREN BENNETT: I would say that.

The CHAIR: You would say that?

DARREN BENNETT: On a small scale, yes.

The CHAIR: On a small scale?

DARREN BENNETT: On a large scale, it's difficult, you need to be well resourced and it's reasonably high risk, I would submit.

The CHAIR: Is the involvement of the Vietnamese crime gangs a cultural issue or is it because they have the expertise to undertake the growing to the standard that the black market demands?

DARREN BENNETT: I'm not 100 per cent sure. It has been a niche in the Vietnamese community for quite some time. The large-scale indoor hydroponics in south-western Sydney were all Vietnamese-based, and now we're finding that the large outdoor greenhouse operations are Vietnamese-based as well. Who knows what the niche is there, but it's just a crime type. I don't know what sits behind it; I really don't.

The CHAIR: In your introductory remarks, Commissioner, you said there was extreme violence associated with some of these operations. How does organised crime protect these operations? I'm sure they can't take out insurance. How do they protect them? How do they ensure security and the like in terms of the production and the distribution?

MICHAEL BARNES: They regularly have people with significant weaponry guarding the sites, and we've been involved in a number of murder investigations that are thought to be linked to marijuana distribution.

The CHAIR: Just on that point of the distribution, cannabis use in Australia and New South Wales is ubiquitous. The trend, in terms of use, has not gone down. It has been relatively steady for a long time since the sort of 1960s or 1970s, with 15 per cent or 16 per cent of people regularly using cannabis. How important is that cannabis to the cash flow and to sustaining the actual network of distribution of other illicit drugs? Maybe I'm not being clear, but is cannabis a staple of drug distribution networks that ensures that they at least have something to sell some of the time, with then other drugs also being distributed and sold as well?

MICHAEL BARNES: Mr Bennett might know more about this, but just anecdotally I've been involved in a homicide investigation recently from a rural or regional city, and it was marked that the witnesses kept distinguishing between drug dealers who would supply cannabis and maybe one other drug, drug dealers who specialised in meth and other drug dealers who dealt in heroin, and these witnesses all insisted that, no, he wasn't part of that group and that there were three distinct groups operating in this regional town or city. But Mr Bennett might give you more information.

DARREN BENNETT: I think cannabis cultivation and distribution is an industry of itself. I don't think it necessarily leads to other types of drugs being sold by the same people. There certainly is a lot of specialising in cannabis cultivation and distribution. The bulk of it, the need for distribution routes and a customer base is the same as any other drug, and I think it's just as lucrative as selling anything else.

The CHAIR: You were referencing other jurisdictions overseas that have gone to decriminalisation and legalisation—I think you mentioned Portland or Vancouver—and that that may not have been enacted as people had initially intended. Do you think that the cannabis part of that issue is the biggest problem in those jurisdictions or is it other drugs like opiates and fentanyl, or is cannabis use a big part of that dysfunction?

DARREN BENNETT: I was commenting on the contact I've had with the police overseas in light of cannabis legalisation being a means by which to diminish the impact of organised crime in their society, and the overwhelming feedback is that it hasn't made really any difference at all.

The CHAIR: And that's because of the regulatory burden of producing legal cannabis and the pricepoint that there's still an opportunity to come in—

DARREN BENNETT: Yes, coupled with the fact that there are now more users because it's now decriminalised or legalised.

The CHAIR: Do you know of any jurisdictions that are moving to repeal cannabis legalisation in Europe, the United States or Canada?

DARREN BENNETT: Not with any great expertise. I think Oregon is trying to wind it back. I'm not sufficiently briefed on that to give evidence about it, though.

The Hon. STEPHEN LAWRENCE: There was discussion earlier about decriminalisation or legalisation potentially leading to an increase in use and, therefore, driving demand that then feeds organised crime activity. I'm just interested to ask a few questions flowing on from that. Firstly, are you able to tell us what percentage of the market is in that category of small-scale cultivators who probably aren't your real concern?

MICHAEL BARNES: No, I can't, I'm sorry. We've been for the past few days preparing for this hearing, and we dug for those figures and we couldn't come up with anything sufficiently reliable to report to you, I'm sorry.

DARREN BENNETT: We rely on the police data for that, and they will give evidence.

The Hon. STEPHEN LAWRENCE: Assuming that an increase in demand might drive organised crime more, do you think it might also be the case that decriminalisation of small-scale cultivation might reduce the demand for cannabis that is cultivated by organised crime groups on the basis that if there's more cannabis in the market that is cultivated by small local growers who distribute to friends and obviously use themselves, that might decrease the amount cultivated by organised crime?

MICHAEL BARNES: It's hard to speculate. Tomatoes can be freely grown but most of us still buy them from commercial producers. I'm not sure what the impact of making more amateur or small-scale producers of marijuana would have on the market generally.

The Hon. STEPHEN LAWRENCE: I suppose the analogy with tomatoes maybe fails in the sense that it would in this scenario still be an unlawful product so you're basically choosing where you get it from, but it'll be legal in that circumstance to cultivate very small amounts of it.

MICHAEL BARNES: I think that's the position in Canberra, isn't it? There is a number of plants you can—

The Hon. STEPHEN LAWRENCE: I think it's like three or five or six or something.

The CHAIR: Four.

DARREN BENNETT: If you get into an arms race on quality, that's a slippery slope, especially if people are growing it domestically. It's really dangerous to grow cannabis in your house with hydroponics; it's really

dangerous. The problem with cannabis is that the quality goes up and up all the time. They're getting better at it all the time.

The Hon. STEPHEN LAWRENCE: In terms of the quality issue, we've had evidence that a million medicinal scripts have been written since medicinal cannabis was legalised, I think, in 2016. We've been, as part of this inquiry, to a farm in northern New South Wales where they're growing it, and we're told that it's quite strong compared to what you might get in the illicit market sometimes and that the pricepoint is maybe a little bit higher than the illicit market but still pretty manageable for people. Have you seen a decrease in the organised crime type cultivation of cannabis as a consequence of pretty widespread availability of medicinal cannabis?

MICHAEL BARNES: No, I don't think so. But we're talking small numbers, really. If you're talking about a million scripts and we're talking about 120 people charged with commercial quantities, you can see that it'd be difficult to show a connection.

The Hon. STEPHEN LAWRENCE: Assuming that there had been a decrease, is that something that would necessarily have come to your attention through your—

MICHAEL BARNES: I don't think it would. I don't think that our volume is sufficient to pick that up. We're not sufficiently confident about the proportion of major operators that we're investigating and taking enforcement action against. We don't know what the whole number is, so we can't tell how successful or otherwise we're being.

The Hon. STEPHEN LAWRENCE: You talked before about, apart from the pricepoint, that if you're going to move to a legalised market, we would talk about the things that the regulatory framework might need to take into account to avoid a continued illicit market, and you talked about availability. Was that talking about availability in terms of geographically, like the service provision? Or was that also talking about, for example, whether it was done through chemists or done through a corner shop? Could you expand on that a bit?

MICHAEL BARNES: I don't have any expertise in relation to that. But comparing the vapes situation, when vapes were available so widely, it would seem clear that there was a rapid increase in their usage—hence the move to limit them to chemists in future. I think the same would apply to marijuana.

The Hon. STEPHEN LAWRENCE: So the harder it is to get under this potential legalised market, the higher the chance you'd continue to have a black market?

MICHAEL BARNES: Yes, I think so.

The Hon. NATASHA MACLAREN-JONES: In relation to organised crime, do you have a breakdown of the local versus international statistics? You did refer to a lot of it being Vietnamese. It'd be of interest to me—do you have that percentage breakdown?

DARREN BENNETT: No, we wouldn't have that. The police may.

The Hon. NATASHA MACLAREN-JONES: Also, you said it was rural and regional areas predominantly. Are you seeing an increase in organised crime moving into more suburban areas?

DARREN BENNETT: I think the major pattern is that they establish the operation for a short period of time on a farm that they either rent or is owned through a series of—a complex web, and then they cultivate for a short space of time with the skill base they've developed, and then they dismantle it and move on. There are 17, 18 large greenhouses in a lot of these things. They're really big operations. I think the most common method at the moment now is in and out as quickly as you possibly can, and then move onto the next place.

The Hon. NATASHA MACLAREN-JONES: Which must make it difficult to track and monitor.

DARREN BENNETT: Once you have an intelligence base, though, you can see these things from outer space; they're so big. The drug squad's been very successful in the last couple of years with these operations.

The Hon. NATASHA MACLAREN-JONES: Which brings me to my final question around what recommendations or additional resourcing would be needed to make your jobs easier and, also, to decrease that supply and disrupt it?

MICHAEL BARNES: There's no doubt that our impact is limited by our budget, but I imagine most public sector agencies would say that. It's clear that if we had more resources, we could do more of the work that would result in more organised criminals having enforcement action taken against them.

The CHAIR: Have you seen a decrease or a complete disappearance of organised crime importing cannabis from overseas? Anecdotally I've heard there used to be quite a lot of hashish in Australia in the 1970s

and 1980s, but that doesn't seem to be the case now. Has that part of organised crime disappeared and been replaced by domestic cultivation?

DARREN BENNETT: I have no recollection of a cannabis importation in recent times. I have no recollection of it; I'm not saying there isn't one. I remember there used to be those blocks of hashish that they used to import from South-East Asia, yes.

The CHAIR: In the red cellophane.

DARREN BENNETT: Yes. But in recent times, I haven't heard of them.

The CHAIR: I think we're done with questions. We very much appreciate you coming along today to give evidence and the work you do for the people of New South Wales, so thank you very much for making the time. I think there were a couple of questions taken on notice. The secretariat will be in contact with you in due course to get some answers to those.

(The witnesses withdrew.)

Ms LOUISE HIGGINS-WHITTON, Director, Road Safety Policy, Transport for NSW, sworn and examined

Mr BERNARD CARLON, Chief, Centres for Road and Maritime Safety, Transport for NSW, sworn and examined

The CHAIR: Good morning, Mr Carlon and Ms Higgins-Whitton. Thank you very much for your attendance today at the hearing for the inquiry into the impact of the regulatory framework for cannabis in New South Wales. Before I go to questions, do you have some introductory remarks you'd like to make?

BERNARD CARLON: Yes, we do have a brief opening statement that we'd like to make. I was fortunate to be able to attend the drug summit last week and hear firsthand the challenges faced by those using medicinal cannabis in terms of driving. Transport acknowledges the difficulties they face. However, there is a need to balance that against the road safety outcomes for the whole of the community. The New South Wales Government is committed to ambitious targets for halving road deaths and serious injuries by 30 per cent by 2030. It's currently against the law for someone to drive with THC present in their oral fluid, blood or urine in New South Wales.

Research shows that THC can affect the skills required for safe driving including attention, judgement, concentration, memory, vision, coordination and decision-making, and the increased crash risk for those drivers by up to 40 per cent. Between 2019 and 2023 there were 233 fatal crashes, representing 16 per cent of all fatal crashes, which resulted in 252 fatalities involving drivers and riders who had the presence of THC in their system. About one-third of these included the presence of another drug and one-quarter had illegal levels of alcohol. The mobile drug testing program is a critical road safety tool to deter driving after use of key drugs that we know impact on safe driving skills. Research completed by Monash University, Victoria, shows that a system of broad-based roadside drug testing has a positive impact on road safety.

