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EPISODE 16 – Jeremy Grimshaw– Friday 5 October 2018

Named by Reuters as one of the most influential scientific minds of our time, this week's guest wears many hats and pursues all kinds of surprising interests. Jeremy Grimshaw has earned a global reputation for translating evidence into genuine changes that improve human health. He's a Professor of Medicine at the University of Ottawa, President of the global Campbell Collaboration and a long-time Cochrane luminary. And as Ray discovers, he can make complex behavioural science, obscure music festivals and Formula 1 racing the most comfortable of companions in the course of just one lively conversation. Here, Jeremy closes out series 2 of the Recommended Dose with his original insights into health and social sciences research, and throws in some top musical tips for good measure.

TRANSCRIPT:

Ray Moynihan: Before we get into the substance of it, we will be coming back to this, but I just want to hear from you in your own words, why you like watching car racing? If you can tell me.

Jeremy Grimshaw: Why do I like watching car racing? Well, I have to confess for probably the first 30 years of my life, I thought it's the most boring thing I could possibly watch.

Ray Moynihan: That's Jeremy Grimshaw, who's been named by Reuters as one of the world's most influential scientific minds. Hello, and welcome to The Recommended Dose with me, Ray Moynihan, funded by Cochrane Australia and co-published with the BMJ.

Jeremy Grimshaw is a professor at the University of Ottawa in Canada. And he's got a global reputation for helping translate scientific evidence into genuine changes that improve human health. Oh, and he does like car racing and music festivals. But before we get to them, how did he first get interested in science?

Jeremy Grimshaw: I went to medical school, but I went to medical school because I wanted to be a family doctor. I didn't come from a medical family. But I saw in my community basically the potential importance of the role of the family doc and how they could support individuals, and that's what I wanted to do. So I went to medical school, I was not

particularly a very strong academic in medical school. My exposure to research in medical school was lab based stuff, which was pretty boring to me, and really did not get me very excited. But when I went to do my family practice training, I was fortunate enough to have to organise a national conference for all the family practice trainees in the UK, and I could start to basically invite people who are heroes, or who I was intrigued by the work they're doing. And so for example, we invited Peter Townsend who's a Professor of Social Policy in Bristol, and really one of the founders of looking at health inequalities.

We invited Murial Grey who at that time was doing facilitation in Oxford, a GPU facilitation in Oxford, and I met these very inspirational generous warm characters who were doing research that seemed to have direct relevance, who could basically improve the lives of individuals and communities directly through what they were doing. And that's what excited me. And after that conference, I talked to my mentors and they advised me to go off and do a PhD. And that led me really into my career. But if you'd have asked me at the start of medical school, did I anticipate I'd be doing research in 30 years time? I'd have laughed at you.

Ray Moynihan: It's amazing, isn't it? The way our lives take twists and turns, very unexpected, lots of change involved.

Jeremy Grimshaw: Absolutely.

Ray Moynihan: You're best known I think, for your work trying to implement scientific evidence into practice, trying to use all the evidence, the good evidence that's generated about what works and what doesn't in healthcare, and really implement that to make changes to the way doctors and others work, to make changes to the way health systems work. Is that a fair description of implementation science?

Jeremy Grimshaw: It is, I mean a lot of your other speakers or guests you've had on The Recommended Dose are very much focusing upon basically generating the best summaries of evidence to inform decisions by patients or healthcare professionals or managers or policymakers. I guess where I think that's incredibly important, and I do systematic reviews, and as you know, I've been involved in things like the Cochrane Collaboration and the Campbell Collaboration for many years. But for me, that generation of summaries of evidence is just a starting point, because one of the things is that those evidence summaries are necessary but insufficient, if we want to make sure that patients get the best care that's available to them. So when we look at repeated studies from all around the world, what we find is there's a gap between what the evidence says we should be trying to provide our patients, and what we actually can achieve in the real world in the healthcare system, so we work with them.

