

## Transcript

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**WEDNESDAY, JUNE 4TH, 2003**

**PROFESSOR TERRY DWYER.**

**DIRECTOR OF THE MENZIES CENTRE FOR POPULATION HEALTH RESEARCH IN TASMANIA.**

Demographics:	Male 16+	Female 16+	All people	ABs	GBs
	N/A	N/A	N/A	N/A	N/A

**VOICE OVER:** Today at the National Press Club, Professor Terry Dwyer, the Director of the Menzies Centre for Population Health Research. Professor Dwyer will highlight the health and economic benefits of medical research, and the implications of a bigger budget for the National Health and Medical Research.

Professor Terry Dwyer, with today's National Press Club Address.

**CHAIR:** Ladies and gentlemen, welcome to today's National Press Club Telstra Address. We're very pleased to have Professor Terry Dwyer here today to talk about saving lives, saving money.

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(\*) - Indicates unknown spelling or phonetic spelling.



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As Director of the Menzies Centre for Population Health Research in Tasmania, it may surprise a lot of people outside Tasmania to know that he has a staff there of 70 and co-ordinates research on a very wide range of projects, some of which he's particularly identified with personally, including things like Sudden Infant Death Syndrome, and the effects of lifestyle on health, which many people in this room, at a quick glance, would probably be paying more attention to now than they did a few years ago.

In addition to all the professional involvements in research and other areas that he's involved in, Professor Dwyer is this year's Australian Society for Medical Research medallist, and just to have something different to begin the event today, the Minister for Health, Senator Kay Patterson, is going to present that award to him.

[applause]

SENATOR KAY PATTERSON: Thank you very much to Professor Terry Dwyer, Dr Moira Clay, Associate Professor Andrew Sinclair, Dr Robin Batterham, Mr Ken Randall, distinguished guests, colleagues, ladies and gentlemen.

I'm actually quite delighted to have escaped from two days of estimates from nine to eleven - I feel like I'm back in the real world again, and I'm delighted to be here, particularly in Medical



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Research Week. And it's a time when the research community pauses and takes stock, and measures how far we've all come since last year.

And it seems to me a bit like - as Health Minister - that research has come to resemble politics in a way, in one respect at least, and that is, that with so much happening on so many fronts all at once even a week in research can feel like a week in politics, and when I look and see each day as I read the newspapers, I think almost there's hardly a day goes past we don't see now some announcement about some fantastic research that's coming out of Australian institutions, and I have to say that one of the wonderful things about being Health Minister is to meet and go into laboratories and see the absolute palpable enthusiasm of our young researchers.

It's tremendous. And in fact, there was one that I was visiting last year, and I said when I retire I'll come and wash petri dishes, because I just want to be here getting the feeling, and that's the sort of excitement there is.

The Government is a strong supporter of medical research week, and promoting and maintaining good health is now identified nationally as a research priority, and this year the NHMRC is funding 199 projects in the preventative health care sub-priority alone.



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And when research priorities align with the national interest in this way, research dollars can be better targeted, and as many of you here know, the Government has responded by doubling medical research funding and high achievers with high impact research like Professor Dwyer benefit greatly from that - and will benefit greatly - from that - from that prioritisation.

I'm very grateful that from this year's Budget onwards, prevention will be regarded as a central element of our health system. I think it hasn't been necessarily a central part of our concept of delivering health, and we've been quite illness focused, and treatment focused, and now I've convinced my colleagues that prevention ought to also be another pillar of that process, because especially as the baby boom ages, we've got - time is running out in terms of prevention and reducing that period of chronicity [sic] at the end of our lives, which reduces the quality of life and also increases cost.

But I'm not going to transgress onto your topic, Professor Dwyer, so I'll leave it there.

Professor Dwyer's research into the cause of sudden death in infants during the 1980s and 1990s has deservedly been recognised as one of Australia's most significant medical research achievements of the 20th century.



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His research findings and their implementation have resulted in a 75% reduction in the death rate from SIDS here in Australia, and saved thousands of babies lives around the world. There aren't many who could say that their research has had such an observable measurable impact, and we all appreciate the - we know that it wasn't always easy at the beginning, in the approach to that research.

Terry's life's been full of remarkable achievements, and his role in SIDS research has already earned him a warm place in Australia's hearts. But along from that - as well as that he has an interesting background and a wide range of interests. He practises what he preaches in preventative health, and is very keen on running.

As you've heard, he operates his own research centre, which I've had the pleasure of visiting, and seeing the tremendous work they do down there. He's chaired the Gulf War Veterans Study Scientific Advisory Committee, and he's had significant involvement in the transfer of knowledge about cardiovascular disease and diabetes prevention to the western Pacific region, and we were just talking at lunch about some of his very interesting work in multiple sclerosis.

So you can see his interests have been very broad in the research area. His career has now earned him a permanent place of honour as a recipient of the ASMR medal. It's an honour which has become a

beacon and an encouragement and something to which young scientists can aspire throughout Australia.

