

Interviews



The EMJ team had the pleasure of speaking to James Bevan, who detailed his commitment to the inclusion of planetary health and sustainability topics into medical education, and Madhuri Hegde, who discussed advanced genomic technologies and her work directing three COVID-19 testing laboratories.



James Bevan

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Q1 What sparked your decision to leave your corporate role as a sustainability consultant to undertake a medical degree before embarking on a career in public health medicine?

I did my chemistry degree at Bath University, UK, where most undergraduates do a year in industry placement. Between the second and third year of my degree, I worked in a sustainability consultancy, which was part of a wider company called Jones Lang LaSalle (JLL), a big property advisory company. I worked there for a year and loved it. Then, I did my final year at Bath, and after a brief spell at PwC (London, UK) as an accountant, I went back to JLL, and worked for a few years as a sustainability consultant. While I was there, I felt that as a society we were not taking sustainability seriously enough. Our team, and a lot of clients, took it very seriously, but it felt like the wind of change wasn't strong enough to lead to the massive reductions in emissions we needed. On a more existential level, I thought: "What can I do to help?". I had always thought

about going to medical school, so at the age of 26, I applied, thinking that if I didn't get in, I could continue on with this career I was quite enjoying. This led me down a slightly odd career path, because I had a unique background of sustainability consulting, but was also developing lots of medical knowledge. Only once I started at medical school did I realise that there is a big overlap. I knew that there were health impacts, but I didn't quite understand the interactions between the two at that point, and that is where my career changed. It was in part by design and in part by accident, which is probably how most people get into their jobs.

Q2 The integration of planetary health and sustainability topics into medical education is a key focus of yours. Could you tell us a bit about your role at the University of Southampton, UK, and how you envision wider rollout of these topics into medical education in the UK?

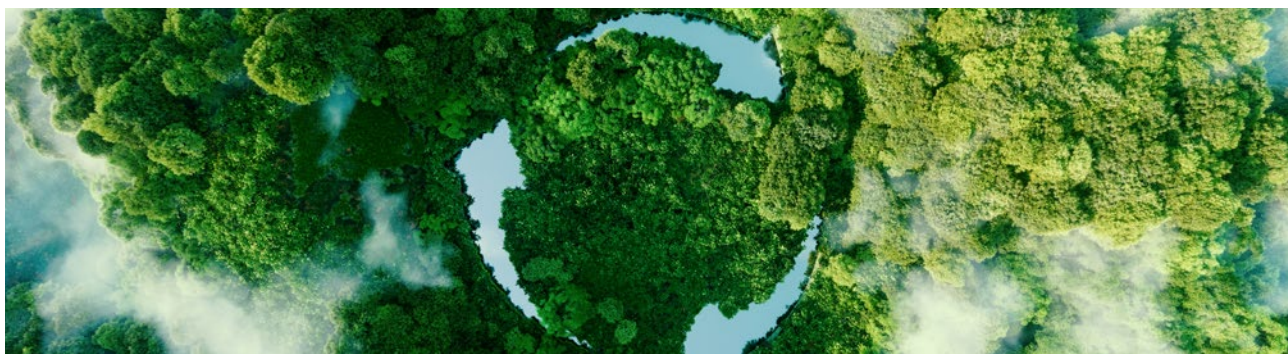
I first started getting involved in medical education at Southampton, just after finishing my medical degree. I did my elective at Mount Sinai Hospital in New York, USA, where I worked with a public health paediatrician called Perry Sheffield, who had been a figurehead in integrating climate change and sustainability into the undergraduate medical curriculum at the Icahn School of Medicine at Mount Sinai. They were leading the way with planetary health education with their “climate change curriculum infusion project,” and I thought this was a great idea. I went away from that elective thinking maybe I could install that at Southampton. We barely had any teaching on climate change and sustainability at that point, so I approached Paul Roderick, who was head of Public Health Education at the time, and suggested we replicate this project at Southampton. He was very enthusiastic! I later got a role at the university as a planetary health senior teaching fellow, and since 2021 we have tried to integrate planetary health and sustainability across the medical curriculum. As a result, we are one of only four medical schools globally to rank with an A in the curriculum part of the Planetary Health Report Card (PHRC), so we have done quite well. I should stress it is not because of me as an individual, but the university who have employed me to come and integrate this, as well as the fantastic population and

planetary health education team, Kalyanaraman Kumaran and Inna Walker.