And so we're probably not maximising the health of our patients based on the knowledge that we currently have. And my research is very much how do we bridge that gap? What are the ways in which we can support healthcare professionals, patients and healthcare systems to better use knowledge to improve patient outcomes?

Ray Moynihan: We'll talk in a moment about a real world example of that in in the area of stroke. But before we do, I think this interest of yours has led you to look very much at often what stops the implementation of change. What are the barriers to change and what might

help implement change? I mean, do you have in your mind, based on that evidence, what some of the most important barriers are? What's stopping us implementing change according to the best evidence?

Jeremy Grimshaw: So one of the ways that we can see for this area is that we're interested in trying to change the behaviours of doctors, patients, pharmacists, nurses who are working in complex, rather chaotic surroundings. And when we think about it that way, it allows us to draw upon a lot of social and organisational science, to think about what are the barriers or enablers to the behaviours we're interested in.

So one of the models that we use a lot of is a model called the Theoretical Domains Framework, which basically is a summary of what psychology says drives our behaviours and has identified 14 major things. And so amongst those things are things that people would not be surprised about. So if we don't have the knowledge, then we're unlikely to do something. If we don't have the skills were unlikely to do something. If we don't think it's my professional role, then I'm unlikely to do this. And so using this model allows us to really get a good picture about what the barriers are.

I think if you went back 20 years ago, the assumption would be that the barrier is knowledge. That somehow if we can just give clinicians more knowledge, then they would practice perfectly. And what we find time and time again in different countries, settings, professional groups is professionals often have the knowledge but there's a much wider set of barriers and in their environment which actually prevents them from acting upon the knowledge. Sometimes it may just be the chaos of the clinical surroundings, or the lack of time, given the other calls on their time. Sometimes it could be about peer pressure or what's acceptable within their social and professional roles.

Sometimes it will be just that they don't get good feedback. So they think they're doing a good job, but actually if you measured their performance closely, you'd notice or you'd be able to tell them that they're not doing as well as they can. As human beings, we often overestimate how good we are. No one loves to think that they are a worse-than-average driver, but 50% of us are worse-than-average drivers. So we always overestimate and think our performance is slightly better than it was because it's how human beings get through the day.

Ray Moynihan: I like that. That's a good thought for us all to reflect on. We all think we're a bit better than we really are. But give me this real world example where I think you've been involved directly in work to improve the sort of care that people who have had a stroke get. Tell me a little about that.

Jeremy Grimshaw: Yes, I've been very fortunate to work with Professor Sandy Middleton, who's a professor of stroke nursing at the Australian Catholic University in Sydney. And I started working with Sandy shortly after she completed her PhD, when she was interested to find out whether - if we could improve nursing care in stroke units, would that lead to better patient outcomes? So as a bit of background, one of the first Cochrane Reviews demonstrated that stroke units are probably the most powerful intervention we have to improve outcome for people who have strokes. And by stroke units we mean people should be admitted to basically a hospital ward which is dedicated to stroke and has nurses and physios and occupational therapists who are entirely focused on stroke. And

we know that if we just put people into those environments with that professional support, they get a significant improvement to their outcome.

There were some signals though that there were some aspects of nursing care which were not optimal in stroke units, and seem to be related to a bad outcome. So there's some evidence that if a patient who had a stroke had a spike in their blood sugar, then they had a worse outcome. If they had a spike in their temperature, they had a worst outcome. And so Sandy was very interested to ask if we could basically support nurses so that they managed sugar control, temperature controls, following assessment better, would we get additional benefit to the care and benefit the patients get from being in stroke units.

So I worked with Sandy who conducted a randomised control trial in New South Wales where she randomised 19 stroke units to get an intervention where we basically got nurses to come together as a team to problem solve, to try and develop concrete action plans about how to overcome the barriers to these aspects of care. And what we were able to show is at the end of the trial, patients who were treated in the stroke unit, who got this additional implementation work, were 16% more likely to be alive or to have or not have major disability at three months.