I'm delighted to be able to present the award. To congratulate him on the role he's played in his leadership in medical research, and to present the medal, and to ask you to join me in acknowledging his tremendous achievements in research.

Congratulations, Terry.

[applause]

Can I just say that it's a bit like presenting a medal at the Olympic Games. You don't - when a medallist wins and they've broken a record in the Olympic Games - you don't see all the work that went in to getting the medal. And I think this represents that in science - that there's a huge amount of effort, a huge amount of dedication - hours of weekends in laboratories. You know, going through ethics committees, or anything else to achieve a medal like this.

So let me just say to you as a researcher I understand the tremendous work, so congratulations on a research Olympic medal.

[applause]

PROFESSOR TERRY DWYER: Thank you Minister. Thank you to the National Press Club for inviting me. And also, thank you to those in AMSR who were so generous in awarding this medal to me this year.

Medical Research Week usually focuses on three important topics. What have our achievements been in medical research, what insights can we gain in the future, and what's the future likely to bring - what are the risks and opportunities. And those are exactly the three things I will be talking to you about today.

First, how have we been performing in medical research? And I'm going to focus on our core activity, which is generating knowledge, and that is measured best and conventionally by publication data and citations, and I thank Linda Butler here at ANU, who does much of the bibliometric analysis for Australia, for taking me through some of her data sets.

I'm just going to summarise it, and I think the summary is impressive. If we look at Australia's share of global publications at present, it's up around three per cent, as is the share of citations - close to three per cent of the world's total. I'm sure most of you know that today the world's population, if you looked on the website, is 6,297,000, and Australia, with just under 20 million has about 0.3 per cent of the world's population.



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So we are publishing at about ten times our expected rate. Now, those who are a bit thorough in their analysis might say well, yes, but many countries don't have medical research efforts - how do we compare against the OECD, and the answer is that we're closer to the average of OECD nations rather than at the top of it.

But it's worth thinking - and I'll come back to this point - that if we look at our industrial output, the new things that were done in the twentieth century, and what's being done in the twenty-first in the economy that we are well behind many of the OECD countries in those areas, but we at least match them in medical research. Medical research stands out in that respect.

How have we been using this knowledge? Well, I'm going to focus first on commercial outcomes. And this is a talk where I can't go into a great deal of detail because of the time, but a good summary is to look at patents on which the companies that make money are based, and Australia's patenting performance has in fact been very good in the biomedical area.

The report Investing in our Future, by ARC and CSIRO - relatively recent report - looked at Australia's patenting performance across the whole range of areas. And concluded that Australia was not doing as well in terms of US patents as you would expect for its population and its GDP. It



commented that Australia looks like a resource economy in terms of its patents.

However, for biotechnology - pharmaceuticals - Australia was right up there with the United States, and actually that report singled out this particular area as the area that was doing the best and seemed to have the most promise in terms of the new technology sector and the new economy. Very important thing for Australia to note.

Trends were very impressive. Between '89 and '93 and '94 and '98 - the two five year periods - Australian patents in the US increased by 249% compared to all US patents increasing at 118%, so the trends are there as well.

But much important medical research has benefits other than commercial. Sometimes the benefit's in relation to prevention and death and quality of life come from findings that can't be patented and can't make anyone any money. The research of our team, on which my award is based, Sudden Infant Death Syndrome is of this kind.

Now, I moved to Tasmania in 1985, and had not been involved in SIDS research before then, but following an approach from a neo-natologist from Hobart, showing the interaction that occurs between our clinicians and researchers, I looked at the SIDS issue and noted that this was something that should be a priority for someone going down to Tasmania

as a researcher, and an epidemiological researcher that I am.

The rate of SIDS in Tasmania was double the national average. It was a disease that stood out. You might be interested to know that when I did my scan of diseases one disease that did not occur at a high rate were congenital malformations.

[laughter]

But SIDS did. Twice the national average. And that - that finding was sufficient for me to think it should be a priority, and we should look at how we could search for causes of this condition which might be preventable causes, which is the basic mission of the research centre that I now head up.

So I thought about this at the time, and looked at the research, and there really was not a lot of good information at the time on preventable causes, and there was a need to think about what strategy we'd adopt to get into likely causes.

We didn't actually have a single hypothesis, but we used another advantage of the Australian medical system, and that is that we have a good, sophisticated medical system, and in addition to that we have fairly good health information systems. One of the better health information systems in the world.



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And apart from noting that Sudden Infant Death Syndrome was occurring at double the national rate, one of the things that I and our team noted was that the perinatal death rate in Tasmania - the death occurring around the time of birth - was about the same as all the other states.

The suggestion was that babies were being born about as healthy, but something was occurring after birth that was causing this double death rate. And the way we looked at it was if we were going to look for causes, then we should look for causes that - in that area after birth. Not that there couldn't be interesting things happening before, but there ought to be something that was operating there that was important.

