



Pay offer of 2.5% is “indefensible”

Doctors’ leaders have condemned the government’s proposed 2.5% pay rise for clinicians next year as “neglect dressed up as restraint.”

The Department of Health and Social Care submitted its annual evidence to the pay review body, the DDRB, calling for a 2.5% uplift in 2026-27. Anything higher would hamper the NHS’s ability to deliver services, it warned, and could mean cuts to staffing.

The BMA said the proposal was “indefensible” and likely to worsen strained relations between it and the government.

The union is already in dispute with the government over the online GP consultation rules introduced on 1 October, and its resident doctor members are set to hold a five day strike from 14 November.

In its 103 page submission to the DDRB, the health department said it had planned only for a 2.5% pay uplift and if the body recommended anything higher this could mean “trade offs against headline government health commitments.”

“We would need to consider if and how this could be made affordable from within existing DHSC budgets. Accepting such an award would inevitably have an impact on healthcare delivery,” the document said.

The department has said that every 0.5%

increase to pay would cost an extra £750m. “As staffing costs are the largest single area of NHS expenditure, it is likely that higher pay awards will affect the ability of the NHS to afford to maintain or expand staffing levels.”

The BMA said that a 2.5% increase is a pay cut in real terms. For first year resident doctors it amounts to a rise of just 47p an hour from £18.62 to £19.09.

BMA chair Tom Dolphin said, “It is frankly indefensible that yet another government is suggesting real terms pay cuts for doctors.

“After more than a decade of pay erosion, spiralling workloads, and an NHS in a state of near chaos, this is a deliberate choice to devalue those who hold the health service together, a profound disregard of our doctors.

“This is not responsible governance; it is a calculated decision to let a vital profession bear the cost of political failure.”

Dolphin said each “sub-inflation offer pushes more doctors to leave the NHS or the country altogether, and it is patients who ultimately pay the price for this foolishness.”

He added, “For this government to even consider recommending what amounts to a pay cut isn’t prudence, it’s neglect dressed up as restraint.”

Adrian O’Dowd, Kent

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Tom Dolphin, BMA chair, said, “This is a deliberate choice to devalue those who hold the health service together”

LATEST ONLINE

- Inequality is making world more vulnerable to pandemics
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MEDICAL NEWS

“Unusually early” flu season sees 250 hospital admissions in a week



Health officials are warning that the flu season has started “unusually early” after almost 250 people were admitted to hospitals in England in a week.

Although admissions for covid-19 and respiratory syncytial virus are declining, the latest surveillance report (20-26 October) from the UK Health Security Agency shows that flu is on the rise, especially among children.

The UKHSA said it was important for all eligible groups, including over 65s, pregnant women, people with certain long term conditions, and children, to get vaccinated.

Since 1 September 12.2 million vaccinations have been administered in England, including more than 6.7 million to over 65s, 1.8 million to schoolchildren, and more than 366 000 to 2 and 3 year olds.

Flu is now circulating at levels above the baseline, and the rate at which people are testing positive in hospital has increased from 6.1% to 8.2% in the past week. This is up from 2.9% at the same time last year. Among children aged 5 to 14 years that rate has risen from 20% to almost 31% over the same period.

Overall, flu admissions increased from 1.74 per 100 000 to 2.19 per 100 000, with a total of 247 new hospital admissions in the week 20-26 October, UKHSA said.

Elisabeth Mahase, *The BMJ* Cite this as: *BMJ* 2025;391:r2299

Public health

Poorer health is linked to votes for Reform UK

People with poorer health are more likely to vote for the populist right wing political party Reform UK, showed a study published in *BMJ Open Respiratory Research*. Researchers analysed voting patterns in England during the 2024 general election and looked at 20 common health outcomes in each constituency, including asthma, cancer, COPD, heart disease, dementia, type 2 diabetes, and obesity. The five areas that returned a Reform UK MP had the highest average prevalence of 15 of those 20 health conditions.

Renewable energy Coal plants are no longer biggest energy supplier

Renewable energy such as that from solar and wind farms has overtaken coal in world energy demand for the first time, said a report from the climate think tank Ember. Renewables overtook coal in the electricity mix for the first time in the first six months of

2025, their share increasing to 34.3% from 32.7% in the same period last year. Coal dropped to 33.1%, down from 34.2%, and gas generation kept its share of 23%.

Primary care

GP dispute in Scotland ends with £531m boost

A dispute between GPs and the Scottish government ended with the announcement of a £531m funding deal. The deal, to be spread over three years, is the largest investment in core GP services in Scotland to date. After the third year the funding boost will continue at £249m a year. The announcement follows months of negotiation during which BMA Scotland entered a formal dispute with Holyrood, calling for action to restore what it said was a funding gap of £290m and threatening to ballot for industrial action.

US welfare

States sue government over benefit suspension

A coalition of US state leaders is suing the US government for what they describe as the illegal suspension of food benefits. On 28 October the New York attorney general Letitia James (left), 24 other state leaders,

and the District of Columbia said that they were suing the US Department of Agriculture for unlawfully suspending benefits under the Supplemental Nutrition Assistance Program (SNAP) in the ongoing government shutdown. The coalition said that the administration’s refusal to issue November SNAP payments to more than 40 million Americans violated federal law and could leave families hungry.

Global health

Drug companies add £6m to fund to fight diseases

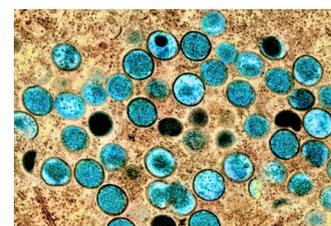
Two major drug companies invested around £6m in the Global Fund to Fight AIDS, Tuberculosis and Malaria. GSK and Viiv Healthcare awarded the money to help strengthen community led responses to these health conditions in low income countries. The cash commitment will be matched by the Gates Foundation, bringing the total to £12m.

New rival body will promote US public health alerts

A rival body to the US Centers for Disease Control and Prevention’s *Morbidity and Mortality Weekly Report (MMWR)* is set to be launched. Media reports said that the journal *NEJM Evidence* and

the Center for Infectious Disease Research and Policy planned to start publishing public health alerts within the next month. The Stat news site said that the alerts would convey information that used to be shared regularly in the *MMWR*, but some articles have been delayed since the start of the second Trump administration and editions paused while the US federal government remains shut down.

Rise in mpox cases may pose risk to UK



Experts advised caution and vaccination for some groups after a rise in mpox, warning that cases could begin to appear in the UK. The UK Health Security Agency said that it was aware of small numbers of locally acquired cases of clade Ib mpox in Italy, the Netherlands, Portugal, Spain, and the US. Most of the cases have been in gay, bisexual, and other men who have sex with men. The agency said that there was a high risk of the infection being imported to the UK.



IN BRIEF

Air pollution

Domestic wood burners “kill thousands”

Burning of wood and coal in homes contributes to almost 2500 deaths a year, and stopping unnecessary burning would save the NHS millions of pounds, a report suggested. An analysis by the charity Global Action Plan and Hertfordshire County Council estimated that admissions, hospital stays, outpatient care, and prescriptions treating asthma, COPD, pneumonia, and cardiovascular events linked to domestic burning were costing the NHS £54m a year. It said that lives would be saved and treatment costs cut if there were no domestic burning.

Methanol poisoning

Eight countries added to UK watchlist as deaths rise

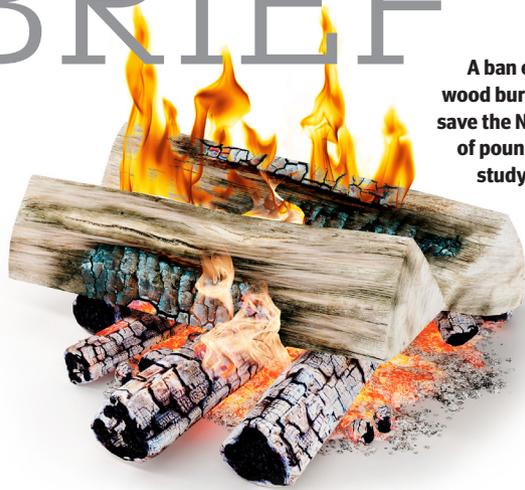


Eight countries have been added to the UK's watchlist advising travellers on destinations with a high risk of methanol poisoning. The update from the Foreign, Commonwealth, and Development Office follows a rise in the number of UK travellers dying from drinking counterfeit or adulterated alcohol. The office added Ecuador, Japan, Kenya, Mexico, Nigeria, Peru, Russia, and Uganda to its list. They join Cambodia, Costa Rica, Fiji, Indonesia, Laos, Thailand, Turkey, and Vietnam.

Climate protests

Jailed eco-activist GP is suspended for 10 months

A GP given a 12 month jail sentence for causing criminal damage at a climate change protest has been suspended from



A ban on home wood burners would save the NHS millions of pounds a year, study shows

the UK medical register for 10 months. At a Just Stop Oil protest in August 2022 Patrick Hart disabled 16 petrol pumps with a hammer at Esso Thurrock Services on the M25 motorway. He was convicted of criminal damage at Chelmsford Crown Court in October 2024 and sentenced to a year in prison in January 2025. At a medical practitioners tribunal hearing this month he admitted the conviction, along with another for aggravated trespass and contempt of court for breaching an injunction.

