Inspiring Doctors. Episode 8: Trisha Greenhalgh

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Martin
Welcome to Inspiring Doctors, a podcast series brought to you by the British Medical Association. I'm Martin McKee, a professor of public health and the president of the BMA. In this series, I'm joined by people who I see as role models. They've successfully taken their medical knowledge to a wider audience in creative ways. So, what inspired their work? What lessons have they learned? And what advice do they have for young doctors who may want to follow in their footsteps?

There is something magical about the confluence of medicine and communication. My interviewees are only some of the role models who do this work. But they are all people who have inspired me. I hope that our conversations will in turn inspire you.

My guest today is Trish Greenhalgh. Trish qualified in medicine from Oxford and became a general practitioner. After a spell in London, she returned to Oxford as professor of primary healthcare. Trish is a strong proponent of working with patients to co-design responses to their needs as they experience them.

She's a member of Independent SAGE. This is a group of scientists who've been engaging with the public to answer their questions about the COVID pandemic, and they've been appearing on online briefings viewed by tens of thousands of viewers every week. Trish was awarded an OBE in the 2001 New Year Honours. Welcome, Trish.

Trish
Hi.

Martin
So, can I begin with what I think is the publication that you're probably best known for, *How to Read a Paper*. What led you to write this?

Trish
Ah, yes. So, for people who've never heard of it, it is a book that is on a lot of reading lists, undergraduate and postgraduate. And it's subtitled *The Basics of Evidence-Based Medicine.*

I qualified in 1983 and the first major paper on evidence-based medicine was written in 1992 in America. And that movement of EBM (evidence-based medicine) came over to the UK in about 1994, 1995, and I was a young academic then. I was very excited, and we started running workshops for people to learn the skills of EBM.

It was very new at the time and the only book that was around was a big red book. It was known as 'Dave Sackett's big red book', and it was Sackett and two other people. But it was very kind of heavy and quite sort of epidemiological and statistical. And the people coming on the course said to me, 'We don't understand a word of this.'

So, I originally made some notes saying, well look, to get you into it, here's the easy bit. Here's the numbers, but described by someone who's not really that numerate. You know, these are the bits that I think you need to know, the real basics.

And actually, it was Ruth Holland the *British Medical Journal* who said to me, 'You know, you really ought to turn these into a series of articles or turn it into a book or something like that.'

So, they were never intended to be published. But I sat down one day and thought, yeah, it might make a book. And actually I'm just writing the seventh edition now, of that book. So, yeah, it probably is what I'm best known for, certainly amongst undergraduates.

Martin
Which as you say, has been described as a guide for anyone who is wanting to teach or learn the basics of evidence-based medicine. But in the world that we live in, there are many people who may not want to learn the basics, even if we think that they should. Here I'm thinking of some politicians and people in the media. So, would you ever think of writing a shorter, simpler one for them, or do you think it would be a waste of time?

Trish
No, I think it's a job that needs to be done. Absolutely. And a number of publishers have approached me. There were people who said, 'Why don't you write the kind of Ladybird guide to EBM?' Not for medical students, but for the lay public. And as you say, for people like politicians or civil servants who might, for example, have an arts background at university.

There are two reasons why I haven't done that. One is that I simply haven't had time and other things have got in the way. But the other thing is I think there are probably better people to do it than me. I think there are some amazing journalists who convey complex scientific concepts to the lay public. And I think one of the other people you've got on your list of people to interview is Alice Roberts, who specialises in public understanding of science.

I mean, I do my best, but I think it should be either a science journalist, or a doctor who really knows about communicating with the public, who would do that. And do you know what? If they did it, I'd write the foreword.

Martin
So maybe this is a call for someone like John Burn-Murdoch in the *FT*, who's been really remarkable in presenting some very complex data in a way that is understandable and obviously reaching out to the audience that reads the *Financial Times*. How has the book been received by patients?

Trish
Well, I don't know really. In all my years in general practice, I've only ever had one or two patients come into my surgery and sat down and opened my book at a certain page and said, 'Doctor, in this book you've said this, could I please try it?' Or something like that.

You know, it's not aimed at patients. But then lots and lots of people have an interest in science. And I think it is written, you know, any basic textbook is going to be accessible to the intelligent lay person.

So, yeah, I think the other audience that it wasn't originally intended for was the sort of non-doctor clinicians. And back in 1995 when I started writing it, I wrote it for doctors, but even by the time we were doing the second edition in the early 2000s, we'd already changed evidence-based medicine to evidence-based healthcare.

And we realised that, you know, actually we should have been aiming at a broader target audience of health professionals, which it certainly is now. And in the latest edition, we're going to be bringing in a lot more examples from different healthcare professionals, which I think is good.

Martin
So, you've been extremely active in communicating to the public during the pandemic, and we now have the inquiry looking at what happened during that time. I mentioned that you've been a member of Independent SAGE, as have I. And I'm wondering what you think from your time on Independent SAGE and the other work that you've done, what do you think should be the inquiry's conclusions? What do we need to do now to make sure that when the next pandemic – which will happen – comes along, we're going to be better prepared?