I'd like to make it clear that the oral fluid test devices and process we use in New South Wales is designed to detect recent THC use. THC levels spike quickly after consumption and then rapidly drop in oral fluid. All samples are subject to laboratory analysis where a confirmatory limit is applied. Claims that oral fluid testing detects THC many days after use is not supported by the scientific evidence. I note that evidence regarding specific effects of the range of medicinal cannabis products on safe driving is still in development. We're aware that duration of impairing effects can vary significantly between individuals and typically last for three to eight hours, depending on the administration, the amount taken and the frequency of dose.

We also know that, at present, there's no scientific consensus on an acceptable THC level in blood that indicates a degree of impairment, being crash risk, as there is for alcohol. For these reasons, it's not simply a case of picking up an approach being deployed in another jurisdiction and implementing it in New South Wales. The evidence base needs to be clear in order not to jeopardise road safety outcomes. To this end, Transport continues to actively monitor research, technological developments and approaches being deployed in other jurisdictions. We're actively considering this evidence as it develops. We thank you for the opportunity to appear before the Committee, and we look forward to answering your questions.

The Hon. STEPHEN LAWRENCE: Mr Carlon, on that point about 16 per cent of fatalities involving THC being detected, I assume in the blood of the person driving the vehicle, is that testing similar to the roadside testing that's done in terms of the sensitivity? That is, is that THC in the blood that indicates recent use, or is that blood testing stronger than the roadside saliva testing?

BERNARD CARLON: I'll answer in brief and maybe pass to Louise in terms of the technical details. Just to clarify, that testing for those results in fatal crashes is blood tests, and it measures the levels of THC in the bloodstream. The roadside drug testing program is a screening device which is applied, an oral fluid device, which is the detection of recent use in oral fluid in the mouth cavity. Two screening tests are done at the roadside, and then the oral fluid is captured in the secondary test and goes to the laboratory, where confirmation of the presence of THC in the oral fluid is conducted by the laboratory.

The Hon. STEPHEN LAWRENCE: I suppose what I was driving at is this: Does that 16 per cent figure indicate that THC was present in that person's blood to a degree that would have affected their driving capacity or driving ability?

BERNARD CARLON: Again, it's a complex issue because there are a whole range of factors, including the time at which the blood might have been taken. As we've said, THC spikes very quickly and then deteriorates in terms of its presence over a number of hours. I might ask Louise to chime in, in terms of some of the details there.

LOUISE HIGGINS-WHITTON: We're certainly aware that the pharmacokinetics of cannabis are really quite complex and that, depending on the biological matrix—whether we're talking about blood, urine or oral

fluid—the amount of time and the type of substance that you're looking at, at times, will vary. We're aware that when we get blood results from fatal crashes, they come to us from FASS at NSW Health and the blood measurements can go down quite low. There is variation and complexity here because some of the subjects that the blood is taken from will be already deceased when the blood is taken, so there are some complexities about picking those raw results up. Some of them are taken from those involved in fatal crashes that are still alive and, as Mr Carlon mentioned, there can be variation in the time when that blood sample is taken.

Obviously, when there is a fatal crash, the priority is patient care, and then NSW Health will take the sample. We know that THC is eliminated from the blood relatively quickly. It has a relatively quick half-life, so there is quite a bit of variation in picking up that raw result, which is why we talk about it as presence. We're not saying that all of those drivers were definitively impaired and that was the primary cause or primary contributor to the crash. It is that the substance is present there. Given that we know it can affect driving skills, we outline that it is there and may have been a contributor to that fatal crash.

The Hon. STEPHEN LAWRENCE: With alcohol, it's obviously fairly well understood in the community that you can consume a certain amount of alcohol and still be under .05, and there's obviously disputation around exact formulas. It used to be advertised, I think, as two in the first hour and one every hour after that. I think they might have moved away from that, but it still may be a fairly effective rule of thumb that people bear in mind. Is there anything similar for cannabis? For example, if we were going to recommend a medicinal cannabis defence for driving, what's happening in the research in terms of a way for people to consume cannabis in compliance with some kind of formula or rule of thumb that will guide them about whether they're safe to drive? Is there anything of that nature, or is it all just too complex and indeterminate?

BERNARD CARLON: Again, in terms of the details, I might ask Louise to respond. But I think it's important to understand that even with alcohol, there's a significant variation in individuals in the way in which it actually metabolises and impacts on driving skills, which is why we have, over the last more than a decade, moved away from having individuals attempt to determine whether or not they may or may not actually be over the limit. Of course, we now have zero for our most vulnerable road users, in terms of novice drivers.

Certainly, the plan B approach is if you're going to have a drink, don't drive. That is the advice that we have regularly been giving the community over the last decade in order to get rid of that, I suppose, decision-making that individuals may make, where we can't reliably tell them—depending on the alcohol content of individual drinks that they might be drinking and volumes and glass sizes—that there is a reliable way in which they can moderate. We say to people, "If you're going to drink, then have a plan B". Similarly, the complexities are even more so in THC currently. We have a large body of research over 40 years in establishing the framework for alcohol, and certainly there's a lot of research that is happening, but it's very recent in relation to THC and even more recent in relation to THC in medicinal cannabis. I might hand to Louise as well.

LOUISE HIGGINS-WHITTON: Just to add that when we do the comparison to alcohol, from a road safety research perspective, we have established over more than 50 years now a very clear and definitive link between the amount of alcohol you take and your degree of impairment, and then a connection directly back to your degree of crash risk. This research started back in the '60s with what's called the Grand Rapids research and has been improved over time and validated in studies time and again. It has really shown us that consistent increase whereby, when you have more alcohol in your system, you have that increased risk, and we've been able to link it back to crash results.

We don't necessarily have that research base to draw on in relation to THC. We haven't been able to see in the research that definitive and clear path upwards with increases in amounts of THC and also in terms of that point at which we start to see an increase of risk. That number of .05 is the number where we say we have a doubling of casualty crash risk for alcohol. We don't have scientific consensus around what that baseline number is for THC. We see in jurisdictions where they have attempted to put in place an impairment level. That number does vary from 0.5 in jurisdictions like France; in some jurisdictions—say, in Colorado—that number is five nanograms per millilitre. It's quite a variation and different approaches.

The CHAIR: Sorry, Ms Higgins-Whitton. Those numbers are important. You said that it was 0.5 nanograms per millilitre?

LOUISE HIGGINS-WHITTON: Nanograms per millilitre, yes.

The CHAIR: Of blood?

LOUISE HIGGINS-WHITTON: That is in whole blood, yes. There is also variation. Some jurisdictions measure in whole blood, some measure in plasma and some measure in serum. I'm not an expert in these biological matrices, but there is some difference in them.

The Hon. STEPHEN LAWRENCE: So that might be a way of working out liability for a criminal offence after the event, I suppose, but it's only useful for the potential driver to the extent that it can be synthesised into some sort of instruction or rule that a person can understand in advance of driving and try to comply with. If we were, for example, to recommend the creation of a medicinal cannabis defence in the law to driving, is there some sort of limitation, rule or guideline that you would suggest that we consider in terms of the amount of time since you've consumed cannabis or the amount of cannabis that you should have consumed within a certain time, or something of that nature?

The CHAIR: Or the type of user you may be—like a novel or new user, as opposed to someone who has been using for a while.

LOUISE HIGGINS-WHITTON: Trying to find a consistent rule of thumb that could be put into the law would be quite challenging. We know that in terms of medicinal cannabis products, there are over 500 non-TGA-approved products that could be used. Some of them have THC concentrations of up to 98 per cent. A lot of people are using these for varying conditions, potentially with other products, and in different concentrations and dosages. Bernard mentioned in the opening statement that there's guidance around the window of impairment in the realm of up to eight hours. That does vary depending on the route of administration—so whether someone is inhaling or taking an oral dose. It does vary depending on how much you're taking and a range of other individual factors. Doctors, when prescribing, need to give their patients individual advice based on what they've prescribed. That does add this layer of complexity to the task of the Committee.

The Hon. STEPHEN LAWRENCE: How well equipped are doctors going to be to really meaningfully give advice? I'm mindful that in respect of Valium and so forth and driving, you must have consumed it in accordance with medical advice. That is then a defence, or you're not liable for any particular criminal offence, if you've done that. If we were to, for example, recommend a medicinal use defence for the relevant criminal offences in respect of cannabis that is conditioned on someone complying with medical advice, how well are doctors equipped to meaningfully give advice about what is safe or not safe in terms of overall community outcomes in respect of road safety?

BERNARD CARLON: I'd firstly say that's probably a question for Health in that context. There's a range of complicating factors in the volume of product that's actually available. There are two out of more than 500 that have been approved by the TGA. There is a vast array of product that's available under the prescriptions currently being issued. But we also have some sociological issues that we need to come to grips with, including a recent study conducted in 2022. There's a proportion of the community who are taking medicinal cannabis because they really require it from a health management perspective and it's recommended by their medical practitioner, and they had never taken THC or cannabis previously. That's clearly a group in the community who are following their medical advice.

But we know from research that the national household drug survey found that, of the people who take cannabis for medicinal purposes, 70 per cent of them did so without a prescription. They're saying they're taking it for a medicinal purpose but don't have a prescription. There's another study that a significant proportion of people who are traditional recreational cannabis users say that they are using medicinal cannabis along with their recreational cannabis source from another source. That does compound the situation in relation to an exemption or some other legal process at the moment. There's more research required, specifically in the medicinal cannabis area.

The Hon. STEPHEN LAWRENCE: Lastly from me, in the jurisdictions that have created a medicinal use defence—which, on the evidence before us, includes Tasmania—are you aware of any research on any effect on road safety outcomes in those jurisdictions?

LOUISE HIGGINS-WHITTON: We're not aware of research that Tasmania, in particular, has done. We have spoken to them to better understand how their exemption operates. As Bernard highlighted, the THC is the same substance in therapeutic products as it is in illegal cannabis. One of the challenges for any defence is being able to understand that the person has taken their substance as it has been prescribed and in the way that is being prescribed by the doctor. By only taking an oral fluid sample at the roadside, we can't determine that, and that is the primary way that we enforce our MDT—mobile drug testing—offences.

You really do need the blood to be able to determine definitively, or close to definitively—with more confidence, perhaps—that the person has taken their substance in accordance with the prescription, otherwise we have this risk, as Mr Carlon has highlighted, that we don't know whether they've taken the substance as intended or potentially with another source of THC. Even when that level is available in the blood, it doesn't tell us which source it has come from. The way that we understand the exemption to work in Tasmania is that a charge isn't progressed if a person can provide a prescription. There isn't any validation in Tasmania that the drug has been

taken in accordance with the prescription. Provided the person can provide to police their prescription that has been validly made under the Poisons Act in that jurisdiction, the charge doesn't proceed.

The Hon. STEPHEN LAWRENCE: So, broadly, you're not aware of any research, whether internationally or here, on the question of what happens to road safety outcomes when you legalise driving with medicinal cannabis in your system?