Prostate cancer

NICE approves combination for advanced cases

NICE recommended darolutamide in combination with androgen deprivation therapy (ADT) as a treatment option for patients with metastatic hormone sensitive prostate cancer unsuitable for chemotherapy. Final draft guidance from NICE says that darolutamide (Nubeqa, made by Bayer) plus ADT is as effective as another combination treatment already recommended by NICE, apalutamide plus ADT, but has fewer side effects and potential interactions with other drugs. Around 55 000 people a year in England have prostate cancer diagnosed, and an estimated 6000 people will be eligible for the new combination treatment, said NICE.

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WEIGHT LOSS JABS

Thousands of illegal weight loss drug pens worth £250 000

have been seized in the UK, the largest known recovery of trafficked weight loss drugs worldwide

[*Medicines and Healthcare Products Regulatory Agency*]



SIXTY SECONDS ON... CHEMTRAILS

WHAT'S THE CHEMTRAIL CONSPIRACY?

Although widely debunked, some people believe that “chemtrails”—visible clouds of vapour left in the sky by aircraft—contain poisonous chemicals designed to achieve mass sterilisation and weather control.

PLANE NONSENSE, SURELY

You would think so. But apparently Robert Kennedy Jr isn't so sure: the US health secretary has said that he plans to do “everything in my power to stop it.”

TURBULENT TIMES

An internal US Health and Human Services (HHS) memo, addressed to the White House health adviser Calley Means and obtained by KFF Health News, reveals that HHS has interviewed for someone to lead a chemtrails taskforce. The memo alleges that chemtrails are releasing toxic substances into the atmosphere.

IS THERE AN EXPERT ON BOARD?

Nasa says contrails (or condensation trails) are cirrus clouds that form in the wake of aircraft, caused by water vapour in their exhausts. Experts have warned that the narrative has “progressed from internet folklore to a potential political force.”

DOES CLIMATE CHANGE FIGURE?

Another version of the conspiracy states that the planes are being used by the government and others to cause weather events such as hurricanes and to change the Earth's climate. KFF Health News said that the HHS memo alleges that “aerosolized heavy metals” are being sprayed into the atmosphere “under the auspices of combatting global warming.”

THROWING JET FUEL ON A FIRE

Daniel Swain, a climate scientist at the University of California, told KFF, “That is a pretty shocking memo . . . it doesn't

get more ‘tin foil hat.’ They really believe toxins are being sprayed.” Others have warned that an investigation into these conspiracy theories is only going to make them appear more legitimate.

BUCKLE UP

Although scientists have debunked many of the claims, HHS seems ready to take off and task a “special government employee” to investigate climate and weather control concerns.

Anna Caldwell, *The BMJ*

Cite this as: *BMJ* 2025;391:r2311

mRNA covid vaccines may boost cancer immunotherapy, observational study suggests

Patients with cancer who received a covid mRNA vaccine within 100 days of beginning immunotherapy treatment gained significant benefit in terms of survival and disease progression, new research indicates.

The findings suggest a possible unforeseen benefit from covid mRNA vaccines, although the results come from an observational study and so can't demonstrate causality. A randomised trial will be needed to show if it is the vaccine itself that drives the effect.

Immune checkpoint inhibitors (ICIs) are

becoming more common in cancer treatment. They unleash the body's own immune system to attack cancer cells but rely on pre-existing anticancer immunity, which is absent in most patients.

Personalised vaccines

To tackle this gap, researchers have been developing personalised cancer vaccines that can sensitise tumours to ICIs by directing immune attacks against preselected antigens. However, developing them takes considerable manufacturing time and is expensive.

But the new study, published in *Nature*,

shows that mRNA vaccines targeting the covid-19 spike protein can also sensitise tumours to ICIs.

"Off the shelf" mRNA vaccines targeting tumour associated or infectious disease antigens may offer alternatives to patients that are widely available and low cost, the researchers said. Their findings were based on an analysis of the records of patients with stage 3 and 4 non-small cell lung cancer treated at the University of Texas MD Anderson Cancer Center between 2015 and 2022.

Researchers compared 180 patients receiving a covid mRNA vaccine within a 100 day period before or after starting immunotherapy with 704 people who were treated with the same drugs but who did not receive a covid jab.

The vaccine was associated with a near doubling of median survival, from 20.6 months to 37.3 months, after variables were accounted for. The overall three year survival

Plan to move care from hospitals to local hubs is at risk, CQC warns

Community health services in England need much more investment if the government is to succeed in moving care from hospitals into neighbourhood hubs, the Care Quality Commission has warned.

The CQC report was published just as the watchdog was hit by the sudden resignation of chief executive Julian Hartley, after an inquiry was

launched into "repeated maternity failures" at Leeds Teaching Hospitals Trust, which he ran for a decade.

The CQC's annual assessment of care in England said that instead of care improving under Labour's 10 year plan it could worsen without enough support in the community for vulnerable groups who face problems accessing care.

It highlighted longstanding inequalities in care for older people, people with dementia, those with a

learning disability, and those with complex mental health needs. It said the "fragmented" nature of the system meant more vulnerable groups were "falling through gaps in care."

Between January 2023 and December 2024 the

number of children and adolescents waiting to access community health services rose by 26%, while the adult waiting list rose by 19%.

The number of children and adolescents waiting for more than a year rose almost threefold, from 12156 to 47494, over the same period.

A third of respondents to the CQC's community mental health survey reported waiting three months or more. The longer people waited, the more likely they were to report a deterioration in their mental health, the regulator said.

Over the past year the number of urgent and very urgent referrals to crisis services has risen sharply.

The CQC also identified a

shortage of mental health staff, a lack of integration between services, and rising demand for local authority funded social care support.

Discharges

Hospital discharges are a persistent problem, and capacity problems in primary and community care continue to create system-wide pressures, the CQC added.

Many people struggle to get GP appointments, and there has been a 50% fall in the past 14 years in the number of qualified district nurses per 10000 people aged 65.

Nuffield Trust fellow Camille Oung said the planned shift from hospital to home care would be an "uphill struggle" without additional funding.

A spokesperson for the Department of Health and Social Care said the CQC report reflected "years of neglect and underfunding," but "significant progress" had been made this year.

Matthew Limb, London
Cite this as: *BMJ* 2025;391:r2255

GPs' online access argument is not credible, says minister

Ministers are trying to "drive a wedge" between patients and family doctors by comparing salaries of GP partners and Keir Starmer, the doctors' union claims.

In the latest exchange in a row over online bookings, health minister Stephen Kinnock said it "isn't credible" for the BMA to claim practices lack resources to implement the system when a third of GP partners earn more than the prime minister.

BMA bosses hit back, describing the comments as an "unhelpful and deliberate distraction" that risks creating hostility to GPs among patients.

The union is in a formal dispute with the government over new rules requiring all practices in England to keep their online booking systems open from 8 am to 6.30 pm, Monday to Friday. GPs have warned the system is unsustainable, unsafe, and likely to reduce the availability of face-to-face appointments.

In an escalation of the dispute, Kinnock pointed to official earnings and expenses figures showing a third of GP partners earned in excess of £175 000 before tax in 2023-24. He compared this figure to the gross salary of £172 153 Starmer receives for his roles of PM and MP.

On X, Kinnock (right) wrote, "1 in 3 GP partners now earn more than the



rate in the covid vaccine group was 55.7%, compared with 30.8% (adjusted hazard ratio 0.51 (95% confidence interval 0.37 to 0.71)).

The researchers repeated the analysis in another cohort of patients with metastatic melanoma, including 43 who received a covid mRNA vaccine within 100 days of initiating immunotherapy and 167 patients who didn't receive a vaccine. With the jab, median survival rose from 26.7 months to 30 to 40 months. Some of the vaccinated patients were still alive when the analysis was completed, so their survival time may be even higher.

No change with non-mRNA jab

Benefits were the same with both the Pfizer BioNTech and the Moderna mRNA vaccines. Receiving non-mRNA pneumonia or flu vaccines resulted in no changes in survival, the study found.

Researchers also showed that the effects observed in humans could be modelled in

mice. They are now planning a randomised clinical trial, to start before the end of the year.

Stephen Griffin, professor of cancer virology at the University of Leeds, said the "remarkable" study showed an "unforeseen benefit" of covid mRNA vaccines.

"Importantly, this effect is not to do with the 'targeting' of SARS-CoV-2 by the vaccines but instead the effect on the broader innate immune response that forms a platform for our immune system to 'switch on,' in this instance

to target a malignant tumour," he said.

Lennard Lee, associate professor in cancer vaccines at the University of Oxford, was more cautious, however. "This is an intriguing finding, yet we should be cautious before drawing conclusions. Patients who are well enough to receive a vaccine are often those already doing better, which makes it hard to separate cause from coincidence."

Jacqui Wise, Kent

Cite this as: *BMJ* 2025;391:r2245



MEDIAN
survival with the
jab increased to
30 to 40
months from
26.7 months in
melanoma patients

PM, so the BMA's claim they lack resources for online bookings simply isn't credible.

"We've backed general practice with £1.1bn extra funding and by employing 2500 more GPs—because people deserve a modern service."

Responding to Kinnock's comments, Katie Bramall, chair of the BMA's General Practitioners Committee, said, "This is an unhelpful and deliberate distraction attempting to drive a wedge between patients and their family GP.

"As any self-employed individual knows, the hours partners put into running the practice and outside of clinical work on the business means GP partners likely earn far less per hour than the government claims.

"Future stability"

"GP partners bear the responsibility for all the costs and risks associated with running a practice and increasingly have to think about their future stability in a very uncertain contractual world."

Kamila Hawthorne, chair of the Royal College of GPs, said, "For some practices, adapting to these changes has been challenging, particularly where digital systems are outdated or resources are stretched. Practices in this position need practical support and investment, not censure."

