CHAIR: Welcome. Thank you for talking to us today. The committee has received your submission as submission No. 50. I invite you to make a brief opening statement.

Mr Vines: I will make a brief opening statement. After that, as I have been sitting here for the last couple of hours listening, some points have arisen that perhaps we can make a contribution to, which might pre-empt some questions or allow us to make some comment. Firstly, on behalf of Rare Cancers Australia I would like to thank the committee for this opportunity to appear here today to discuss the issues around funding for research into cancers with low survival rates.

In 2015 we released our second *Just a little more time* report in Parliament House, and the report demonstrated that over the past 20 years survival rates in many rare and less-common cancers have improved only marginally, if at all, while outcomes for common cancers have improved dramatically. It also showed that the number of these types of cancers is increasing and that they are high impact across all age groups. Every day we lose 10 gen Xers and one gen Y, and for baby boomers and older the toll approaches 40. Very sadly, we lose a child every three to four days. These numbers are increasing as our population ages and our population increases, and essentially we are facing what could best be described as an epidemic.

It is no small coincidence that government research funding into rare cancers remains disappointingly and disproportionately low, as does the money we spend on treatments for these patients through the Pharmaceutical Benefits Scheme. These two are closely related, as research generates evidence to justify PBS funding, and it is a direct consequence that the drugs are not listed on the PBS; it is a lack of research. There are many opportunities to repurpose existing drugs from common to rare cancers, but we need evidence and flexibility.

For example, there is a young lady at the moment, who I believe will watch this online, whose name is Andreanna Candi, and she was not well enough today to come. She has—I am going to try to pronounce this—inflammatory myofibroblastoma. It is caused by a mutation—again, I will just use its initial—called ALK positive. It is a genetic mutation. There is no known diagnosed treatment for this on the PBS, but there is a version of lung cancer that is also caused by that mutation. Through a process of initially paying for the medicine through our crowdfunding service and then, subsequently, through us and her clinician, lobbying the pharmaceutical companies, she is now on a compassionate program for those drugs. The impact is positive; it is improving. It is a really good example of what is going on in research and care at the moment. As we understand cancer better and as we understand the genetic drivers involved, we have opportunities to re-purpose. But our system is evidence based, so we need to find ways to fund those clinical trials and fund the build-up of evidence around that, both in clinical trials, where possible; and in real-world evidence, where not.

The successes we have seen over the past 20 years for common cancer patients have been significant. While incidence rates have increased as a result of increased surveillance and screening, mortality rates have decreased due to investment in research and treatment. As a result, patients today diagnosed with a common cancer have a much higher chance of survival than they did in the early 90s. But for patients diagnosed with a rare cancer, the news is not so great. For them, a diagnosis of a rare cancer is almost twice as likely to lead to death as a diagnosis of a common cancer.

Australia is a leader in cancer research, but we need to do more for rare cancers. Of the $350 million spent annually on cancer research, only a negligible two per cent of that will go on solid rare tumours. You may have heard some figures quoted by the Cancer Council, of $40 million, around low-survival cancers that we would classify as less common—pancreatic, oesophageal, and those kinds of cancers. They do not fit in the super rare category where there is nothing happening at all.

So the first and most obvious problem is that, without research, there is no likelihood of improved treatments and potential cures. The second, and perhaps less obvious, is that, without research, we will not develop the knowledge to design screening tests or early diagnosis mechanisms. I do not think there is anyone who would disagree that the improvement in survival of breast cancer patients and bowel cancer patients has been due to screening. If you get it early and you cut it out, you have got a shot. If it metastasises, every cancer is dangerous.

Given the neglect of rare and less common cancer research, when compared to burden of disease and mortality, we have to take action to encourage the research community. One of the things I have written down—I did not realise I was doing it while I was listening to all this; I just kept writing it down—on every page, at least once or twice, is 'affirmative action'. We are not going to solve this problem without treating it like a minority problem. The way I describe it best is that, if I was diagnosed with a melanoma, then, because there are lots of people who have been diagnosed with a melanoma, I would get a standard of

treatment that stands here. If I was diagnosed with a Merkel cell carcinoma, which is another variation—of which, interestingly enough, Queensland has the highest incidence in the world, although it is still rare—then I could be treated with the same types of drugs, but I would have to pay, as things stand today. We are not going to fix that problem without some affirmative action.

