



The Association of Directors of Public Health

Policy Position: Air Quality

Key Messages

- Air pollution causes a considerable burden of death and disability and costs the UK economy £22.6 billion every year.¹
- Public health should be placed at the centre of air quality control and future national planning policy to improve population health and wellbeing and reduce the social cost of poor health.
- Policies with co-benefits on public health, air quality and climate change should be considered.
- Local authorities (LAs) should be supported with resources, adequate staffing, and additional inspection capacity to enforce restrictions and reduce pollution. Enforceable restrictions should also be imposed within the existing regulatory framework.
- The UK Government needs to deliver active travel and public transport infrastructure and interventions that have significant co-benefits to health.

ADPH Recommendations

National

Adopting and achieving air quality standards: Governments across the four nations should set out clear, funded plans to adopt and achieve the World Health Organisation (WHO)'s air quality standards, outlining the role and the relevant support for local public health authorities^{1, 2}.

Investment in public health must be increased across the four nations. In England, the Public Health Grant needs £0.9 billion more a year to reverse years of funding cuts.³

Active travel: Governments across the four nations should prioritise active travel and continue to invest in infrastructure for active travel. This should be set out clearly within appraisal and modelling strategies.

Public transport: Governments across the four nations should improve public transport and ensure that it is safe, cheap, convenient, regular, reliable, clean, and connected.

Greener fleets: Governments across the four nations should support commercial fleet operators to switch to more environmentally friendly fuels and technologies and lead the way by switching to lower polluting vehicles for the NHS and other public sector fleet vehicles.

National diesel scrappage scheme: The Government should commit to a cost-benefit analysis of a national diesel scrappage scheme in England.

Domestic combustion: National messaging is crucial to reduce solid fuel burning. More restrictions should be imposed on the installation of solid fuel burners and more polluting wood burners in urban areas.

Vehicle Excise Duty should be adjusted to reflect diesel vehicles' impact on nitrogen dioxide (NO₂) levels.

¹ By local public health authorities we mean bodies with statutory local responsibility for public health functions (eg upper tier local authorities in England, Health Boards in Scotland and Wales, Public Health Service in Northern Ireland). These differ across the UK, Crown Dependencies, and associated territories. We have published a separate [headline explainer](#) on public health in each of these systems.

Low-emission vehicles: The Government should incentivise the use of low-emission vehicles.

Research: Funding should be provided for research on the implementation and evaluation of interventions that address air pollution while maximising the benefits to health.

Local

Whole system approach: Public health and planning departments should collaborate more closely. A commitment to improving air quality should be included in strategy documents that guide planning decisions.⁴

Green space: Trees can filter pollutants from the atmosphere and are important in improving air quality. Planning decisions should ensure adequate green space in local areas.

Local areas should adhere to [NICE guidance on air pollution](#) and building emission standards. Infrastructure to support active travel and use of public transport needs to continue to be developed and local areas should aim for at least 10% of the local transport budget to be dedicated to active travel.

Local planning: Specific Air Quality Policies should be included in all Local Plans to restrict, where appropriate, any new development in areas of identified poor air quality. New developments should consider mitigation options for impact on air quality.

Transportation: Areas should consider adopting a 20-mph speed limit and phased traffic lighting where it is feasible and appropriate.

Background

What are the health impacts of indoor and outdoor air pollution in the UK?

Air pollution causes a considerable burden of death and disability and costs the UK economy £22.6 billion every year.⁵ In the UK, 40,000 equivalent deaths a year are attributed to exposure to outdoor air pollution through increased risk of diseases such as heart disease, stroke, respiratory diseases, and cancer. The World Health Organisation (WHO) has called air pollution (both indoor and outdoor): ‘the biggest environmental risk to health, carrying responsibility for about one in every nine deaths annually’.⁶

Air pollution contributes to over 20,200 respiratory and cardiovascular hospital admissions per year and could have long-term impacts on health.⁷ One study has shown that air pollution exposure has long-term effects on mortality that persists for decades.⁸

Air pollution can be originated from both natural and human sources and is defined as a: ‘substance or complex mixture of particles and gases in the air that cause harm to people's health’.⁹ Common air pollutants include fine particulate matter (PM_{2.5}), NO₂, carbon monoxide (CO), and sulphur dioxide (SO₂). They can be generated from transport, industrial processes, farming, energy generation and domestic heating. Indoor air pollution is also a concern, as an average person spends around 80% of their time indoors.⁷ Domestic appliances containing carbon-containing fuels (eg heaters and ovens), environmental tobacco smoke (ETS), second-hand smoke (SHS), cleaning and personal care products, building materials and household consumer products are major sources of indoor air pollution.