A Department of Health and Social Care spokesperson said, "Most GP practices are now offering this service and patients are benefiting.

"We are grateful to the many GP practices who have stepped up, and we'll continue to provide support and guidance to get all practices up to speed. The BMA signed up to this—it is baffling that they are now trying to turn back time."

Gareth Iacobucci, *The BMJ*
Cite this as: *BMJ* 2025;391:r2323

England's postgraduate medical training needs "urgent" overhaul

Training bottlenecks are leaving many resident doctors without a job and must be "urgently" tackled as part of an overhaul of postgraduate medical training, a landmark NHS review recommends.

Competition ratios are "now too high," causing major bottlenecks in training that "do not benefit anyone," the report from England's chief medical officer, Chris Whitty, and former national medical director, Stephen Powis, concludes.

Grievances

The "diagnostic" report is the first phase of the biggest overhaul of postgraduate medical training in England for more than 15 years. It was ordered in February in response to grievances from resident doctors about the current training process.

The report heard from more than 8000 doctors—including more than 6000 resident doctors—and from patients and regulatory bodies.

Training bottlenecks were

among the biggest immediate problems reported. This year in England 91 999 applications were made for 12 833 specialty training posts (an overall competition ratio of 7), leaving many doctors unemployed.

The report said that while the UK benefits from the "exceptional" internationally trained graduates who work in the NHS "we cannot shy away" from the fact that a shift to more international graduates has left fewer posts for British doctors.

Tackling bottlenecks "will have to include consideration of the right ratio between international entrants and those already working and training in the NHS, taking into account workforce need," it advised.

The government's 10 year NHS plan has pledged action to tackle bottlenecks by prioritising UK graduates for specialty training and to create 1000 posts.

Whitty and Powis said they were conscious their report

came "at a time of increased dissatisfaction" among resident doctors, who are set to strike again this month over pay and unemployment.

The report acknowledged "significant risks" to making major changes to training, citing past failures such as the electronic medical training application service that "caused more harm than good." But it said the risks were justified given the



problems that need solving.

Shivam Sharma, deputy co-chair of the BMA's UK Resident Doctors Committee, said, "The government seems to be realising the scale of this crisis of confidence, but now we need to see urgency in delivering solutions."

Gareth Iacobucci, *The BMJ*
Cite this as: *BMJ* 2025;391:r2251

London schools are to receive £2.7m for classroom air filters

As the mayor funds classroom air purifiers to improve children's health, should healthcare sites be the next in line? **Emma Wilkinson** reports



We've been working in homes where air quality can be just as poor or even worse than outside

Frank Kelly



Professional collaboration is important when tackling this issue

Bob Klaber



Awaab Ishak's death after prolonged exposure to mould at home led to Awaab's law, which forces social housing landlords to urgently fix hazards

London mayor Sadiq Khan has announced funding of £2.7m to put air purifiers in classrooms as part of ongoing plans to reduce the effects of pollution in the city.

At least 200 schools across the capital will get high efficiency particulate air (HEPA) filters or air purifiers, to cut levels of particulate matter in the air children breathe in school. The move follows an audit of primary schools and nurseries that began in 2017 in the busiest areas of London to try to find ways to improve air quality.

Schools have employed strategies such as moving entrances and play areas away from busy roads, planting bushes and hedges to help filter fumes, and reducing traffic in adjacent roads.

Last year research carried out by the Greater London Authority on different air filtration systems found that they could reduce levels of particulate matter of less than 2.5 µm in diameter (PM_{2.5}) in classrooms by 27-68%.

Through the London greener schools scheme, air quality sensors have been provided to more than 50 schools and to boroughs to improve air quality, and more than 800 "school streets" restrictions have been put in place to cut or eliminate traffic near schools.

Work is also under way in Scotland to monitor air quality, with the Royal College of Physicians of Edinburgh calling for monitors to be placed in all urban primary schools for at least a year.

A study by UK Health Security Agency researchers in May found evidence that pupils' attainment and attendance is linked to the effects of various pollutants. The study concluded there are cost effective ways to improve ventilation and air quality.

Harms to health

Awareness has been growing that air quality is related to far more harms to health and at lower concentrations of pollutants than previously thought, including to children's development.

The Royal College of Physicians and the Royal College of Paediatrics and Child Health (RCPCH) have called on the government to go further in meeting WHO's targets on clean air.

Helena Clements (below), officer for climate change at RCPCH, said exposure to air pollution had become the second most significant mortality risk factor in children aged under 5, nationally and worldwide. "With pollutants from both outdoor and indoor environments unnecessarily impacting the health and development of children and young people, there is an urgent need for comprehensive policy measures to safeguard their future," she said.

Deprivation and air quality

The charity Asthma and Lung UK warned of an "inextricable link between deprivation, air quality, and asthma exacerbations." Nearly half (46%) of the most deprived neighbourhoods in the UK but just 2% of the least deprived have nitrogen dioxide concentrations above legal limits, its analysis found.

"Children are particularly vulnerable to the harmful effects of air pollution due to their faster breathing rates and smaller lungs," said Jonathan Blades, director of external affairs at the charity. "Continued exposure can lead to stunted lung growth and a heightened risk of developing lung infections."

He added that almost three quarters of schools that took part in the charity's air pollution monitoring programme reported levels of nitrous oxide outside their schools above the WHO limit. "The highest recording was in Lewisham," he said, "which has one of the highest numbers of emergency admissions for children with asthma in the capital, where levels were more than five times WHO's recommendations."

Although traffic outside schools is a big problem, poor indoor air quality—whether in the classroom or the home



or in other public areas—is a threat to health too, said Blades.

Participating London schools will receive an air filter per classroom, where possible, with the rollout focusing on those in areas with poorer air quality and higher levels of deprivation.

Frank Kelly, an expert on air pollution and indoor air quality at Imperial College London, said that the equipment to measure air quality has become much smaller over the past decade, making it possible to use in small indoor spaces such as classrooms.

Researchers at Imperial are currently studying air quality at different times of the year in 100 homes across Hammersmith and Fulham, half of which have children with asthma. The results are expected next year.

"We've been working on this for 30 years in London . . . often in homes where air quality can be just as poor or even worse [than outside]," said Kelly, adding there was also rising concern about damp and mould.

Last week "Awaab's law" came into effect, forcing landlords of social housing to urgently fix emergency hazards that have been reported. The legislation was introduced after the death of 2 year old Awaab Ishak from Rochdale, who died in 2020 after prolonged exposure to mould.

Healthcare settings

When it comes to hospitals and GP surgeries, work on air quality is starting to be done, Kelly added. "At Hammersmith Hospital we're looking at ways in which we can improve air quality within the hospital itself, and we're monitoring air quality inside and outside the hospital as well as in some local GP surgeries.

"If this shows that the air quality is poor—maybe in certain areas of the hospital, such





as operating theatres—the next stage would be to look with the engineers whether ventilation can be increased and whether that will improve things. If not, then the next stage would be to add air purification.”

Kelly explained that at Queen Mary University of London and the NHS Royal London Hospital they are also working to tackle air pollution with children’s asthma clinics. Home visits now involve taking mould samples, and children are provided with portable air quality monitors.

ANALYSIS found that **46%** of the most deprived neighbourhoods in the UK, but only **2%** of the least deprived, have nitrogen dioxide concentrations above legal limits

At Great Ormond Street Hospital for Children, air pollution data were integrated into patients’ medical records in 2023 to help clinicians advise families on the dangers it may pose.

Bob Klaber, consultant paediatrician and director of strategy, research, and innovation at Imperial College Healthcare NHS Trust, who is working with Kelly on the air quality project, said that “collaboration is important” when tackling this issue.

He said, “The scientists can produce the evidence, my colleagues can confront the health implications, and the local authority can do the policy around low traffic neighbourhoods and school streets.” But he strongly believes that there “absolutely” is a role for doctors as advocates and supporting their patients to take meaningful action.

Emma Wilkinson, Sheffield
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Boiling homes, blistering hospitals, a potential mental health crisis—the UK is failing to prepare, expert warns

EXCLUSIVE Ministers’ failure to act on the increasing effects of the climate emergency will have severe health and societal consequences, a leading adviser warns, as reports suggest that UK heat related deaths could exceed 10 000 a year by 2050.

Speaking to *The BMJ*, Julia King, member of the advisory body the Climate Change Committee (CCC) and a cross bench member of the House of Lords, said a lack of action on and funding for adaptations, especially in relation to extreme weather events, was only going to increase pressure on the already struggling NHS and its outdated infrastructure and worsen the health of the population.

King also warned that climate change has been linked to poor mental health and, due to resource scarcity, conflicts and terrorism.

“The government are saying the right things, but we are not seeing enough action,” she said. “They have to recognise that there needs to be funding to invest in the changes that are needed, and we have really got to start seeing this reflected in spending review settlements.”

King, who chairs the CCC’s adaptation committee, added that the UK was in denial about the severity of climate change. “We don’t take extreme heat seriously enough,” she said. “There are now adaptations and hot weather plans for the NHS, but we don’t think they go far enough. And we don’t see them being funded.

“Investment does need to be prioritised. This isn’t something we can continually put off to the future because it ‘isn’t that bad yet.’ We are already seeing some very significant impacts and we do need to be investing now.”

Earlier this year the CCC adaptation committee released a critical report warning that the UK’s progress was “too slow, has stalled, or is heading in the wrong direction.”

King said, “Almost every announcement we’ve had about the weather has been that it’s been a record. I think that should be worrying us and really be spurring us into action.”