Only by improving our investments in rare cancer research will we ever be able to deliver improvements to patients and reduce mortality rates for these otherwise neglected patients so that we can give these Australians the resources, support and treatment they need, and, most importantly, provide them with just a little more time. We typically call our reports *Just a little more time*. We are not yet at a point where we are sitting here discussing: can we cure cancer? But, if we can treat it as a chronic disease and we can build people's time—we have one patient who was diagnosed with stage 4 lung cancer and his wife was pregnant. Because he has been able to get access to clinical trials and treatments, he has been able to walk that little girl to school. I was talking to his wife, and she said, 'We know that one day, the cancer will get him, but my daughter will know her dad and will remember him,' and that is what we are trying to do.

There are what I would call shovel-ready research projects out there that can help with this. We went through a process a couple of years ago where I applied, in consultation with a whole lot of people whose first name is 'Professor', to the NHMRC to set up a centre for research excellence for rare cancers. The aim was to bring together, as an advisory board, the top 10 researchers and clinicians, particularly in the regions and in private practice, when they encountered some of these cancers, who could come to this centre for research excellence for both knowledge and assistance—like a virtual Wiki, if you want—and that would allow that group to build data and to understand what was working. That was not funded, and that is unfortunate. However, it is still the kind of research, by way of example, that we can very easily do, and there are a lot of people out there trying to do that.

In this place today, at Garvan, there is a trial being run by Professor David Thomas which looks at analysing the genetic make-up of tumours and then trying to define treatments from existing drugs. There is so much opportunity in this process to repurpose. We have got a whole arsenal of drugs on the shelf here, but we just need to go through—they may have been developed for breast cancer, lung cancer or bowel cancer, but, if we are really clever about it, we can run trials, test them and, we might find, as we did with Andreanna, that the drug that was developed for lung cancer is ideally suited to treating her. We need to do work in that area, and David Thomas has set up a trial that, like all research, is hard to fund, but it is an example of what is possible. I think he is appearing before you next week.

We are helping COSA to fund teletrials. Teletrials are the only way that people in the regions—and I am originally from Bendigo so I am sensitive to this—are going to get access to state-of-the-art treatment through clinical trials, if we can somehow build a protocol and manage that remotely. You were talking about collaboration before. I think there are about 10 organisations that banded together to fund the development of that teletrial protocol. So there is plenty of appetite to work together to get this kind of thing done, but we are doing it right now a little bit out of any sphere of government support.

I want to make some comments about clinical trials, because you asked the question before. One of the challenges that patients face is that, if there is a clinical trial and it is only available overseas, there is no government funding to send someone onto a clinical trial. I can kind of understand why, but, if you are sitting there and you are thinking, 'Gosh, if I could just get to London, I could have a shot,' and you have already been financially devastated by the disease in the two years prior, it is pretty tough. That may be something that is worth thinking about. As an old software guy, I know this is something you should never do, but, when you were talking about access to clinical trials, I looked up Australianclinicaltrials.gov.au and I just typed in 'all', 'all'. I just want to read you out of the description of a trial. Imagine that you have just been diagnosed with a head and neck cancer. This is the description of the trial:

Prospective randomised controlled study of pharyngo-oesophageal dilatation in Head and Neck cancer therapy-induced dysphagia: Evaluation of efficacy and safety

Key inclusion criteria

1) self-reported problematic pharyngeal dysphagia 12 months beyond the surgeries and chemoradiation for head and neck cancer; 2) abnormal Sydney Swallow Questionnaire score (above 234).

I am guessing, if you have just been told you have got cancer—we have got to do better than that. Part of our work at Rare Cancers is building a knowledge base which will work. We have 240 cancers classified on the database and we are expanding it every day. It is easy to find and it is easy to look at and it will go back through to specific clinicians who can help in the process and specific clinical trials so that a patient under huge stress can actually go somewhere and work back from what they have to where they go forward. We look at the stats on our website and we know that that directory, which we have been building for the last

five years, is the most accessed part of our website. Sadly, it is not the donation page, but we cannot do anything about that!

People come out of that first consultation with an oncologist with no idea. They have been told they have got adrenocortical carcinoma and they think 'adrenal gland' and they start from there and then they try to find it. Quite often the second thing that the clinician will say is, 'I've never seen one of these before,' and that is what you do not want to hear. Being able to provide them with knowledge as to where they might go for assistance, or where the clinician might go for assistance, from someone who is deeply involved in it and working in it is where you want them to be. I will shut up now and listen to questions.

CHAIR: That has been very helpful. What is getting in the way of repurposing drugs? What are the actual issues that are getting in the way that are making it difficult?

