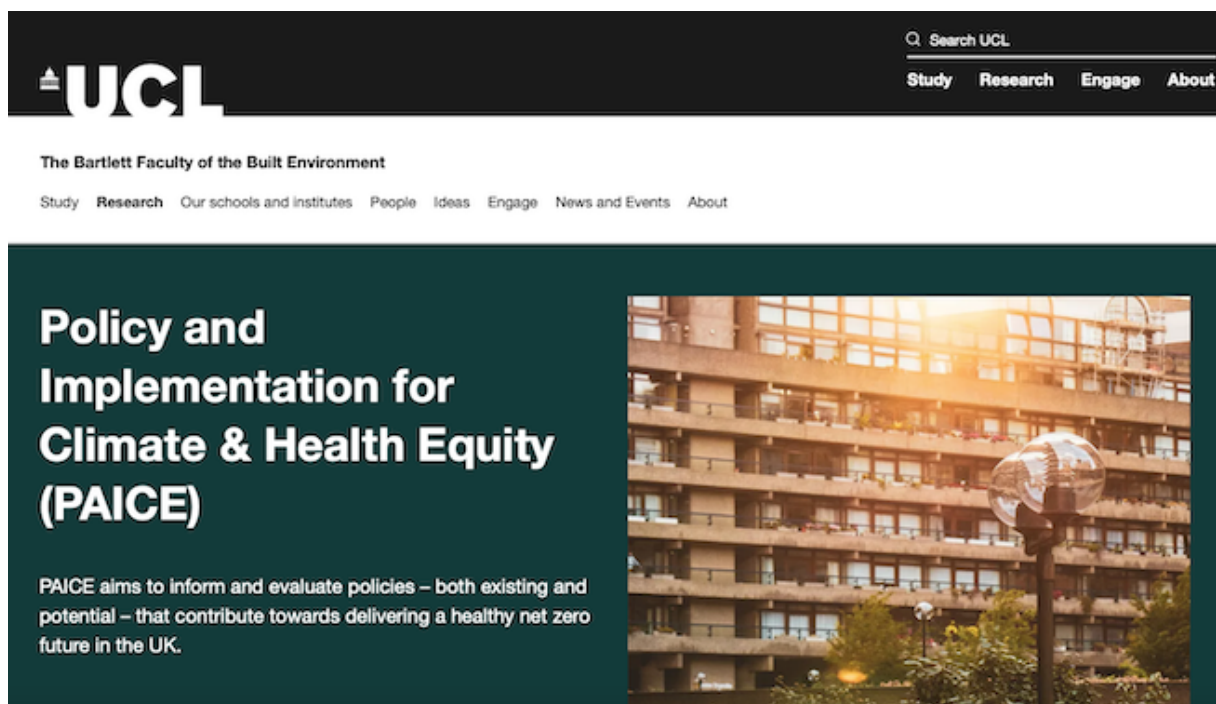


An academic expert view: urban environments + public health

Interviewer: [Gareth Byatt](#) – Principal Consultant, [Risk Insight Consulting](#)
Interviewee: [David Osrin](#) – Professor of Global Health, Director of Research at [the UCL Institute for Global Health](#)

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The PAICE programme ([screenshot of UCL website page](#))



David,

Thank you for making the time to discuss health and urban environments with me. I'm looking forward to hearing your views about how the world's cities and towns can provide a healthy environment and lifestyle for people amidst all the challenges they face. I appreciate that it's a matter that has a lot of "moving parts". I'm keen amongst various other aspects to hear your views on how we can measure and monitor the effectiveness of different actions to improve urban health, in the form of "urban indicators".

To begin with, could you summarise your background and experience and the projects and research you are currently working on?

David: *It's a pleasure to discuss urban health with you. I'm a doctor by training and background and I used to be a paediatrician.*

From 1998 to 2024 I was largely based in South Asia. In 1998 I moved to Nepal to work on community interventions to help improve the survival of children. I spent six years to 2004 based there and the next 20 years based in Mumbai. A particular interest I have had for many years has been how to improve the health of people through interventions that are broader than the health system – meaning aspects such as community action, community mobilisation and social intervention.

When I moved to Mumbai in 2004, I was struck by the disparity in the city, which got me thinking about the history of cities and urban health. I was working in Mumbai's informal settlements at the time, and I found myself thinking about historical settlements such as the slums of London in the British Victorian era (1830s-1901) and what has changed in the modern day.