Trish
I'm not sure it's my place to prejudge the conclusions of the inquiry, but I think I'd certainly have a view on what the inquiry should be looking at.

The area that I personally have done most work in is prevention, and particularly the sort of public health things of the efficacy of masks – what kind of masks should we be wearing, when should we be wearing them? Should we be wearing them at all? I think we should; not everywhere and not all the time, but, you know.

So I've written a lot on masks. I've summarised evidence from studies other people have done on different kinds of masks, different settings, different risk environments. But I've also actually done some studies myself. Some of our medical students did a randomised controlled trial of wearing different kinds of masks, running around the Iffley Road running track, to test the hypothesis that the mask blocked off your oxygen levels and increased your carbon dioxide levels and made you very ill. And they showed that it didn't do any of those things, which was very nice. So, we published something called the MERIT trial, so I've even done a randomised controlled trial of masks.

I've also worked with aerosol scientists, engineers and chemists and people who look at the environment and how small particles travel in indoor air. I mean, they look at outdoor air as well, but of course we're very interested in indoor air because when you're exhaling viral particles, other people are inhaling those particles. And that's been a great thing for me because I learned so much; I didn't know anything about aerosol science.

Anyway, your question was about what the inquiry should cover. So, one of the questions that the inquiry needs to cover is why were the aerosol scientists ignored for so long?

And also, why was so much high-quality evidence about the efficacy of masks ignored because it didn't sit within that very narrow domain that some people with a very rigid and narrow view on evidence-based medicine say must come from randomised controlled trials? It's very, very difficult to do a randomised controlled trial of masks. I know, I've done one. It's almost impossible.

In fact, I personally think it is actually impossible to do a real-world study of masks. The reason is, you can ask me to wear a mask and you can test whether I catch COVID. But hang on a minute, the mask is protecting other people. So how do you consent someone to be tested for COVID when, hang on a minute, they weren't the person recruited into the trial? The only way you can do that is by randomising whole towns or villages, as someone did in Bangladesh. But even so, the uptake of the masking is going to be very low because they're free-living populations.

In the end, the randomised controlled trial evidence on masking is only part of the picture. It is inherently flawed, no matter how hard you try, no matter how good a study you do. It is inherently difficult because the person wearing a mask is not the person you need to test, fundamentally. And because of the evolution of the progress of the pandemic, the way it spreads through a community is not a kind of single outcome event, but a dynamic process.

So, the inquiry needs to ask, why on earth did we get seduced by an overly narrow perspective on evidence-based medicine that made us reject the whole of aerosol science, really high-quality evidence from outside biomedicine which didn't need randomised controlled trials? You don't need randomised controlled trials on how to build a good bridge, how to build an aeroplane, that kind of thing. The engineers use quite different quality standards, quite appropriately. So that's number one, is why we didn't.

So that's one. The second thing that I think the inquiry should look at is, broadly speaking, inequalities. The pandemic laid bare all sorts of what we call structural inequalities; in other words, inequalities that are built into the fabric of our society. Some people are very affluent, they are very well-connected, they are very well-educated. They have a lot of, for example, information technology in their homes, etc, etc. Other people are at the other end of the privilege spectrum.

And the pandemic affected people who were poor, people who were poorly housed, people with uncertain citizenship status, people who had to travel to work on public transport rather than just… what I did, which was just sit in their nice living rooms and work from home, etc, etc. And not enough was done to acknowledge or support these huge, huge structural inequalities.

And so, we got massive disparities in mortality between different social and demographic groups. It was an absolute scandal. Of course, it's been recognised up to a point. But as you say, Martin, what are we going to do about learning from this pandemic and facing the future and saying, we cannot let this moral injustice happen again?

The third thing I think we need to do better next time is protect public-facing professionals: clinicians, support staff, social work staff, teachers, supermarket workers. People whose job requires them to be facing the public. I don't think we prioritised them. I don't think we protected them well enough. And many of those people caught COVID in the course of their work.

Martin
In another one of the podcasts in this series, we talk to Dom Pimento, who wrote the book *Duty of Care*, and he really makes this point about the way in which health workers were not protected. And he described what he and his colleagues did to try to address that.

But just sticking with the evidence-based medicine for a minute, because we do teach this hierarchy where we have RCTs (randomised controlled trials) at the top. And yet during the undergraduate medical curriculum, if you're doing bacteriology, for example, or microbiology, you learn about Koch's postulates.

And people will have done physics at school, many of them will have some physics A-levels, and they will have learnt the basics of dynamics in engineering, where you don't do randomised controlled trials because you don't need to, as you've already said.

So, do we need to think again about this? You've talked previously about real vs rubbish EBM. Are there insights there? We've almost sort of deified this concept of this hierarchy of evidence and that means that people just dismiss observational data, they dismiss all of the methods that econometricians use, natural experiments, interrupted time series analysis, difference in difference, all the things where you cannot randomise – planetary health, where we only have one planet. So, do we need to try to redress this a bit more?

Trish
Well, yes, of course we do. But before I do that, let's be really clear that the randomised controlled trial in its place, for what it was designed to do, is unparalleled for comparing two groups of participants, patients if you like, because they've been randomly allocated. And that means that all sorts of confounding variables are hopefully evenly distributed between those two, which are the arms of the trial, the groups.