With regard to a wider rollout in the UK, I am working on driving momentum on this. Last year I wrote an article discussing why every medical school needs a planetary health teaching fellow. This is in no way me trying to blow my own trumpet, but the rationale behind it is that without a dedicated person, there is not necessarily the expertise in medical faculties to know about planetary health or sustainability. There might be expertise, but they do not have time or the bandwidth to talk about it. The idea of having a dedicated fellow is that it accelerates that change. Anyone can replicate what we have done and integrate it across the course at their institution. I work just over 1 day a week for Southampton University, and we have seen quite a lot of change there. It is both because of my employment and because the faculty has really bought into it. If you have faculty who are motivated, and just a little bit of money, I think it can be quite feasible to do that.

"Environmental degradation exacerbates already existing health inequalities experienced by the poorest people in society."





Q3 Do you see a roadmap for including planetary health and sustainability into medical curriculums across the globe?

This is something I am working on with the Global Consortium on Climate and Health Education (GCCHE), alongside colleagues in the UK and the USA. Now, medics are aware of climate change and its impact on health; however, that awareness was not there when I started medical school. I think 2013 was when the term planetary health was coined, and since, there has been a huge rise in the amount of research. However, education typically lags behind research and appears to only slowly be taken up globally. Although there is no evidence on this, I suspect the countries which will feel the worst health effects are teaching about this the least.

Environmental degradation exacerbates already existing health inequalities experienced by the poorest people in society. Historically, these people have also been responsible for the least emissions. Now, these populations are, to some degree, going to be the most vulnerable to environmental degradation. We are going to see some health consequences in the UK, but it is going to be absolutely dwarfed in comparison to many low- and middle-income countries, particularly in South Asia, Sub-Saharan Africa, and low lying island states, where these effects are being felt already. The health infrastructure in those countries are particularly vulnerable to shocks caused by environmental change. We need to teach medical students and doctors to be prepared for those changes. They need to be aware of this, so they can put pressure on their healthcare leaders to build resilience within global and local healthcare systems. What I mean by that is building hospitals, supply chains, and primary care practices that are not vulnerable to extreme weather events such as floods, storms, and droughts.

Q4 What, if any, barriers do you foresee in the uptake of these topics into traditional medical curriculums?

One thing we anticipated in the International Medical Education Collaboration on Climate and Sustainability (IMECCS) was that faculty would not be interested in introducing these topics into their curricula, and that we would get some pushback from medical educators. What we found was the opposite, educators have been very supportive when approached, and eager to get this into their curriculum. Doctors, on the whole, are quite sensitive to the global influences on health, and want to teach about it. The other barrier to this is educator awareness or knowledge of these topics. Doctors teaching today were not taught about planetary health and sustainability when they were at medical school, as it has only really been a formed topic for the last 10 years. They might have had a bit of education and some awareness, but lack the confidence to teach it, or the bandwidth to increase their teaching load. It takes a lot of time to do the research, and for people who teach on medical courses, who are often busy clinicians who do not have time to do that, I think those are the main barriers to implementing it. This is where IMECCS comes in.

Q5 What are the potential implications for neglecting planetary health and sustainability in medical education and practice?

First, you have the impact that environmental degradation has on health. We need to prepare the doctors of the future to be able to face these challenges, and treat patients with diseases that arise or spread because of climate. If we do not do that, they will not be equipped to protect their patients' health in the context of environmental change.