My time in Mumbai was central to how I moved into the sphere of urban health. When [the International Society for Urban Health](#) first formed in 2002, if I remember rightly, they held their first international conference in Mumbai. Being aware of this event and other activities, I shifted my focus over time to looking at non-medical influences on urban health.

I have been teaching urban health at UCL for about 10 years. In 2024 we set up a virtual urban health community across the whole university, of which I am the co-lead. This community speaks to the idea that urban health is multidisciplinary – whether for a university, a city or any other organisation that is involved in broad-ranging matters. In a full-service university, focusing on urban health means that social scientists, political scientists and planners need to be involved along with clinicians and others, which brings me to two large urban health programmes.

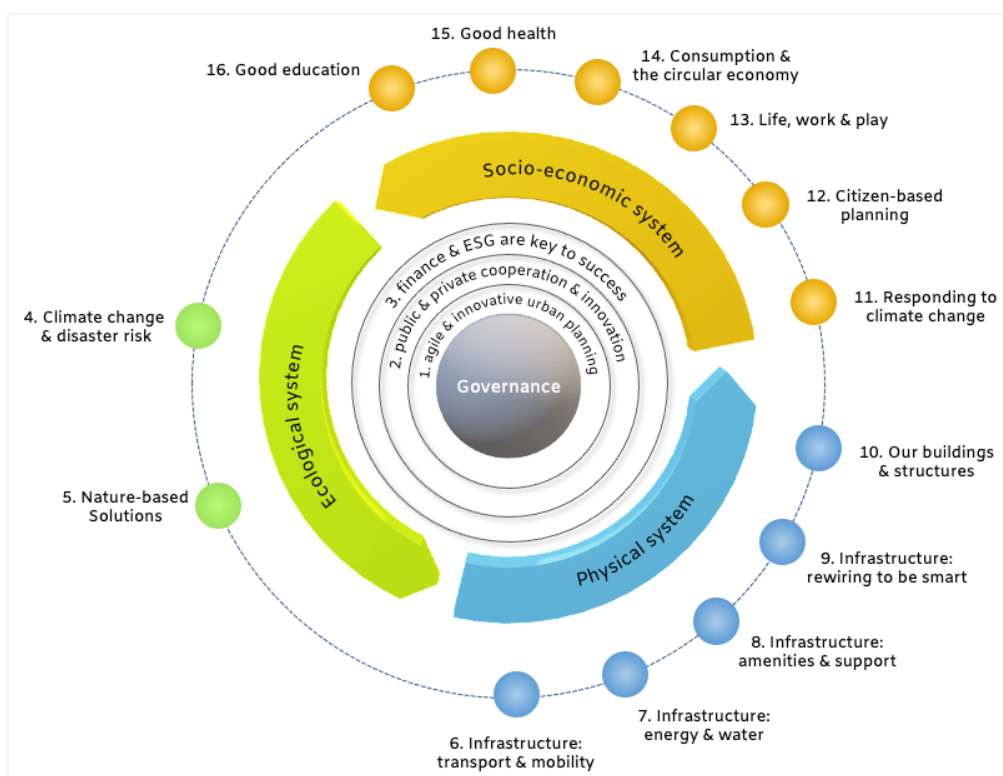
The first programme, which has now finished, was called [CUSSH](#) (Complex Urban Systems for Sustainability and Health). CUSSH was a five-year programme funded by Wellcome to deliver global research on systems that connect urban development and population health. The six cities that were part of the programme allowed us to review a range of different contexts. A big part was about urban sustainability and responding to the climate crisis, to do big things in the context of complexity. Whilst it has come to an end, I still work with some of the partners including [the African Population Health Research Centre](#) (APHRC) based in Nairobi, Kenya. I believe the concepts of CUSSH are still ongoing in a number of medium-sized African cities of which Kisumu in Kenya is one.

The second programme, which is ongoing as of mid-2025 and is currently UK-focused, is called [PAICE](#) (Policy and Implementation for Climate & Health Equity). This initiative has some linkages to the CUSSH programme. It has been formed to investigate complex interconnections between climate change action, health and health equity, with the aim of informing policy and practice, particularly in the UK.

It is, in essence, exploring and defining the health co-benefits of Net Zero. Whilst PAICE initially focused on climate change mitigation initiatives, we now also work on [climate adaptation considerations](#). The non-academic partners of PAICE are [the UK Climate Change Committee](#) and [the Greater London Authority](#) (GLA). To your point about using urban indicators, our work at PAICE includes injecting and valuing health into the indicators and metrics for progress towards climate change mitigation and adaptation. When reports about progress are being released, benefits to health need to be assessed. Whilst everyone agrees this makes intuitive sense and it is important to focus on, there are challenges to showing how health truly benefits from taking climate action. We need to include certain climate indicators and their links to health measurements are not always clear. Moving forwards, there is potential for a PAICE piece of work that may take place in Kenya and Senegal (to be confirmed), which if it proceeds will focus on a similar activity in counties within these countries.

