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AIR POLLUTION

Doctors have a role in tackling air pollution: here's how some are rising to the challenge

After Ella Adoo-Kissi-Debrah, the case for GPs and other medics to become clean air champions is growing, says **Sally Howard**. And some are responding—with solutions from individual activism to technological tools, and the UK's first environmental air pollution clinic for children

Sally Howard *freelance journalist*

The case for a greater role for doctors in the UK's air pollution problem has been growing over the past two years. Public officials, parents, and doctors themselves are calling for increased education for medical professionals about the link between air quality and health (box 1)—and for them to pass this learning on to patients and through policy advocacy. Now, some are rising to the challenge.

Box 1: The UK's air quality is a public health problem—particularly for children's respiratory health

Outdoor exposure to air pollution contributes to 26 000 to 38 000 deaths a year in the UK¹¹ and has been shown to increase the risks of heart disease, heart attacks,¹² cancer,¹³ and strokes.¹⁴

The impact on children's health is particularly stark. Air pollution affects children's neurodevelopment and damages lung function, even at lower levels of exposure.¹⁵ Approximately 25 to 30 children and young people die from asthma each year in the UK, one of Europe's worst records,¹⁶ with around 12 of these deaths occurring in London.¹⁷ Exposure to air pollution in utero has been shown to lead to higher infant mortality, lower birth weight, impaired lung development,¹⁸ increased later respiratory morbidity and obesity, and early alterations in immune development.

In guidelines updated in 2022, WHO recommends threshold air quality levels for six pollutants.¹⁹ For PM_{2.5}, particles so small they can pass through the lungs into the bloodstream²⁰ (chiefly caused by the combustion of petrol, oil, diesel fuel, and wood) the guidelines state that concentrations should not exceed 5 µg/m³. In December the UK government set itself the legally binding target of achieving 10 µg/m³ of PM_{2.5} by 2040,²¹ an ambition criticised by campaigners as “weak” and by medical representatives including the BMA as insufficient.²²

The health and social care costs to the NHS of air pollution will be £5.3bn by 2035 unless action is taken, according to a 2018 report by Public Health England.²³

It started in earnest with the landmark legal case of Ella Adoo-Kissi-Debrah, who died in February 2013 in the London borough of Lewisham. In April 2021, the south London coroner Philip Barlow concluded that the 9 year old had died of asthma, contributed to by exposure to excessive outdoor air pollution.

In his report,¹ Barlow said that “the adverse effects of air pollution on health are not being sufficiently communicated to patients and their carers by medical

and nursing professionals,” and that action should be taken by the General Medical Council, Health Education England (HEE), and others to tackle gaps in undergraduate and postgraduate training of medical professionals around the implications of air pollution in poor health.

The case for acting

In summer 2022, Ruth Fitzharris found herself in a hospital in London with her 6 year old son Ted.* Ted had suffered a series of asthma attacks during a heatwave.² “We were in a respiratory clinic surrounded by tiny children on nebulisers, coughing and wheezing,” Fitzharris recalls. “It was truly heartbreaking.”

Fitzharris, an activist with Mums for Lungs, joined the grassroots cleaner air campaign after realising that London air pollution was exacerbating her son's severe asthma. A respiratory consultant at Whittington Hospital advised Fitzharris to travel by back roads and to monitor outdoor air pollution levels when her son first started having asthma attacks in 2018. “I was lucky,” Fitzharris says. “Mums for Lungs have found that children are more often discharged from hospital after an asthma attack with a leaflet detailing asthma triggers, from which air pollution is omitted.”³

Mums for Lungs would like better public messaging around air pollution and its public health impacts as well as the introduction of core GP training in the respiratory impacts of air pollution.

In his 2022 chief medical officer's annual report into air pollution⁴ Chris Whitty stressed the importance of communicating the health risks of pollution to patients and said that the training of healthcare staff “should include the health effects of air pollution and how to minimise these.”

Andy Whittamore, clinical lead at Asthma + Lung UK and a GP, says that the charity's surveys found that two thirds of people with lung conditions want more guidance from their local health services and GPs to manage the impact air pollution has on them. The charity is calling for a comprehensive health education programme, he adds, “to equip health professionals with the skills and knowledge they need to protect those who are most vulnerable to the dangers posed by air pollution.”

Medics must speak up

In a December 2022 talk by the Clean Air Fund—*Cleaning our Children's Air: What Should Health Professionals Do*—Camilla Kingdon, president of the Royal College of Paediatrics, said that she understood that many medics were “more comfortable leaving legal and policy advocacy to professional bodies such as the colleges,” but that air pollution’s “staggering” impact on child health dictated that healthcare professionals have a duty to act.

“We can advocate in our relationship with patients,” she said. “If a child keeps presenting with asthma look at sites such as [pollution data aggregator] [pollution.org](https://www.pollution.org) to see what the air quality is where the patient lives that day. Don’t just look at the patient in front of you and treat the symptoms.” Healthcare professionals, Kingdon added, also see first hand the relationship between poverty and high pollution exposure.

Ella Adoo-Kissi-Debrah’s mother, Rosamund Adoo-Kissi-Debrah, is campaigning to enshrine a right to clean air in the Clean Air Human Rights Bill, or Ella’s law, a private member’s bill that will be debated in the House of Commons in early 2023. Adoo-Kissi-Debrah tells *The BMJ* that, while she understands the “immense strain” on GPs, doctors have “an important role” in speaking up about the effects of poor air on children’s health that they witness in clinical settings.

Kamila Hawthorne, chair of the Royal College of GPs, agrees: “As GPs we want to be able to have meaningful conversations with families about how they can mitigate the risks of air pollution, which we know exacerbate heart and lung diseases,” she tells *The BMJ*. “GPs are under enormous workload and workforce pressures, however, and we often lack the time to have these important conversations with patients.”