The other side is the healthcare sustainability side. Healthcare has this paradoxical impact on health, because as we deliver healthcare to people, we are also causing environmental degradation. And we know that this impact on the environment has an impact on health. So, through the delivery of healthcare, we are paradoxically impacting global health. We need to teach doctors to reduce that impact, work more sustainably, and reduce healthcare emissions. Healthcare is responsible for about 5% of global emissions, equivalent to aviation or shipping. We often talk about aviation and shipping being awful for the environment, but we very rarely, if ever, talk about how bad polypharmacy or unnecessary surgeries and interventions are for the environment. I am not saying that we should be restricting medications or surgery from people who need it, but sometimes an intervention that is good environmentally can also be good for health, or the converse, and we need to think about that. That is what we try and teach the medical students about: thinking about things in a more holistic planetary way, rather than just the patient in front of them, but always with the underpinning that practice needs to be evidence-based, good clinical medicine.

Q6 You are the international lead for the IMECCS and a working group chair with the GCCHE. What do these roles entail?

I started up IMECCS a couple of years ago with Perry Sheffield, who I mentioned earlier. The idea was: how can we overcome these barriers I mentioned easily? Perry had already developed the “climate change curriculum infusion project” and we thought we could make it into a usable product for medical schools to add to the curriculum. Essentially, we wanted to make a one stop shop. Anyone who is interested can come to our website or resources and see all these materials to insert into existing teaching sessions. The idea was that we would provide these lecture slides with scripts and references, so that we can overcome barriers of lecturers not knowing about the topic. They do not need to do their own research, and there is no need for more space within the medical curriculum, because we

are aiming to improve already existing teaching sessions, rather than adding sessions. The aim of IMECCS was to have an open resource bank that is accessible across the world. We have not collected data on how people have used it yet, but we know that most people using it are trying to implement a planetary health curriculum.

The GCCHE, at that point, was just forming. Now, it is a much more powerful organisation. Hundreds of climate and health experts signed up to help with this project, which essentially does a very similar thing to IMECCS, only bigger and better, I think. They provide resources in a similar way, which have been peer-reviewed and go through a very stringent process, and some of the content was provided by world experts on these topics. I am one of the co-chairs on one of the working groups, and part of that process is trying to get the word out about the GCCHE, and engaging with interested parties across the world. We have ‘office hours’, which are like a troubleshooting session every month or 6 weeks. Anyone can log in to the office hour and ask us questions about how they can overcome barriers at their local institution, and implement planetary health and sustainability education.

Q7 The PHRC is currently in use in over 105 medical schools across 15 countries. Could you explain what the PHRC is.

I am not actively involved in the PHRC, but it is a brilliant student-run organisation that has catalysed change in this area. They have been one of the main drivers for accelerating faculty putting planetary health in their curriculum, because you can rank medical schools against each other and every doctor in the world is competitive, leading to a strive for better year on year performance. If your medical school is not doing well, you are going to want to improve things. It is built off this competitiveness and replicates Environmental Social and Governance (ESG) reporting in the corporate world, hopefully without the greenwashing. The PHRC has driven change massively, and I am incredibly impressed with them.

"Healthcare has this paradoxical impact on health."

Q8 Where do you feel the greatest impact on sustainability and planetary health can be made in clinical practice?

The number one way in which we can reduce healthcare related emissions is by preventing ill health. In the last few decades, we have become very good at keeping people alive; however, we have not necessarily increased the length of life that people live disease-free. Our population is much more multimorbid, and these people need to use healthcare a lot more. Now, if we can prevent people from getting ill and live longer without illness, then we will reduce those emissions. This, I think, is nicely reflected by The Royal College of Surgeons, who came out and essentially said the number one way to reduce surgical emissions is to reduce surgery. It makes sense, but needs a cognitive change in how we manage health.

Public health is key to reducing our emissions, and a healthy population will lead to lower emissions. That is obviously not completely feasible in all aspects. Once you have reduced the illness as much as you can, you need to think about what interventions can be good for the patients and good for the planet. These interventions help carry 'co-benefits'. We know that prescription medications in primary care have the biggest emissions impact due to raw material extraction, manufacturing, and delivery of these medications. If we can reduce the amount we are prescribing, that is, reduce polypharmacy, then that reduces emissions. When we are prescribing medications as doctors, we need to think of evidence-based, effective ways in which we can avoid prescribing medications in a way that is good for the patient as well as the planet. I am in no way saying that we should not prescribe something because of its environmental impact if it is clinically needed, but there are plenty of evidence-based solutions out there. It is just not necessarily the cultural norm for us to be prescribing them.