Gareth: Thanks for this overview and context to your work, including the CUSSH and PAICE programmes, David. I appreciate your points about the multidisciplinary approach and mindset. This aligns with [the Urban 2.0 system](#) I use in which urban health is embedded into and linked to all parts, and also the UN Sustainable Development Goals, [or SDGs](#). Ensuring a healthy urban environment for everyone links to all parts of the urban system including city / municipal governance, transport, the built environment, our use of greenery and natural habitat, education, and others. I'm sure these aspects will crop up in our discussion. Thanks for mentioning [the International Society for Urban Health](#) as well, a global nonprofit organisation working to achieve a healthier, more equitable urban future for everyone.

The Urban 2.0 system (image by G Byatt)



Gareth: Have any reports and / or findings been published so far through the PAICE programme (as of mid-2025)? I appreciate that there are lots of aspects to consider, from the various causes of health problems to the provision of healthcare systems.

David: [You can read about our ongoing research here](#). On the general subject of how health and climate change link together, when I first came into the climate and sustainability area I felt like I didn't know much about climate change or resilience. But there has been a growing interest and conviction in the importance of transdisciplinary research when we're trying to address wicked problems. I have a long-term interest in programme theory and my role on a number of projects is to help to develop theories we can use to evaluate their success. And I guess that 'success' has two dimensions. The first is whether a programme achieves the kind of transdisciplinary working that it hopes for – did the different kinds of people involved in the work manage to speak the same language, develop trust and produce research that is more than the sum of its parts – and the second dimension is whether the programme 'worked' in terms of its hoped-for outputs and outcomes.

Gareth: I understand the completed CUSSH programme focused on six cities – [Beijing, Kisumu, London, Nairobi, Ningbo, and Rennes](#) – and that it looked at solutions to urban issues affecting people's health—to reduce pollution, create more usable green space, and support sustainable active transport.

Are there certain common points you worked on and developed in the CUSSH programme for these cities, and for the work on the PAICE programme also, which can be used for any city / urban area? I always appreciate that context to a locality is always key, and we touched upon indicators just now – I'm an advocate of thinking carefully through indicators and ensuring that we have a manageable and practical set, in all of the different aspects of what we do.

David: I believe that cities and urban localities do have commonalities, and that urban health is a global concern that can be looked at with some common indicators. It is important to clarify that urban health is more than informal settlements and marginalised communities; it covers all sorts of things which, as you say, link into and are part of an urban system, with core elements that are common everywhere. The issues are the same, but contextual differences affect the weighting that a particular issue has in a certain place.

In a medium-sized city in Africa, for example, a lack of infrastructure to support growth, and a lack of human capital, skills and capacity in city and municipal authority teams is something that established cities in Europe and the US will also relate to, whilst their context on this particular point will be different. The issue of informality is global, and it tends to be emphasised in some countries because it is particularly prevalent there; nonetheless, it exists everywhere. So our priorities depend on exigencies at the time. There are some cities where outdoor air pollution is a key focus, and some cities where it used to be a key focus but is not as high on the list of priorities now because it is being managed.

One of the most infamous examples of outdoor air pollution in an urban area nowadays is Delhi, where in wintertime it can be truly terrible, with serious impacts on the health of citizens and visitors. The emphasis that people put on urban health issues depends on the dialogue at the time, which is inevitably influenced strongly by the political landscape.

Gareth: Thanks for this point about relative differences, which change over time, David. It's interesting that you mention Delhi – I am developing a research paper about its challenges with air pollution.

We have touched upon metrics and indicators, which is something I have discussed with many people including [an interview in April 2025 with the urbanist Alain Bertaud](#). How are you approaching the definition of indicators for urban health, which can perhaps be given greater or lesser significance to different cities and localities depending on their context today and where they want to be in future?

David: *One of the things we have focused on in both the CUSSH and PAICE programmes is developing system dynamics models which have a great many connections. They look like a complex interconnected web, with different characteristics of the urban fabric, people and decision-making. We are trying to see if a model can be used to assess different strategies and different actions in a virtual sense so that we can then decide what initiatives are worth trying in the real world and which ones will deliver the greatest benefits, according to the context of each place. The essence behind the work we've done with CUSSH and PAICE is to see what the payoff will be to certain strategies, and which strategies deliver the most benefits.*

The challenge with complex models is that they are hard to create, and they are a constant learning process – you develop and adapt as you discover more linkages and opportunities to model situations.