There was very little change in mortality and death rates within the trial, most of this was about people who probably would get home rather than having to go into an assistant facility because they were managed in units where nurses were looking after these aspects of care. Where we followed that up, we follow these patients up over five years. And we could actually demonstrate that patients are more likely to be alive within five years, if again, they had been treated in the stroke units where we had optimised the nursing care.

Ray Moynihan: A great example of the use of evidence being translated into practice in a clever way, and people's lives being improved. It's funny that we're talking about stroke because I remember filming in a stroke unit that you describe in Canada, and it was just so impressive. I think we filmed it at a dance class that was part of the process in the stroke unit, that was to have I think a weekly dance session.

Jeremy Grimshaw: Those crazy Canadians…

Ray Moynihan: But more than dance, it was very much an example where a whole lot of different professionals were working together and really did seem to be an example of this common rhetoric about patient centred care, that it really did seem to be quite a rare example where teamwork among all the different health professionals, was actually a reality and people were benefiting.

Jeremy Grimshaw: Absolutely. I mean, just to follow up on the Sandy Middleton story, basically this sort of innovation was then picked up by I think the New South Wales Innovation Agency. it was rolled out across New South Wales, so all the stroke units, all the citizens in New South Wales benefited from this and if anything, the implementation was even better as this was rolled out into the settings and it's now being rolled out across I think 300 hospitals in 13 countries in Europe. So it again is one of those areas where not only did Sandy demonstrate this benefit, she's also managed to then make sure this becomes part and

parcel, just routine health care in New South Wales, increasingly in Australia and around the world.

Ray Moynihan: And I guess for us all listening to you talking, one of the take homes here is this, if we do suffer a stroke, if one of our loved one suffers a stroke, then these sort of changes mean that we're going to end up with better care after that stroke, improving the lives to follow that.

Jeremy Grimshaw: Absolutely. What it also shows is that little things in clinical care matter. You know, my guess would be that before Sandy's work, people wouldn't get too worried if there's someone with a stroke, their temperature went up. But Sandy's work clearly shows that that is important, and if we look after that, then basically our loved ones, our patients will be more likely to get home, more likely to survive as a result of that. So it's that kind of detailed understanding of the clinical care and making sure that patients get the right care. I mean, that's what drives me. That's what gets me out of bed in the morning.

Ray Moynihan: You're listening to The Recommended Dose with me, Ray Moynihan, and this week we're talking with Professor Jeremy Grimshaw. A Fellow of the Royal Society of Edinburgh, Jeremy's also President of the Board, of a sister organisation to Cochrane, that's the Campbell Collaboration which summarises evidence about social policy. And he's also been deeply involved with Cochrane for a long time, including 10 years as Director of Cochrane Canada.

Jeremy Grimshaw: I wasn't at the first Cochrane meeting but I got involved towards the end of 1994. And it just became part and parcel about you know, my ethos, how I see the world, how I see research needing to be done, and it's also a wonderful intellectual space. So as a relatively junior researcher, being able to be in rooms with people like Iain Chalmers, Andy Oxman, who were remarkably generous to young scientists and young clinicians. And it's also a remarkable social gathering. I have friends and colleagues now around the world who I have over the years got to know incredibly well. I'm here visiting colleagues at Cochrane Australia. And through Cochrane, I have incredibly deep friendships, that has also kept me there. So it was very much driven by initially that kind of influential 'aha' moment about what a systematic review is, but then you got sucked in. And it became an intellectually challenging family space that you wanted to be in.

Ray Moynihan: Let's move from Cochrane to the Campbell Collaboration, because this is where in recent years a lot of your energy is going now, the Campbell Collaboration. Before we talk about what it does, who was Campbell? I mean, we've talked on this program about who Archie Cochrane was, quite an extraordinary figure that Iain Chalmers talked about in a recent podcast. But who was Campbell?