The other thing that we concluded was because Queensland, we had an idea then, we know now is very similar genetically to Tasmania, had about a third the rate of Tasmania. This was unlikely to be primarily genetic. It was likely to be in the environment.

So we wanted to do a study which measured factors after birth, and which focused primarily on environmental factors. There were studies going on - we weren't the first in the field. But all those studies to date on human babies that had been done actually were retrospective - they were studies that went out and collected information from parents,



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and did what measurements could be done on babies after the death.

It struck me that here was a field that we could do a prospective study. It was possible. The disease occurred very quickly after birth - the first few months, usually - and we could collect the information, and some of those babies would die and we'd have the information ahead of time. We thought that would be an advantage in part because this was something that caused such anguish in mothers, and fathers - the whole family - that possibly their recall would not be as accurate as it might need to be to finance us.

So we looked at a prospective study. We needed to get some money to get started - and I'm thinking now back to 85, 86 and another feature of this Australian system became a great help to me and that was the volunteer contribution from the Australian system.

The Menzies Foundation - a group of people who gave their time voluntarily, provided money for me to get started. I actually used some of that money in the early stages before we appointed our first new appointees to fund the SIDS work. Rotary Health Research Fund gave us funds, and at that stage I personally - and no-one else in our team, it was a very new team - had any track record in SIDS, and we actually weren't really in a position at that stage

to command the sort of response that one would want and did get later from NH&MRC.

So that's where we got our start-up funding from. The next thing I needed was a team - all those in science know that you need a good team to conduct research and I was, in this respect, very lucky because not only was there a clinician in Neville Newman who'd approach me, but Dr Anne-Louise Ponsonby - who's here today and who is now at ANU as an Associate Professor - she came along as a new PhD student in 1987, and from that point onwards we worked as a pair of equals trying to get this research up and going, work through the hypothesis, work through the practicalities, and we were able to.

We were able to do that, we were able to mount this prospective study which involved collecting data on 1500 babies a year. We thought initially maybe for three to five years, but it stretched out even beyond that, and we got started.

Now this, this story has many twists and turns, and I'm not going to take you through them today. But the upshot of this story is that between 87 when we started data collection, and the end of 1990, even though there had been findings about sleeping positions of babies before, they hadn't been taken all that seriously by the SIDS research community.



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But by the end of 1990 and early 91 a couple of studies from England and New Zealand - again, retrospective case control studies - provided even more convincing data that sleeping position was important.

We noted that, we also noted the response of, in the medical journals to those findings, and the response was that quite possibly the association was due to the fact that grieving mothers, when asked what position they put their baby in, because the hospitals and doctors were telling them to put the baby on their stomach, were reporting they had done the right thing. And this was an artefact this measurement.

Well as it happened, we had the only prospective data in the world, and we were able to report that data - which we did in early 1991 - showing that measurements collected ahead of time showed just the same thing - a much greater risk for babies on their stomach than side or back.

And Australia being a country that can mobilise when it needs to, got together key people - NH&MRC, the Health Departments in the States, the SIDS societies - we all got together and by mid 91 a campaign was launched, and that campaign was successful virtually immediately.

We could see in our own State in Tasmania, within a month or two, that the deaths were dropping and



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they did drop. In Australia we had been averaging, prior to 1991, 500 deaths a year. The first year - a part year for an intervention - the number of deaths was under 400. For the most recent year in which we have data in Australia - 2001 - there were 100 deaths from SIDS.

So approximately 80% of the SIDS deaths in Australia have been prevented by that campaign on prone sleeping position and we're confident from other things we did that this is, this is in fact a causal relationship.

Others might, people might like to ask me later what causal links are and how it exactly it works. I'll be happy to reflect on that.

So that's the story of SIDS. It was a wonderful success for Australia. I said it was a success that did not have an economic implication, and that's the way we would look at it.

For this talk, I had some help from a few people, including colleagues in Australia and some over at Harvard Business School, and we had a look at things like what value do people place on a life.

It's interesting that economists now have done things like interviewed people in the workplace to find out how much they have to be paid to sustain a high-risk of death from a particular input to their working environment - environmental, chemical,



whatever. And a number of US economists have come up with a figure of three to five million for a human life. You might like to reflect on whether you agree with that, but that's from these sorts of analyses.

If you wanted to look at the economic impact to Australia using those figures of 400 lives saved a year, I'll let you do the maths. The other thing you'd have to do is work out what fraction of the contribution you accorded to Australia - and I won't, I won't give you an estimate at this moment.

So, clearly this was a tremendous contribution. There are other contributions that Australians are making, and one that is very important is to the world, the developing world around us - our region.

I was in Kuala Lumpur with Alan Pettigrew from NH&MRC in April, and was quite surprised at the statistics that WHO put up for collaborating centres in our region.