LOUISE HIGGINS-WHITTON: There is some research. There's a lot of emerging research when it comes to medicinal cannabis specifically and its effect on driving. A lot of our understanding comes from recreational cannabis use, which is somewhat applicable because it's the same substance, but not completely. There is emerging research coming in that space. We can look to the experience in, for example, the US. We know that where medicinal cannabis has been introduced, if you look at crash rates overall, the few studies that have been done don't show that you get an increase in the overall crash rate from just having medicinal cannabis. Having said that, there are also some studies that are showing that, if we're talking about the broader legalisation of recreational use and the broader access to cannabis products, that's when it appears, from some of the research studies in the US, that you start to see those shifts in crash rates at the state level overall. I would just put a caveat on that, noting that the US is quite a different enforcement culture to what we have in Australia in terms of having that very established history of RBT and successful history of random stopping.

The Hon. STEPHEN LAWRENCE: Would you be able to provide us with a summary of that overseas research?

LOUISE HIGGINS-WHITTON: Yes. I'm happy to take it on notice and provide you with some research.

BERNARD CARLON: To go back to the Tasmania experience, we would be unlikely to see any definitive research. The total fatalities in Tasmania are, on average, 10 fatalities per annum. Their roadside drug testing is around 50,000 tests compared to our 200,000 target in New South Wales.[1] The relative trauma in New South Wales is significantly more in that context.

The Hon. NATASHA MACLAREN-JONES: Following on from that, in relation to the research or the data that you'll provide and the breakdown, can you also break it down, if possible, to medicinal use versus non-medicinal use in relation to incidences overseas?

LOUISE HIGGINS-WHITTON: For the research information, we can provide whether it was a study specific to medicinal cannabis or not. We can't do that with our own crash data, because the substance is the same substance.

The Hon. NATASHA MACLAREN-JONES: If a person is then asked whether or not they're prescribed medicinal cannabis, is that recorded at all or is it just listed that a person tested positive?

LOUISE HIGGINS-WHITTON: Do you mean within our crash data?

The Hon. NATASHA MACLAREN-JONES: Yes.

LOUISE HIGGINS-WHITTON: We don't know that. I would say the only circumstance where we would know that a person that has been involved in a fatal crash was taking a prescription could potentially be if the matter goes through a coronial investigation. Then it may come to light when they do that very forensic look at what was present in the system and the other factors that contributed to the crash.

The Hon. NATASHA MACLAREN-JONES: In relation to New South Wales specifically, do you have a data breakdown between crashes and collisions that led to death versus no death?

BERNARD CARLON: Do you mean is there serious injury data?

The Hon. NATASHA MACLAREN-JONES: Yes.

BERNARD CARLON: Again, the data availability for serious injury crashes is not very strong, although there are proposals within our Road Safety Action Plan to mandate the collection of that data where there is a grievous bodily harm incident. We're working with New South Wales police and others around that reform in particular, which would lead to better quality information around those serious injury type crashes.

The Hon. NATASHA MACLAREN-JONES: What's the time frame for that?

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[1] In correspondence to the committee received 15 January 2025, Mr Bernard Carlon, Chief, Centres for Road Safety & Maritime Safety, Transport for NSW, provided a clarification to his evidence.

BERNARD CARLON: We're currently working with those agencies in order to provide a package to government in terms of bringing legislation forward.

The Hon. NATASHA MACLAREN-JONES: In relation to Operation RAID, which occurred a few months ago, that was looking at driver impairment over a four-day period. Did you have any involvement in that or was that purely all police?

BERNARD CARLON: I think that would be a matter you would need to take up with New South Wales police.

The Hon. JACQUI MUNRO: Following on from Ms Maclaren-Jones around the data collection for prescriptions, is there a process that would make it easy to collect that data? At what point do you collect that data?

LOUISE HIGGINS-WHITTON: We don't collect data as to people's prescriptions. Obviously, that would be between them and their—

The Hon. JACQUI MUNRO: What's the process for you getting the data that you receive at the moment? Is there a way to influence the collection of that original data so that you can have that additional point of information?

BERNARD CARLON: Yes, that data is collected. In terms of the crash investigation by the police, those data are collected and we look at all of those contributing factors to individual crashes, as well as the vehicle type and the conditions of the road network, and the whole system and the likelihood of the contribution of any parts of the system to that crash or the fatal or serious injury outcomes. The data in relation to the presence of drugs in the blood actually comes from our health laboratories. They're testing it. I understand they're giving evidence to the Committee as well, so I am happy for us to refer that question to them about the collection of that information and the availability of additional information that might come from them and the police investigation.

The Hon. JACQUI MUNRO: So if that data was required, it could come from perhaps police or Health, if there was going to be a point at which you ask someone, for example, if they had a script?

BERNARD CARLON: That would normally come from police in the first instance.

The Hon. JACQUI MUNRO: On impairment, are there examples internationally of impairment tests that are not related to the collection of samples but are related to behaviour? I wasn't alive, I don't think, when we had the "hold your hand above your head and walk in a straight line, hopping on one foot" sort of test. Is there an example of that internationally that's related to other substances?

BERNARD CARLON: Yes. I have to say, in our regulatory framework as well. The more severe offence of driving under the influence, where police actually observe the nature of the driving and the condition of the individual, is of that similar sort of category. They arrest someone for the purpose of a blood test to validate the levels of any impairing drugs. The international jurisdictions—there are a range of different tests that are done at the roadside. I might hand over to Louise in terms of the framework. The assessment and research around this area shows that there's a high degree of variability in those approaches internationally, as well, in terms of their veracity.

LOUISE HIGGINS-WHITTON: I would add that, as Bernard mentioned, there is a degree of variability. There are also differences in the approach of who conducts those particular tests. Depending on the jurisdiction you're in, what is involved in those tests does vary. There are some standardised field sobriety-type tests that have been used, particularly in the US. Studies have looked at their efficacy in identifying impairment and have validated them, particularly for alcohol. There have been some studies to look at how well running through those particular tests identifies cannabis.

There is, as has been mentioned, some variability. You obviously have to be trained in some of these more sophisticated sobriety assessments to be able to undertake them reliably. In some jurisdictions, they require a medically trained person to undertake them and there are multiple steps. The answer is that there are tests available, and they are complex and they do vary from jurisdiction to jurisdiction. There are some challenges with them, in terms of picking up more subtle signs of impairment, to always be able to identify impairment.

The Hon. JACQUI MUNRO: Are you able to go into some more detail about what that actually looks like in a couple of particular cases—perhaps some of the more successful ones that you're aware of?

LOUISE HIGGINS-WHITTON: It is an emerging space, but I can, for example, speak to the position in Colorado. They use a number of different sobriety assessment type tools. One is a standardised field sobriety assessment, which is based on physical signs and symptoms. All police are trained to do this base level of assessment at the roadside. They then have a more sophisticated type of assessment, which is called the Advanced

Roadside Impaired Driving Enforcement program. That allows certain officers that are trained to undertake different types of impairment tests. It looks at things like pupil eye function, walking tests, lack of eye convergence and other physical signs in the driver. About 40 per cent of the police officers are trained in this, so it's a more complex test to be able to undertake.

Then the third layer of standardised assessment in that jurisdiction is called the drug recognition expert test. That's a very comprehensive assessment of drug impairment, and only about 1 per cent of the police in Colorado are trained to do that piece. So there are quite sophisticated steps that they run through from the point of stopping someone at the roadside where they think there are signs of impairment, and it is quite a resource-intensive approach to prosecute a driver in that jurisdiction.

The Hon. JACQUI MUNRO: Are those tests used for lots of different substances?

LOUISE HIGGINS-WHITTON: My understanding is that they can be used for other substances. We've spoken specifically to Colorado about their use in this context, in the context of THC. That's been a particular challenge there with the legalisation of cannabis in the US.

The Hon. JACQUI MUNRO: What was their response to your questions?

LOUISE HIGGINS-WHITTON: They provided this information for us.

The Hon. JACQUI MUNRO: Is it something that they have continued for a long time? What's the revision or reflection on their program?

LOUISE HIGGINS-WHITTON: My understanding is that this is only a relatively recently introduced series of steps. Obviously, that legalisation has happened only in the past decade or so. But I would need to take it on notice, if you're happy for us to provide more information about the Colorado position when it was introduced.

The Hon. JACQUI MUNRO: That would be fantastic.

The CHAIR: That would be greatly appreciated.

The Hon. JACQUI MUNRO: I wanted to lastly ask about the prevalence in New South Wales of impairment tests related to other prescription-based medications and impairment or risks to driving. Is there any comparison in terms of data you've collected on legal opioids or other prescriptions that might have an effect on driving and whether people are being prosecuted or picked up for impairment on those types of substances as compared to THC?

BERNARD CARLON: Yes. We do have those incidents under the offence of driving under the influence where there is identification of an individual, through their behavioural driving, and information around those drugs which have been proven, following a pharmacological assessment, to be impairing. We can take it on notice to provide that information to the Committee. Certainly I think we're in a very different context with THC in that it has been a recreational illicit drug used for many decades and we've more recently seen the emergence of medicinal cannabis or THC in that context.

There's a large variety of product on offer as well, from our point of view, and from recreational purpose or illicit use, a much more significant number of people who are actually using it as well. But, as we see the emergence of medicinal cannabis use as well, that's an issue where we believe we need more research in that area in order to identify how we might manage any system changes from the current oral fluid testing system. Louise might like to add. We do have a research program. At the last parliamentary inquiry into this area, we committed to monitoring the research and we have done a significant body of work over the last couple of years. There is potential for us to be doing more in some areas as additional research that we've been monitoring in other jurisdictions has better informed potentially where we need to fill gaps in this area.

The Hon. JACQUI MUNRO: What would those be?

BERNARD CARLON: I might hand to Louise around what we've been doing in that research program as well as where there is potential for us to be doing additional sort of studies along that line.

LOUISE HIGGINS-WHITTON: Just in relation to the question about whether we have something comparable around sobriety assessment, obviously Colorado has quite a multi-tiered approach to their sobriety assessment and this is linked to a different factor in Colorado being that drivers there have the right to refuse giving blood tests as part of their legal framework. In terms of the most comparable thing that we have in New South Wales to it, under our Act, if police suspect that a person is impaired by a prescription drug, they can conduct a field sobriety assessment, and that is conducted in accordance with New South Wales police standard operating procedures. They may be in a position to provide some information to the Committee about the detail

of that. The Act allows them to do that. When a person fails that sobriety assessment, they can then take that person to a hospital and have the blood taken and, at that point, the blood is analysed for a full spectrum of drugs, be they illegal or prescription, and that brief of evidence can then be provided to identify that. In terms of the research steps that we're currently taking, we've commissioned—

The Hon. JACQUI MUNRO: I was also interested in the research steps that may have a gap. You just mentioned, Mr Carlon, that there were some areas that you'd like to move into and that there were some gaps. Just in the interests of time, because I'm mindful that Mr Buckingham hasn't asked any questions. I am interested in what you're doing, but it might be a little easier to find that information, so I'm just interested in what kind of gaps you see and where there are areas that you would actually like to expand your research into.

BERNARD CARLON: I think the connection between our oral fluid testing program and the outcomes that we see in terms of the blood levels in crashes—clearly there is research being done, and I think you are speaking to Swinburne university. So very recent studies are showing up and confirming the fact that THC is a drug that affects your safe driving skills, no matter where it comes from, and developing more robust models in the way in which we have seen for establishing the alcohol-related system that we currently have, which as Louise has mentioned was developed over a 50-year period. We're in a very early period of research around the impact from a road safety perspective of these drugs.