How is air pollution related to health inequalities?

There are striking health inequalities associated with air pollution, as people with low incomes are more likely to have existing medical conditions, live in areas with poorer outdoor and indoor environments (for

example, near to industry or busy roads), and have worse access to decent housing and green spaces.^{10 11} Air pollution combines with other social determinants and creates a disproportionate disease burden in the most deprived areas.¹²

Policy Context

In 2019, the English Government published its Transport appraisal and modelling strategy: informing future investment decisions.¹³ In 2023, England released a proposed revised Air Quality Strategy.^{14 15} Concerningly, the WHO Air quality guidelines 2021 have not been mentioned. The targets set in the Strategy also do not align with WHO target for PM_{2.5} and is less ambitious than the Clean Air Plan in Wales.¹⁶

In 2019, an independent review on Cleaner Air for Scotland was completed. This paved the way for the development of Scotland's air quality strategy in 2021 - 'Cleaner Air for Scotland 2 - Towards a Better Place for Everyone' which set out Scotland's air quality framework for the next 5 years.¹⁷

In 2020, the Welsh government issued a new Clean Air Plan for Wales.¹⁸ The plan introduces new air quality management targets and initiatives. The Environment (Air Quality and Soundscapes) (Wales) Bill was introduced in 2023 which is passing through the Senedd.

In 2020, the Department of Agriculture, Environment and Rural Affairs (DAERA) started developing the first Clean Air Strategy for Northern Ireland.^{19 20} In 2021, Northern Ireland announced changes to the Air Pollution Alert Protocol to improve public awareness during periods of high air pollution through social media.²¹ A new online air pollution dashboard was also launched that allows the public to input a postcode for anywhere in Northern Ireland to see levels of air pollution in their area.²²

ADPH Position

A whole system approach to reduce the health impacts of poor air quality

Public health should be placed at the centre of air quality control and future national planning policy to improve population health and wellbeing and reduce the social cost of poor health. At the local, regional, and national levels, a whole system approach is required to improve air quality with the joint effort of key partners across transport, planning, health, and education. The central government plays a key role in joining up the work of different departments at local, regional, and national levels to enable a more robust regulation framework. It should provide a country wide perspective to support and inform advice, guidance, and regulations' enforcement at local level.

It is vital to develop partnerships across national, regional, and local boundaries to implement effective sustainable strategies to bring down mortality associated with air pollution, as air pollution does not adhere to boundaries. In 2017, DEFRA, the Local Government Association (LGA) and ADPH published [Air Quality: A Briefing for DsPH](#), which provides guidance to Directors of Public Health (DsPH) about how they can work collaboratively with local partners to improve air quality.²³

More public health funding is needed to reduce harm caused by air pollution

Investment in public health must be increased across the four nations to reduce harm caused by air pollution. Public health needs to be funded sustainably and adequately in line with local population health need. In England, LAs' public health funding has suffered a 26% cut (in real terms on a per person basis)

since 2015/16. It is estimated that £0.9 billion will be needed annually to restore funding to 2015/16 levels.²⁴ Although DsPH have been acting to manage these cuts they have reached the limit of available efficiencies. Cuts to public health funding will result in cuts to interventions which reduce harm caused by air pollution.

LAs, in particular, should be supported with resources, adequate staffing and additional inspection capacity to enforce restrictions and reduce pollution. Large industries have made it expensive for LAs to prosecute, and so the national Government plays an important role in supporting LAs to enforce regulations. Dedicated funding should be provided to LAs to raise awareness and increase enforcement capacity. Enforceable restrictions should also be imposed within the existing regulatory framework. The Government should also provide consistent messaging regarding air pollution.