In my experience, there are two key aspects to developing complex models:

- 1. First, there is the work to decide how everything connects together. This includes working out where we are going to obtain data to inform what you're doing and what the progress is.*
- 2. Second is to work out how much value we are going to give to the effects and outcomes generated through the model.*

Let's draw on a part of the Urban 2.0 system – ecology, and the value of parks that provide green and perhaps also blue spaces. To model the potential effects a new park or changes to an existing park can have on the health of people involves many factors, all of them interlinked. We have to first agree what we mean by health and how we quantify the potential effects a park can have on people. Health considerations include active mobility, exercise, being outdoors and breathing clean air, encouraging social connections and leisure, and many others.

If we can define these things in the context of a locality, how are we going to value and estimate the effects on people's health in terms of structural changes in an urban environment by adding a new park? It depends on its size, location, how people access it and other matters. Creating a park is in concept an attractive option to change a built environment: working out how to practically measure its benefits in detail is hard.

Gareth: Your point about complex systems gets me thinking about aspects that are not directly related to health, yet they influence them. This includes the impact on land value and potentially on property prices of creating a park. Does a “green view” from your home improve health in a measurable way? In theory, parks encourage more sustainable lifestyles including active travel (walking and cycling, for those who are able) and gatherings for various types of activities. They influence travel and mobility choices in different ways. I’m mindful that how a park is used by people depends on the overall urban context – people won’t go to a good park if they can’t get to it, or if the air quality in the city is poor, or if it may feel unsafe to travel to it.

There are examples of large new parks in urban environments around the world, such as [Bishan-Ang Mo Kio Park in Singapore](#). As I have written about elsewhere, this parkland used to be a human-made concrete water channel, and it was turned into a wonderful park area. Today, people exercise and play games there, they enjoy nature, the park helps with cooling in the hot tropical environment of Singapore and, importantly, it helps with flood management. I then think about [parks in Delhi](#) such as Lodhi Garden, which in wintertime when the air pollution is very bad are not widely used. I also think of smaller park examples such as what I call “street corner parks”, little areas carved out of a dense built environment. Each has its own context, and the points you mentioned earlier, about how things connect and what value can be obtained, are key – and should ideally link to good indicators to measure value and benefits.

Linked to all of this, when we get into complex systems, do we need to be mindful of not getting too immersed in theory, that we need to keep our focus on practical and action-orientated outcomes? I wonder if the SDGs can help here.

David: *Context is always important. A lot of the models relating to health have traditionally focused on mortality, and whilst measuring changes to mortality and lifespan is an important measure of health, it is quite crude and it should not be our sole focus: we need to consider broader aspects.*

When you have a park, as we discussed earlier, how will people use it and how would you like people to use it? How much exercise will they gain as opposed to it not being there? What sort of health benefits will it translate into? There are so many possible factors that it becomes complicated, and we need to agree what matters most in the local context. One issue concerns equity, which is central to my work at the moment.

We need to know what data are available to track and help us assess benefits. A city ward or a borough or a local authority probably doesn't know who goes to its park(s). Whilst we want to improve people's experience of nature for many reasons including through the provision of parks, including climate adaptation and mitigation and health and wellbeing, we don't actually know what kind of people go to our park(s), at what time(s) of day, for how long and what they do when they are there. It's historically been hard to capture and monitor on an ongoing basis this data, which people in city and local authorities will I think admit to.

Plus if we think about vulnerable and minoritised communities, which is an area I look at, if we don't think about and understand how they may use green and blue spaces we may not encourage people to make use of them.

Gareth: Thanks for raising the point about vulnerable groups, David. When I think about parks in various cities, in developed and developing countries, I can think of various times when the use of parks by vulnerable groups seemed to be, in my non-scientific observations, limited.

I wonder if “crowdsourcing of data” can help city and municipal authorities learn about who uses their parks and what for? Could for example an urban app that could be used by people for a variety of purposes in the city encourage people who visit a park – locals and visitors – to provide feedback, perhaps with a reward of a free coffee or tea for doing so (linking up with businesses)? Maybe (though I don't know how widely they would be used) feedback booths in parks can help, along with qualitative interviews of people if feasible?