We do know what is certain is that THC has an impact on your safe driving skills and that there's a number of research studies that have confirmed that. It's the connection between that and the levels at which individuals might be impaired over time and the levels at which we can confidently match that, in the way that we have with our alcohol system, to put in place a regulatory framework that allows for Australia to continue its world leadership in mass screening programs that provide a deterrent effect for the community. We know that our experience in RBT in alcohol-related crashes, through that journey on the development of that research, has seen us go from 389 people killed in 1980 down to 36 in 2022. We can see the risks associated with drug use and drug impacting on your safe driving skills and we would like to be moving towards that system.

The CHAIR: What were those figures? Those figures were the total road toll in New South Wales?

BERNARD CARLON: No, 389 people were killed in alcohol-related crashes alone in New South Wales in 1980 compared to 36 in 2022.

The Hon. STEPHEN LAWRENCE: In New South Wales.

The Hon. NATASHA MACLAREN-JONES: Can I just clarify in relation to the research, are you undertaking any specific research in New South Wales?

BERNARD CARLON: I'd be happy to have Louise outline what we're currently doing in that area.

LOUISE HIGGINS-WHITTON: We've commissioned an attitudinal research piece with users of both recreational drugs and prescription drugs to better understand the prevalence of drug driving and attitudes and behaviours towards drink driving. That piece is currently out in field. We are expecting results from that early next year. It will give us a better understanding of self-reported behaviours when it comes to drug driving, how often people are doing it and when they're doing it. We've included medicinal cannabis questions within that research for the first time. It's research that we have done before and we're building on, but we have now included medicinal cannabis within that research piece.

We have also been doing internal research to make sure we keep abreast of any research that arises in this space. That includes doing a scan of what's happening internationally—as I mentioned, speaking to counterparts in other jurisdictions, such as Colorado. We have also identified that there is a potential to look in more depth at some of that data we already have from fatal crashes to better understand how the substances, be they illegal or prescription, may have actually affected drivers and if we have any emerging trends potentially with new drugs where we see a road safety risk.

We are also keeping in touch with colleagues in Victoria. You may be aware that they have commissioned a major piece of research, a closed track trial, which I assume that potentially the witnesses from Swinburne can talk in more detail about. They're running that piece for the Victorian Government, but we are keeping a close eye on that because it is a world first in a sense and it will look at the actual effect that taking medicinal cannabis then has on factors such as braking and steering in a closed track environment, which is a more realistic environment, to better understand the actual real-world impact that the substances have compared to, say, a simulator-type study. That is a really interesting and emerging piece we're watching as well.

The Hon. NATASHA MACLAREN-JONES: In relation to the testing, not so much of impairment but of the presence of THC in the body, at the moment is it purely blood testing that is the most reliable form of testing?

LOUISE HIGGINS-WHITTON: If we want to get a reliable indication of the level that can potentially confirm or deny that a person has taken the substance in accordance with a prescription, then probably the gold standard in terms of the approach of being able to have—we can't get from an oral fluid level alone an indication of whether they've taken a prescription in accordance with the doctor's advice.

The Hon. NATASHA MACLAREN-JONES: Does that mean, in your opinion, oral testing doesn't allow for an accurate read, let alone an ability to judge a person's ability or impairment?

LOUISE HIGGINS-WHITTON: We know that the oral fluid provides an indicator of recent use because we know that THC is present in the oral fluid immediately after use and then it's rapidly illuminated**.** If we can detect the THC in oral fluid, it does indicate that THC has recently been used. We know from the other evidence that that window around when you use the substance is where we are most likely to see the effects on driving skills. There's definitely a connection there between when we see the substance present at detectable levels in the oral fluid and what we know about when drivers are most likely to be impaired in terms of that window of hours after use, because there is a matrix where you see the substance there soon after use, but not for days and weeks after.

The CHAIR: Are there any jurisdictions that rely on an oral roadside test to establish a level of THC presence? Not just presence, but a level of THC presence upon which they then establish a regime of road safety? Are there any jurisdictions in the world that have a roadside test that tests for nanograms in terms of saliva or anything like that?

LOUISE HIGGINS-WHITTON: I think I understand what you mean. You mean in terms of a graded approach? An equivalent to 0.5 or 0.8, a level where we're talking about—

The CHAIR: Yes, are there any devices or any jurisdictions that rely on that?

LOUISE HIGGINS-WHITTON: Not that we're aware of. That is a missing piece in the evidence. We talked about what we know about alcohol in that, as you have that presence going up, you see the crash risk going up. We don't have that piece of evidence showing that, as the volume of THC in oral fluid goes up, it's directly linked back to an escalation in crash risk .

The CHAIR: In relation to the 16 per cent of fatal road accidents where there was cannabis found to be present, is that in the person who was found at fault and deceased, or in anyone who was deceased in those accidents?

BERNARD CARLON: Testing the driver or rider involved in a crash?

The CHAIR: Yes.

BERNARD CARLON: Any driver or rider involved in a crash, a fatal crash, is being tested for their blood in terms of the presence of those drugs and the level of those drugs at that time.

The CHAIR: They may not necessarily be deceased, or they may not necessarily have been at fault?

BERNARD CARLON: That's correct. The way in which we are attempting to reduce risk from a road safety perspective, it's actually identifying where particular behaviours, or the absence of a particular part of a system for managing—if there's risk, then we're monitoring those, I'd say.

The CHAIR: What I'm trying to establish, Mr Carlon, is that if someone who doesn't have THC crashes into someone who does have THC in their system, does that shows up in your figures? Someone who, say, was speeding, and doesn't have THC in their system crashes into someone who's driving with THC in their system, and one or both of those people is deceased, your figures will show that that person had THC? It turns up in your figures?

BERNARD CARLON: That's correct, because we don't analyse the road safety systems approach on the basis of fault. We analyse it on the basis of what the risks are in a crash, and had that person not had that in their system they may have been able to avoid that crash. That's the systems approach that's been adopted internationally around assessment of risk in crashes and the attempt to eliminate those risks over time.

The CHAIR: What percentage of those serious accidents where there's a fatality was there only cannabis found in the blood of those persons involved—where there was no alcohol, illegal alcohol, other illicit substances or prescription medications?

BERNARD CARLON: I'm happy to provide more detail on notice but, in those where THC has been identified, around a quarter had the presence of alcohol, and about a third had the presence of another illicit drug. In those total fatal crashes over the last five years, there were 233 and 241 drivers or riders where the presence of THC was involved in the crash.

The CHAIR: Yes, I understand that, but how many were just THC?

BERNARD CARLON: I don't have that in front of me, but I'm happy to provide it on notice.

The Hon. STEPHEN LAWRENCE: If we were to move to a medicinal cannabis defence to drive illicit, would you expect to see an increase in adverse road safety outcomes based on the international research that you've looked at?

BERNARD CARLON: I don't think we're in a position to—there were a number of different ways in which you might implement that. There are different exemptions versus defence processes that would result in different outcomes, so it would depend on the model that was being adopted. I think it would be difficult for us to comment, but we're happy to, again, share the research that's available internationally from our perspective.

The CHAIR: Thank you very much, colleagues, for your excellent questions, and the quantity of them. I thank you, Mr Carlon and Ms Higgins-Whitton, for your excellent evidence. It's been very informative, and will certainly help with the inquiry and our report. Again, thank you for taking the time to appear today and for the work you do for the people of New South Wales. We very much appreciate it. The secretariat will be in contact in due course about some of those matters you took on notice.

(The witnesses withdrew.)

(Short adjournment)

Professor IAIN McGREGOR, Academic Director, Lambert Initiative, University of Sydney, affirmed and examined

Dr DANIELLE McCARTNEY, Research Fellow, Lambert Initiative, University of Sydney, affirmed and examined

The CHAIR: Thank you very much for your attendance at this hearing for the inquiry into the regulatory framework of cannabis in New South Wales. Do you have some introductory remarks you'd like to make before we go to questions?

IAIN McGREGOR: Yes, I'd be happy to speak for about two minutes or thereabouts. First of all, thank you for the opportunity to give evidence today. I also congratulate the Committee on the interim report, which I thought was extremely informative and thorough. We're scientists so we work in the area of evidence, and I thought you marshalled the evidence around these issues particularly well. The Lambert Initiative is a philanthropically funded centre at the University of Sydney for investigating the benefits and possible harms of medicinal cannabis. We do a lot of work on clinical trials of medicinal cannabis products. We do quite a lot of work with patients, surveys with patient and prescribers. We do some policy work, but probably most importantly we work on the development of new cannabis-based medicines, so we're actually mostly lab boffins, and we are developing a range of very exciting products from the cannabis plant.

There are more than 500 different bioactive molecules in the plant, and we have a broad range that we're investigating for a whole range of different conditions. As a result of the work that we do in the community, we've tracked the changes in patient access to medicinal cannabis over the past decade, and it has been nothing short of remarkable. Necessarily in that work, we often come into contact with people who are using cannabis illegally, and indeed in the early days, 2017/2018, when we were surveying medicinal cannabis patients, the vast majority of them were self-medicating with illicit medicinal cannabis, and that has changed in the course of our surveys. In our last CAMS 2022-23 survey, more than 70 per cent were getting prescribed cannabis.

There are two things I think we want to bring to our evidence today. One is the idea that pharmacies could actually become an outlet for non-medicinal, non-prescription cannabis. We quite like that idea from our studies. When we look at people currently receiving prescriptions for medicinal cannabis products, it seems that a sizeable minority of them are getting the prescriptions primarily for entertainment purposes rather than medical purposes, and I think this is worth exploring. In some ways, we already have legalisation of cannabis by stealth through the use of prescription products, and so that puts us in something of a position of strength in relation to access for patients.

The second thing we'd like to talk about today is a study we've just done in the ACT where we surveyed more than 300 cultivators, and I think that may have been circulated to you today. It was a very interesting look at the experience of cultivators, but we also analysed their cannabis. There are concerns of course that cannabis that has been cultivated at home may not meet criteria in terms of quality, and so that chemical analysis was actually very informative. We found very few red flags with home-cultivated cannabis and also got a range of very interesting insights about the lived experience of cultivators and the effects of legislative change.

The two things we're interested in in terms of policy change are perhaps to use pharmacies to supply a non-medical market but also, as kind of low-hanging fruit, for decriminalisation or depenalisation to allow people to grow plants at home and cultivate if they can. I realise that young people often can't afford to have a home with a garden—in Sydney at least. But to allow people cultivation would be a very constructive step forward, and the findings from our ACT survey certainly support that.

The Hon. STEPHEN LAWRENCE: What's the line between cannabis as a medicine and cannabis as a substance that people use because they feel the desire/need to use it? At what point is it medicinal and at what point is it recreational, do you think, from an underlying point of view?

IAIN McGREGOR: You started with an excellent question. Our surveys often find that people are dual users, so we define that in our Cannabis as Medicines Surveys as people that are using both medically and non-medically. Really, the two things go hand in hand. It was the same with our survey of cultivators in the ACT—a lot of them were growing for both medical and non-medical purposes. There's no sharp division actually because if you think of what cannabis does, you're causing euphoria. In psychological parlance, we talk about lifting hedonic tone—hedonic tone being the extent to which you find happiness in the world around you. If you lift hedonic tone, that can have, what I call, entertainment values where you enjoy music more, you enjoy movies more, you enjoy food more and all of these sorts of effects. But if you have an underlying depression or anxiety about your existence, then that is also alleviated.