Now I owe my life to a randomised controlled trial. You know, a few years ago I was diagnosed with a poor prognosis cancer. And guess what? There were randomised controlled trials that told the doctors treating me which drugs, which surgery I would have in order to optimise my chances of survival. And guess what? I've been cancer-free for eight years and I will defend to the end the randomised controlled trial in testing drugs.

Another example is vaccines. I was giving a talk the other day, and someone put up their hand up and said, 'I understand you're anti-randomised controlled trials and by the way, there's no evidence that vaccines work.'

And I said, 'Well there is evidence that vaccines work because we've done randomised controlled trials of vaccines.' It's one of the great successes of the pandemic, the platform

trials of various therapies, but also those big, early, very rapid trials of vaccines. They got us a vaccine less than a year into this new disease. It was absolutely amazing.

And I think had we not tested those vaccines in randomised controlled trials, we'd be in a much bigger mess than we are now with the anti-vaxxers. But what we can say is, we can turn to those anti-vaxxers and say, 'Sorry, you are wrong. We know because of RCTs that vaccines work.' And we also know from those RCTs and also because of the post-marketing surveillance that the harms of those vaccines are a lot less than you're claiming.

So, putting that aside, it is also the case, and I've already said, that randomised controlled trials are not the optimal design for everything. They're not even the optimal design for every intervention.

And a very good example there is masking in a real-world situation, because the person who wears the mask is not the person, or not the only person, that you need to look at the outcomes for. But it's also the case that when you're studying the travelling of small particles in the air, you can't do a randomised controlled trial of that. I mean, it's ludicrous to even think that you can.

It's a good example actually of where the thinking has gone wrong, dangerously wrong, and wrong in a way that caused hundreds and thousands of deaths. There was a study published, I think it was published in *Nature*, one of the big science journals, where they took ferrets and they put healthy ferrets in one cage, and they put sick ferrets who got COVID in another cage.

And they sealed off the cages and they connected those cages with an air duct that kind of went up and around and down. So, you couldn't actually transmit droplets through that. And the healthy ferrets in the second cage caught COVID. All of them caught COVID. Now, the scientists concluded, well, since the only thing that was connecting the cages was this air duct, then the virus must travel in the air.

And the EBM people said, 'Oh, you can't count that. It's an animal study. And it wasn't a randomised controlled trial.' I think that's just a very common-sense barn door example of, wait a minute, how do you explain the transmission of the disease, Koch's postulates, without invoking an airborne mechanism of transmission? You can't, in no way.

But you will hear people say, 'Well, our little triangle with the randomised trial at the top hasn't got that ferret cage on it, so it must be a really low level of evidence.' And I have literally explained that experiment to a six-year-old and the six-year-old perfectly well understands it. Something must have travelled in the air.

So yes, it's gone way over the top.

Martin
Yeah. So, I think that's really just an example of laziness, isn't it? People have a framework and if it doesn't fit into it, they just disengage their brains with, as you say, alarming consequences.

Now you're also known as someone who believes strongly in what's termed technically as 'co-creation', and that's where health professionals and patients work together to find solutions to the problems that they face. Why have you embraced this idea so strongly? And maybe you can give us some examples that will help us to understand why you think it's so important.

Trish
Yes, so, co-creation is a very fashionable word. And actually, I think in some areas it may have gone a bit too far because it's one of those buzzwords that if you're not co-creating something these days, you're obviously a bit old-fashioned.

But just to wind back a bit; I don't know, 20, 25 years ago when you did research, you, the doctor or the researcher, came up with all the ideas and then you did whatever research it was and then you kind of introduced it to patients. And the patients used to say, 'Well, actually this isn't going to help me.'

And I remember Mark Taylor from the National Institute of Health Research. I can't remember his official title, but he was, you know, head of patient involvement or something. And he has a condition called multiple sclerosis, and he stood up at a conference I organised once and he gave the opening talk and he said, 'Well, I've had this condition for 20 years. And in those 20 years there have been five iterations of the NICE guidelines on multiple sclerosis, and none of those guidelines have addressed the main things that are important to me.' And I thought, oh dear, where have we gone wrong?

Now let me tell you an example of some co-created research that I'm doing right at the moment, which is, you know, it's really up to the minute. It hasn't all been published yet. We've published one or two papers, but most of the papers are still in the pipeline.

So I've been looking at a condition called long COVID, and we've got a grant, again from the NIHR, called LOCOMOTION, and I can't remember what it stands for but you never forget the acronym. And in the LOCOMOTION study, one of the things we're doing is trying to get long COVID clinics to do something called quality improvement, to identify best practice and then to measure their performance and then to iterate and gradually improve and benchmark themselves against the clinics that are doing really well.

The problem with quality improvement in long COVID is that we don't know what best practice is. There's so much controversy over what the disease is, what causes it, what is the underlying biological cause, what treatments should be given, what tests should be done. And because of that, we had real problems with this quality improvement collaborative that we were running because different clinics would say, 'Well, I'm not doing that. There's no evidence for it.'