This summer was the UK’s hottest on record, and experts warn that the UK is heating up faster than the global average. Rising temperatures pose significant risk to people living in unadapted housing—which is most of the country, said King. “After 10 years of nagging by CCC and others, we do now have building standards for new homes that say they should be habitable in hot conditions, but we haven’t got any schemes for helping people to adapt their homes to hotter weather,” she said.

The UK has a boiler replacement scheme that provides a grant to some low income

households to help cover the cost of replacing a fossil fuel heating system with a heat pump or biomass boiler. “Wouldn’t it be sensible to combine that with a scheme that enables you to put in some shading or other cooling measures or to improve the ventilation in your home?” King asked.

“[What about] reversible heat pumps that can work as air conditioning in the summer and heating in the winter?”

The lack of joined-up thinking around this issue stems from denial about rising temperatures, she said. “We’re not accepting it. And yet we already see excess deaths of around 3000 in a hot summer. And almost every summer now seems to be a hot summer.”

Over the past four summers the number of heat related deaths has ranged from around 1300 to 3000. But evidence suggests this could rise to 10000 a year by 2050. Some groups bear a greater burden: very young children, elderly people, people with pre-existing medical conditions, and those living in deprived areas are more at risk of a heat related death.



Impact on staff efficiency and infrastructure

Increasing temperatures and extreme weather events will have a “huge impact” on the NHS, King said, “not only in terms of the increases in numbers of patients turning up at A&E, because of heat related problems and accidents caused because people haven’t slept very well, that kind of thing, but also the impact on staff efficiency and the infrastructure of our hospitals.”

A recent report by the UK Health Alliance on Climate Change found that 90% of NHS buildings in England were vulnerable to overheating. And the number of overheating incidents at NHS sites in England increased by 60% from 2016 to 2022.

Furthermore, a fifth of doctors reported cancelling surgeries because of extreme heat during the summer of 2022, when UK recorded temperatures exceeded 40°C for the first time.

Drug supply chains will also be affected, King

(Continued on page 120)

warned, because “most refrigerated lorries are not designed to be used for significant periods in temperatures above about 35°C.” Storage of drugs in hospitals and especially in general practices could become a problem, too.

As well as the effects on physical health and infrastructure, King said that worsening climate change was also a threat to mental health.

“Mental illness is a very significant consequence of climate change,” she said. “We know people whose homes are flooded are very much more likely to suffer significant mental illness.”

A UK study of flooded households showed that 36% of participants had probable post-traumatic stress disorder within a year.

“The longer they’re out of their homes, the higher that risk becomes; and the less affluent they are, the higher that risk becomes, because the less chance there is that they’re really well insured and so can move somewhere comfortable while their home is restored.”

Terrorism and conflict

Turning to recent moves by governments to cut spending on overseas aid in favour of boosting defence budgets, King suggested that this was counterproductive.

“It’s very, very sad to see us cutting aid spending. And it’s very sad to see the whole world thinking it’s got to spend more on defence.

“To think that we take aid funding and spend it on defence, when actually we know that things like the changing climate and the water shortages that countries are increasingly seeing spark conflict and they spark terrorism.”

Earlier this year the government announced it would be transferring funds from the official development assistance budget to the defence budget, cutting aid spending while boosting defence spending to £31.7bn.

“Spending the money on defence is addressing the problem after it’s happened,” King pointed out. “We do need to be balancing that by spending the money on trying to stop the problems happening in the first place.”

Halimah Nisa, Elisabeth Mahase, *The BMJ*

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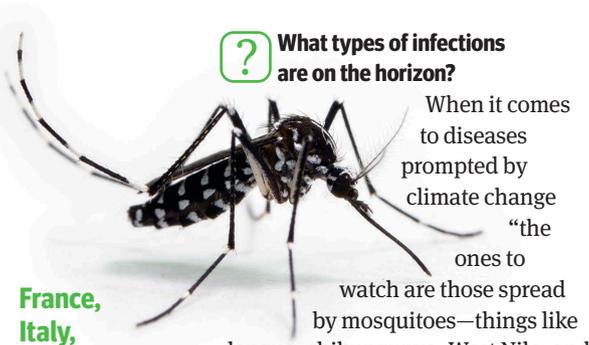
NEWS ANALYSIS

Are deadly mosquitoes, pathogen laden ticks, and waterborne diseases arriving in the UK with climate change?



Climate change is no longer a distant concern for health systems; it is already reshaping patterns of disease in Europe and the UK. Warmer temperatures, shifting rainfall distribution, and extreme weather events are making the country more vulnerable to infections that were once restricted to warmer climates.

? What types of infections are on the horizon?



France, Italy, and Portugal have reported 27 locally acquired dengue cases—unthinkable a generation ago

When it comes to diseases prompted by climate change “the ones to watch are those spread by mosquitoes—things like dengue, chikungunya, West Nile, and Zika are all on the radar,” says Tom Solomon, director of the Pandemic Institute, a partnership between academia, healthcare organisations, and industry aimed at preparing for future pandemics.

“These diseases are carried by mosquitoes that thrive in warm, wet conditions, which are becoming more common in Europe and possibly parts of the UK,” he says.

The spread of *Aedes albopictus*, also known as the Asian tiger mosquito, is perhaps the canary—or mosquito—in the coalmine.

“*A albopictus* is traditionally a tropical mosquito, but it has now undergone a huge global expansion,” says Heather Ferguson, professor of infectious disease ecology at the University of Glasgow.

So far in 2025, France, Italy, and Portugal have reported 27 locally acquired dengue cases—unthinkable a generation ago. And the UK Health

Security Agency (UKHSA) has been spotting *A albopictus* in the UK since 2010. The last UK sighting was in 2024, next to the M20 motorway in Sevington, Kent.

Ferguson told *The BMJ* that while *A albopictus* has not yet been established in the UK and has “probably just come in on trucks or transport, we do think it might be just a matter of time.”

Her warnings are echoed by academics at the UKHSA’s Centre for Climate and Health Security, who in a recent study on UK surveillance said “future incursions of invasive mosquitoes in the UK are likely.”

The more immediate risk for UK citizens is native mosquitoes.



West Nile virus is spread by several mosquitoes, including species found as far north as Shetland. The UKHSA detected the first case of West Nile virus in UK mosquitoes this May.

West Nile virus can manifest just as a mild illness with flu-like symptoms or as a severe illness affecting the central nervous system that can result in admission to hospital or death.

“This is a particular risk, as we certainly have the right mosquito,” warned Ferguson. “This is a virus that primarily infects birds, but there is a subtype that can feed on both birds and other animals, including humans, and that’s when it can spill over.”

? Could malaria return to the UK?

Changes in rainfall prompted by climate change may also provide opportunities for illnesses to thrive. “There are the waterborne infections—cryptosporidiosis and cholera—which can surge after heavy rainfall or flooding,” says Solomon.

“It’s not just exotic diseases either; climate change can make everyday infections worse, particularly

when it disrupts food, water, and sanitation systems.”

He added that fungal infections could also become more commonplace, “especially if changes in humidity help their spores spread more easily.”

Extreme weather and flooding could also put malaria back on the UK map. “Something that the public doesn’t generally know is that we used to have quite a lot of malaria in the UK,” Ferguson says. By the start of the 20th century, land drainage and improvements to housing had led to a large reduction in cases.

This was further helped by agricultural and economic development, which created drier environments and reduced mosquito breeding grounds. The last indigenous case of malaria was recorded in 1957. An increase in waterlogged habitats could reverse this trend, however.

While malaria might not pose as high a risk of spread as other mosquito-borne infections, extreme weather events could increase the chances of resurgence in the UK, Ferguson warns.

? Are midges and ticks moving into new territories?

Tickborne diseases, such as Lyme disease, are already a domestic reality, with around 3000 to 4000 new cases each year in England and Wales. Climate change—which is lengthening the tick activity season and pushing populations of the arachnids into higher latitudes and altitudes—could see the numbers grow.

More concerning, tickborne encephalitis virus—long endemic in parts of central and eastern Europe—was detected for the first time in ticks in Yorkshire in 2019, and cases in humans have since been confirmed.

Oropouche, an influenza-like illness transmitted by biting midges, is also “something we need to keep an eye on,” Ferguson says. “Last year was the first year we saw a big global uptick. It’s something previously described only in a few places in South America.”

Oropouche virus has been detected in Europe through imported cases in Germany, Italy, and Spain since 2024.

“Is it suitable to be transmitted in Europe? Is it warm enough? Do we have the right midges?” asks Ferguson. “We don’t know yet. It’s too new, but it’s definitely another example of an insect-borne disease that seems to be undergoing rapid emergence.

“And possibly that’s because of climate change.”

? How do we fight the threats?

“We need to be proactive, spotting threats early, modelling risks, and making sure that public action is part of the solution,” Solomon says. He argues that strong surveillance systems that “connect human, animal, and environmental health,” as well as continuing investment in research and innovation, will be crucial.

“Most importantly we need to involve the public, through open data projects, community engagement, and civic led initiatives, so that people understand what’s happening and feel part of the response.

“Even simple things like insect repellents—and long sleeves and trousers when at risk—can really help.”