In a sense, recreational, non-recreational, medical, non-medical, they merge together in the human being who's a cannabis user. Probably the best example of a pure medical user would be someone who develops, say, a neurological illness or chronic pain late in life who has never actually used cannabis recreationally, and they do exist. I think it's important to point out that people who come to cannabis quite late in life for medical purposes do often achieve major benefits from that and have great surprise that they hadn't discovered this medicine earlier.

The Hon. STEPHEN LAWRENCE: What are the main medical benefits of cannabis that are actually proven and accepted?

IAIN McGREGOR: It's funny, the top three things that cannabis has been used for in Australia medically are chronic pain, anxiety and sleep disturbance. The scientific evidence is still being built around all three of these, and we've often remarked that there's kind of a strange dissociation between what patients report in terms of their use and medical benefits and what the kind of gold-standard clinical trial evidence that's published in *The Lancet* and *JAMA* and all the esteemed medical journals tell us. It could be that the scientific trials are still trying to catch up. We knew this in 2015. It's actually really hard to run clinical trials with a prohibited substance, so it took a while for clinical trials to come along.

The other thing, which I think is quite interesting, is that people that use medicinal cannabis often just have a global improvement in their quality of life, which may not necessarily be captured by a scale from one to 10: How much pain are you feeling now between one and 10? It might still be six but, in fact, the quality of their life has been greatly improved by the medicine, perhaps as a result of the up-regulation of hedonic tone that I referred to earlier.

The Hon. STEPHEN LAWRENCE: Apart from harms that you can avoid through not smoking it—because it's carcinogenic, obviously, to smoke things—what are the main harmful effects of cannabis?

IAIN McGREGOR: The harmful effects, when used as medically directed, are surprisingly modest. We often laugh because one of the top five is appetite stimulation, which we all know about with THC. In some cases, if you've got wasting due to terminal cancer, that's a positive effect, but that does come up. Lethargy comes up a bit. Somnolence—sleepiness, particularly from THC products—and dizziness comes up a little bit, as well. With CBD there are sometimes drug interactions that you have to be mindful of. Then I would say certain populations of very vulnerable individuals have to take particular care or perhaps not use cannabis at all—people with a family history of schizophrenia or bipolar, or people who've experienced these illnesses themselves. Certainly, the unborn child needs to be protected because we just don't know enough about THC and CBD during pregnancy. These are what I'd call vulnerable populations, and probably under-18s. Although, ironically, the Lambert Initiative started with a three-year-old girl who was given cannabinoids for her severe, intractable epilepsy—mostly CBD, and this has remarkable benefits for children in that particular case.

The Hon. STEPHEN LAWRENCE: In terms of psychosis issues, are you able to give us a sense of how statistically significant they are, in terms of the vulnerable cohort in the community?

IAIN McGREGOR: There's a chicken-and-egg problem. That basically comes from the observation that people who have schizophrenia who use cannabis often get great relief from their anxiety and their symptoms as a result of their cannabis use. There's a strong statistical association between cannabis use and psychosis as a result of that self-medication. When you try to impute some sort of causality, it gets much more difficult. I would have to say that the odds of psychosis in someone who's THC-positive are probably doubled, but the literature at the moment, despite many very interesting large-scale, expensive studies, is still a little bit unsure about the causality versus self-medication hypotheses. Hopefully we'll get to the bottom of that eventually.

I would point out that CBD is now emerging as a very interesting new treatment for psychosis. We're involved in at least one trial at the moment—in fact, two trials, one in Brisbane and one in Melbourne—where very high doses of CBD seem to be able to put a break on psychotic symptoms. The study in Brisbane is with the very worst cases of schizophrenia—what they call clozapine-resistant schizophrenia—where basically all existing prescription drugs have failed. There seem to be some very promising results with very high doses of CBD in that population. So some cannabinoids may actually be very beneficial for schizophrenia.

The Hon. STEPHEN LAWRENCE: We've taken evidence to the effect that decriminalisation, as opposed to legalisation, does not lead to an increase in use, according to the international research, and therefore doesn't lead to an increase in cannabis-related harms, and that legalisation has internationally led, I think, to fairly modest increases in use and maybe some increases in harm. But, in the view, for example, of the Royal College of Psychiatrists, any such increase in harm is offset by the harms that you reduce through decriminalisation and legalisation. I'm curious about your view or opinion on those propositions, in terms of those important issues of legalisation and decriminalisation.

IAIN McGREGOR: I would tend to endorse these views. One thing around our work up in the ACT recently was the recent report from ACT Health that compiled all the data around things like hospitalisations since the 2020 legislative reform up there that allowed people to have 50 grams of dried cannabis and to cultivate at home. There was nothing in that report that was a red flag, I think, in terms of mental health, in terms of cannabis use disorder, in terms of driving, in terms of uptake amongst young people. They do the wastewater analysis to show the amount of THC had been used in the community, and that didn't change, as far as I understand, as a result of these changes. So I really encourage people interested in legislative reform to look at the ACT example. We fully envelop the ACT in New South Wales, so it's a fantastic laboratory for us to study the effects of decriminalisation.

The Hon. JACQUI MUNRO: Thank you so much for coming today. I'm curious about addiction and any differences that you've seen between cohorts who are prescribed medicinal cannabis and those users who are not prescribed but still use cannabis products. Do you know of any differences between the addiction patterns of usage?

IAIN McGREGOR: It's funny you should mention that. I was working on a paper last week with Professor Lintzeris, who I think appeared in front of the Committee earlier in the year on this very issue—again, taking our large dataset from our CAMS surveys to look at that issue. As part of that survey, we did get them to complete a scale for cannabis use disorder. There are certain caveats with that scale. It's an 11-point scale. To get a diagnosis of mild cannabis use disorder, you just have to tick two boxes, which I think is probably a little bit of a low bar. Basically, it's a bar that anyone that uses cannabis daily will probably end up ticking, because there's frequency of use but also "Would you miss your drug if it wasn't present? Would you perhaps suffer mild discomfort?" There's already two boxes that you've ticked, and you've got a diagnosis of CUD.

In our medical users, I think about 40 per cent of our sample ticked two boxes or more. The thing with dependence on other medications—for example, opioids—when you're looking at dependence in opioid patients, you don't take into account dependence and withdrawal because it's just assumed that people that are on high doses of morphine, fentanyl or methadone are going to experience dependence and withdrawal; it's just a by-product of that medical treatment. We haven't arrived at that stage yet with cannabis, and I think we probably should. Nick has certainly been thinking hard about that with a view to maybe talking to some international colleagues about treating cannabis when used as a medicine in the same way as opioids, in terms of the way that we measure dependence.

I'm a bit of a veteran of running clinical trials on people who are trying to give up cannabis. In the early days, pre-decriminalisation, the only way you could get money from the Government to do cannabis research was to look at people who were addicted and try to get them off the stuff. So we did a number of trials of cannabis withdrawal during that time. The general point I would make is that coming off cannabis is nothing like coming off opioids or alcohol. It's a very benign treatment. It doesn't require hospitalisation. There is a little bit of grumpiness, maybe appetite will be inhibited, insomnia is a major issue as well, but it is not a medical emergency. It is a very benign withdrawal compared to benzodiazepines, alcohol and opioids.

I think, in summary, we have to be careful about the notion of cannabis use disorder because it's not a serious medical condition. In terms of medical users, it tends to be a result of using the medicine as their doctor has instructed. As for your actual question, we didn't find meaningful differences in dependence between people who had prescribed medicinal cannabis and people who were using illicit cannabis for medical purposes. There were moderate differences, but, in the end, in our statistical model, it didn't amount to very much.

The Hon. JACQUI MUNRO: I guess there is a difference between the idea of dependence and withdrawal as opposed to a sense that people would not want to use it anymore. I suppose that's the difference between if it's prescribed or not. If you have a doctor, you can say, "I don't want to use this anymore," so you stop being prescribed the medication and perhaps can have assistance if that's a problem, as opposed to people who are using it illegally, without a prescription, but don't have that support to exit their use.

IAIN McGREGOR: Yes, or someone who has suddenly run out of cannabis, who is heavily dependent upon it—

The Hon. JACQUI MUNRO: More like somebody who would like to stop but feel as though they can't.

IAIN McGREGOR: Yes, understood. I think the fact of the matter is that we've had this massive transition from the black market to the green market. In our very first CAMS survey in 2016, less than 1 per cent of patients were getting prescribed medicinal cannabis; in the last survey, it was 73 per cent. Most people who at least can afford it can access it.

The Hon. JACQUI MUNRO: And you would suspect or suggest—I hope I'm not putting words in your mouth—that it would be easier for people who didn't want to use it anymore to go through their doctor and have that support to not use it anymore?

IAIN McGREGOR: I think so. I mean, there are so many prescription drugs that you don't stop using suddenly. Antidepressants are an excellent example; steroids are another one and opioids as well. A taper with medicinal cannabis would probably be what an enlightened GP would recommend. It wouldn't be too difficult to manage, I imagine.

The Hon. JACQUI MUNRO: Do you have any stats on the number of people who stopped using medicinal cannabis?

IAIN McGREGOR: I think we've been more focused on the initiation because it was so hard in the early days for people to—and our surveys tend to recruit people who are current users rather than previous users, but I can certainly take that question on notice and see what I can fossick up.

The Hon. JACQUI MUNRO: That would be helpful.

The CHAIR: The Lambert Initiative—and I'm mindful that we have Dr Arkell later—has done some work on the issue of impairment with cannabis. What does the current scientific evidence suggest about the relationship between the presence of THC in a driver's system and actual impairment? What does your research and the research that you're aware of suggest in terms of the mere presence of THC impairing a driver?

IAIN McGREGOR: I have a world expert to my left, so I'll defer to Dr McCartney on this one.

DANIELLE McCARTNEY: I think that's exaggerating, but I'll do my best to answer your question. I think the short answer is there's not a particularly good relationship between THC concentrations in blood, oral fluids and metabolites in urine, and impairment. We've looked at the correlations—comparing the concentrations to the degree of impairment observed—and found not a lot present. We also know that low concentrations of THC can persist in blood for extended periods of time after cannabis use, and we know that at that point in time impairment has resolved. I guess that is the short answer to the story, yes. It's not a particularly good relationship.

The CHAIR: "Impairment" is a word that has been thrown around a lot, but what's the nature of cannabis impairment, according to your research and the research that is emerging? How does cannabis impair you in the context of, say, driving and motor skills?

DANIELLE McCARTNEY: When we study impairment in the lab, there are lots of different types of impairment and different tests of impairment that we use. Most of those tend to be computer-based cognitive function tasks, and they'll measure all kinds of different aspects of cognitive function—things like reaction time, attention and working memory; there's a whole spectrum. But our preferred task and one that we also use in the lab is driving simulation, where you actually put a participant in what resembles a vehicle and they operate it using computer screens and steering wheels and everything—exactly the same set-up as you'd have in a car—and we measure all kinds of different things.

When it comes to the driving simulator task, the main measure of impairment that we look at with cannabis and all drugs is what's called standard deviation of lane position—basically, how much lateral movement the vehicle makes as it's progressing along the road. It's a really sensitive indicator, and it has been shown to correlate tightly with crash risk. We do see an increase in SDLP, as we call it, with cannabis and other drugs. What we don't often see as much with cannabis are things like speeding behaviour or risky driving behaviour in the driving simulator like you might see with something like alcohol. With regard to the other cognitive function tasks, we do also see effects. The effects are not usually large, and they do dissipate within a number of hours. Hopefully that summarises that area.