So, we decided to run our quality improvement in a different way. We decided to ask the patients. And so we set out to review the literature, but we reviewed it with patients who were suffering from long COVID, and we got together and wrote a series of articles for the *British Medical Journal*. As I say, two have come out, two are in the pipeline, and one we've just submitted and we hope they'll accept the last one.

And in every single one of those, we've got at least one and usually two patient co-authors who've been going through the evidence. And they've been saying, 'Well, we don't agree with this paper because it hasn't covered the kinds of things that we are experiencing.' Or, 'The advice that is in this paper isn't going to help us and we've got evidence for you that that advice, you know, could make us worse.'

It's been a very difficult journey. It would have been much easier if the patients hadn't been on the writing group and the literature review group, because I look at it and I say, 'Well, this is this is good evidence.' And the patients say, 'That is not my experience.' And you think, is the patient experience really on the level of me assessing a piece of evidence? I've been quite humbled that the patients have put us under a lot of pressure. 'We don't like that sentence. We don't want you to cite that piece of work.'

And sometimes we push back, and there's been a lot of conflict. I think that's the point I want to make, is that co-design, co-creation, is this cosy word where everybody seems to be on the same page. And actually, I started to write an article with the title *We're not all on the same page*, because actually the patients are coming from a different place.

But through that conflict, through those disagreements, different perspectives, different systems, different sets of what goes at the top of your value hierarchy, you get something that comes out which is actually more useful and more authentic, and which also has some explicitly made compromises.

So, in some of those articles that we've been writing, we've said the evidence appears to show this, but the patients disagree, and their experience is different. And people reading those articles will be able to say, 'Hmm, that's interesting. Maybe we should do some more research on that.' So yeah, I like it. But then I've always liked a bit of conflict and contestation.

Martin
But then I suppose one of the other benefits is that different people will have different views about what's important to them. And too often we measure the things that we find easy to measure, but not the things that are important to the patients. So, you can address that to some extent.

Trish
Well, yes. And actually, I'm remembering a study we did a few years ago on mostly older people, certainly people over 60, most of them were over 75 with what we call multimorbidity, multiple different diseases in the medical terminology. They'd had various things like strokes or, you know, they have mental health problems, or arthritis or diabetes. You know, the whole lot.

And we had a particular view, like you say, the patient's had a stroke and this and this, and they probably won't be able to move this. And actually, when we talked to them about their lived experience, how they went about their lives, we went back and visited them several times, and we made a list of the problems that the patients had versus the problems that we thought they would have. And there was almost no overlap.

So out of 40 people studied in depth, 20 of them, the biggest problem that they complained about was chronic tiredness. And I think almost 20, maybe 18 of them, it was chronic pain, pain everywhere, tiredness everywhere. So, in other words, it was non-specific symptoms rather than symptoms associated with a particular organ system or a particular disease.

The point being, if you've got several different things wrong with you, you just feel wiped out the whole time. Well, that's not in the textbook. What's in the textbook is these little bits of disease, and then you're supposed to treat all the bits of disease, and then you get a kind of whole patient. Well, it doesn't work like that.

So, I think that's quite a good example of studying the patient experience.

Martin
Maybe we can link that back to the RCTs because of course, randomised controlled trials tell us what works, but not necessarily for whom and in what circumstances. And the challenge, of course, is you're dealing with an individual patient, and you have an overall measure of effect in whatever population was included in the trial. So how do you as a GP, and you work as a general practitioner as well, how do you then take that evidence and adapt it to the individual?

Trish
Yes, it's a great question because of course the result of the RCT, as you say, Martin, is the average effect in a particular population or in a particular stratified subgroup. But that doesn't mean that Mrs Bloggs has got to take that drug at that particular dose because Mrs Bloggs might have a particular view on it, or she might have a particular metabolism. And she's just one out of thousands of people who might have contributed to that mean effect, and she might be an outlier in relation to that mean.

And so, I think doctors are actually pretty good at this because we do see patients one at a time, mostly. And we take that result of the RCT but then we might say, 'Well, this is what's recommended.' Actually, I've got a relative at the moment who is literally cutting their blood pressure tablets into quarters because that person only needs a quarter of the smallest tablet that is available in this country.

Now, some people in those trials will have found the standard dose to be way too much for them, and they would have got the side effects. But nobody titrates right down to the lowest possible dose that will have the therapeutic effect. I mean, people don't do that in trials, but as doctors we do, with individual patients. If the patient's having side effects, try half the dose, you know, that kind of thing.

But it's also the case that Mrs Bloggs might not want any pills that are not red. My dear departed mother had great faith in red pills, particularly liked vitamin tablets, because they came in red. But it was amazing how much more effect the pill would have when it was red. I'm being slightly comical, but you know, those of you who see patients will know that everybody's got their quirks and their particular beliefs.

We have to go with that flow, don't we? You know, the patient says, 'Well, look, I don't mind taking this doctor, but I'm going to have homoeopathy as well.' Then you say, 'Alright, if you

want to go for homoeopathy, I personally don't think it's going to work, but it won't do you any harm. But please carry on taking your inhaler.'

