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Air pollution is a public health emergency

The UK government must commit to (much) cleaner air by 2030

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Respiratory and cardiovascular disease were the two main causes of the 12 000 deaths estimated to be a result of London's great smog in 1952.[1] We have come a long way since then, but air pollution continues to be a major and growing public health challenge. Now, however, it is invisible to the eye. Air pollution today comes from traffic, farming, and wood burning including wood burning stoves. Fine particulate matter (PM2.5) passes through the lungs into the circulation along with toxic gases such as NO2, and together these initiate, accelerate, and exacerbate non-communicable diseases.[2 3]

In 2016, a report from the Royal College of Physicians and the Royal College of Paediatrics and Child Health estimated that the equivalent of 40 000 deaths were attributable to outdoor air pollution every year in the United Kingdom.[4] Since that report, the contribution of air pollution to non-communicable diseases has greatly increased, while also having a negative effect on pregnancy outcomes and early life development.[5] In December 2020, air pollution exposure was listed as a cause of death for the first time in the UK after the inquest into the death of Ella Adoo-Kissi-Debrah.[6]

Greater efforts to reduce this key driver of adverse health are needed. PM2.5 is undoubtedly an invisible killer, but its effects are clear to see: increased risk of asthma attacks on high pollution days[7] and more hospital admissions for heart and lung diseases.[8] Polluted air triggers strokes and heart attacks, exacerbates respiratory illnesses, such as chronic obstructive pulmonary disease, and can stunt children's lung growth.[9] The result is not just premature deaths, but more years spent in ill health, and more avoidable pressure on the health system. Air pollution, both outside and indoors, is a major driver of health inequalities, with the most deprived UK communities and those from ethnic minority backgrounds more likely to live in polluted areas.

The *Prevention of Future Deaths* report that followed the inquest into the Adoo-Kissi-Debrah's death found that "the adverse effects of air pollution on health are not being sufficiently communicated to patients and their carers by medical and nursing professionals."[10] We know that patients trust healthcare professionals. Conversations to help patients understand how pollution might worsen health or exacerbate their conditions are vital. There are key touch points—during asthma assessments and reviews, in cardiovascular and maternity checks—for these conversations to take place. But do healthcare professionals know enough about air pollution and its impacts?

More can be done to ensure that health professionals are confident to have these conversations. The environmental charity Global Action Plan has a suite of resources for healthcare professionals.[11] Then there is education. The Royal College of Physicians was one of three organisations (the others were the Royal College of General Practitioners and the Royal College of Paediatrics and Child Health) required to respond to the coroner's report after the death of Adoo-Kissi-Debrah in relation to its postgraduate curriculum.[10 12] The Royal College of Physicians committed to reviewing its internal medicine curriculum and, although it was satisfied that pollution is currently covered, in a recent progress report the college promised to keep it under review to ensure that it has appropriate focus.[13]

Steps must also be taken to reach clinicians who are not in medical education and therefore not learning about air quality as part of the postgraduate curriculum, as well as allied professions such as nursing or occupational therapy that are not regulated by the General Medical Council. All health professionals have an important role in understanding the serious adverse effects of air pollution and communicating them clearly and effectively to patients at risk. Equally importantly, they can be influential advocates for cleaner air and can push for government intervention to achieve that.

The government's consultation on air quality targets under the Environment Act 2021,[14] which closed on 27 June 2022, could be a turning point for the nation's health if the government is bold in its ambitions. But the target currently proposed to reduce PM2.5 annual average concentration to reach 10µg/m^{-3} by 2040 falls way short of what is needed to turn the tide on toxic air.

The target date should be brought forward to 2030. Research from the Clean Air Fund and Imperial College London shows that many parts of the UK are already on course to achieve it and estimates that setting a 2030 deadline would lead to 3100 fewer cases of coronary heart disease and 388 000 fewer reported asthma symptom days in children each year.[15] The government's own analysis indicates that reaching 11µg/m^{-3} is likely to be achievable by 2030 across most modelled scenarios including the government's preferred "high" ambition option.[16]

Waiting until 2040 to reach 10µg/m^{-3}—35 years after the recommendation was made by the World Health Organization[17]—is not good enough when the grave impact of air pollution on health and health inequalities is so clear. The Royal College of Physicians along with leaders from the British Medical Association, Royal College of General Practitioners, Royal College of Paediatrics and Child Health, Royal College of Obstetricians and Gynaecologists, Royal College of Psychiatrists, UK Health Alliance on Climate Change, and others

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recently wrote to Jo Churchill, former minister for agri-innovation and climate adaptation, to make that case.[18]

Air pollution is one of the greatest environmental and public health threats of our time. The government must commit to reducing PM2.5 to 10µg/m^3 by 2030, with the ultimate objective of reducing annual mean concentration to 5µg/m^{-3} in line with the latest WHO health based air quality guideline values.[19] The nation's health depends on it.

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