Direct action and conversation starters

Veena Aggarwal is a GP registrar in south west London and co-chairs the south London branch of the UK’s primary care sustainability network Greener Practice. She believes that many GPs do not yet “make the connection” between air pollution and patient health. “There’s also an impotence felt by some GPs who think that even if they know about air pollution levels, what can they practically tell vulnerable patients to do? Move to another area?”

Aggarwal, who undertook a fellowship with NHS England to look at better prescribing of pressurised metered dose inhalers, which emit powerful greenhouse gasses, thinks it’s time GPs spoke out about political indecision. “We need to speak to patients about everything they can do—from taking different routes to writing to their MPs,” she says. “We also need to raise awareness among our GP colleagues.”

Anna Moore is a respiratory doctor who regularly engages in direct action, tapping the windows of car drivers who leave their engines idling outside school gates. She believes doctors need to shift their “individualist mindsets.”

“We think about a body and how that body has gone wrong but not about the environment that body is living in,” she says.

Moore works in a specialist breathlessness clinic where she routinely asks patients how they get around. “If it’s by car I’ll ask if they know that they’re exposed to more air pollution in a car than through active travel such as walking and cycling, and few do—there’s a worrying lack of awareness.”

Katherine Brown, a GP in Cornwall who is also a member of the Greener Practice Network, became a local clean air champion after

reading that children growing up in areas of high air pollution levels have smaller lung capacity.⁵ “To me, air pollution is the new tobacco,” she says. Brown has installed leaflets and posters that highlight the health impacts of air pollution in her Newquay surgery waiting room and talks about air pollution sources with patients “at every opportunity” and particularly when they come for asthma checks or any respiratory illness. “A simple, ‘How do you get to school?’ is a good conversation starter,” she says.

Adoo-Kissi-Debrah adds, “We as campaigners do get a lot of support from doctors and it’s good to see the NHS taking seriously its role in transport related air pollution emissions.” NHS travel and transport accounts for 3.5% of all UK road traffic but a raft of “green plans” are seeking to reduce these impacts.^{6,7}

Seeking solutions—the NHS responds

Mark Hayden, a paediatrician at Great Ormond Street Hospital (GOSH), was prompted by the challenge laid down by the coroner in the Adoo-Kissi-Debrah case to bring in a first of its kind clinician’s air pollution tool. Designed by GOSH with the MRC Centre for Environment and Health, Imperial College, the tool will display annual average air pollution estimates for patients’ local air on the hospital’s electronic medical record system, providing clinicians with click through educational resources on air pollution and health, as well as tools to help patients approach their GPs about local air pollution.⁸

Hayden cycled from London to Glasgow in 2021 with a group of activist healthcare professionals to publicise the effect that air pollution has on children’s lives. They delivered a letter to politicians at COP26 signed by millions of health practitioners across the globe.⁹ He would like to see GOSH’s tool rolled out to other settings, including GP surgeries. “Any technology would be able to do it, as it’s quite simple,” says Hayden. The UK Health Security Agency, the Greater London Authority, and Cambridge University Hospitals Trust have all expressed an interest in the tool.

In spring 2023 the UK’s first environmental air pollution clinic for children will open at the Royal London Hospital in the Tower Hamlets area of London. The clinic will examine the impact of air pollution (both indoor and outdoor) on children in one of the country’s most polluted boroughs: PM_{2.5} particulate levels in Tower Hamlets are routinely 40 times the World Health Organization threshold (see [box 1](#)), at over 200 µg/m³. The clinic will measure children’s pollution exposure at school and on their commutes, using backpack monitoring devices, as well as the particles, chemicals, mould, and damp the children are exposed to at home. The clinic will provide individualised reports with recommendations to reduce patients’ pollution exposure.

Jonathan Grigg, senior lead at the clinic, tells *The BMJ*: “This clinic is our response to the preventable death of Ella Adoo-Kissi-Debrah by providing information to children, families, and healthcare professionals on exposure to inhaled toxins.”

The GMC tells *The BMJ* that, while its powers do not extend to setting specific content in undergraduate curriculums, “all UK medical students are required to study a framework which has an enhanced focus on health promotion, illness prevention, and tackling health inequalities,” and that newly graduated doctors are required to recognise the signs of environmental exposure, evaluate environmental factors that influence health and disease in different populations, and evaluate related hazards in ill health and be aware of ways to mitigate effects.

HEE tells *The BMJ* that the agency is building a range of learning programmes that support healthcare professionals to communicate

the links between climate and health, including an air pollution module on its All Our Health elearning programme.¹⁰

Hayden welcomes the growth in quality data about poor air's health impacts, but would also like to see a broader shift in the medical profession. He says, "As doctors we need to change our mindset from air pollution being the government's problem or the local council's problem, to air pollution and the climate emergency being everybody's problem, including ours."

*Name has been changed to protect identity

Box 2: The fight for clean air—five things GPs can do

- 1 Inform themselves about the impacts of air pollution on health and how to discuss these risks with patients through resources on Action for Clean Air's Health Hub: www.actionforcleanair.org.uk/health/knowledge-hub-health
- 2 Talk to patients about how air pollution affects them. Identify their likely exposures such as commutes along busy roads—and don't forget indoor air pollution
- 3 Look for car dependence in patients, and when people are making multiple short distance journeys (which both cause pollution and lead to high levels of pollution exposure for drivers and passengers) encourage active travel
- 4 Become a member of the Greener Practice Network and consider joining its special interest Whatsapp group for greener respiratory and clinical care: www.greenerpractice.co.uk/join-our-network/special-interest-groups
- 5 Sign up for the healthcare providers pollution campaign group Ride for Their Lives: <https://climateacceptancestudios.com/ridefortheirlives>

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