The CHAIR: It does. We've often heard that the strength of cannabis is diverse, but there's a trend towards increasingly strong cannabis and high levels of THC. Is there a big difference, in terms of impacts on mental health and driving, between low-THC cannabis and high-THC cannabis?

IAIN McGREGOR: This has come up in various contexts. I'm reminded, actually, of some medico-legal work I did in Canada around the transportation industry. There you can readily access vaping fluids that may have 80 per cent of THC, compared to 30 per cent in the strongest plant cannabis. Incidentally, one nice thing about the ACT cultivation study we did was that it was very mild cannabis at about 9 per cent THC. I don't know if that was because their cultivation wasn't particularly good or the seeds they were using. Anyway, back to your point, what came out in the Canadian cases was the notion of titration, and that is that people don't use high-THC products the way they use low-THC products. Think of it as whisky and beer. You wouldn't go into a pub and order a schooner of whisky, would you? Well, if you're Scottish, you might.

The CHAIR: Mr Murphy might! We have an Irishman over here.

IAIN McGREGOR: It's the same way with cannabis. There have been studies of this where people have gone into the homes of cannabis users and asked them to use their own cannabis, which is later analysed for potency, and the people with the very high potency ones tend to use a lot less than the people with the weak cannabis. Much the same as alcohol, people titrate their dose according to the strength of the product. I think that maybe falls apart a little bit where you have more vulnerable populations—young populations or people who are determined to get intoxicated—and there you obviously have concerns that people are vaporising 80 per cent THC fluid, and they're going to get very, very intoxicated on that. But I would suggest that most experienced cannabis uses are quite exquisite judges of the doses that they prefer and act accordingly.

The CHAIR: One of the issues we've received evidence about is quality control—that the black market can't be relied upon to ensure public safety, patient safety and user safety when it comes to the production of cannabis. What are some of the potential contaminants that you can see, both biologic or additives, that emerge in cannabis? What are the risks of those?

IAIN McGREGOR: Cannabis is quite a good bioaccumulator. There are ideas afoot to use hemp to remediate industrial land that is contaminated with heavy metals. In our study of the ACT cultivators, we ran basically the same test that the TGA should run—but often don't—around cannabis, looking at heavy metals, pesticides and moulds. We were quite reassured, with the exception of one sample that had quite high arsenic in it. For the most part, the samples that we analysed met the TGA's standards. There are concerns in the US market, particularly around CBD-labelled products also containing THC. That is a thing, and it has been quite widely reported in scientific literature that some of the dispensary labels are extremely inaccurate.

I think the TGA has done at least one study—it would have been three or four years ago—where they found some discrepancy between labels with some medicinal cannabis products that had been prescribed and what was actually there. I would have to look back at this, but I believe they may have then revised their opinion once that industry complained about their tests. I think that generally—and your interim report may have pointed this out—the TGA should be up-regulating the amount of testing that they do of products.

There are no major alarm bells, apart from maybe synthetic cannabinoids being put in products that are supposed to be cannabis plant. We know that there are some lab-manufactured cannabinoids that are 10 or 100 times more potent than THC. In much the same way that fentanyl and its derivatives are much more potent than morphine, you get the same thing with THC. There are all these synthetic cannabinoids, often out of Chinese laboratories. In very occasional cases, you may have something masquerading as natural plant cannabis that actually contains these artificial cannabinoids, but such cases are very few and far between. I haven't heard of any in Australia in recent times.

The CHAIR: In your view, has the prohibition on cannabis historically—I think you've already said this—impacted public perceptions and the development of your scientific research? I think you've already said that it has and that it was hard at the beginning to get funding. Is that ongoing? Are you finding it easier to attract money, to attract research dollars, to make the case for research in this area? Is the stigma around cannabis as a medicine and for recreation or relaxation—whatever you want to call it—reducing and, therefore, flowing through to an opening up in terms of access to research funding and collaboration across different disciplines?

IAIN McGREGOR: I think the first point is—and you would know this yourself from your inquiries so far—that there is quite a high level of support now in the community for decriminalisation of cannabis. I think it's about 80 per cent, which is unprecedented in recent history. We obviously have a situation in New South Wales where the Government and police policy are at odds with the community. That tension means that it is inevitable that eventually something will have to be done to bring legislation into line with community expectations. I'm really quite enthusiastic that that will occur as a result of this inquiry and other initiatives. With our research, we've certainly found that ethics and governance—which are the arms of university that oversee clinical research in cannabinoids—have become much more familiar with medicinal cannabis.

I used to joke that it would be easier to land a chimp on the moon than to run a clinical trial of cannabis, but that, fortunately, has now changed. We don't have too many problems moving forward. What we do find problematic is that the industry is quite impoverished. We have this paradoxical situation where there are more patients than ever, more products being shifted than ever, but whenever we approach industry to run a clinical trial on even one of their own products, it's very hard to get anything out of the companies. We certainly appeal to the medicinal cannabis industry to be more proactive about supporting research into medicinal cannabis and its benefits. In some ways, you have to ask the question around why it's left to some kind-hearted philanthropist to fund a large body of clinical trial research in Australia on medicinal cannabis.

The CHAIR: You've talked about the ACT. Are there other jurisdictions that you think provide a good model—if we were inclined to deregulate or reregulate the cannabis sector—that we should be considering in terms of social, medical and economic opportunities?

IAIN McGREGOR: I'd go back to my opening comments and suggest something that may be seen as a little bit subversive and say that the system that is already in place may actually be a very good system for non-medical cannabis. It's not what the system was intended to provide, but it's extremely clear that large numbers of people in the community are currently accessing cannabis clinics, having a conversation with a GP and saying that they have back pain, insomnia, a little bit of anxiety or whatever and very easily obtaining a prescription for cannabis, which they then fill via mail order or at a pharmacy and then proceed to use that cannabis, largely for non-medical purposes.

This is a huge elephant in the room that not many people are talking about at the moment. In some ways, it provides a very beneficial model of non-medical cannabis supply in as much as you have to at least have that initial conversation with a doctor, who will presumably ask you about your mental health and any family problems with cannabis and so on, which is a good thing. Then you will get a quality-controlled cannabis product delivered conveniently. You'll also be able to show the police that you have a legitimate prescription for that cannabis and will avoid the criminal justice system.

We could look to Portugal, Canada or various states in the US, but how about looking at home and asking the question: Could we actually tweak that system ever so slightly to provide a model that would be very easily attainable? We could just recognise that the system is being used for non-medical cannabis and legitimise that so that you get your quality-controlled cannabis from a pharmacy. You would always have a conversation with a doctor before you access that cannabis, and then you keep checking in with that doctor every six or 12 months as a mandatory approach. That, as well as decriminalisation of home cultivation, are the two very easy things that we could do almost tomorrow. Indeed, one of them is already happening, but without the legislative imprimatur. I would encourage people to have a think about that.

The CHAIR: So rather than going to the doctor and saying, "I've got insomnia," you would just say, "I'd like to improve my hedonic tone"?

IAIN McGREGOR: Exactly right. And the doctor says, "Tell me about your mental health. Did you have a father with bipolar disorder? Do you have a safety-sensitive job at a mine?" I've been working a bit with the mining industry recently, and that's a huge issue there. The doctor would be briefed to ask all the questions, and then you could get a card that you can take into a pharmacy—a non-medical cannabis user card—and you go and fill your script. In many ways, that would be a win-win. It'd be easily implementable and it would, in many ways, guarantee the medical safety of the patient. The Pharmacy Guild would probably love it as well, because it would be great for business.

The Hon. STEPHEN LAWRENCE: Dr McCartney, I have a question for you. If we could go back to that impairment question, we took evidence earlier from public servants involved in the road safety area. They provided us with a statistic that in 16 per cent of fatalities, the blood drawn from people involved in those accidents had THC. I suspect you're familiar with that figure. I was wondering if you could comment on what that says about a causative role of THC in adverse road safety outcomes?

DANIELLE McCARTNEY: That statistic on its own doesn't say a lot about a causative role of THC in the accident. You could measure the caffeine concentration in the blood of people in road accidents and find that 90 per cent of them have caffeine in their blood at the time of the accident. We know that, if anything, caffeine improves driving performance. So it's hard to necessarily draw a lot based on that one individual statistic. I will say that there is evidence that THC does impair driving, unlike caffeine, which is a slightly different story. So it's something we definitely need to be mindful of. As cannabis law reform occurs, there's a risk of increased people driving under the influence of cannabis that's there. But to determine the actual numbers like that is quite difficult to do.

The Hon. STEPHEN LAWRENCE: Is that because of things like you don't know about the presence of other substances and you don't know what the presence of THC might say about some other characteristic of that cohort who then become involved in the accident?

DANIELLE McCARTNEY: Yes.

The Hon. STEPHEN LAWRENCE: There are all these other variables—

DANIELLE McCARTNEY: That's the important factor, yes.

The Hon. STEPHEN LAWRENCE: —like young, male et cetera.

DANIELLE McCARTNEY: Yes. As you say, young males are more likely to be in traffic accidents and they're also more likely to use cannabis. So in order to separate those two things, you need more information than the percentage of people in a road accident that have cannabis in their blood.

The CHAIR: Thank you very much, Professor, and thank you very much, Doctor, for your evidence, your submissions and for the work you're doing in the community. We very much appreciate it. It's going to be essential for us. It has been already, and will continue to be, in our inquiry and deliberations. There may have been a question or two taken on notice. If there was, the secretariat will be in touch in due course. I wish you all the very best with the work you're doing.

(The witnesses withdrew.)

Dr THOMAS ARKELL, Research Fellow, Centre for Human Psychopharmacology, Swinburne University of Technology, affirmed and examined

The CHAIR: Thank you, Dr Arkell, for making the effort to come up from Melbourne to appear at this hearing and to assist the deliberations of this inquiry. Do you have some introductory remarks you'd like to make?

THOMAS ARKELL: First of all, I'd like to thank the Committee for inviting me to come up and give evidence today. I've been working in cannabis-related research for close to 10 years now. Having completed my PhD at the University of Sydney with Professor McGregor, having worked in the Netherlands and in the US, and now in my role at Swinburne University, I've conducted a number of clinical trials focused on better understanding whether, and to what extent, cannabis actually impacts driving cognition.

We're now leading a really quite important on-road driving study that's being funded by the Department of Transport and Planning, which I'm sure you're aware of. So I welcome this inquiry and what I think is a more nuanced conversation about cannabis, which is inevitable, given what we know about the failures of prohibition, changes overseas and the enormous growth of medical cannabis over here. I also wanted to say that I'm a huge advocate for evidence-based road safety policy. I'd like to think that when we talk about being world-leading in our approach, we will rigorously assess that and be, I suppose, transparent about what is working and what isn't working.

The Hon. STEPHEN LAWRENCE: On the road safety issue, we're obviously concerned with a whole range of things, including whether there ought be a medicinal cannabis use defence to the current criminal offence of driving with an illicit substance in bodily fluid. I was wondering if you could talk us through your knowledge of any developments internationally or in Australia in terms of whether such a reform would impact in an adverse way on road safety outcomes.