Jeremy Grimshaw: So Donald Campbell, like Archie Cochrane, was an extraordinary scientist in his field. He basically was working in the social evaluation space in the US which meant that he did research that was particularly relevant to education, to social welfare, to business and organisational scientists. And he was I think, first and foremost a methodological thinker. His influence really cannot be underestimated. When Campbell started, the thing that I got excited about was I was in the room with generations of his graduate students who are now senior professors, world leaders in their field, and many of them in the same way in health Iain Chalmers encourage a whole generation, many of the leading thinkers in

that social economic policy space, really were sort of encouraged and supported and intellectually challenged by Campbell and his ideas.

Ray Moynihan: So for those who don't know, briefly, what's the basic difference between the Cochrane Collaboration and the Campbell Collaboration?

Jeremy Grimshaw: It's largely about the content area. So Cochrane focuses on systematic reviews of health. Now, within that they also look at public health and so often when they're looking at public health, they may start to look at social or economic welfare. But the Campbell Collaboration is basically trying to do systematic reviews of social and economic policies. So the areas that we particularly focus on are crime and justice, education, international development, social welfare, and more recently, we have a new education disability group, a business and management group, a knowledge translation implementation group, and we have emerging groups, particularly staying focused on things like food security. So there's always some overlap between health and social welfare, but largely Campbell does the social welfare stuff and Cochrane does the health stuff, and where there is overlap, we try and work together.

Ray Moynihan: So in other words, if a government was going to introduce a new policy in terms of how it runs its prison system or how it runs its education system, or how it runs its social security system, am I right in thinking that the Campbell Collaboration is generating good quality evidence about what policies and programs might work and which ones might not work?

Jeremy Grimshaw: Absolutely. That's a great summary Ray.

Ray Moynihan: And so let's talk about an example to make this real, Jeremy if we can. I think there's been some work done on a program that relates to criminal justice called the Scared Straight programs. And they've had some interesting findings about programs for young offenders. Can you tell us about those?

Jeremy Grimshaw: Sure. Scared Straight programs are programs that will take juvenile offenders, and take them into prison and meet basically hardened criminals who are serving life sentences for whatever offense. And the idea behind this is that basically these hardened criminals will basically try and scare these kids into going on the straight and narrow. And actually in the UK, there was a TV program. This was made entertainment so that every week basically kids will be taken into jails, and they'd be filmed with these life prisoners screaming at these kids and they started crying and yeah, got very emotionally upset. It was really horrible reality television. When Campbell was being founded or established, one of the first reviews that it did led by someone called Anthony Petrosino is actually look to see well, is there any evidence that these programs lead to reduced criminal activity amongst these kids as they grow up.

Ray Moynihan: And what did the evidence show?

Jeremy Grimshaw: Well, Anthony was able to find 12 randomised control trials, I think it's the first thing that surprised me. I don't think I would have estimated there were 12 for this. But what it showed clearly is this did harm. These kids were more likely to re-offend if they went through these programs than if they didn't.

Ray Moynihan: I'm interested in your reflections on what the limits to evidence informed policy change are? If you do see any limits.

Jeremy Grimshaw: So evidence is only one input into policy decisions. And often it's not particularly the most dominant one, the two will be political views, ideology or what's possible will drive the political agenda. But I think that if we look at governments around the world, if you compare where we are to maybe 20, 30 years ago, I think there's a much stronger emphasis on evidence as being one of the inputs to this. So maybe 20 years ago, it would be, we'll get our favourite expert in who will largely reinforce our own biases in terms of what we think we should do. It's clearly not a global phenomenon but in many jurisdictions now people are more formally incorporating evidence as one of the inputs into the political decision making process. So I think we can expect and demand evidence to be used more often. And if we don't like the results of policy formulations, we need to hold our politicians to account.

Ray Moynihan: I think I'm right in saying that the Swedish government has talked about introducing prostate cancer screening in Sweden and given the evidence suggesting that this could cause great harm, this could be a very non-evidence based decision that may well provoke a response from citizens as well.