Returning to the Urban 2.0 system we discussed earlier, there are seven principles that link to it, which are described below. One of these principles is meaningful involvement of everyone in agreeing the way forward. Am I right in thinking that dynamic systems models consider how to involve people from all parts of society from “Day 1” of an idea, rather than some of the outdated approaches of developing solutions and then asking people for their views? This discussion point often crops up in my interviews, such as with Gil Penalosa.

Urban 2.0 principles (image by G Byatt)



David: *Meaningful involvement by people is key. Let's consider the dichotomy of context for a moment. If context is so different, how can we get a general impression and view on what is happening? I think that it still comes down to talking with and observing people. We have to go to the parks and measure things in a diligent way. Think of the work of [William H White and the Social Life of Small Urban Spaces](#), through which he spent hours filming how people use public spaces. The legacy of his work stands the test of time (it remains important reading today).*

Some people are looking into the specifics of this – for example, I know researchers who are spending time with people, interviewing and watching them go about their activities – including how they use and perceive parks.

I wonder if we can use the surveillance solutions that are already in place in cities in a positive and sensitive way to support this type of research and analysis. Food for thought...

Physical experiments and simulations are possible to conduct, as well. [UCL's PEARL facility in Dagenham](#), East London, is an example of an interactive physical facility which can be used to engage a broad group of people to help us understand what's possible, and what can be done in an interactive and real-life sense to improve our approach to a wide range of urban considerations. For example, the team at PEARL has created a park which they have used to understand how people with neurodiversity use such a facility, measuring many points in a detailed way (and always taking data privacy into account, of course).

The team at PEARL carry out a range of research which includes working with Transport for London [to look at good transport solutions](#). For example, they set up a tube train in the PEARL facility and got people to step on and off it for a period of time to work out the best shapes for train carriage entrances, and all sorts of other things such as what to do with excess heat from the trains.

Gareth: It's great to hear about UCL's PEARL facility – something for me to follow up on. You bring up a very interesting point as well, David, about the idea to perhaps use existing city infrastructure to analyse how people use public spaces and the impacts they have on health. As I have discussed with urbanists, we can tap into Google and other sources to look at transport efficiency. Cities have many cameras in place today for surveillance and security purposes. Can these cameras be used in a way that always protects data privacy (i.e. never show identities) to support an understanding of how people use different spaces such as parks and other areas to learn and optimise urban health? It's an interesting idea.

David: I am sure the devil will be in the details, nonetheless it would be an interesting idea to look into. Whilst city and municipal authorities may say they do not know how parks and other parts of the public realm are being used, maybe this type of data can help them find out. Full disclosure about any such data uses, and only using de-identified data, would be key, of course.

Gareth: I wonder if [Edge AI](#) can support this idea. Edge AI is about bringing AI technology “to the edge”, meaning that computer power to calculate AI can happen at the source where the data is created, and it is being adopted by some cities, as teams such as [Smart Cities World](#) show. Edge AI can provide data protection at source, because it is close circuit. For example, an AI-enabled camera that is on its own loop can provide metadata about overall behaviours and patterns whilst not recording any personal details about people (Edge AI can support other things too, from making lighting in specific areas more efficient to monitoring traffic through AI cameras on buses).

On a societal level, and for citizens to be involved in contributing towards good health in urban environments, is citizen action and citizen-supplied data something that can be used to good effect (in an appropriate data-protected way)?

David: Absolutely. There are several groups at UCL working on citizen science. We can involve citizen scientists in, for example, documenting biodiversity and the patterns of animal and plant life in cities, pollution, opportunities for exercise and many other things. What we can also do is co-produce better environments by involving different kinds of people in placemaking. I feel like one of the effects of tactical urbanism has been to show us the potential of hyperlocal action in improving people's experience of urban life. The word ‘translocal’ seems to be popping up quite a lot nowadays.

Gareth: I can see that there is much still to do overall to improve urban health around the world, but if we look back over the past twenty years, it seems that good actions have been and continue to be taken?

David: *I think you're right, Gareth. The most obvious examples are urban placemaking, which we see nowadays in every city we visit, and efforts to increase walkability and wellbeing and reduce pollution and emissions.*

When I work with planners – and when I look at the growing number of reports and guidelines on planning and health – it is clear that a huge amount is known about the ways in which the built environment can improve and support health. The issue is operationalising all this knowledge. Can we take the opportunities of newbuild, retrofit or changes to the urban environment to optimise our health? We know the what, but we have to act on it, and the only way to do so is to increase the number and quality of conversations between different groups of people.

Gareth: Thank you very much for your thoughts and perspectives on the challenges of ways to improve urban health, David. Some very interesting insights. I look forward to following the outputs of the PAICE project.