Kate Bowie, *The BMJ*

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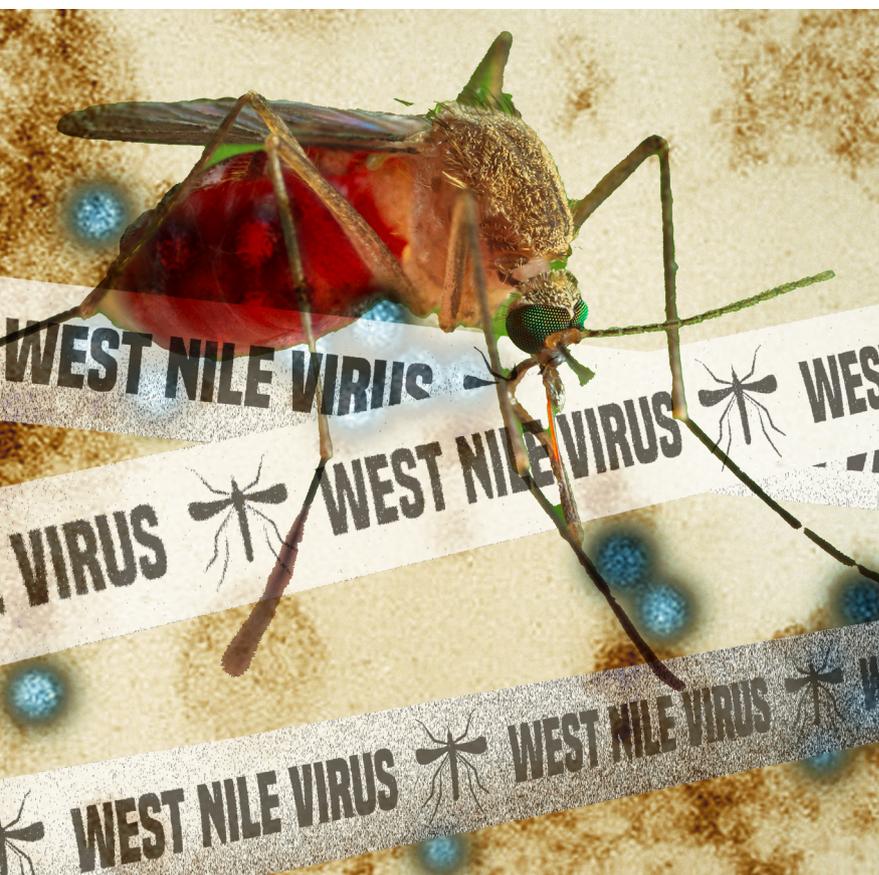
***Aedes albopictus* is a tropical mosquito but has undergone a global expansion**

Heather Ferguson



The public needs to understand what’s happening and feel part of the response

Tom Solomon





THE BIG PICTURE

Melissa's power created by climate change

Black River, a port town in southwest Jamaica, bore the brunt of Hurricane Melissa when it made landfall on 28 October.

One of the strongest Atlantic hurricanes on record, Melissa swept through the Caribbean at speeds up to 300 km per hour, killing scores of people and devastating towns in its path from Jamaica to Bermuda through Cuba and Haiti.

As the rescue and clean-up operation began, a report from Imperial College London found that category 5 hurricanes such as Melissa were made four times as likely because of human caused climate change. Ralf Toumi, director of Imperial's Grantham Institute on Climate Change and the Environment, said, "These storms will become even more devastating if we continue overheating the planet by burning fossil fuels."

Alison Shepherd, *The BMJ*

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MATIAS DELACROIX / AP / ALAMY

Responding to populism's climate harm

Mitigation, civil action, and the ballot box offer hope

This year is proving challenging for climate action. After his inauguration as US president for a second term in January, Donald Trump immediately withdrew the US from the Paris Agreement, reversed domestic climate protections, encouraged drilling for oil, gas, and coal, and defunded the World Health Organization. In his destructive slipstream, the European Union, Australia, and New Zealand rolled back on climate protections, and the Brazilian government approved drilling for oil in the Amazon basin.¹⁻⁴ The UK government remains committed to its net zero targets, but anti-climate rhetoric grows among political parties, with Reform UK rejecting net zero targets and the Conservatives promising to scrap the 2008 Climate Change Act if they get into power.

All this against the backdrop of an accelerating climate crisis. Crucial climate tipping points have now been reached or surpassed. Coral reef ecosystems are being pushed into decline by warming global temperatures, biodiversity and nature are being destroyed by human activities such as deforestation and rising temperatures, and more wildlife species are at risk of extinction.^{5,6} The climate emergency is driving more frequent and extreme weather events across the world, such as droughts, wildfires, flooding, hurricanes, and heatwaves. New research predicts that more and more cities around the world will be under rising water or sink.⁷

Challenges of populism

Populist movements and governments—those that pit people against the state and attack evidence and experts that oppose their world view—are detrimental to a country's economy, resulting in a fall in national income and living



standards, both of which harm population health.⁹ When health declines, people lose trust in public institutions and tend to disengage from democratic processes. If they vote, they often lean towards more extreme political parties.¹⁰ This creates a “self-reinforcement feedback loop” of declining health outcomes and political discontent, say researchers.¹⁰

Far right populist governments also spread disinformation about the climate emergency and perpetuate anti-science rhetoric.¹¹ Trump calls the climate crisis a “con job” and carbon footprint a “hoax.” Under his administration, US climate science and research are being defunded and censored, making it hard to counter scientific misinformation. An anti-science approach limits research and understanding of the future impacts of the climate crisis. It is a self-serving and disruptive agenda that is destroying the health and wellbeing of people and the planet.

The public remains concerned about the climate crisis.¹² International surveys show how young people live with increasing eco anxiety.¹³ They report feeling overwhelmed and fearful for their future.¹⁴ They want more climate protections but are also distracted by immediate issues—for example, the cost of living and global conflicts. Despite the acute crises that dominate the media and social media, climate change remains the biggest public

Defunding of US climate research makes it harder to counter scientific misinformation

health crisis of our time. Without immediate action, climate change will accelerate mass migration, economic decline, political disruption, and global conflicts and instability—the very issues that right wing populists rail against.

Positive action

Protecting the climate and nature is the greatest imperative for the health of future generations. While it is hard to maintain hope, it is vital that we do. Hope—distinct from optimism, which is passive and suggests complacency—helps to prompt action in the face of adversity.¹⁵ It drives change and is necessary for tackling the climate emergency. Despite the discontent, fear, and disruption that populists foster and stoke, we mustn't lose sight of the need to act, and to unite behind a common cause.

We may have surpassed climate tipping points and the 1.5°C increased warming target, but it is crucial that we limit further damage.¹⁶ We must continue to mitigate against further global warming, but also adapt to changing climates by building urban environments designed to withstand more extreme weather.¹⁷ As the articles in our annual climate issue show, action is possible: legal action against big emitters, adapted healthcare systems that meet the needs of communities, collaborative action to protect nature and biodiversity, and the example of leadership by indigenous Amazonian women.¹⁸⁻²²

Change is possible. Change is non-negotiable. And change must be now. It can happen through civil action and the ballot box. Our voices might not persuade you, but the cry of the rainforest—the regulator and protector of our global climate—cannot be ignored.

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Juliet Dobson,
managing editor,
The BMJ, London, UK
jdobson@bmj.com

Sophie Cook, head
of clinical content,
The BMJ, London

Kamran Abbasi
editor in chief,
The BMJ, London

Reducing the health risks from ever larger cars

Parking policy, taxation, and regulation could help curb sales and harms

Sports utility vehicles (SUVs) are passenger cars that have a chassis with extra ground clearance and are generally taller, wider, and heavier than other models. Once a niche vehicle for offroad driving, SUVs now make up half of new car sales globally, up from 15% in 2010.¹ In the UK, SUVs accounted for 63% of new sales in 2024, compared with 12% in 2010. The proliferation of SUVs is one aspect of the wider trend of “carspreading,” whereby cars are becoming steadily larger over time,^{2,3} and with this come potential harms to health.

In a collision, pedestrians and cyclists are at greater risk if hit by an SUV than by a regular car.^{4,5} A recent systematic review found a 44% relative increase in the likelihood of death for an adult pedestrian or cyclist hit by a SUV or similarly large car compared with a standard car.⁴ For children there was an 82% relative increase in the likelihood of death.

The taller, squarer bonnets of SUVs cause more serious injuries.⁶ When an adult pedestrian is hit by a car, often they are struck close to the knees before being carried on to the car bonnet. If hit by an SUV, the pedestrian is more likely to be struck on the pelvis and then flung forward into the road, increasing the chance that the SUV rolls over them. For children, the point of impact may be their head. Poorer visibility for drivers in large SUVs further increases risk to children. The average driver in a Land Rover Defender cannot see a 4 year old child standing directly in front.²

Increasing bonnet heights much above 75 cm makes collisions more lethal, all other things being equal.² Nonetheless, vehicle manufacturers continue to increase bonnet heights by 0.5 cm a year, with average bonnet height increasing from 77 cm in 2010 to 84 cm in 2024 among new car sales in Europe.² Across the same years, new cars in Europe also grew



MARTIN BERRY/ALAMY

Increasing bonnet heights much above 75 cm makes collisions more lethal

0.5 cm wider a year.⁷ Thus, those who walk or cycle—or want to do so—face each year a cohort of new cars that have a more dangerous shape. These vehicles reduce the space available for cyclists to move safely beside them and make it harder to achieve an increase in active travel, which has substantial health benefits.⁸

Carspreading is also an obstacle to achieving climate and air quality goals. Counting cars and SUVs together, around 80% of all new sales run exclusively, or partly, on fossil fuels, while 20% are all electric. SUV versions of regular sized petrol cars emit more carbon. Volkswagen's T-Roc SUV, for example, emits 11% more CO₂ than the VW Golf on which it is based.⁹ Bigger vehicles, whatever their fuel type, use more raw materials in production, pushing up carbon emissions.