WHO actually allocates collaborating centre status to organisations - medical organisations - it thinks can give expert help.

The western Pacific region has 28% of the world's population - 25% of the collaborating centres in the western Pacific region are Australian collaborating centres.





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Our presence in that domain is far beyond what we would see in most areas of the industrial sector, and I think there are opportunities there for Australia, both in foreign relations and maybe, maybe - not only foreign relations - but also in terms of what we, what responsibilities we have. And I think they're so great that they are issues that should be looked at in policy terms.

Okay, so Australia has contributed with its knowledge. It's done things with it, no question about that. Is it, is it sustainable? Are we going to be able to keep competing like one of the best countries in the world?

Well, one can reflect on things that can go wrong. But I thought it might be interesting - because of my sporting background, and because contrary to a view that probably many would hold - I think there is more in common between striving for international excellence at the elite level in sport, and something like medical research, science generally, than people might think.

And I thought I would have a look at a systems, as a systems analysis, the system of Olympic sports and see what happened. And it's a very interesting story this one - that Australia in the 1950s and 1960s was in the top 10 in every Olympic Games, and it won between five and 13 gold medals, and Australians thought this was just something we did well.



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It wasn't fostered, it wasn't renewed, we didn't look at what our competitors were doing - and it was a lot, as it is at the moment in medical research - and by the mid 70s Australia fell to thirty-second in the Olympic table in Montreal and didn't win a single gold medal. Australians were shocked.

The Government responded and put money into the AIS and other related areas, which really made a big difference. But it's interesting to reflect that we did not enter the top 10 table at the Olympics for another 16 years.

Now one should reflect on what would happen if we allowed our current system to erode, and whether waiting 15, 16 years for a response is something that we would want to do in that arena.

So, it is possible. It is possible that this system could erode, and in my view it is under considerable strain. It also is, it's travelling well but it's under considerable strain for a whole lot of reasons. Those who are leading the research now are having to travel more, there are travel problems. Those overseas may be less likely to keep up their networks if we don't travel to see them. I'm sure all my colleagues here from medical research institutes are doing enormous amount of this at the moment.

The Wills Report did a great deal for this country and its medical system, medical research system. We really did take a jump ahead, and I think if that



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money hadn't come through we would have started to fall back then.

But we need to realise that this is a competitive arena. Medical scientists do not go out in the main looking for money, but they want to be competitive. And some who aren't might say well, you know, can't they just share their findings and so on. But no, the people there want to find something. It means finding it ahead of someone else. So they need to be in settings where they can truly compete with the world.

And, what is happening around the world is that the resources are going up. There is a need to spend more. The teams to do the work need to be bigger. There really is a great deal that our country has to do if we're going to keep, keep up there. And I think we need to reflect on what will happen to the output and the flow-on effects of our medical research if we don't do that.

And I'll just share a few thoughts with you. First of all, the contributions we can make to our region - which I actually think are very important - will be less. Our foreign relations opportunities, our ability to actually meet responsibilities will be less than they otherwise would be if we kept up our current momentum and built it further - which I think we should be doing. We should see medical research as really one of our icons of achievement in this country and one of the great areas of opportunity.



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It's also the case that there are things to find out. We've been involved - Anne-Louise and myself - in a wonderful story - one that we couldn't have predicted at the outset. But there are other things to find out. There are neuro-degenerative disorders, Parkinson's disease, Multiple Sclerosis - Minister mentioned that - and we now, Anne-Louise is leading that research, which I think really has great potential to make advances as well.

But these are diseases we want to do things with. Osteoarthritis is something that really affects not only our health system but affects a lot of individuals. We need to find out what we can do to prevent this from happening as well as treat it. So, and we need a research endeavour, a research community that can do it.

And finally, just to finish on an economic note, these are some thoughts that come from my colleagues at Harvard - Jonathan West and Juan Enrique\*, who's written a very interesting book on this subject - and they make the point that if you analyse what happens to the value of products that are produced by countries over time, the old products lose relative exchange value. They become less valuable unless they're very scarce like oil. And if you want to be able to purchase the new products, what you need to do is to be in the production of new products.



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And as far as the new technology, new economy areas go, I believe, and I think the data from Australia suggests it, our best chance - and it's partly because of the dynamism that exists within this community, this medical research community, part of the, the greatest opportunity is there in relation to the biotechnology area. And Australia should focus on that, and it should foster it and look for greater returns in the future.

Now what happens if we don't get those returns? Well if we don't have, if we don't have products of equal value to exchange for the new products that are coming from elsewhere - and I'm going to concentrate on the new drugs, which are very expensive. We've experienced that, we've had some problems in terms of looking at being able to purchase all the new drugs that patients and doctors might want.

The new, the new gene-based drugs for a cancer that is otherwise unstoppable will not be available to our patients who need them.

We will not be able to get the new drugs for Alzheimer's disease that our parents may need and could effect their quality of life and their families.