THOMAS ARKELL: Victoria has just introduced a change here. I think from 1 March next year magistrates will have the power to exercise discretion as to whether they charge someone. It really puts the burden of proof onto police to demonstrate that a driver was impaired when they were stopped to provide on oral fluid sample. We'll see what that looks like. My feeling there is that these cases are going to be very difficult for police to prosecute. In terms of the number of patients that are stopped and will provide their evidence of prescription as a defence, I'm going to be really curious to see what that looks like. We have a sense of how many people are driving around with THC in their system that may be prescribed, but as to the number of people that are stopped for an oral fluid test that have a valid prescription, I really have no idea what that number is. So that's going to be interesting.

New Zealand decided to introduce roadside drug testing a couple of years ago and then went back on that because none of the devices met their standards. As far as I'm aware, they are now reintroducing that, but patients will have a medical defence. I think it's a fairly sensible approach. It's really just bringing cannabis into line, more or less, with any other prescription drug we currently have. A counterpoint to that—Canada doesn't provide patients with a medical defence. If you have THC in your system that is medically prescribed, that doesn't protect you. But the kicker there is that you would never just be randomly pulled over. Police can do some oral fluid testing there, but they must have a reasonable suspicion that you were impaired by a drug to be able to do that. So it's really quite a different system and your interaction with police is very different from what we would typically see here.

The Hon. STEPHEN LAWRENCE: We took evidence earlier that there is a connection between cannabis being present in the body and adverse road safety outcomes or risk, but also that in jurisdictions overseas where they've created medicinal use exceptions to criminal offences, there hasn't been an adverse impact on road safety. Does that in your mind suggest that where you do create such exemptions or regimes, you ultimately don't have an increase in the level of people driving with dangerous levels of THC in their system?

THOMAS ARKELL: That's what it seems to look like. There doesn't seem to be any association between the introduction of medical cannabis laws and the number of people being involved in crashes or fatally injured in crashes. I will say that these statistics can take a long time to emerge. I'm not sure that we have a great picture of this yet. It's relatively new in Canada. Certainly, in some US states it has been around for a while, but it takes quite a while before trends begin to—you often, for example, see an artificial spike in the first couple of years. That may be accompanied by changes in law enforcement efforts. But, over time, that starts to settle down and you start to get, I suppose, a better sense of whether there is any relationship between the two things. But it certainly looks like medical cannabis laws in and of themselves have absolutely no impact on road safety.

In terms of legalisation, it seems like it may depend a little bit on what that legalisation looks like. If you have 500 dispensaries within a square mile—or a kilometre, but much of this data is from the US—and you can

drive there at three in the morning, they're open 24 hours. Things like that—so the number of dispensaries and how easy it is to access it. There are factors that may, I suppose, increase the likelihood that there could be an association between legalisation and road safety. But those things, in my mind, are very easy to regulate and control, just simply with a well-regulated market.

The Hon. STEPHEN LAWRENCE: If there is no increase in adverse road safety outcomes when you introduce those sorts of defences, does that suggest that, in Australia, for example, where we've had medicinal cannabis now for eight years, the people using medicinal cannabis are driving anyway and, therefore, when you introduce the exception, there aren't more people driving? Or does it suggest that when you introduce the exception the more people that are driving are taking some sort of medical advice, and then complying with it and therefore not driving when they have a higher amount of THC, or an unacceptable amount?

THOMAS ARKELL: I'm not sure. From my conversations with patients over the last couple of years and working quite closely with patients on a range of studies, my general sense is that, if people feel impaired, they don't want to drive. That's very common. If you've got a 60-year-old with chronic pain and no history of cannabis use and they start using medicinal cannabis, the last thing they want to do is drive if they feel that it's unsafe. My sense is that people are pretty good at self-regulating—the way that people do, if you feel really tired, you're going to switch drivers every two hours and you pull over. People don't want to put themselves in a position of danger.

If we're talking about 20-year-old males, who are already vastly over-represented in crash statistics, that may be a slightly different story. But for most people who are using medicinal cannabis with a valid prescription, my sense is that they just simply don't want to drive if they think there is going to be a risk and they will generally be quite conservative in their estimates. Often, if they've used cannabis the evening before, they'll wait eight hours or 10 hours until driving the next morning. If they've used cannabis that day, they'll avoid getting in the car. For people living in regional and remote areas, I think that is a slightly more nuanced conversation and that is difficult because driving is so essential to freedom of mobility and someone's quality of life. People then may make decisions to drive anyway because that is simply the only option they have. Then the question is are they really likely to be impaired or not.

The Hon. STEPHEN LAWRENCE: I think the argument put in favour of the current regime of an offence that basically criminalises mere presence of THC and widespread availability of testing and enforcement is that, in circumstances where you can't test for impairment in a very effective way and there's no rule of thumb for consumption and then the effect on impairment, it is necessary to send a message of general deterrence and enforcement to deter people in an absolute and widespread way from driving after consuming cannabis. That is the only way to bring down the numbers in terms of adverse safety outcomes. What would you say to that?

THOMAS ARKELL: I'm not sure. I'm not sure how your average medical cannabis patient responds to that general deterrence. I know that the University of the Sunshine Coast has been doing some work on this, generally looking at how people respond to that. I don't think I have a particularly good answer to that. I really think that this could be something that's better expressed as a conversation between a patient and their doctor. I'm not sure if it's one or the other. Bringing this back to the relationship between a patient and their doctor and a general kind of education program where people do feel empowered to self-regulate based on the information they have rather than the general deterrence that's implied by roadside drug testing could be equally effective. Doctors do this the whole time with patients who are using all kinds of other medications.

I think we have a model in place. You say, "When there is no other recourse for police instead of roadside drug testing", I'm not sure that is true. Police can conduct impairment assessments. Certainly in Victoria there is a drug impairment assessment protocol. Police can do it. The numbers around how many police are actually trained to do that and how often it happens are murky. I don't think they've released the numbers of how many of those tests have been done for quite a long time. But police do already have other methods at their disposal. They are time-consuming. They are obviously a lot more complicated. You don't have the high throughput that you would have with roadside drug testing, so I appreciate that they are more difficult. But they are not impossible to do and lots of other countries have a system like that in place already.

The Hon. STEPHEN LAWRENCE: As well as not being able to be rolled out to the extent that may be necessary to achieve that objective, it's also perhaps not as accurate. The saliva tests, by and large, are accurate. If there is THC in your system at a certain level, it's going to pick it up. There might be some false positives or false negatives or whatever but, by and large, it's accurate, whereas that individual assessment that might come from an impairment test will miss a lot of people, I suspect, who might be on the tail end of affectation, for example.

THOMAS ARKELL: It would probably be used in a much more targeted way and probably in conjunction with oral fluid screening. I don't think that that's a bad route to go down, to have those two things

together, that you use oral fluid screening really as a preliminary, confirmatory—I don't know if that makes sense as a sentence. If there was evidence that someone was driving erratically, they'd be pulled over—and impairment assessment showed that there were grounds for that. You then may use oral fluid testing as a way to say, "Okay, that's most likely due to cannabis." To me, that's actually quite a sensible use of the device. I think those two things could work in tandem. But that is appropriate for targeted traffic stops, not for random mass roadside screening obviously.

The Hon. NATASHA MACLAREN-JONES: Just following on from that, you were saying that there are some accurate tests that are currently being done to measure impairment, or were you saying that there is the scope to do it?

THOMAS ARKELL: I'm just saying that police already have at their disposal, I suppose, a tool kit that includes impairment assessments that could be used in that situation. Their accuracy is debatable. They're really based off a program that was introduced in the US quite a long time ago. They do work well for alcohol and they're drug recognition experts in the short standardised field sobriety test. They are pretty good for alcohol. They are not very good for cannabis. I'm not in favour of saying let's go down that route and roll it out for everyone. I'm simply saying that there are other options available at the moment that could be used in conjunction with oral fluid testing as a way to ascertain, first of all, whether someone was actually impaired or not and, if so, whether that was likely due to cannabis.

The Hon. NATASHA MACLAREN-JONES: In relation to your comments about self-regulation and making a decision as to whether or not to drive, you commented about rural and regional, which makes it more difficult, and particularly challenges of transport and things. How realistic would it be to leave this to individuals to make a decision when someone, in particular in a rural or regional area, has no other option?

THOMAS ARKELL: I don't think that would be the only message you send, to leave it up to everyone to decide for themselves. I think my point was that we generally trust people to make sensible decisions about when they shouldn't be driving the whole time. That can be related to all kinds of factors—how well someone slept the night before, if you've run out of the house in the morning and you've just had an argument with your partner getting in the car. There are all kinds of things that may affect your driving. We generally trust that people are going to, by and large, make sensible decisions about whether they can or can't drive. I don't think people do that especially well 100 per cent of the time.

In terms of people driving in rural and regional areas, I'm not sure. That is more complicated. I'd like to think that a part of what that looks like is that we give people a little more discretionary power to decide whether it's appropriate. But also that's a conversation with a doctor. If someone has started new medication, a doctor should potentially have the right to say, "Okay, you're not allowed to drive for the first month and you have a licence suspension in place while we get you to the point where we know that you're not acutely intoxicated." It would be part of a parcel where it's an ongoing conversation with a medical professional and a patient about what impairment looks like, how to recognise that, how long does it last and then how to manage that appropriately.

The Hon. JACQUI MUNRO: My questions are around the equivalence of other prescription medications and impacts that they have. We've heard evidence to say that cannabis use does impair driving ability to some extent, and that obviously varies according to how people use cannabis and how long ago they used it. Is there an equivalent medication in terms of the impairment style or effect?

THOMAS ARKELL: There's an equivalent in terms of the crash risk, which is the likelihood of someone being involved in a crash if they have that in their system. I think the number that came out earlier was about 40 per cent, which is consistent with some of the work that we've done. Antidepressants and antihistamines have a pretty similar crash risk associated with them. That's probably the closest we would get, and then .05 alcohol is a little bit higher. That's actually closer to a doubling of crash risk, so it's actually higher than the overall crash risk we tend to see with cannabis at the population level.

Antidepressants, that effect is generally most pronounced in the very first stages of treatment, and it does taper off, but antihistamines can certainly do this. Common over-the-counter things like Phenergan, which is promethazine, and diphenhydramine, which is Benadryl—very common things that people might use for allergies or for short-term sedation—do have a very similar crash risk to what we see with cannabis. These numbers aren't perfect; they're estimates based on studies that are often done in certain parts of the world.

I don't know if Australia has ever done a really good study like this, but there are a couple of very instrumental ones in the US where you just have thousands and thousands of people who are randomly stopped at the roadside and they say, "Do you mind providing an oral fluid sample?" You compare essentially how many of those people are turning up positive versus the number of people who are involved in a crash turning up positive.

Then you get an estimate of whether people are over-represented in crashes if they have THC in their system, or if there a similar number of people involved in crashes and not involved in crashes that have THC in their system.

The Hon. JACQUI MUNRO: With antihistamines, for example, that comes as a surprise to me. I've never even considered that that might be a problem. I personally don't have allergies, so I don't take them. What kind of medical advice do people get when they're receiving an antihistamine over the counter?

THOMAS ARKELL: It's just a simple warning on the back that says—I forget the exact wording—"This medication may make you drowsy," or something to that effect. I sometimes take something like Phenergan if I'm on a flight. You wake up feeling groggy the next morning; you're a little slow and muddled. That's where that crash risk comes in. They do make people feel a little sluggish and slower than they might normally be.