Mr Vines: The PBS requires evidence of cost-effectiveness. I always describe it like this: imagine that the only way you would decide what car you bought was on the basis of fuel economy. The decisions the PBS makes are not entirely but largely driven by improvement in survival for a cancer patient. If the current drug gives you three years and the new drug gives you four years, you have an extra year, so the cost related to that is balanced off. And that is regardless of what the side effects are. There is no measure of the side effects; there is no measure of how many times you are hospitalised or anything like that.

The way I look at it is, if our Prime Minister were forced to buy his car on the basis of fuel economy versus price, he would be driving a '96 Kingswood because he would never be able to justify the cost of a BMW, which offers all those things that are not taken into account when you are only looking at fuel economy. It does not look at comfort, safety or being bulletproof—all the things that he needs to do his job. If it were only fuel economy he would be pushed back. Sometimes we find that what we are doing is trying to bring a new drug to the PBS and not have it compared to a 30-year-old chemotherapy ancient. That is complex and, in fairness to the PBS, they are doing a lot to make that better.

The second part of that is that you have to look at the pharmaceutical industry, and, for a patient population of 30 or 40 in Australia, there are two restrictions: one is, do they have any evidence at all and have they run a trial on that? And secondly, putting in an application to the PBS is a big job. As a charity, we applied to list two drugs last year so we understood the process. Aside from the financial investment, they have a team of people whose job it is to make applications to the PBS. If I were running that team, sitting there, I would say: do I make an application for this drug here, which might be melanoma or breast, which will give me thousands of potential uses, or do I make it for Merkel cell carcinoma, which is going to give me 300? I only have a certain number of hits.

So we need to think about how we make that a bit easier. I do not want to drift off onto the PBS, but one of the things we have thought about is: can we make it so that they can apply for several at the same time and bundle them up to make that process more efficient? Incidentally, one of the drugs that we put up last year we got listed. One of the key considerations in that was being able to convince the PBS that the comparison should not be an ancient chemotherapy; it should be palliative care. There was no alternative treatment at the time we wanted it.

CHAIR: You mentioned that lung cancer drug that would be covered under the PBS if you had lung cancer, but not if you wanted to use it for another cancer. As I understand it, it is not as simple as a doctor deciding that he thinks a drug—we will make this a bit hypothetical— that is predominantly used for lung cancer could benefit someone with a low-survival-rate cancer and just writing a prescription, is it?

Mr Vines: No. He could do that, but then they would have to pay. The rationale for it is that, through diagnostic testing, they are able to determine that the same genetic mutation is just causing a different manifestation of cancer in a different part of the body. We have another patient who is also L positive, who has a blood cancer and an anaplastic large-cell lymphoma, but it is still caused by this genetic mutation. She was at a point where her oncologist was saying to us: we need to get this drug to her next week, because I am really worried about her. When an oncologist is really worried about you, you are not in a good place. We worked really hard and we had to crowdfund for her. The impact was so dramatic that she went from a massive tumour in her leg to being tumour free in a month. She is now back at work and still on that drug. The company ultimately gave her compassionate access. So there is a case, hopefully at times, where people are doing this kind of research—David Thomas is doing it—where we are saying, 'Maybe we should be listening and looking at how to use drugs by genetic driver rather than just by looking at whether it is in your elbow, knee, ear or your lung.' The effects sometimes are just so dramatic.

CHAIR: You also mentioned in your submission:

When we look across the spectrum of cancers it is clear that a correlation exists between research spend, burden of disease and mortality.

Can you expand on that for the committee so that we understand what you are saying more clearly?

Mr Vines: I am always really conscious that this is a complex subject. In 1990, the survival rate for women diagnosed with breast cancer was 60 per cent. I think the advocacy organisations and everybody have done a brilliant job of getting that up to 90 per cent. It is something we can learn from and something we can understand. The key element of that was being able to screen. Early diagnosis is everything. You were talking before about how we make the public aware and I was reminded that there are two issues: one is how do you tell the public that if they have a pain that does not go away that they should not just take two aspirin in perpetuity but that they should do something about it? Virtually every patient who comes to us has been three or four months in the diagnosis. That is critical because that is the time when the cancer is likely to metastasise. For example, breast cancer patients with metastatic cancers do not do well; you want to understand it early.