We won't be able to purchase those drugs unless we have the goods to exchange that are of similar value, and the only way for us to keep up there is to get into the new economy and to do it well, and



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biotechnology medical research, and medical research underpins biotechnology so importantly, is the way to go.

Where will the money come from? Well the unfortunate thing in Australia - and I will not reflect on why this has occurred historically in Australian life - is that the overwhelming amount of money that's available at the moment to keep us competitive is government.

If you look at philanthropy in the US, there are five dollars for every Australian dollar provided for philanthropy for medical research. In the UK, three for every one.

Our money, our substitution - we're not going to get substitution funds from philanthropy that will keep us up with the world. We're not going to get them at the moment from the commercial sector because we're well down on R&D in that area as well. The commercial sector is being built on the public infrastructure that the government's supported.

The government has done very well. The money that flowed from the Wills Report was a tremendous increase, but it is the only source at the moment of really serious funds to help this country move ahead further. And just as a reassurance to the government, at present our government is not providing the most funds per capita for medical research.



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At the time of the Wills Reports the US was providing three dollars for every dollar we provided. It possibly has improved a bit, although the latest figures I saw - which I haven't had a chance to have others analyse - suggest that because of US funding changes, we remain in about the same position.

So there is scope for the government to increase its funds, and I think if we are going to maintain the momentum in our medical research which is so important not just to those within this room but to those outside in our Australian community, then we must maintain the momentum.

Thank you.

[applause]

CHAIR:

Thank you very much Professor Terry Dwyer. As Terry indicated, there's a lot of people in this room who've got a very close and professional interest in this subject, and I would hope the way we're progressing, that there will be a chance for some of them to ask you questions - you almost challenged them to do so - after we have dealt with some media questions, which begin today with one from Mark Metherell.

QUESTION:

Mark Metherell from *The Sydney Morning Herald*, Professor. One of the fascinating and most significant things I think of what flowed from your



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SIDS finding was that we saved so many lives and continue to do every year through a behavioural change - no expensive drugs, surgery or the like. I see that you now have an interest in cardiovascular disease. We also know there that through behaviour change we could save and prolong a lot of life - perhaps a lot more than SIDS babies.

Do you have any ideas - we have a federal government, the Minister here has introduced life-time health scripts - life-time, no, I'm getting mixed up with health insurance - life-style health scripts which give more emphasis to changing behaviour. Do you have any ideas here, given that just turning a baby the other way has saved so many lives with SIDS?

**PROFESSOR DWYER:** Yes, I, I've been a strong advocate of looking at the prevention side of the coin for a long while. And I mentioned that our research centre is, it focuses on searching for preventable causes because we have the opportunity to do very good work in Tasmania on that - and I don't think there is enough, enough in either the research or the health services side. And I'm glad to hear the Minister's taking, taking these actions.

On the other hand, one has to temper this with the realisation that what happened with prone sleeping position and SIDS, involved a far more effective intervention than even those who were involved at the time might have expected.





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The response of parents was so rapid and so, so great, I mean 30 odd per cent of families were putting babies on their stomach and the proportion now would be well under 5%. I haven't seen the latest figures, but certainly watching the trends, that's about where it would be.

So this is a, but you know at the same time, the SIDS societies ran campaigns to, to tell mothers to stop smoking, parents to stop smoking around babies. There was almost no change.

So the thing is, that some interventions for prevention work very effectively, some need a much stronger input, and you just, you can't rely solely on prevention, and there will be people who will get diseases that maybe they could have prevented, and as a generous society we set that aside and treat them as, as others - and I believe we should.

There are other conditions we don't know how to prevent. We mentioned Multiple Sclerosis. We're working on preventable causes at the moment - our team at the Menzies Centre - and with others elsewhere - and particularly at ANU - and, you know, at the moment we, we can't prevent that from happening.

There are families that are out there with, you know, quite a significant number of people in their families who are suffering these conditions, and it



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would be great to be able to tell them what to do. In the mean time, we need to look for ways of treating their disease.

So I, your sentiment I share, but I think we need to be practical. And once a person gets sick, one has to do what one can to help. And I, I mean I think health knowledge for prevention, health education, other programs that help prevent are terribly important, and so is, so is the treatment of disease whether it's drug based or surgical.

And as a country I think we value it highly. We just need to keep putting it right up on our agenda. And my extra point today is recognise that Australia's one of the, one of the - not the big players, because we're a country of 20 million people - but we hit far above our weight in all these areas - whether it's prevention or cure.

**QUESTION:**

Jason Frankle\* from *The Herald Sun*, Professor. I phrased my question before you gave us those comparative figures with the US and the UK. But what kind of increase in government funding would you like to see to maintain the momentum, as you say? Is it in the order of triple?

**PROFESSOR DWYER:** To give an answer to that, that was firm and fast would be unwise of me because I think it's, there are always competing interests, and one should sit down and see just what the money would do, and over what time.