We have those conversations all the time, and I think this whole idea of personalised medicine, adapted to your genome, might take on. You know, all those tests that you're supposed to have, you're a slow acetylator or whatever, we'll give or we'll adjust this. They're not going to be anywhere near as accurate or as kind of comfortable, clinically, as simply having a dialogue with the patient. 'How did you get on with the tablets? Oh, right. They made you pee a lot, let's change them to this.'

We do personalised medicine with all our patients and that's one of the really fulfilling things about general practice, but also about a lot of other branches of medicine.

Martin
But then we don't use the information we have. You talked about acetylation there. We can find out people's acetylator status just by asking them if they can sleep at night after they've had a cup of coffee. And that would give us the information without doing any laboratory tests but we ignore that anyway. So maybe the question is, would we actually make use of that additional data if we had it?

But I want to ask you about your background and your training. We've already talked about your engagement with engineers, but you've also reached out particularly to people working in the social sciences. Your first degree was in social and political sciences, and you've drawn explicitly on that knowledge to offer, for example, a feminist critique of health technology. Could you explain how your training before you did medicine, how it shaped your ideas subsequently?

Trish
Well, yes. I mean, in fact, my first degree technically was in social and political sciences, but actually, that was an intercalated year when I was at Cambridge.

So, I did two years of medicine and then one year of what was known as SPS. I think it still is – social and political sciences – and I studied SPS at a very crucial time in the development of sociological thinking. I was taught by Anthony Giddens at Cambridge, who was at that time developing something called structuration theory, which I'm still rather grabbed by, actually, although it's gone slightly out of fashion. But I still quite like it.

So, the idea is you've got these sort of external social structures like the economy, for example, or social expectations, the institution of marriage, those kinds of things. And they change over time. And then you've also got what people think, people's subjective assessments and interpretations of the world around them.

And the idea in structuration theory is we need to think about both of those things, and they both influence one another. So the more people who live together without getting married, the more that slightly erodes the institution of marriage, because nobody really cares anymore, type thing.

I mean, there's lots around structuration theory. But one of the big things, of course, that I was learning about in 1979 in Cambridge – not just learning about, but living and breathing – was feminism.

And feminism isn't just about men and women, or at least academic feminism isn't. What feminism is about, what the feminist sociological lens is about, is the haves versus the have-nots, if you like, the dominant group versus the 'oppressed' group. I'm putting oppressed in inverted commas because as a white woman, I check my privilege quite a lot. You know, I think there are way more oppressed groups in society.

But going back to 1979, most Cambridge colleges hadn't even accepted women. There was still a lot of sexism around when I was sitting as a medical student. Frequently the male lecturers would put pornographic slides of women's genitals just to spice up the lectures, all that kind of thing.

And against that background, I was delighted to discover this theory of how, for example, language is loaded. I mean, these days I think a more contemporary lens might be critical race theory, where our language is loaded with colonialism. All these assumptions that the Global North's way of doing things is the benchmark, and the Global South is obviously not quite caught up with us.

Back in the late '70s, it was a very gendered language, the default was male, etc, etc. And that raised my awareness of, if you like, things that have a very powerful effect but are hidden until you look for them. Until you deconstruct language, for example, until you analyse not just the overt power plays, but also much more covert power plays.

And I've been interested in that ever since. We're just doing a paper at the moment on hidden work, the work that gets done by people that isn't appreciated, which plays out very differently by gender and class and race and all that kind of thing. It's interesting, it's exciting. And yeah, I think that early year of SPS has very much shaped the kind of stuff that I've done in the pandemic, but also most of what I did in between.

Martin
And I might add, just for completeness, we have used strong structuration theory to understand adherence to antihypertensive medication, where we've looked at the role of peer support, family support and concerns about medicine, and then applied it in a cluster RCT. And we found that peer support was incredibly important in getting better outcomes, so I fully concur with your view about the need to bring on board these perspectives.

Now, this series of podcasts is about doctors who find different ways to communicate, reaching far beyond the traditional medical and scientific audiences, and using innovative ways of doing so. For much of the pandemic, you've been engaging with the public, answering their questions, interpreting complex issues as a member of Independent SAGE. Why did you think this was important? Was there a gap that needed to be filled in the public communication of the pandemic?

Trish

Yes, most certainly there was. It's quite interesting looking back. You know, it's more than three years since all this was going on, but in the early weeks of the pandemic, things were happening very, very fast. I was an avid Twitter user; I still am. Things were unfolding in real-time on Twitter. You could search Twitter for COVID or SARS-CoV-2, and you could see right away what was happening.

That was very exciting. And it was kind of interesting that Twitter became an important communication mode, for scientists, for clinicians, for public health, for communities. But also, because of the design of Twitter, you don't have close communities. I mean, everybody could look at what the scientists were saying on Twitter. Everybody could look at what the doctors were saying. You didn't have to pay to look at it.

And it became evident very early on that the questions that were being pitched to SAGE, the Scientific Advisory Group for Emergencies, were being pitched in a particular way. They were being defined often quite narrowly, because that's what government does. Government gives its advisory groups a very specific question to answer, and then they're not allowed to stray outside it. They don't push back and say to government, 'You shouldn't have asked us that question. You should have asked us this question.'