"The number one way in which we can reduce healthcare related emissions is by preventing ill health."

Q9 As well as planetary health and sustainability, you have a research interest in infectious disease and you recently worked as a clinical research fellow at University College London Hospitals (UCLH) NHS Foundation Trust and the Hospital for Tropical Diseases, London, UK. What was your role there?

In 2022 I completed the diploma in tropical medicine and hygiene from the London School of Hygiene and Tropical Medicine. This was the best educational experience of my life. I met so many interesting, motivated doctors and was lectured by genuine world experts every day. I can't recommend this course more to anyone thinking about it. Following the diploma, I got this job at UCLH, where part of my time was spent working on clinical trials, and the other part of the job I was free to work on projects that interested me.

In the clinical research role, I was mainly involved in the SUPERNOVA study. This randomised controlled trial was looking at the effectiveness of a novel monoclonal antibody in protecting immunocompromised individuals from developing severe COVID-19. It was a real insight into the inner workings of clinical trials; I loved it (despite the relentless paperwork)!

I also worked on various other projects, including working with the brilliant RESPOND team at UCLH. This is a team of doctors and nurses who over the last few years have been going out to the community and providing care to refugees and asylum seekers living in contingency hotel accommodation in North London. Specifically, I worked on trying to design a study that could estimate the efficacy of their offering in terms of reducing stress on local healthcare infrastructure, while serving the needs of this vulnerable population.

While at UCLH, I also helped with the setting up of an observational study which will be using metagenomics to assess if the algorithms we use to detect viral haemorrhagic fevers (e.g., Ebola, Lassa, Marburg virus) are effective tools. This may also become increasingly important as climate change alters the epidemiology of these diseases.

Q10 Are you currently working on any projects or interested in any innovations that you feel will be pivotal to improving planetary health and sustainability in the future?

I am not working on any research as such at the moment, but I am due to start a research project as part of my Masters looking at whether the recent meningitis outbreaks in Angola could be due to climate change.

Other than that, I have been working with a student group at Southampton called 'Students for Planetary Health', which works on lots of different projects around planetary health. To date, we have focused a lot on education, but are now trying to get students linked with clinicians so they can work on healthcare sustainability and get engaged in the idea of research and the creativity behind it. In medical school, it is very easy to think that there is no creativity in medicine, so I want the students to realise how rewarding academia is and the importance of creativity within that. I try to take a slight step back and get students to think about their own projects and help them along the way. It is very much in the early stages at the moment, but that is something I am keen for students to get engaged with.

Q11 You are now studying for an MPhil in Population Health Sciences, and have been accepted as a Fellow of Higher Education. Where do you see your career heading over the next 5 years?

I am a public health registrar, so to a certain extent, my career is laid out for me. Public health training is great, as it can lead to lots of different career avenues. The MPhil, which is a funded Masters, is a part of it. For me personally, I am interested in a career in the field of

epidemiology and outbreak response, particularly in the context of extreme weather events. So, combining my interests of infectious disease and planetary health, I am interested in how we can prepare healthcare systems or populations for environmental shocks, and how can we reduce the impact of infectious disease following these events.

Q12 Do you have any advice for practicing healthcare professionals or medical students looking to become involved in public and planetary health?

One thing I would say is something I did at medical school, which really set me on my way. If you are interested in something, give it a Google. Look up people who might be a link or a new contact, and if you have time and capacity, email them and say: "I am really interested in working with you. Can I come and work with your research team over the summer holidays?". Having done that, I worked for Public Health England on sustainability topics when I was a medical student, I did some research with Harvard School of Public Health, and did my elective at Mount Sinai. All these things were just me reaching out over email saying I was interested and asking to get involved. You will send out 20 emails and get two responses, but those two responses can easily completely change your career trajectory, and I got some great advice along the way from people who could not take me on, but who I still kept contact with. So, send that email, because you might be the person they are looking for, or you might get advice that could completely change how your career goes.

Secondly, planetary health is a growing specialty and something that is great to get into now, because there are relatively few experts with many years of experience and there is a lot of funding going into it. ●