There are a group of organisations that talk about neuroendocrine cancers, which are very rare, and how it may be a zebra and not a horse. What they are saying is that if you hear a lot of hooves coming down the hallway you maybe want to think that it is not a headache but a zebra—it may not be the common thing that you think it is. If we were brave enough we would have a public education program, but it is part of that balance between terrifying everybody because cancer is such a scary subject. What you would do for survival, I suspect, would be dramatic because then you can present to a surgeon, the surgeon can operate and, if the surgeon gets it all, it has gone. There are some places where you cannot get it—but, God, it would help.

Senator GRIFF: I would like to go back to the statement you made about the overseas clinical trials and no government funding. You must have some further thoughts on that or ideas as to what could work.

Mr Vines: I think we have an obligation. The slightly different point is that we have just announced that we are putting a proton beam therapy unit into Adelaide. Brilliant.

Senator GRIFF: We got that.

Mr Vines: Well done! If you needed that treatment, and you could demonstrate it right now, the government would fund you to go to London or wherever to have that treatment—as part of the deal, the treatment has to be not available in Australia. I do not think that it is impossible to come up with a set of criteria where if there is no relevant clinical trial, if the clinical trial is phase 2 or phase 3 and someone qualifies for it and it is easier to qualify than here then there may be a way to get them onto it. I have not done enough work to cover a specific proposal. It is just heartbreaking for these people when they think there is a shot. I understand from a fiscal responsibility view that we cannot have people running off on hope on the taxpayer dollar, but I think there is a middle ground.

Senator GRIFF: I think everyone is running on hope that there will be assistance somewhere.

Mr Vines: Yes. Exactly: everyone is running on hope. But if your hope happens to be located somewhere outside of Australia then you do not have much hope unless you have some money—all the time we come back to that process. We pride ourselves on equitable health care in this country and right now—which is why I am talking about affirmative action—we do not have it, because in the case of a clinical trial the guy who has a lot of money will get on a plane and go. The perfect example is Ron Walker. I know he has done a lot to get his immunotherapy drug listed in Australia but, when Ron Walker was diagnosed with melanoma, the only trial available for Keytruda was running in the States, and he was able to get on a plane and go and survive. If it had been Richard Vines, he might not have been able to get on that plane and go. That is not equitable. That is not what we preach around the PBS. I understand the realities of that, but it is worth thinking about what is possible.

A lot of these things are solvable if we acknowledge that the people who really know the answer to this are the clinicians. If we want to make decisions on people going to clinical trials, there is no reason why we cannot have a board of really distinguished oncologists to sit there and say, 'Yes, there's a reasonable basis for this.' It is not a heartbreaking 'hit or hope'. There is a real opportunity there—'Maybe this will work for this person.' I think we just need that mechanism to do it.

Senator SMITH: My question was going to go to exactly that point: who, or what collection of people, should carry the burden of making that decision? It would be a specific pool of money. Do we just find ourselves in similar sorts of circumstances where the most reasonable trial is the one that someone is able to participate in, but the real benefit—the real discovery—might actually be over here? Is that a burden that

organisations like your own and cancer specialists would happily take, or is making decisions about who would get access to that limited pool a burden that would fall on government?

Mr Vines: I am a big fan of cancer specialists being front and centre in this. I am not shying away from us, but we are patient supporters. We advocate, but we do not profess any great knowledge. The process, as I would see it, is that a clinician would decide that this patient would benefit. He needs to take that to a panel of his peers and say, 'This is why I think this is right.' If the panel of his peers says, 'I think that's pretty responsible,' I think there is a whole lot of basis for this. When we are talking about Andreanna and access to that drug, Andreanna pays her taxes. There ought to be a process where her clinician could have gone to a panel and said, 'I think she's entitled to receive this as a PBS funded product.' So I think they are the people who know.

Senator SMITH: The benefit falls not just to the patient and their immediate family but to the global community, because here is a trial and, even if it is unsuccessful, as Mr Cullen said earlier today, it is better to have tried and failed than not to have tried at all.

Mr Vines: Absolutely. I think that part of the issue with a lot of the patients we see now, and a lot of people that we raise money for and that we advocate to pharmaceutical companies to get compassionate access for, is that we are losing that knowledge. There is nowhere that is being recorded. We need a better structure of trials and better structure of real-world data. I think that question came up before, and I was about to stand up and cheer. The interesting thing about the world in which we live is that, if a drug is listed on the PBS, nobody tracks it and we do not know if it works the way we thought it was going to work. It just rolls on. We need a real-world registry and collection of data so that we can look at this and say: 'Yes, that works; that's brilliant. Yes, we got this, and we know what we're doing.' We need data. Clinicians need data.

Senator SMITH: Thank you.

CHAIR: Thank you, Mr Vines.