Reducing health inequalities

Poor air quality is affecting different populations differently. It is important to understand who and how many people are exposed to different kinds of air pollutants. This could allow an understanding of the differential impact air pollution has on different population groups. This could also enable an understanding of how air pollution affects vulnerable populations.

Given air pollution's disproportional impact on vulnerable individuals, more work is required to engage populations most susceptible to poor air quality and ensure that they know where to obtain information on local air quality. This could be done through working with local partners such as schools and health professionals. Trials have been carried out with GPs in London preceding a national pilot to create air quality champions in the GP community.

Improving indoor air quality

The Government should allocate more resources and funding to support LAs to improve sub-standard housing. It is vital to ensure housing has adequate ventilation and better insulation that follow appropriate standards. Damp and mould remain a public health concern. The Government should update the Housing Health and Safety Rating System (HHSRS) risk assessment. This framework enables property inspections to identify where damp and mould is likely to adversely affect residents. In addition, the Government should support households to improve insulation to prevent mould from forming in the first place.

Smoking tobacco products is also a major challenge to indoor air quality and is a significant driver of health inequalities. It has been estimated that smoking causes half of the difference in life expectancy between the least deprived and the most deprived areas.²⁵ Therefore, the Government should ensure all social housing and communal buildings is smoke-free, make stop smoking a norm and work harder to protect non-smoker populations from the harms of second-hand smoke.

Promoting active travel

Improvements to air quality can be achieved through making walking, cycling and use of public transport the preferred and accessible form of mobility. Private car travel remains dominant across the country overall, this is both a cause and effect of how transport modelling and appraisals are designed and implemented. More focus should be given to improve how the overall benefits of cycling are appraised, especially health benefits, so this can be better reflected in investment decisions. 81.2% of DsPH prioritise active travel in terms of transport policy and investment decisions.

Urban planning teams should also consider how they can promote active travel and public transport use

through putting in place wider pavements and cycling infrastructure. This would require partnerships across LAs to ensure these initiatives are useful for community mobility.

There are opportunities for win-win approaches that view economic growth, environmental sustainability, and economic success as complimentary and interconnected, rather than competing or contradictory goals. For instance, the Mayor of London's strategy, [Transport and Health in London](#), aims to achieve economic benefits of nearly £2.2 billion through the promotion of active travel.²⁶

Moving towards cleaner vehicles

There is a need to move towards lower emission vehicles and rises in vehicle excise duty could be one way of achieving this. Electrification of light vehicles and public transport is also a big step towards cleaner air. 71.3% of DsPH support incentivising the use of low-emission vehicles and adjusting Vehicle Exercise Duty to reflect the impact of diesel vehicles on levels of nitrogen dioxide in the atmosphere.²⁷

LAs can help to reduce emissions from road transport by regulating vehicles – both private and commercial – and working directly with public transport authorities to ensure that they are operating low emission public transport fleets. This requires further guidance, support, and funding from central Government to guarantee budgets, encourage behaviour change, and to support enhanced monitoring.

The Mayor of London has published proposals for a national scrappage scheme and a model for cities to tackle air pollution from diesel.²⁸ The use of raised exhaust pipes and road systems which encourage continual traffic flow rather than stopping and starting can help to mitigate the impact of diesel and heavy goods vehicles. Furthermore, improving technology for clean heavy vehicles to reduce the use of coal and diesel will allow for massive improvement in air quality. The adoption of 20mph speed limits, where appropriate, also has positive effects such as reducing air pollution, noise pollution, and road traffic injuries. This makes it safer for children to engage in more physical activity outside while supporting greater community cohesion and the viability of local businesses.²⁹

The impact of Clean Air Zones (CAZs) on improving air quality and health

CAZs with financial charges (including Ultra Low Emission Zone in London) have the greatest impact on reducing air pollution over the short to medium term.^{30 31} They are associated with a reduction in PM_{2.5}, NO₂ and PM₁₀, and there is no evidence that they displace emissions to neighbouring areas.^{32 33 34} Where financial incentives are provided, CAZs have a positive longer-term effect in accelerating the replacement or retrofitting of older, more polluting vehicles with low emissions ones.³⁵

Although CAZs can lead to a reduction in air pollution, it is difficult to estimate how that reduction has been achieved – whether it is through switching vehicles, public transport, or active travel. Reduction in air pollution will have a lower impact on health outcomes if that reduction is simply achieved by a reduction in journeys. Measures should be in place to promote active travel. Support should also be provided for the disabled and others who cannot walk, cycle or use public transport easily.