Because, you know, what do they say? Scientists advise, ministers decide. Well, yes, OK, that's fine if you want to run government like that. But that doesn't mean that's the only scientific debate that needs to happen. And certainly, at the beginning, I think, I'm pretty sure that SAGE minutes were not made public.

So, you know this Martin, Independent SAGE was set up pretty early in that time period and I wasn't part of it at the time, although I did tune in and watch. And I thought, gosh, this is really, really important because the questions that the public were asking were really important questions. Not always, I mean you always get someone asking a daft question, don't you? But in general, people were asking the questions that needed to be answered.

And I think that's really important – that if you allow open public debate, the salient issues rise to the surface. I think if you want a kind of reference for that, I'm very interested in something called pragmatist philosophy, where what we need is a dialogue in real time with real people who are at the coalface of what's happening, and we engage with the concrete reality, and then the questions will arise.

I often talk about this example actually. In Amsterdam on the 8th of March 2020, there was a pre-Easter performance of Bach's *St John Passion* and 140 people who attended that developed COVID. Four of them died; the conductor ended up in intensive care. And the public were asking questions like, 'Why did a singing performance lead to so many deaths?'

Now, many people ignored that. I don't think SAGE thought about it, but it was all over Twitter. Hang on a minute, if singing produced so many cases, some of which were very serious and indeed fatal, surely there must be something in the air? I think that's a really good example of common-sense questions from members of the public, who are thinking, gosh, this is unfolding, please scientists, will you take this and run with it?

And the kind of questions that come up in Independent SAGE are a bit like that. And they were also questions that don't have easy answers. People writing to Independent SAGE would say, should I send my child to school? There's a COVID outbreak in class, and Grandad's upstairs, and he's not very well. And there is no easy answer to that.

But again, that's not the sort of question that you could put to a formal government advisory group, because they've been given a different set of questions to answer. So yeah, it's really important.

Martin
But then we seem to keep making the same mistakes again and again. I'm thinking of the classic example of the British colonial authorities trying to grow groundnuts in what was then Tanganyika without ever asking the local people why they didn't grow them. Or the book *The Blunders of Our Governments*, which looked at governments of both political complexions, and the conclusion was that policies were enacted without talking to anybody on the ground.

So, you really do wonder if we will actually learn anything from this process either. Now, one of the big questions that people have asked about Independent SAGE and other groups like that is whether scientists should actually advise on policy, or should they just state the facts as they see them and then leave the decisions to others. Where do you stand on this?

Trish
I think it's a false dichotomy, and I've done a lot of policy work and I don't think that's the question, frankly. I think the question is better framed as: what should the science-policy relationship be like?

Let me give you an example. At the beginning of the pandemic, we very quickly had to shift medical consultations from a predominantly face-to-face modality to either telephone or video or other means where people weren't in the same room together. This was in the pre-vaccine era. Of course, you could still go and see a doctor if you really needed to, but the vast majority of consultations had to move very quickly.

And I got a phone call from somebody in policy, the Primary Care Digital Transformation Team, and she said, 'Trish, how are we going to do this? We need your help.' And I said, OK, how can I help? How can I work with you, to make what was actually the biggest shift in the organisation and delivery of primary healthcare since the NHS began in 1948. We just moved the whole of primary care to what they called a remote-by-default mode.

Now, should I have told the policymaker what to do, or should I have given some scientific evidence and the policymaker decide what to do? It didn't work like that. We worked together. Why did it work together? Because for the last four years, I've already been working with that policymaker. I sat on the Primary Care Digital Transformation Advisory Group because I was doing research into remote primary care, and I had a relationship with that policymaker.

And that is the important thing – that if you have a close dialogue or a close relationship with your policymaker, your policymaker knows who the leading scientists are in this topic area, and you have already been doing research that acknowledges and responds to the questions that

policymakers are asking, then when the crisis happens, you just have to pick up the phone and you then have a dialogue.

Now that's a slightly simplistic example. It's not going to work everywhere. But I think one of the problems in this false dichotomy – it seems to be everywhere, you know, 'should the scientists be dictating policy?' – is because you're thinking of this as a kind of freeze-frame in time.

What we should be having is a close dialogue between scientific groups and people making policy in all sorts of areas, whether it's vaccines, whether it's, you know, drugs or whatever. And if we can do that, then I think there would be far fewer situations when you'd have these arguments of hang on a minute, should it be the scientists *or* the policymakers? Because, of course, it's something that needs input from both.

Martin
And of course, much of that was written in a paper by Innvaer and colleagues about 20 years ago, where they really stressed the importance of having those good relationships. But again, I sometimes wonder if we have ever actually learnt anything.

I want to talk a little bit about Twitter, which you already mentioned. Now, you're a Twitter megastar. You've got, the last time I looked, about 180,000 followers. Have you ever regretted using the platform and how do you deal with the abuse that we all get on social media?

Trish
I think the only time I've ever regretted anything I've posted on Twitter… I used to post quite a lot about one of my sons, who is a marine biologist and lives on a remote island a long way away, shall we say, doing very interesting scientific research on the coral reefs and manta rays and things. And I used to post a lot of pictures that he sent.