SUVs also increase air pollution as particles thrown off by tyre and road wear increase with rising vehicle weight. In Europe's urban areas, air pollution from non-exhaust emissions (ie, tyres, brakes, and road wear) now dominates particulate matter pollution.¹⁰ The fine particles of this pollution can enter lungs and the circulatory system, and may be important contributors to chronic illnesses and premature mortality.¹⁷

Reversing the trend

Action is needed locally, nationally, and internationally to curb sales of new SUVs and to reduce their presence

in urban areas. Cities can apply higher parking fees, as has recently been announced in Cardiff.^{11,12} In Paris, the best known example, authorities report a large decrease in SUVs parked on streets.¹³ The French cities Bordeaux, Grenoble, and Lyon vary parking charges by vehicle weight, while German cities Aachen, Cologne, Koblenz, and Tübingen vary charges by either weight or size.

The UK currently has some of the lowest tax charges on large cars in Europe, and reforms to vehicle excise duty could also create stronger incentives for smaller cars.¹⁴ For instance, a BMW X5 has an acquisition tax of £3200 in the UK versus £66 000 in France, and it is therefore unsurprising that sales of the largest SUVs are four times higher in the UK than in France.¹⁵

Vehicle width and length are stated on registration certificates in Germany and Italy but not in most other European countries. Including dimensional information on registration certificates adds insight for policy makers considering tax and parking reforms. Moreover, mandating such data on certificates will also increase public consciousness of rising vehicle size.

Well established pan-national safety rating programmes such as Euro NCAP provide independent vehicle safety ratings based on crash avoidance and mitigation measures.¹⁶ Such programmes could implement a “child visibility test,” which would encourage lower bonnet heights in future designs.²

Further engagement and advocacy are vital to secure reform of parking rates and car taxation, making them more proportionate to harm. Health professionals, as opinion leaders in society, must raise their voices in supporting the health and environmental case for policy action.

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Anthony A Laverty, associate professor in public health, Imperial College London, London, UK a.laverty@ic.ac.uk

James Nix, vehicles policy manager, Transport and Environment, Brussels, Belgium

Cleo Kennington, consultant in emergency general surgery and major trauma, St George's Hospital, London, UK

Anna Goodman, assistant professor, London School of Hygiene and Tropical Medicine, London, UK

From rainforest communities to inner city patients—the Brazilian doctors working to combat the climate crisis

With Brazil set to host COP30 this month, The BMJ talks to doctors who are working to help the communities that are worst affected by the climate crisis

For Brazilian doctor Érika Pellegrino the covid-19 pandemic was a turning point: that's when she began tackling the barriers to healthcare faced by the country's rainforest communities. With lockdowns restricting movement, people in these communities were no longer able to travel to access the much needed healthcare concentrated in Brazil's urban areas.

Pellegrino had joined Health in Harmony, a non-profit organisation dedicated to protecting the health of rainforests and their inhabitants, in 2019. She noticed that pandemic restrictions compounded existing barriers faced by the rainforest's indigenous and riverine groups, making access to medical care increasingly fraught.

To tackle these problems, Pellegrino, now medical coordinator for Health in Harmony, works as part of a team that delivers vaccines, as well as running regular medical care expeditions and providing a fund to help cover the cost of trips to cities to access healthcare.

"In Brazil we have this amazing public healthcare system, but it was created for urban areas. It wasn't created for remote areas and it's quite hard for some people to access," she explains. "It's expensive and sometimes it can take people in remote areas two to three days just to get to the city. If there's an emergency and you have to take them by plane, it's expensive and the municipality doesn't have the money to do it. And then when they're in the city, even if it's for something that's not that complicated, they have to wait for

one or two weeks for an appointment or an exam."

One of the health impacts of the climate crisis that has affected rainforest communities is premature labour. Research shows that extreme heat increases the risk of stillbirths and newborn deaths, while air pollution from carbon emissions has been linked to an increased risk of preterm birth.

"For these communities, that's very worrying because they don't usually have much prenatal care. Being able to give birth in the community is very important—but that becomes harder in the face of the climate crisis, which can provoke worse birth outcomes," Pellegrino says.

Displacement and mental health

For Pellegrino, climate change and health are cyclically linked. Climate change causes poor health and at the same time poor access to healthcare forces indigenous people to relocate, leaving their land vulnerable to environmental harm and unprotected from deforestation.

Being unable to access healthcare is one of the main reasons people leave their rainforest communities, especially as they get older and require more care. "If someone in your family is sick and you don't have access to proper healthcare then people feel like they can't live there, so they leave the area," Pellegrino says.

This has two main consequences: it leaves those parts of the rainforest unprotected and it generally worsens the mental health of the person.



Climate change is not the future. It's happening now
Danielle Bedin

By living on and tending the land, rainforest communities protect it from deforestation and other harmful activities, Pellegrino explains. When they no longer feel able to stay—or in some cases are forced to leave—their mental health worsens as they feel a reduction in their quality of life, as well as a sense of being cut off from their way of life.

Both these themes emerged when Pellegrino held listening sessions with people who were among the 20 000 displaced because of the construction of Belo Monte dam in the north of the country.

"They said things like, 'We were rich when we were in the community because we didn't have any major needs. Even though we didn't have money, we had healthy food to eat, big yards with all kinds of fruits to give to our children.

"Nobody was starving. And now that we're in the city, they gave us some money for housing but we don't have a livelihood, so now we're poor,'" she recalls.

COP30 IN BRAZIL

COP30 will take place in Belém from 10 to 21 November. "Promoting resilient health systems" is one of COP30's 30 objectives.

Danielle Bedin, a climate ambassador and pulmonologist in São Paulo, has hope for what COP30 could bring. She says, "We have stark inequality in Brazil. We have very poor and very rich people, we have a lot of vulnerable people who will be impacted by climate change. It's important for COP to be here because the world will see the problems we're facing."

Érika Pellegrino, doctor and medical coordinator for non-profit organisation Health in Harmony, isn't so sure. "I don't feel very hopeful. But on the other hand, having COP in Brazil for the first time and having some better people now in government, there's a big opportunity for them to highlight some important messages."

Displacement has devastated the rainforest's indigenous communities, who are known to have higher rates of self-harm and suicide.

Early warning system

As well as providing healthcare, Health in Harmony is working to reduce the impact of the climate crisis on rainforest communities through the development of an early warning system for extreme weather events.

The system, which is still being developed, will provide advice and support to keep people safe, and also ensure that health teams are ready to help if needed. "For instance, when there are forest fires we want to be prepared and have the right equipment and treatments ready."

For Pellegrino and Health in Harmony the aim is to help rainforest communities live well and to provide support as they protect the rainforest, a vital resource for combating climate change.

"We don't have these separations between what's healthcare, what's livelihood, and what's thriving," Pellegrino explains. "In Brazil, we use a concept called 'well living.' Well living comes from the indigenous concept of the interconnectedness of being healthy and being able to reproduce your way of living and teach younger generations to be spiritually connected with the environment."

Doctors have the power to create change

Danielle Bedin, a pulmonologist in São Paulo, sees the effects of climate change in her consultation room every day.

Bedin is a climate ambassador for *Médicos pelo Clima* (Doctors for Climate), an organisation that raises awareness of the health impacts of climate change and air pollution in Brazil. She says air pollution during heat waves and forest fires worsens and, sometimes, causes conditions such as asthma, cardiovascular disease, and chronic obstructive pulmonary disease.



Érika Pellegrino carrying out a patient consultation during a recent health expedition

MARCELLA TOVAR

In Brazil, we have this amazing public healthcare system, but it was created for urban areas
Érika Pellegrino

She discusses the health impacts of climate change with her patients, including practical changes they can make to avoid the worst effects.

"Here in São Paulo we have a very dry climate, we don't have rain here, and we have a lot of air pollution. It's not good. Sometimes I have patients who have a persistent cough. I do all the exams and investigations and provide the medicine, but they're still coughing," she says. This has led Bedin to discuss the climate during consultations and to advise patients to make changes such as closing windows when it's hot and minimising time outside during forest fires.

She believes that "as doctors, we have the power to talk with our patients and other doctors," and that there is now more of an opportunity to influence government policy.

While former president Jair Bolsonaro (2019-23) encouraged deforestation for commercial purposes, current president Luiz Inácio Lula da Silva has committed to environmental protection, cutting deforestation to a 15 year low in his first year alone.

Bedin also says that Brazil's hosting of this year's UN climate change conference (COP30) has made it "easier to talk with politicians about climate change and its impact on our health" (see box).

Taking care of the climate is taking care of health

Médicos pelo Clima delivered a signed letter to the COP30 president and Brazilian diplomat André Corrêa do Lago on 17 October. It outlines several recommendations to make health a priority in climate policy, including strengthening the Brazilian ministry of health's Belém health action plan, which aims to boost the implementation of proven climate solutions and investment in research and technology aimed at helping the most vulnerable communities, and making the country's healthcare infrastructure climate resilient.

Médicos pelo Clima is also planning a global health and climate march, set to take place in COP host city Belém on 11 November during the conference, and promoting the message that "taking care of the climate is taking care of health."

Bedin says she hopes the letter and march will help spur world leaders to act. "Climate change is not the future. It's happening now. We are at a tipping point and if we don't change now things will only get worse. We must protect our fellow humans and our planet."

Elisabeth Mahase, *The BMJ*

Halimah Nisa, freelance journalist, London
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Are our health systems following through on their climate targets?

Many countries, including the UK and US, have committed to climate resilient health services and cutting carbon emissions from them—but are they making good on their pledges? **Kate Bowie** reports

The health sector pumps out nearly 5% of the world's greenhouse gas emissions—more than the aviation industry—and at the same time doctors and health systems are seeing the very real consequences of climate change.