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There's no way of saying well give us double the money and that's what we need, rather, it depends a bit on the, it depends a bit on the planning.

But what I would say is, that if you look at our task here compared to America, and to Europe, it's not, it's not really a much easier task, and the total amount of funding going into medical research at the moment - as I have outlined, if you go across the three areas, government, philanthropic, private, commercial - is considerably less. And I would certainly think that a doubling of government money - and my figures tell you this - would not take us beyond the sorts of investments that are taking place in our competing countries overseas. And I think that would certainly be something that would be used very very well.

The timing of it, well not the timing of it, but the way in which it's spent, the planning, all that needs to be done if this is, if this comes into effect, but certainly I would think that was a reasonable goal. I might say, I have not discussed that with any of my colleagues here today who might be seeking a trebling or a quadrupling, and they might not get an argument from me.

I mean there is a lot of, you'd be surprised how much competition there is out there at the moment. These issues - one of the interesting things about the competition is that even the information revolution I

don't think has helped us as much as we might have thought.

It's great to be able to exchange emails with colleagues, but the experience of - my experience and that of others I've spoken to in Australian research institutes, is if you're not there face to face, then you don't, you don't bill [sic] the email exchange, and it's easier to do that in the big population centres of North American and Europe.

We actually have to work a bit harder now to keep the same positioning, and I think really significant new resources need to come in, if, over the next five to 10 years we don't see an erosion in the current position.

QUESTION:

David Rowe from *The Age* newspaper, Professor. I'm very interested in what you were saying about philanthropy. Can you tell us why, why do we rank so poorly compared with those other countries, and what can we do about it?

PROFESSOR DWYER: The - I've read a little on this and I've thought a bit on it. I think much of what I'm going to say to you is speculation. There are some tax issues, as I understand it, and I haven't looked into that carefully. You'll have to ask others about that.

There are tax issues. It is the case, for example, that there's been more philanthropy in Victoria than the other States - and that's partly due to some foresight



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with that system, I think earlier on in the Twentieth century.

Those things make a difference. I think part of it is, as a country, probably philanthropy in relation to medical research and tertiary education has been at a lower level, in part because the cohort of individuals who have even been tertiary educated here is a very recent cohort. Many of those who might be giving money might have not been associated in a very serious way in their lives with tertiary education in the way that might - well not might have, has been the case in the US.

And maybe as a country we rely a bit too much on government for some of these things, so that there's just, we expect that government will do it. And I guess the answer is I'm saying yes we, we expect that government will do it, until these things turn around, if they will.

QUESTION: [indistinct].

PROFESSOR DWYER: No actually, when, when the original press release was put out, because I tentatively put in that sporting analogy - I think it's a relevant one - but the press release had, you know, medicine needs to be, or medical research needs to be treated like sport. And my response was, well, you know, probably you'll get the Australian Sports Commission coming back saying their funds have



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been cut and, anyway they don't get as much as us, well that's their battle to fight.

My point simply is that the benefits to Australia of medical research have been deserving of the funding and there are great opportunities as well as risks for us that we have to build on here with Hardy.

CHAIR: Laurie Wilson.

QUESTION: Laurie Wilson, Professor. A couple of questions if I might. Firstly as you said you would not have got your SIDS research up had you not received, because you wouldn't have attracted it from an organisation like NH&MRC had you not had I think you referred to them as volunteer funding support, if you like.

You also said that in the future you'd like to see Australia very much focus on areas of biotechnology and I'm wondering what would you suggest to ensure that the potential areas that we don't recognise at the moment are still catered for, that the potential SIDS research areas are not overlooked because there are too many eggs in one basket perhaps?

It was a second question you seemed to be inviting a question subsequent to your speech about the causal effects between, well the causal effects

related to your SIDS research, you might like to tell us a bit about that as well.

PROFESSOR DWYER: Let me tell you about that first because that's an easier answer.

The first - this issue of why prone sleeping is so important and I don't think that there's any doubt that we're looking at about 80 or 90 percent of the deaths that were occurring in Australia and it seems to be the same in the UK, for example, were associated with a causal chain where prone sleeping was part of that causal chain.

In medical research often we find out about the other links in the chain by doing other types of research. For example, research on animals. It has been very difficult to get animal models of a human baby in the cot to be able to reproduce the circumstances in a way that we might have been able to use mice and other species to look at causes of diabetes, for example. So one of the problems has been looking at that and our group actually I think one of our contributions after the original findings was to look at the question of what did prone sleeping interact with that might increase the risk for a baby.

I mean, in Tasmania, these are very rough figures, the risk for a baby on its stomach, this is before the intervention, was about one in a hundred, for a baby that wasn't on its stomach closer to one in a



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thousand, but what, you know, one in a hundred, ninety-nine babies didn't die on their stomach, what was it?