And after a while, he said, 'Can you just post slightly fewer?' He wasn't saying, you know, don't post them at all. But of course, if you live on a tropical island to get away from the world, you probably don't want your mum with 180,000 followers posting all sorts of pictures, even though they're very beautiful pictures. But once I found out that he was less keen, I'm posting about him less, but otherwise I don't think I have, no.

I post under my own name. I post a few personal things. I don't post much personal. I post scientific stuff. And I've just come from a meeting where we were talking about an MSc course that I run, and it was a marketing meeting, we were asking, 'How are we going to market this course?' And the answer was, well, we already market it through Trisha's Twitter feeds. Apparently about two-thirds of the people who come on our course learnt about it from me tweeting about it. So, this saves the university a lot of money. They don't have to do all sorts of marketing like they do with the other courses.

And the reason why the students come on the course is because they feel they kind of know me from Twitter. They know the kind of things I'm interested in. They know the stuff that I really don't like because I tweet about that; I put something up to say, 'I don't agree with this.'

And I guess some of them think, I'd quite like to learn a few of those skills, and then they come along. So no, I don't regret it.

The abuse, oh, that's easy. You block them, you just block them! And it's a bit of a violent thing to do in a sense. You know, you might even block everybody who follows some account which is putting out abuse, that's putting out hatred. I think if people are following that account, they've probably got views that I really don't want to have anything to do with, and so you can block all of them, and then people kind of send you emails from time to time saying, 'Did you really mean to block me? Because I quite like following you and I'm sorry if I've offended you.' And then you check, you think, I didn't mean to block you and you unblock them.

But in a way, that's just part of the kind of ebb and flow of Twitter. It doesn't really bother me or upset me that much anymore. You know, once or twice it did. But even… I mean, I tweeted about my mother's death. My mother died of COVID, hospital-acquired infection and I got, I mean, hundreds of thousands of messages. I couldn't possibly reply to them all. But one or two of those messages said, well, she must have been a horrible old lady, and anyway, who cares? You know, you deserve to lose your mother, type thing.

And then you think, this person must be really sad. You know, what are they doing as a keyboard warrior sending messages like that, trying to upset me? And I can tell you what my mother would have said, is you know, they should find something better to do with their lives. I can hear her saying it. So, no, even that doesn't upset me too much. I just think it's a great pity that there are people around who are that sad.

Martin
And in that case, you even got a mention in Parliament, if I remember correctly.

Trish
I think I've come up a few times in Parliament. Yeah, that's true. And a guest appearance on the Piers Morgan show, all sorts of things.

Martin
You've also done a lot of mainstream media, and recently I was asked to comment on a government policy by one of the major outlets and I said no, because in my view the policy was just stupid and there was nothing that I would say would make a difference.

So I'm wondering, when should we say no? And if we do say yes, you know, apart from the obvious advice that there are certain outlets that you would want to avoid, are there any tips that you would give to people who might be thinking about appearing in the mainstream media?

Trish
Yeah, there are a couple of tips. One is, I would say have an area where you can get to know, and you get known about. So, I got a call the other day from one of the big mainstream media outlets saying, would I come on and talk about vaccines? And I just replied straight away saying, no, I don't talk about vaccines, I talk about masks.

It's not that I know nothing about vaccines, and I could have researched it. The trouble is if you go on the telly and talk about vaccines when it's not your area, you're bound to get something wrong. You're just bound to, because they're trying to catch you out. So, narrow it down. If it's your research, if it's, you know, if it's your PhD, or if it's an area that you're comfortable with, then accept invitations. And you can even put yourself about and you can contact them saying, look, I'm an expert on this, but don't stray out of your lane.

I think when there's been some really big embarrassments, during the pandemic and otherwise, it's when a professor has got up on the TV and they've been asked about a subject that they know nothing about, and they've just carried on talking as if they do know something about it. And that doesn't do any good for anyone, and it doesn't get professors a very good name either.

The second tip: I would recommend if you're going to do media is practice, practice, practice before you have your one-and-a-half-minute slot on live television. So, I've got a crib sheet here, which is what I was scribbling down in case Martin asked me about any of these topics, which he hasn't done, so a small A5 card is quite a good-sized crib sheet.

You can write down the points that you want to make in the order of importance, and then you can stick it up and you can almost literally read it off. You can't quite read it off, but it certainly jogs your memory and it'll stop you freezing when they ask you things. And if they ask you things that they didn't warn you about, you can say, 'No, I can't comment on that. That's not what I came on to talk about.' And so, you keep to the topics that you really are an expert on.

Martin
Sometimes I think people don't recognise that the preparation is really important and often you maybe do 20, 25 minutes of preparation for what is a two-minute interview.

Now, I want to look at what you're doing now. You've been exploring a new idea and that's how to teach radical and critical approaches to sustainability. Could you tell us a little bit about what this means?

Trish
Yeah, I've been working with Eivind Engebretsen from the University of Oslo in Norway, who's got a wonderful scheme going there. He's got a big grant and has set up something called the Centre for Sustainable Health Education, which they call SHE.

And he basically teaches students to be agitators, to be radical and critical. And when I was talking about my introduction to academic feminism earlier, you've really got to kind of scratch the surface and go underneath and ask questions like, hang on a minute, whose interests are being served by this particular policy, or whose voices are not being heard? Etc, etc.