To ensure that the greatest benefits are derived from introducing CAZs, it is essential that they have sufficient public support, as well as viable alternative public transport. Greater support must be also provided by LAs for people and businesses to upgrade their vehicles when implementing a CAZ, or other charging zones. This will help all people to change to less polluting modes of transport regardless of their income level. This support could take the form of a scrappage scheme or mobility credits – whereby a vehicle is swapped for credits to use on public transport.

Reducing air pollution from domestic combustion

Domestic combustion is a major source of particulate matter emissions, accounting for 16% of PM₁₀ emissions and 27% of PM_{2.5} emissions in 2021.³⁶ However, the enforcement of legislation around domestic combustion is problematic, as realistically LAs cannot effectively control what people burn on their stoves. LAs also have limited enforcement capacity. The significant scale of domestic solid fuel burning requires action at a national level through tougher emission standards and policies to regulate domestic wood burners and incentivise a shift towards newer, less polluting appliances. Efforts should also be made to cut heat demand in residential properties through insulation and ventilation, especially as fuel poverty leads to an increase in demand for cheap but polluting firewood and wood-burning stoves. The Government should provide targeted messaging to reduce solid fuel burning. More restrictions should be imposed to outlaw the more polluting wood burners in urban areas. Increased regulation for the installation of solid fuel burners should be considered.

In England, smoke control areas (SCAs) were introduced to regulate domestic combustion.³⁷ However, LAs have no duty to put in place SCAs and different LAs place different emphasis on this. A strong regulatory framework should be created. It should also be easier for LAs to declare SCAs.

Reducing air pollution from industrial combustion

Identifying premises which require permits is an issue with businesses often unaware of the fact that permits and control of their emissions is required. More resources are required to support LAs to undertake regular surveys of their area to identify unregulated premises. The Government should update current guidance for LAs to increase the frequency of inspections to LA regulated premises and additional resources should be provided to ensure LAs have sufficient capacity to undertake inspections.

Reducing air pollution from agriculture

Agriculture can lead to the emission of air pollutants such as Ammonia and Nitrous Dioxide which will add to the current PM_{2.5} level and impact ecosystems and human health. Governments across the four nations should raise awareness of the impact of agriculture on air quality and provide strong national messaging.

The [National Farmers Union](#) (NFU) flags a variety of ways in which LAs can help. Governments across the four nations should support LAs with adequate funding, guidance, and enforcement powers to support agricultural management practices which can reduce air pollution. Precision application of slurry and other polluting fertilisers should be used, and slurry stores should be covered.

Research and evidence needed on public health interventions

More evidence is needed to identify high impact interventions which are likely to have the greatest co-benefits for both air quality and health. Local air quality monitoring is crucial as comprehensive, accessible air quality data within LA boundaries are important to facilitate an evidence-based approach to reducing air pollution. In England, air quality data should be included in Joint Strategic Needs Assessments so that Health and Wellbeing Boards, and other local partners, are equipped with the information needed to act.

In the process of identifying effective measures, it is crucial to carefully consider unintentional consequences of intervention. For example, at the time when diesel vehicles were promoted, inadequate consideration was given to the negative consequences of increasing nitrogen dioxide and PM₁₀. We need to learn from these experiences and adopt an evidence-based approach to reduce air pollution.

About ADPH

The Association of Directors of Public Health (ADPH) is the representative body for Directors of Public Health (DsPH) in the UK. It represents the professional views of all DsPH as the local leaders for the nation's health.

The Association has a heritage dating back over 160 years and is a collaborative organisation, working in partnership with others to strengthen the voice for public health. It seeks to improve and protect the health of the population through collating and presenting the views of DsPH; advising on public health policy and legislation at a local, regional, national and international level; facilitating a support network for DsPH; and providing opportunities for DsPH to develop professional practice.

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