So our group did some work that was published in the *New England Journal of Medicine* back in 1993, and what we showed there is that there were factors that increased the risk once a baby was on its stomach dramatically. And those things included things like the type of bedding; if the infant had an infection, these sort of things one can look at and say, well, what more does that tell us about the causes? And the answer is I'd have my views on what are the most likely, what was the most likely thing happening, but we can't yet determine for, with absolute certainty, what the causal chain was that followed putting a baby on its stomach, and maybe we won't know because we don't have those animal models that exist in other areas of medical research.

But no doubt some of the babies suffocated and maybe a good proportion of them did.

And what was that other question?

QUESTION:

[Inaudible] ... future areas that might otherwise fall by the wayside if we put a lot of money into one area [inaudible].

PROFESSOR DWYER: Ideally what you'd want is to be able to cover all the areas of interest and to have a significant





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interest in your own country, because the ability to determine which of the material is coming out from overseas is really significant and true and should be applied, rests, I think, a lot on whether you've got people of high scientific quality actually working on those problems where you are.

But Australia won't be able to work on everything and I do think we actually have to strike a balance between picking areas that area important and also building on what's there, and this is using the sporting analogy it would be like us saying, well, we don't want to keep trying to produce middle distance runners because it looks like there's a gap in high jumping, and we find we don't have high jumpers and it's not in our school system and so on you could work away there without the successes you'd think.

You have to build on successes, there's no question, you have to start with the people who are achieving successes in a particular area and then build on what they're doing and if you would like them to start to do work on new problems, and maybe someone working in cancer working on the vascularisation of cancers, might be able to turn some of that attention into cardiovascular disease.

Those sorts of things one can look at but I don't think you can just sit back and say well, this is a gap, let's put all our money into this and we'll take the money away from here where people are doing



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research of excellence because you really only get excellence from people who have learnt how to do the work in an excellent way and you have to build on that, that's your starting point, I believe.

CHAIR:

Just reinforce what I said earlier, that all you experts in the audience who would obviously like to ask, dispute, some of the things that Terry Dwyer's already said, would you please indicate your interest to my colleague over here against the wall who will give you a microphone at the appropriate time so you can be heard.

In the meantime there's a question from Mark Metherall.

QUESTION:

Professor, it's interesting to see your comments about the number of biotechnology patents now being registered in the States which seems to indicate something of a sea change in terms of application of Australia's relatively strong medical research effort. Do you think that what is happening here relates back to the strength of the universities and what do you think about the latest proposed changes to higher education funding, do they impact on this issue?

PROFESSOR DWYER: I'd have to be a very knowledgeable person to answer all the questions you put to me.

Let's start with the first one. There is at least some data on what contributes to Australian patents that



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have been listed in the United States, and that data shows that 91% of the papers cited for those listed patents was emanating from publicly funded institutions. So that's a pretty good estimate of what it is that is the building, represents the building blocks for our commercial successes that are occurring in Australia.

So that's the first thing. The second thing is the federal tertiary education system and the proposed funding changes - what I will say is that this is not an issue that I've given the thought to that many others have and I'm not a particular expert on it.

I do think some of the changes that are proposed which are to recognise, not in a way that pushes academics towards focusing on financial returns and not finding knowledge or conveying knowledge but the issue of actually ensuring that there is some relativities that are more similar to what we see overseas, in the long run it's bound to be important. If you have very, very big differences in funding between a research institute fellow in an American institute or a university and they're doing the same thing, and they're pursuing knowledge, then there will be the attraction for people outside, so we always have to watch those things, and I note that that is one of the issues that's been highlighted.

The other thing that comes out of my example is one wouldn't want to restrict research to just a few places.



I mean I certainly would not have been able to do the research on SIDS that I did from my Sydney base which I left to go to Tasmania. It would have been very difficult and, I didn't - maybe I did mention it - but we had 96% of Tasmanian families participating in that research from hospitals that had over 90% of the births, you know, some very, very representative sample that we were actually sampling from and those sort of - we do need in Australia when we think about research and research concentrations to realise there are some groups that are not just a little bit excellent but are globally important in different part of Australia, so this new scheme needs to think about how to take that into account by taking away the opportunity for them to build on their success and grow. There could be considerable losses, so this is something that needs to be taken into account.

But, as I said, I haven't studied the proposed changes well enough to be the person who is quoted to a great extent on this.

CHAIR:

The next question down the back.

QUESTION:

Hello Professor Dwyer. Tony Oldfield from the Canberra Hospital. Recently there's been a lot of comment about funding of public hospitals. Public teaching hospitals in particular have a role in not only providing excellent clinical service but they also have a teaching and research role, and that research role is becoming increasingly pressured.

How important, as a resource for research activity in Australia do you see public teaching hospitals and how should they be supported?

PROFESSOR DWYER: Let me make a general response to that too. We need to realise that the health care sector is one of the bigger areas of our economy, and it needs to have an R&D component like all others, and this is one where it's highly relevant and the evidence is knowledge moves on rapidly if people work at it, and the hospital system needs to have an R&D component to it that's quite recognised and it shouldn't be a niggardly part of that process.