And so rather than teach something like the Sustainable Development Goals as these kind of 17 beautiful goals that nobody could disagree with. You know, let's end poverty, let's get free healthcare for all, let's stop wars, you know, all these things. He actually teaches his students to unpack what these policies actually mean for actual communities. And I went over to Oslo

recently and saw some presentations from students who are deconstructing the metrics we use to measure success in progress towards the various Sustainable Development Goals, SDGs.

And so, for example, let's say you increase the education of girls. So that's one of the things, the gender goal. We want to increase the education of girls. Well, yes, you might do that, but that is at the expense of the health of other members of the family because the girls were looking after, say, elderly members of the family while the parents were out in the fields, or whatever it might be.

Now, you could say, 'Well hang on a minute, the girls should be in school.' Yes, they should. But you know, what about Grandma? You can't just impose a set of goals on a community without saying, well, what's this going to mean for those communities? And in order to reach the target that has been imposed on that community by these global SDGs, actually families are being disrupted, or whatever it might be.

That's actually a hypothetical example. But what the students are encouraged to do is really unpack what these mean and then say, 'Well, we're not going to use your metrics, we're going to use a different metric for this community which we think is an ethically better metric.' And so, you move away from global metrics, and you start to have bottom-up metrics.

So, this is a really radical way of teaching and the students do come out with a bit of lip. They come out and they say, 'Well, you, the educators are not teaching us properly. We want you to educate us in a different way.' And the educators say, 'You're the students. You're not supposed to do that.' No, that's right. We're turning it upside down.

And it's fun. It's fun. It's radical. And, you know, the world is in a very precarious state at the moment. All these sustainability crises are happening on our watch. They're going to be our legacy. We need to train a generation of students who care about them, and who are going to push back on approaches that are not actually that effective.

Martin
So, it does sound like it links very much to the work that we do, the teaching on the political determinants of health, where the key questions are, who benefits and who defines the narrative.

Trish
Absolutely. That's exactly the kind of thing we're doing.

Martin
So, we're almost at the end Trish, and I want to close with two personal questions. The first one is that we are talking about doctors as role models. And clearly, I see you as a role model, which is why you're part of this series. But who are the role models for you? Who do you look to as the people that you would seek to emulate?

Trish

That's really interesting. It would depend on which aspect of my life and which phase in my career. I do not have one single lone hero that I can say, 'You know, that person inspired me so much and I just wanted to be like them.' It really wasn't like that.

I had an uncle who was a GP. I kind of admired him, but I didn't admire him that much because I didn't agree with his politics. Although he probably influenced me a bit, because he was the first person in our family to go to university and I was pretty much the second.

There were other people. I've already mentioned Anthony Giddens, who is a sort of radical sociologist from whom I learnt quite a lot. I was very, very impressed with Professor Sir David Weatherall, who was the regius professor of medicine at Oxford when I was a student.

I'll tell you a story about that. Everybody in the first term of our clinical course passed, except for two of us. One was a guy who I think never completed. The other one was me, and I had to stay behind over the Christmas holidays and retake my exams.

And there are a number of things that Weatherall did. The first thing was that he designed the whole curriculum so that the first go at any exam was a practice go. But if you passed the practice go, you didn't have to take the real exam, which meant that nothing went on my record as having failed. But the other thing that Weatherall did was he said, 'Just hang out, just follow me. You're the only student on the wards now, so just come with me and follow me. I'm sure you'll be fine.'

And after a couple of days, he told one of his junior doctors, actually, he told me many years later, he said to her, 'Do you know, people who are too clever for their examiners always fail first time.' And I'd failed because I'd picked an argument with the examiner, and Weatherall took me under his wing and didn't say anything, didn't tell me why I'd failed and didn't do anything apart from say, 'Follow me.'

And through observing the way he handled patients, the way he examined patients, the way he looked at evidence, I very quickly picked up, not just the knowledge, I already had the knowledge, but the kind of professional attitudes that were necessary. And guess what? When I took my test a few weeks later, I passed with flying colours and that was what went on my record.

So people like that are really important, people who care about that one student who failed. I don't think he ever expected me to come back to Oxford as a professor, but hey, here I am.

Martin
Well done. And my very final question, what advice would you give to someone who has just graduated in medicine and might be thinking of following in your footsteps?

Trish
Family comes first. I've got a husband and two kids and my family's always come first. I've mostly worked full-time because my kids were healthy, they were very happy at day nursery. You know, I obviously had a few months off when I had them. I've got colleagues whose kids in their early years needed a little bit more parental attention and so they've gone part-time.

But if someone is telling you that your clinical role or your academic role is so important that you have to compromise and neglect your family, then they're off-message. They're off-message. Nobody is going to be lying on their deathbed saying, 'Gee, I really wish I'd spent more time at work and less time with my family.' It's always the other way around. So that's the one tip I would give.

Martin
Trish Greenhalgh, thank you very much indeed.

Trish
Thanks for having me.

This podcast is hosted by Martin McKee, produced and edited by Alex Cauvi. For more information visit bma.org.uk/inspiringdoctors