Medicine’s neglect of air pollution reflects a wider failure

Richard Smith, chair

I must begin with a confession. When I became the chair of the UK Health Alliance on Climate Change (UKHACC), I learnt that much of the work of the Alliance was concerned with the harmful effects of air pollution. At the same time, I realised that despite being an editor at the BMJ for 25 years and working on non-communicable disease for eight years I knew remarkably little about air pollution. I wrote a blog about “waking up” to air pollution, and today I read that a “Cancer breakthrough is a “wake-up” call on danger of air pollution.” My failure, I now recognise, is a wider failure of medicine. Why have we needed to be “woken up?”

Think of the tens of thousands of consultations that take place every day with patients with respiratory problems. Every one of those patients will be asked about smoking, but few will be asked about air pollution. The failure has, I hypothesise, two causes: doctors don’t know as much about air pollution as they do about the harms of smoking; and they think that people can’t do anything about air pollution, or the air they breathe. Both causes are remediable.

The breakthrough—or development, as I prefer to call it—is evidence on how air pollution may cause lung cancer. We have long known that air pollution causes lung cancer, including in those who have never smoked. The new evidence is that PM2.5, fine particulate matter found in polluted air, rather than causing mutations in cells that lead to cancer switches on mutations that are already present. This mechanism may be important in other cancers with carcinogens other than air pollution. The findings were presented recently in Paris at the conference of the European Society for Medical Oncology.

The new finding is “a wake-up call on the impact of pollution on human health,” said Charles Swanton, a professor from the Francis Crick Institute in London and one of the authors of the finding. Swanton went on to suggest what has kept doctors asleep about air pollution: “Air pollution is associated with lung cancer, but people have largely ignored it because the mechanisms behind it were unclear.” This seems implausible to me: medicine is full of diseases and treatments where we don’t know the mechanism, but they are not ignored. Plus, the average doctor neither knows nor cares about mechanisms.

The BBC journalist reporting the story writes that “The idea of taking a cancer-blocking pill if you live in a heavily polluted area is not completely fanciful.” The pill will be many years off (and may never appear at all), but to start dosing people rather than lowering the currently lethal levels of air pollution that affect most of the world’s population seems to be completely the wrong response. Having written that, I reflect that every day I take a preventive polypill to reduce my blood pressure and risk of cardiovascular disease and if I lived the life of an indigenous person in the South Seas I would not need such a pill. But, then again, reversing air pollution should be easier than reversing centuries of “development” (a word that I can’t use comfortably).

To be fair to Swanton, he said: “You cannot ignore climate health. If you want to address human health, you have to address climate health first.” Unfortunately, we have not followed his advice, but he is right. In the West we start from the health of the individual, failing to recognise, as Australian Aboriginals knew, that the health of the land and the people are indivisible. Australian Aboriginals must have inspired the Australian ambition for “healthy planet, healthy places, healthy people.” Australians may have ignored their own saying, but you cannot have healthy people in a sick planet. Health is as much about the planet, places, communities, and relationships than it is about the condition of our internal organs.

Let me return to why medicine has neglected the importance of clean air when we long ago recognised the importance of clean water. One reason might be scientific. Richard Doll told me that when looking for the cause of the epidemic of lung cancer he and his colleagues first suspected it was air pollution. If they had done a larger case control study and looked more at those who had developed cancer when they didn’t smoke, they might have detected the importance of air pollution. It might then have held a place alongside tobacco.

We probably recognised the importance of clean water because polluted water could have immediate, dramatic, and lethal effects. Polluted air takes longer to cause harm, and humans seem programmed to concentrate on the short rather than the long term. Perhaps as well the discrediting of the miasma theory of cholera diverted attention from the importance of clean air.

The usual invisibility of current air pollution must contribute to us failing to give it the attention it deserves, but the roots of medicine’s neglect of air pollution must lie with the intertwined factors of the feeling that there is nothing doctors can do about air pollution and failures of education of doctors. There is advice that doctors can offer to individuals—recognising the importance of polluted air, reducing internal pollution in the home, accessing information on local air pollution, changing travel routes, avoiding particularly poisonous days, and perhaps even contributing to lessening the problem by driving less or not all—but the needed response is political action at a local, national, and global level. Why not advise patients to write to their MPs and local council calling for action? That makes many doctors feel uncomfortable, but any MPs and local councils will welcome the messages, giving them ammunition to counteract the motoring lobby...
and other sources of pollution. Unfortunately, we have trained doctors to feel comfortable with individuals and uncomfortable working on a larger stage, failing to recognise the wider determinants of health.

Rosamund Kissi-Debrah, whose daughter Ella was the first person in the world to have air pollution written on her death certificate despite air pollution killing some seven million people a year globally, recognises the failure in responses to this huge problem. Kissi-Debrah has become a very effective campaigner on air pollution and she sees a “lack of joined-up thinking...You can pump all the money you want into the NHS, but unless you clear up the air, more and more people will become ill...My concern regarding global health is that every year we churn out the figures – air pollution causes nine million premature deaths – but no one is held accountable.”

We need now a major educational effort with the public, all health professionals, and politicians. Attention to air pollution has picked up dramatically in recent years, but it’s still not a priority for most politicians (although it is for Sadiq Khan, Mayor of London). As I recently heard Chris Whitty, chief medical officer for England, say, politicians mostly follow the public rather than vice-versa, so think what you can do today to educate yourself and others about air pollution.

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2 The Guardian. Cancer breakthrough is a wake up call on danger of air pollution. https://www.theguardian.com/science/2022/sep/10/cancer-breakthrough-is-a-wake-up-call-on-danger-of-air-pollution