The Australian hospital system is a resource for Australian Medical research. It's been a resource for our epidemiological research, but it relies on us being able to get clinicians to give us time and for them to put time into helping us get access to the patients that are needed for the studies, and it's becoming that sort of, that access to patients and to the population generally is becoming more important, I believe, in science, medical science across the board.

I talked to Peter Doherty last week to get his perspective as a lab based scientist as opposed to me, an epidemiologist, and he said - he might not have said this a couple of decades ago, but now the integration and cross fertilisation of information from the clinical side, the population side, and the



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laboratory side, was not only critical but it's one of Australia's strengths, and I think it is.

I had a colleague from the Fred Hutchison Cancer Centre in Seattle out here a year or so back saying that not only was this an asset for Australia he was impressed at the way we were moving forward and integrating those areas.

Hospitals need to be supported, extremely important. I don't have in my head the dollar figures and the trend figures on that, but I'm well aware working next to a hospital of what the issues are that people are discussing there and they're tremendously important, and it does seem as though there's been erosion there.

Let me just make one quick point because I didn't get a chance to put that in my talk either.

There is an issue of management here too, and one of the things that's happening in Australia, this whole, everything is getting more complex, you know, running a hospital is complex, integrating research with it, and I do think that one of the things that we have not done and I won't comment on hospital management, one of the things we haven't done in the research sector yet is recognise just how complex a management job there is now for people managing big teams.



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Our team is 70 or 80, but there are bigger research groups around this country, and one of the things we need to do is start to realise that the leaders of those organisations need actually to have improved management skills, and I think there's a whole new development process there for our system and maybe with better managers in the research sector and in the hospital sector we can do more with what we've got.

CHAIR:

A question over on the right.

QUESTION:

I'm Jeff Simms\* a health statistician. Professor Dwyer, you mentioned in an answer to one of your questions earlier that not all behavioural factors that may be behind causation of disease would be as amendable to change as the sleeping position was for SIDS.

Given that and given the likely benefits that could come if they were so amendable, do you think that there's sufficient relationship or a sufficient contact between health and medical researchers and behavioural researchers to address the issue of knowing how best to deal with behavioural factors in dealing with disease. And is there a sufficient recognition of this potential relationship to support the arrangements for funding that might be needed to bring about support for medical research from a behavioural scientist?



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PROFESSOR DWYER: Well, there's no question that actually behavioural scientists are critical in most interventions that involve preventing disease certainly. But also clinical areas. Getting patients to get the most out of their clinical treatments.

It didn't seem to make a big difference, I have to say, for prone sleeping position in SIDS, because we've just taken up so quickly. Just studying why that happened is interesting in itself. But my observation too, though, is that we're making quite good progress there.

If I reflect back on 20 years ago and the number of behavioural scientists working in health promotion and the dearth of them in key areas, a single activity smoking, cessation and so on. We've made really big gains in training people and there are people out there now and the NH&MRC system, which has changed a lot in the last 15 or 20 years, now actually provides I think genuine opportunities for people in those areas to get funded. You always have to watch and make sure it's being done fairly and with an eye on excellence.

But there is a much better opening there in Australia, and I think much more work going on in a behavioural science area. And I think in that area again we're probably integrating it better than some of our overseas colleagues are. I think we're doing a bit better at integrating some of the areas of research than some others might be. And I think





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that's one of the things that's helping us hang in there despite the relative, in terms of comparisons to other countries, relative lack of absolute dollars.

QUESTION:

Bob Buckley, I'm a budding bio-fanaticist [phonetic], but I'm also a Convenor of Autism Aspergers Advocacy Australia. So to follow on from the previous question, we've seen an increase in autism that's between five and forty-fold in this country over the last 10 years. The funding that goes into it is less than .03% of the national funding. Is it appropriate that so little funding is spent on something that costs and is such a large burden on our community?

PROFESSOR DWYER: That needs specific knowledge as well, and I understand what you're saying, but in terms of making a judgment about the relative lack of funding and whether it should be taken from other areas and applied to that, I mean I really can't answer your question.

One of the things we should learn is that medical research has been surprisingly, surprisingly effective, and it's interesting as it turns to different challenges, just what it's able to turn up, and it would be nice to have it applied to the areas where there's a need.

CHAIR:

Let me ask you the final question of the day, based on a conversation we had over lunch Professor, in all the work you've done in getting your speech

down to 20 minutes today, what was the most important thing for you that you left out?

[laughter]

PROFESSOR DWYER: [laughs]. I think I've managed to sneak it in during the question, during the question time.

CHAIR: Thank you very much.

[applause]

CHAIR: It won't quite rank with that handsome medal, but do have this souvenir of your appearance here today and thank you very much again.

PROFESSOR DWYER: Thank you very much.

[applause]

\* \* END \* \*

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