The Hon. JACQUI MUNRO: Obviously you need a prescription for antidepressants. I presume that there is a clear conversation between a medical professional and a person who has been given a new medication in particular, as you said, to suggest that they shouldn't drive or to just let them know that there is an increased risk. There's no actual restriction available really at this point. Is that right?

THOMAS ARKELL: As far as I'm aware. To be honest, I don't know how often that conversation happens. I would like to think that happens all the time, but I'm not aware of any research explicitly on how often that conversation happens with a doctor and their patient when they're starting a new medication that could impair their driving. Probably opioids and benzodiazepines are a better example. They often get trotted out in this conversation as examples of drugs that generally affect someone's driving, or they have a bigger crash risk associated with them than cannabis. I presume if someone was given a prescription for Valium and they had never used it before, that would be a conversation the doctor would have, and it's probably "Don't drive until the next morning, and if you think you may be impaired, then avoid driving." But I don't know how often that happens or exactly what that looks like, but that's certainly something that doctors, I believe, are instructed to do. There are decision trees and frameworks in place to help them navigate whether a patient either should or shouldn't be able to drive.

The Hon. JACQUI MUNRO: Are there roadside drug tests that capture antidepressants and antihistamines?

THOMAS ARKELL: Antidepressants, I don't think so. Antihistamines, potentially. The one that the police use here is a very targeted one for a limited number of drugs, but there are plenty of roadside drug tests out there that screen for a whole host of things that are used quite commonly in the workplace, for example.

The Hon. JACQUI MUNRO: So in New South Wales you wouldn't expect to have a random drug test on the side of the road and be picked up for antihistamines?

THOMAS ARKELL: No. There probably are ones that are commercially available. I would have to take that on notice and check that, but certainly for other drugs like ketamine. There are lots of other illicit drugs that these tests can commonly screen for. Antihistamines, I'll check that after.

The Hon. JACQUI MUNRO: Do you know if there are any legal substances that those roadside tests do test for, or is it all illicit?

THOMAS ARKELL: In terms of legal drugs?

The Hon. JACQUI MUNRO: Yes, like something prescribed.

THOMAS ARKELL: Opioids are a very common one, yes. It's quite common for those tests to test for opioids, which could be a whole host of legally prescribed opioid medications or heroin.

The CHAIR: Dr Arkell, the Victorian Government has commissioned a study by Swinburne into patients prescribed medicinal cannabis to investigate possible impairment. You're oversighting that. Can you tell us a little bit about that study, without disclosing any confidential data of course? Can you just tell us about how that is working just to inform our deliberations?

THOMAS ARKELL: We've only just started. This is going to be a huge effort over the next little while for us, but essentially what we have done is we have two research vehicles that have been articulated and kitted out with all kinds of tech for us to be able to measure at a very granular level how the driver is operating. We have an array of cameras set up around these cars. We are getting information out of the CAN bus, everything about the engine state, whether the indicators are on, speed in real time, braking force; basically everything you could imagine that you could possibly suck out of a car we are getting.

We're going to have 72 patients divided into patients with chronic pain, anxiety or a sleep disorder, and they're going to almost attend a whole week of testing. We'll be taking people down on a Monday afternoon to

one of the test tracks, which is down near Torquay about two hours south-west of Melbourne. People will go through a whole day of testing there where they will get in a car before using their medical cannabis and then at two different time points after they have consumed a standard dose or whatever their doctor has prescribed them. They will then stay over that night. We'll bring them back to Melbourne the next day, and then they'll attend another day on Friday at a different track where we basically repeat the exact same protocol.

The two different tracks—one allows us to look at highway driving performance. We have a 100 kilometre an hour speed limit highway circuit. It's a 4.2-kilometre circuit that follows the land. It's out in a national park, so it's quite remote. But it's fantastic because it's a two-lane highway and we can really accurately recreate, minus the complexity of the traffic, what highway driving looks like. The other one is more of a driving training facility, but it allows us to look at urban driving performance and more fine motor skills, simple things like reversing and weaving through cones and tight cornering. Between those two tracks, what we're trying to do is get a sense of the different kinds of situations in which people may be driving and really better understand whether there is any change in driving performance at all when we compare someone before to after they've used their prescribed cannabinoid medication.

We're also essentially repeating that study but with alcohol. We have a sub-study on the side with 24 people, which is more of a randomised clinical trial where we will have people at those same two tracks with exactly the same protocol. We'll also have cognitive testing, blood sampling and oral fluid testing. We have a full-time nurse on site. We have all kinds of questionnaires, so we are collecting a ton of data for this. But then the alcohol study is a bit of a counterpoint. We get people to a round .05 BAC, so we get them to a threshold legal dose of alcohol, and we're then going to use that as a reference point for the results that we get with the patients and say, "How does that data look like compared to someone that's just about borderline legal blood alcohol limit?"

The CHAIR: There is, of course, an argument for a medical exemption or judicial discretion when it comes to medicinal cannabis patients. What's your view on, essentially, a cannabis-only defence—that is, that someone cannot avail themselves of a defence if they've got a medicinal cannabis prescription and there's another illicit substance? But, say, below .05 BAC—what's the relationship between low-level alcohol use and medicinal cannabis? Do you think that's a risk and we should be focusing on the defence for medicinal cannabis without any sort of poly-drug use other than, say, caffeine or nicotine?

THOMAS ARKELL: It's a little murky, that combination of alcohol and cannabis relationship. If you use a lot of alcohol and a lot of cannabis at the same time, you shouldn't be driving—simple as that. If you've got a BAC of .02 and you have a very low level of cannabis in your system, I don't think we really have good data on whether there's a cumulative effect there. In general, I would probably be supportive of an alcohol limit for people that do have THC in their system if there was a medical defence available, which I also do support. That's probably not a bad route to go down. It's probably a system we should have in place for any prescription drug. If you've got something in your system that could theoretically impair your driving, I think a zero BAC is probably not an unreasonable approach to pursue.

The CHAIR: I suppose this is hard to assess because we've only had medicinal cannabis available to patients legally for the last seven or eight years. We've talked a lot about the short-term impacts and effects of cannabis use—for example, "I've had cannabis last night and what's my driving like the next morning?" or, "I've had it today and what's my driving like right now?" What are the long-term impacts of cannabis use on motor skills, driving and these types of things? Is there a cumulative effect over time that people's motor skills or cognition degrade? Is there any evidence of that?

THOMAS ARKELL: It seems that people using cannabis consistently, in a fairly regulated manner, show very little long-term or chronic effects associated with the use. If you're waking up and you're smoking 50 bongs a day, it wouldn't surprise me that five years down the track that person may have some cognitive deficits as a result of that. They do tend to recover after a period of abstinence. There was a Danish study that just came out very recently that looked at this. I think they tracked people over 40-odd years; I'd have to double-check the numbers on that. They compared people that had been using cannabis over that period with those that hadn't. The people that had been using cannabis actually had a very mild positive improvement in their IQ, relative to the others. There was certainly no evidence of cognitive decline. Take that with a grain—

The CHAIR: Hear, hear!

THOMAS ARKELL: This was like a military fitness-to-serve test, so I don't know exactly what goes into the test. But that was probably one of the newest bits of really quite comprehensive evidence, with a very large sample, to suggest that long-term cannabis use doesn't have any particularly deleterious effects on someone's cognitive function. But, again, the amount that you're using and the control you have over it is important, in the same way that you may have a glass of wine every night with dinner. Over 40 years, is that going to affect you?

It might make you a little bit less stressed, to be honest. If you're drinking two or three bottles of wine a day for 40 years—yes, we're going to see a different outcome. It's not that black and white, but it seems for people that are using cannabis in a consistent manner, where their use isn't increasing over time and doesn't really fall into what we would consider a heavy substance use disorder, there isn't really any particular long-term effects.

The CHAIR: We've heard a lot about changes in the US and Canada, and we've received evidence around that. What's the situation in Europe? Germany recently legalised, essentially, home grow of cannabis. Did they change their driving laws?

THOMAS ARKELL: Yes, Germany now has a 3.5 nanograms per millilitre THC limit, which is in blood serum; in whole blood, that number would be a little bit lower. Yes, they have introduced a legal cut-off level. It's roughly consistent with the kinds of cut-off levels we're seeing in the US and Canada.

The CHAIR: How do they test that? Is that after an accident—if you've had an accident and your blood is above the 3.5 in terms of serum, then you've committed an offence?

THOMAS ARKELL: It's a per se offence, yes, exactly. But one of the oral fluid testing devices is the one that police use here. The second one, the Dräger DrugTest 5000—they do have some oral fluid screening in place, but I'm not entirely sure to what extent that's used in the field. The law mainly applies to—I think a positive test on that may be grounds to require someone to provide a blood test, and then that 3½ nanograms per millilitre limit would kick in as a legal cut-off.

The CHAIR: Are you aware in these jurisdictions of educative campaigns? Where there's been a legalisation push or a medical cannabis push, has there been a corresponding rollout from a relevant agency of an education campaign that says, "If you're smoking, don't drive for four hours," or, "This is what responsible use and driving looks like"? Are there programs or education campaigns that you're aware of, in that regard, anywhere?

THOMAS ARKELL: I couldn't answer that in any great detail. To the best of my knowledge, Germany is absolutely doing that. That was certainly part of their rationale—that by doing this, you can divert people away from the criminal justice system into the healthcare system, which is really one of the strongest reasons for regulatory reform, and one that we hear time and time again. So I can only assume that that's accompanied by a concerted effort to educate people around potential risks, but I don't know exactly what that looks like.

The CHAIR: The ACT, Canberra, has essentially decriminalised or legalised, I suppose—it's this quasi-legalisation system—homegrown cannabis. Are you aware of any data coming out of the ACT in terms of road safety concerns about an increase in road trauma associated with cannabis there? It's early days, but—

THOMAS ARKELL: I actually have a small grant from the ACT Road Safety Fund at the moment to look at exactly this, so I'm in the process of doing this right now. I've got crash data from 2010 up through to the end of 2023. I'm trying to see, really, whether there was any shift in road safety when comparing those before and after decriminalisation periods. I haven't finished analysing it yet. I'm waiting for police to come back to me with more of the actual drug and alcohol testing data. We have a full set of crash data, which is quite comprehensive, but we don't have complete drug and alcohol test results. One question there is, "Are there more people testing positive for cannabis after?"; that's a very separate question from, "Has there been any change in road safety?"

From the preliminary analysis I've done, it doesn't look like there's any dramatic shift, but I would be very cautious to give you guys that as a takeaway. We'll have to wait and see until the final dataset is analysed and we have the full set of results in. The only thing I would say is that it's a very small jurisdiction—certainly much smaller than New South Wales, Queensland or Victoria—and so the number of crashes that actually happen is relatively low, and also the number of drug tests that are conducted. I'm not sure whether that's going to be completely representative of what a similar process might look like in other jurisdictions. I will be able to come back to you with a more final and better response to that, probably, in a few months time when that's actually been released and published.

The CHAIR: We'd like to hear that. Thank you for making the effort to come up to New South Wales to give evidence. We appreciate the work that you're doing in the community in this area. It's incredibly interesting and informative. If anything has been taken on notice, the secretariat will be in contact with you.

(The witness withdrew.)

The Committee adjourned at 12:25.