Some health systems are starting to face this contradiction head on. The UK, US, Norway, and Brazil are among 100 that have signed up to the Alliance for Transformative Action on Climate and Health (ATACH), an initiative led by the World Health Organization. This means that they commit to building climate resilient and/or low carbon sustainable health systems. But a 2024 analysis of the initiative by the Lancet Commission on Sustainable Healthcare found “substantial gaps” in data on the countries’ progress. So, which of the four countries, if any, are sticking to their commitments?

UK

In October 2020 the NHS in England set a goal to reach net zero in the emissions it controls (such as anaesthetics, transport, electricity use, and waste—collectively, “the NHS carbon footprint”) by 2040, while also cutting those that it can influence (such as patient and staff transport or commissioned health services outside the NHS—“the NHS carbon footprint plus”) by 80% by 2039, against a 1990 baseline.

Recent reports offer some reassurance on the massive task at hand. In September NHS England announced that it had reduced its carbon footprint emissions by 14%

(0.8 million tonnes of CO₂ equivalent) in the five years since 2020, “equivalent to one million people flying from London to New York.” That figure sets the NHS “on track” to reach its goals, said NHS England—although it admitted that meeting them would still “be challenging.” Slashing emissions associated with the use of gas remains one such challenge. Gas emissions, which are primarily used for heating, accounted for around 40% of the NHS’s carbon footprint in 2024-25 and have decreased by just 1% in five years.

A wider government focus on decarbonisation could be a big piece of the puzzle. As NHS England’s *Five Years of a Greener NHS* report recently emphasised, “The NHS cannot achieve net zero in isolation. Decarbonisation of the electricity grid, acceleration of low-carbon heating options, wider electric vehicle infrastructure, and more sustainable production of medicines are all essential.”

A 2024 report from NHS Scotland, where emissions saw a 5.9% drop from 2019-20 to 2022-23, raised similar concerns. It warned that, while it had so far met all its annual energy targets for heating and powering, this was “expected to become more difficult going forward” as grid decarbonisation and energy use reduction gains stagnate.

The health service in Wales, which has committed to 34% lower emissions by 2030, has also flagged concerns about implementing its decarbonisation strategy. A 2024 progress assessment found that the service was achieving an “amber” status on the plan, meaning that



The US's climate commitment is in limbo—on paper but not in reality
Diana Picon Manyari

“progress is slow, and/or [there are] delays due to existing low-level issues that need to be mitigated.”

And while the health service in Northern Ireland has committed to developing a low carbon health system to help meet Northern Ireland’s overall emissions target of net zero greenhouse gas emissions by 2050, the health service has not yet set a net zero target.

The UK’s targets are among the clearest and most ambitious of any national health system—but progress reports suggest that meeting them will be tight.

Norway

After joining ATACH in 2021 Norway set its goal for health services to be net zero by 2045 and to reduce their CO₂ emissions by 40% by 2030.

Norway stands out for keeping watchful, and public, records on its progress. The Norwegian Directorate of Health has developed an online interactive dashboard that anyone can use to track CO₂ emissions at the hospital, regional, and national levels. Health authorities can use the dashboard to compare progress

and to request action by poorly performing hospitals.

Diana Picon Manyari, international climate senior director at the environmental healthcare charity Health Care Without Harm, tells *The BMJ* that this kind of reporting tool is an “amazing platform that helps to make evidence based decisions.”

Signe Hveem, specialist adviser at Norway’s Regional Healthcare Trust South-East, adds, “The dashboard has contributed to increased awareness, improved governance, and more targeted climate actions across the sector. It also serves as an example of how digital tools can support sustainable transformation in public services.”

Norwegian hospitals reduced their direct and indirect emissions by 11% from 2019 to 2024, Hveem tells *The BMJ*. She says, “Oslo University Hospital, Norway’s largest hospital, is leading the way with a 26% reduction in the same period.”

But are these efforts enough to leave Norway confident of achieving its climate change goals? While the Ministry of Health and Care Services has set requirements for hospitals to lower their emissions, it “is also aware of the challenges in this area,” says Hveem.

US

Unlike the UK and Norway, the US’s health provision is fragmented across private systems, non-profits, insurers, and public providers. Its climate goals are similarly fragmented: hospitals and health organisations can sign up to targets voluntarily, but there’s no systemwide goal.

Under the Biden administration in 2022, the Department of Health and Human Services (HHS) and the White House launched a voluntary pledge asking healthcare organisations to reduce emissions by 50% by 2030 and to reach net zero by 2050. Picon Manyari says, “At the end of last year, 960 private sector hospitals had signed up to that pledge.”

But in February 2025 the office in charge of the pledge—the HHS’s Office of Climate Change and Health Equity—was shuttered by President Trump. Picon Manyari explains,

“In that transition, we rehomed the voluntary pledge, and now we’re including it under Health Care Without Harm.”

Around 19% of all US hospitals have committed to the pledge, now renamed the Health Sector CARES (Climate Action, Resilience, and Equity Solutions) Pledge. Health Care Without Harm offers pledge signatories “tools and resources to meet their ambitious goals and continuing peer learning,” says Picon Manyari. She adds that private sector health organisations are now being “a bit more quiet” about their work in this space, “but that doesn’t mean that they have stopped the work. They’re just not advertising it so openly.”

Similarly, while the US signed up to ATACH in 2022, in January this year the Trump administration started the process of withdrawing from the World Health Organization. Picon Manyari explains that this leaves the US’s climate commitment “in limbo—it’s there on paper, but it doesn’t necessarily exist in reality.”

Brazil

As host of this year’s climate change conference, COP30, Brazil has also committed to building climate resilient and low carbon health systems, but it hasn’t yet pledged any net zero goals.

In recent years the country has renewed its commitments on national emissions, planning to



We cannot afford to lose sight of mitigation goals
Maria Beligni

reduce net greenhouse gas emissions by 59% by 2035. But the impact of climate change is already straining Brazil’s services and dampening its sustainability plans. In 2023 alone it experienced a historic winter heatwave, catastrophic floods left hospitals in Rio Grande do Sul underwater, and the Amazon region experienced record breaking droughts and wildfires.

Ahead of COP30, Brazil has put climate adaptation at the front and centre of its healthcare agenda. This summer the country presented the Belém Health Action Plan, a road map to guide countries in adapting their hospitals to climate change. But Picon Manyari warns that the plan omits decarbonisation efforts. She says that, while it focuses on adapting to climate change, “we need to make sure that we don’t lose sight of mitigation.”

Maria Beligni, senior communications analyst at the Brazilian non-profit health and climate change think tank Instituto Ar, echoes Picon Manyari’s concerns. “While adaptation efforts are critical in providing immediate responses to climate driven disasters, we cannot afford to lose sight of mitigation goals,” says Beligni. “Balancing both approaches is essential to prevent worsening conditions and ensure a sustainable future for healthcare delivery in Brazil.”

Kate Bowie, *The BMJ*
kbowie@bmj.com

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Hospitals and other healthcare facilities in Rio Grande do Sul, Brazil, were severely impacted by the catastrophic floods in May

“We hope we won’t exist in five years”—UKHACC says medical leaders must act

It may feel too big and difficult, but hospitals and general practices can make practical changes to protect the planet, **Sandy Mather** and **Hugh Montgomery** tell The BMJ

Medical leaders and organisations must overcome their climate action inertia to tackle the current and imminent health threats posed by the climate crisis, say the new chairs of the UK Health Alliance on Climate Change (UKHACC).

“There’s something about the psychology of change and how people feel as though it is too big of a thing to do, so they just don’t—they can’t start, there’s inertia,” co-chair Sandy Mather, radiographer and past chair of the Intensive Care Society, tells *The BMJ* in an interview. “But how do you eat an elephant? One bite at a time.”

Mather and her co-chair Hugh Montgomery, consultant intensivist and professor of intensive care medicine at UCL, have outlined several practical ways that hospitals, general practices, and medical organisations can make concrete changes for the betterment of the planet, including switching to renewable energy, moving to plant based food, and changing where they bank and invest.

“I put this to Richard Nugee, who wrote the climate report for the Ministry of Defence. I asked him: ‘Is the train hurtling towards the cliff edge?’” says Montgomery.

In response, Montgomery says that Nugee told him: “The train went over the cliff edge ages ago. It’s just dragging the carriages behind it. Now it’s just a question of whether we can decouple a few carriages and save a few people in it. We’re careering out of control.”

Members must follow through

Montgomery points to the UKHACC’s membership—which includes dozens of influential medical organisations, including *The BMJ*, the *Lancet*, the BMA, and royal medical colleges—as bodies that have agreed to make changes. Now, he says, they must follow through.

“If they’re in, then they have to move their bank accounts. They have to move



How do you eat an elephant? One bite at a time
Sandy Mather



If medical organisations are in, then they have to move their bank accounts
Hugh Montgomery

their investments, they have to move to plant based foods. They have to change the way they run their conferences and use transport, and they have to communicate with their members and help encourage and support their members to do the same things themselves,” he says.

“There are plenty of banks out there that have less engagement with fossil fuels than the big names [in banking],” Mather adds. “It only takes half an hour to 40 minutes to switch your bank account. And that makes you very empowered on a personal level, and it’s another step in the right direction.”

When asked about their hopes for the future of the UKHACC—which was set up in 2016—the co-chairs say they hope “we wouldn’t need to exist.”

“My highest hope in five years’ time would be that we’ve achieved everything we wanted to achieve. We’ve mobilised the one million healthcare professionals involved in the alliance and the 50 organisations or more that are our members and have been able to make a significant change, so much so that we no longer need to exist,” says Mather.