Jeremy Grimshaw: I would hope so. But I think prostate screening as a man now in that age group is something I would avoid like the plague, even if I'm found at a later stage to have prostate cancer, I think that the risk of harm is potentially very great, and we need to respect that. I do think that screening is one of the areas where we actually have really good guidelines about when screening tests are appropriate or inappropriate, and we can then look for the evidence to see whether they meet those guidelines and from my perspective, but I think for many other national guideline bodies perspective, prostrate screening would not be anything I would choose to implement at the population level.

Ray Moynihan: Seeing as we're talking about your decisions, Jeremy, I think I'm right in saying that you had your own, some version of a health scare a few years ago. I mean, is that something you'd want to talk about and what did you learn from that?

Jeremy Grimshaw: Yes, if you want. I had a heart attack, now almost 10 years ago I think. I was in Norway at the time, so I was doing some health services research comparing what care might have been in the UK or Canada to Norway. The Norwegian system was exceptional, I was looked after remarkably well. And they were very embarrassed because I was a foreigner and they had to actually charge me, in fact charge by insurance company for the care I got. They were very embarrassed to have to do that. One of the things about this, I mean clearly I come from a medical background. It was a funny presentation so it wasn't clear to me that I was having a heart attack when I was having a heart attack. But once the diagnosis was made, to some extent basically I got picked up, I had a stent put into my coronary artery.

So you know, that was evidence-based but in no way was that anything that ... I was involved in the decision making process for that, and I have confessed that even though I'm very committed to evidence, I'm also very interested in what the healthcare professionals looking up to me think I should do. Thankfully, all the healthcare professionals who were looking after me in Norway and then in Canada, actually were recommending the treatments that I knew from the research evidence were entirely

appropriate for me. So it is one of those areas where if they had been recommending things that I didn't feel comfortable with, that would have been more problematic. But to some extent, I was very happy to take their judgment as healthcare professionals. What it has meant though, is I'm a very happy complier.

So if you have a heart attack, if you take four preventive drugs after the heart attack, you reduce your risk of death at one year by a relative risk of 80%, but for an absolute risk of about 6% reduction. And what we do know from the research evidence around the world is about 50% of patients after 12 months are not taking these medication. I am very happy complier, I take the medications because they are one of the things that I think has probably kept me healthy since then. And so if you like the research evidence on compliance, and the fact that if you're a complier, you're more likely to get additional benefit has been part of what's driven my personal behaviours.

Ray Moynihan: So this is another example of evidence informing medical decisions in your own life.

Jeremy Grimshaw: Absolutely.

Ray Moynihan: Looking forward into the future, a little bit here, Jeremy, you wrote in Nature that 'health data has never been more plentiful from the millions of research studies published every year to data from personal genome sequencing, electronic health records and wearable devices, yet sifting through this information to make more evidence based decisions is becoming increasingly difficult for experts' - not to mention the lay public. So I mean how do you feel when you look at the future? Is all this information that we're getting from all these sources going to help us or we're going to have too much information and how much is too much? What are your thoughts?

Jeremy Grimshaw: So my sense is that this information should help us, but we need to think about how we curate this information and also how we look at it critically. So you know, one of the impulses for that paper with Julian Elliott, who I think has been one of your previous guests, were a recognition that we increasingly have big data. So these are data that are stripped from electronic health records or from people's patterns of where they travel on Google, et cetera. And that is a very rich source of information. However, it's also very limited in what it can tell us. And what we need to do is we need to find a way of curating evidence where we're actually taking the best knowledge or information we get out from the big data. We're aligning that with what we're getting from more rigorous research to try and get closer to the truth that will help citizens make decisions.

What I worry about is if we end up with a siloed evidence community where the big data people are at one end, in one corner, the researchers are in another corner, the electronic health record people are in another corner. That's where I think we'll get into real problems because there'll be just a lot of noise and all these groups shouting over each other. If we could actually come together and say - How do we work together? How can we honestly both recognise a limit of what our personal source of information can bring? And then how do we bring the different types of information together to as I said, try and get to a healthier, more nuanced approximation of reality.

Ray Moynihan: Let's move to the close of this conversation by talking a little bit about you. And as we learned at the beginning, you have become in recent years, something of a petrol-head, if

you don't mind me using that phrase, enjoying watching car racing. Remind us again where that enjoyment comes from.