Plant based hospital menus

Turning to examples of healthcare organisations leading by example, the

co-chairs highlight the Royal National Orthopaedic Hospital in north London and its move towards plant based food.

The hospital recently piloted a new menu in its staff canteen whereby half the foods are vegetarian and staff get discounts if they bring reusable lunchboxes or coffee cups. It says that the initiative has led to a 40% reduction in the canteen’s carbon footprint.

The hospital is now aiming to widen the initiative to include the menu provided to patients, with a specific focus on those with spinal cord injuries who typically face bowel dysfunction and need more fibre as a result.

This London hospital is not alone, at least worldwide. In 2022, New York City’s hospitals became plant based by default, saving 59¢ per tray, reducing carbon emissions by 36%, and getting a 98% patient satisfaction rate.

Plant Based Health Professionals UK has said that defaulting to plant based meals could save the NHS £74m a year, while reducing food related emissions by up to 50%.

Renewable power

Another UK example of good climate practice can be found in Glasgow, where Queen Elizabeth University Hospital is seeking a power purchase agreement (PPA) that will allow for a low carbon and renewable electricity supply by 2027.

In September the UK government announced £100m for nearly 200 NHS sites to install solar panels.

Without action, things are only set to get worse, the chairs warn. Montgomery says, “Society will collapse quickly because of the social determinants of health. It will collapse because of extreme weather events, economic collapse, mass migration, and war.

“And we’re not very far away from that now. We’re already seeing it happening.”

Halimah Nisa, freelance journalist

Elisabeth Mahase, careers editor, *The BMJ*

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CAREERS

WHY I... grow houseplants

GP Saffi Ahmad tells **Kathy Oxtoby** how growing houseplants improves his wellbeing and helps him stay connected with nature

For Saffi Ahmad, a GP based in west London, “Plants are fundamental to any living space I’d like to be present in. Some years ago, when I eventually bought my own little place, I began filling it with greenery—and didn’t look back.”

His home has more than 30 plants, ranging from hoyas to a yuzu tree. “I also have a jasmine that’s doing wonderfully,” he says. But while they are decorative, his love of plants goes far beyond their beauty.

“I take a lot of inspiration from plants. They’re important as symbols of life, resistance, cultural memory, and healing. They also provide grounding, they’re constant reminders helping us to think about the devastation megacities and extractive economies and industries bring, as well as the loss of biodiversity, and the need to challenge this,” he says. “If we think about London, where I live, as its expanded over the centuries, you’ve had huge environmental degradation and loss of biodiversity.”

“Plants are a small reminder of what has been lost, and what there is left to protect,” he says. “It’s important to learn about how the plants we cultivate got here, as well as what we stand to lose as environmental destruction unfolds.”

Ahmad has been inspired by some of his favourite writers and books. He highlights the work of authors bell hooks, Naomi Klein, George Monbiot, and Alice Walker who have written about nature, ecology, and climate justice. He mentions novels as well. “In books ranging from *The God of Small Things* to *One Hundred Years of Solitude*, you’re surrounded by lush tropical gardens. I wanted some of this magic in my flat.”

Of the eight main groups of houseplants, he keeps a lot of palms, flowering plants,



Plants are a small reminder of what has been lost, and what there is left to protect

and foliage plants, as well as small trees. They come from a huge variety of ecologies, from rainforests to deserts, and are easily accessible from garden centres and websites.

The key to keeping houseplants healthy is “asking yourself where these plants came from and if you can to some extent recreate this environment,” he says.

He has learnt that the main considerations when growing plants include soil, including drainage and pH; light conditions, direct or indirect; watering and humidity levels; temperature; pests; and diseases.

He laughs while admitting all his plants have names. He says naming them can “help foster a greater sense of responsibility.”

“In some cultures, plants are considered persons with a spiritual presence. I talk to them too sometimes, worrying my neighbours.”

Diagnosing and treating problems “often through dogged research,” and being at ease with long Latin names—“many of the plants we cultivate have lost their indigenous names”—are some of the skills he brings as a clinician to growing plants at home.

Ahmad says, however, that “houseplant growing is for anyone and everyone, and much easier than people assume.”

There are also many benefits. “Plants

are important for emotional and physical wellbeing, yet many of us don’t have access to personal green spaces,” he says. One in eight households in Great Britain do not have access to a garden.

This is disproportionately higher among those from minority ethnic backgrounds. “It’s certainly higher among resident doctors, too,” he says. “With no access to gardens, why not bring the garden into your flat?”

Numerous studies have linked houseplants to improved air quality, including the 1989 NASA clean air study, he says.

Furthermore, “plants have clear benefits for mood, creativity, productivity, cognitive function, mental health, resilience, and even blood pressure. They can also foster a sense of social connection.”

“Humans have an innate emotional connection to other species and nature, and we feel and perform better when this connection is nurtured,” he says.

“Rather than attempting to dominate and manipulate nature, we may do better to understand ourselves as part of ecological systems,” he says. “Nature is not simply a neutral backdrop for historical events, it has agency and this should be respected.”

Kathy Oxtoby, London

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HOW TO MAKE A CHANGE

- You don’t always need to buy expensive plants. Ask keepers of plants if they’ll let you take cuttings and look into propagation methods
- When travelling or on call there are plenty of ways to keep your plants well watered. Place a wick or absorbent cloth into a bowl of water at a position more elevated than your plant, then place one end of the cloth into the soil. The plant will absorb what it needs
- Water with rainwater when possible as it contains fewer fluorides and chlorides
- Don’t use soil from the garden in your houseplants as this can introduce pests and pathogens, and it doesn’t drain well enough for most indoor plants. General purpose potting mixture is usually fine

I care about the climate crisis but what can I actually do?

From small daily adjustments to influencing national policy, doctors can make a difference, **Elisabeth Mahase** hears



Make realistic suggestions

Veena Aggarwal, co-chair of the Royal College of General Practitioners' climate and sustainability group

“Greener practice is something I am passionate about. My first piece of advice is to make your thoughts known and start conversations in your workplace.

“Talk to the GP partners and managers at your practice or the leadership team of your hospital and ask them what they’re already doing on sustainability. Ensure you go into any meetings prepared, knowing what your ambitions are and ready to make thought out and realistic suggestions. Using case studies of best practice or innovation can strengthen your argument for sustainable improvements, many of which you can find on the Greener NHS or Centre for Sustainable Healthcare websites.

“Sustainability can also be embedded into your everyday clinical practice, such as prescribing more environmentally friendly inhalers, deprescribing drugs when clinically appropriate, or only using disposable gloves when they’re really needed.

“You can also consider taking up a fellowship, either full time or part time, such as the chief sustainability officer’s clinical fellow scheme. This is a unique chance to focus on sustainability in healthcare and influence real change from the inside. Fellowships have also been known to lead to other opportunities and connections that can help you tie sustainability into your future career.

“Finally, remember to use your voice. As doctors, we have a platform and are lucky to be trusted figures in our communities. Effective campaigning can take many forms, from writing to your MP and campaigning at a local level, to joining climate focused groups and networks.”



Reduce unnecessary care

Bethan Griffith, consultant acute physician

“Reducing unnecessary care is one of the most powerful levers available to us as clinicians. Unnecessary tests, over-investigation, and redundant interventions not only expose patients to potential harm but also drive considerable environmental impact. Every test, imaging study, and hospital day consumes energy, produces waste, and uses resources, which comes at environmental and financial cost. Importantly, minimising low value interventions also corresponds with high quality care: it reduces iatrogenic harm, shortens admissions, and improves patient experience.

“Climate conscious care does not require large scale overhauls; incremental, thoughtful actions in routine practice make a tangible difference. Small, focused improvement projects, guided by tools like the sustainable quality improvement framework, can incorporate environmental impact alongside clinical outcomes. It allows clinicians to visualise the broader difference they can make using the ‘triple bottom line’—simultaneously assessing the financial, social, and environmental return on their investment.

“Practical, evidence based examples include admission avoidance pathways, such as early oral switches for intravenous antibiotics, and considering the carbon footprint of plastic, fluids, and cannulas. Can you reduce your daily c-reactive protein requests or cut down your use of non-sterile gloves?

“By embedding these principles of streamlining care into daily practice, we can protect patients and the planet.”



Talk to anyone who will listen

Anandita Pattnaik, public health doctor

“During the covid-19 pandemic lockdown I enrolled in an online course with HarvardX which opened my eyes to the wide ranging health impacts of climate change. One line stuck with me: ‘Those who are least responsible for the climate crisis bear the maximum brunt of it.’

“I began exploring the situation of small island developing states like Kiribati. Not only do the people there face losing their homeland to rising sea levels, they are also having to deal with groundwater salinisation which increases their risk of hypertension. Connecting these dots made it clear to me that urgent climate action is critical, but also the power that health professionals have in speaking up.

“I joined the Planetary Health Report Card to evaluate the content that two medical schools in India, including the one I attended, provided to health professionals in training. I’ve also worked with the World Health Organization to develop guidance on building climate resilient healthcare facilities, and with the UK Health Alliance on Climate Change as a policy officer.

“The health argument can push real action. Doctors are among the most trusted professions in the UK and across the world. The most powerful way to fight climate change is to use our voices. Talk about the health impacts of the crisis and highlight actions that bring the greatest health benefits. Speak to your peers, colleagues, friends, patients, and especially your MP—basically anyone who will listen. The more people understand and support climate action, the closer we get to keeping the Earth healthy and habitable for future generations.”

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