Jeremy Grimshaw: So it's this Grand Prix Formula One. I don't get particularly excited by other car racing. But I think the thing that I enjoy most is that you have teams that are pushing at the absolute edge of developments. You have just amazing drivers. So when I started, I had a favourite driver, who didn't particularly like the other drivers around there. I still have a personal favourite of the moment. But you come to respect just how remarkable these drivers are, what athletes they are, and also what mental stamina they've got. And the final thing is that car races or the Grand Prix is about two hours or two hours maximum, and it actually is like a chess game that unfolds over two hours.

So you're watching that and having enough of them saying about what's happening in the background that something for that some one pits in these times and that's going to mean this is going to happen at lap 50. It actually makes it quite gripping. There are some very boring races, but Sunday mornings are often good time to sit in front of the television in Canada with a cup of coffee and basically allow yourself just to be in the car with the drivers.

Ray Moynihan: Well, speaking of cars, if you are a guest host on a show called Carpool Karaoke, and I have to admit I'd never heard of this program until I was preparing for this interview. I mean, but if you were a guest host on Carpool Karaoke who would you have as your guest?

Jeremy Grimshaw: So in general, I like electronic experimental drone music which I don't think would go down particularly well within a car, but as you're asking that the person who springs to mind is Bonnie Prince Billy. So Bonnie 'Prince' Billy is an American, I guess this alt-country singer, but is just an amazing artist who I have followed and loved for you know, probably over 20 years. One of his most famous songs is a song called, 'I see a darkness'. And Johnny Cash did an absolute amazing version of this in American Unchained Volume Three. I would recommend all of your listeners, go and listen to Johnny Cash and then go back from Johnny Cash to Bonnie Prince Billy and I'm sure that it's not the most uplifting of songs, although it's not that pessimistic, but they'll enjoy that.

Ray Moynihan: That is a great tip. And we should share with the listeners that you are a great music lover too Jeremy. And you particularly like going to music festivals too, is that right?

Jeremy Grimshaw: I've spent a lot of the last 10 years trying to organise my professional life so I can also take in a concert or a music festival at the same time.

Ray Moynihan: And do you have any music festivals anywhere in the world that are particular favourites?

Jeremy Grimshaw: I certainly do. There is an amazing festival called Big Ears, which happens in Knoxville, Tennessee, at the end of March every year, and it's run by basically a promoter who promote throughout Southern America. But this is his hometown, and he basically selects artists that mean something special to him. And he has everything from experimental 20th century composers. So Philip Glass has been an artist-in-residence there, to brutal metal, Faust the German krautrock band from the 70s played there. Sunn O))) who are a death metal band, played there, to jazz, Kamasi Washington has played

there, to kind of leftfield music and electronics. I saw Antony and the Johnsons there at the first concert, at the first meeting which was just breathtaking.

Ray Moynihan: Well normally, we ask for literary recommendations, but I think those music tips are a great way to go out. Jeremy Grimshaw, thank you for your time.

Jeremy Grimshaw: Thanks a lot Ray, great speak to you.

Ray Moynihan: You've been listening to our conversation with Professor Jeremy Grimshaw. And if you're after that Johnny Cash track that Jeremy mentioned, it's on the album American III: Solitary Man.

And that was the last Recommended Dose for this season. Thanks to Touch Music for the clear singer piece we're about to hear and a very big thank you to the indefatigable Shauna Hurley and her colleagues at Cochrane Australia for production.

Thanks too to the BMJ for co-publishing this season, and to the sound guru Jan Muths for his exemplary editing. Thanks also to Chris Scanlan from Visualism for all the great show artwork throughout the series. And thanks to all the inspiring guests. But the final thank you, is to all of you listening. It's been a particular privilege and an absolute pleasure for me to be able to share these conversations with you.

And we're closing now with a recommendation from Jeremy, from Scottish composer, Claire Singer with a track called Fairge.