# Impact of Air Quality on Health: A Guide for ICBs

The **10-Year Health Plan** sets a clear ambition to shift care from sickness to prevention and from hospital to community, while **Core20PLUS5** provides a framework for reducing healthcare inequalities. Raising awareness of the health impacts of air pollution, supporting people to reduce their exposure, and embedding action on air quality within prevention, long-term condition management, neighbourhood services and wider system planning can contribute to **better population health and wellbeing, reduced health inequalities**

## CORE 20: Air Pollution and Premature Death in London

- **Air pollution an important contributor to premature death and disease and is the single, largest environmental health risk in the UK**. Action to improve the quality of London's air and to reduce people's exposure to air pollution will deliver important population health benefits and reduce inequalities.
- In 2024, **6.6% of London's mortality burden was attributable to particulate air pollution (2024), the highest of all English regions*** (measured as fine particulate matter, $PM_{2.5}$**), and communities living in more deprived areas continue to be disproportionately impacted.
- Without action, the cost to the health and care system in London is estimated to be **£5.49 billion by 2050**[2]. In 2019 and 2022, **all London hospitals were located in areas where annual average $NO_2$*** and $PM_{2.5}$ concentrations exceed the WHO guideline of 10 µg/m³ and $PM_{2.5}$ of 5 µg/m³ respectively**[8] – the two pollutants with the strongest evidence for effects on health.
- Actions to improve London's air quality (including the central London Ultra Low Emission Zone and expansion to the North and South circular roads) are expected to **save the NHS in London almost £5 billion and prevent more than 1 million hospital admissions** related to air pollution by 2050

* Deaths aged 30+, Fingertips | Department of Health and Social Care
** $PM_{2.5}$: Particles that are less than 2.5 microns in diameter and can penetrate deep into the lungs.
*** $NO_2$: Gas that is produced along with nitric oxide (NO) by combustion processes.

## What your ICB can do:

- **Use local data and intelligence:** Use the borough Air Quality guidance documents, London Air and London Datastore to understand local air quality issues to inform, target and prioritise ICB and local action
- **Align to Greener NHS:** Ensure Green Plans consider the need to improve air quality, the impact of partnership measures to improve health e.g. the ULEZ, and promote active travel for staff, patients and visitors.
- **Long Term Conditions:** Include reducing exposure to air pollution in proactive Long Term Conditions management.
- **Communication and engagement:** Provide staff, patients, and communities with information about air quality, its impact on health and personal actions that they can take to reduce exposure to poor air as well as improve London's air quality. Use visual opportunities e.g. screen savers, display boards.
- **Training:** Use evidence-based information and resources on air quality and health, for health and care professionals to support them to talk to patients about air quality as part of their care.
- **Care Pathways**: Care pathway redesign and new service models can support improvements in air quality e.g. virtual wards, e-consultations.
- **Estates and procurement**: Implement good building design/ construction and procurement/ supply chain to improve air quality.

## PLUS 5: Five Clinical Areas of Focus Impacted by Poor Air Quality

| 1. Maternity | 2. Severe Mental Illness | 3. Chronic respiratory illness | 4. Early cancer diagnosis | 5. Hypertension |
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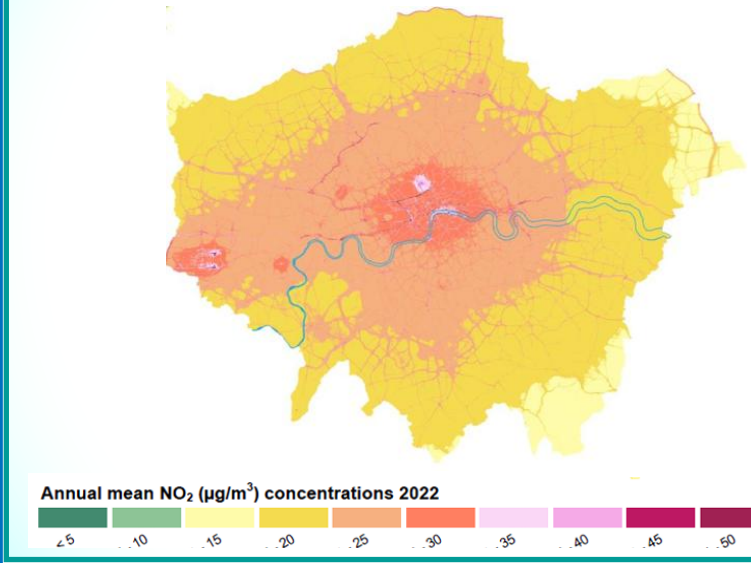
| Air pollution can affect everyone. It can even be harmful to the womb. There is growing evidence associating air pollution with early life effects such as low birth weight and premature birth. Prematurity and low birth weight are associated with an increased risk of poorer health in later life. | Air pollution has been linked to dementia and cognitive decline in older people[4]. The prevalence of dementia is strongly age-related: doubling every 5 to 6 years over the age of 65 years[4]. | Air pollution is a risk factor for the development and aggravation of respiratory diseases, such as asthma and COPD. Air pollution in London contributed to > 1,700 respiratory hospital admissions between 2017 and 2019[5]. | Air pollution is a cause of lung cancer and lung cancer deaths. Air pollution contains a mixture of polluting particles. Research is ongoing into how tiny particles may cause inflammation in the lungs that can lead to cancer. | Air pollution is known to increase risk of CVD, which are the leading cause of mortality worldwide. |

## Modelled $NO_2$ annual mean concentrations across Greater London (LAEI 2022, includes data for $PM_{2.5}$ & $PM_{10}$)[8]



## ADDITIONAL RESOURCES

**Make the case for addressing air quality**

- The ICS Clean Air Framework is introduced in this Supercharging action on clean air in your ICS report with additional guidance in Supporting slides and how-to video
- Institute for Health Metrics and Evaluation Disability adjusted life years (DALYs) attributed to air pollution by age
- Institute for Health Metrics and Evaluation Attribution of risk factors to DALYs broken down by health condition
- Health Foundation Relationship between air pollution and health, explains why high air pollution may not always be associated with poor health outcomes of the same magnitude seen elsewhere in the country where there are similarly high levels of pollution, where deprivation or wealth confounds the relationship.
- Primary Care UK, 2024 Air Pollution & Illness: What Primary Care can do, (podcast).

**Data sources and materials**

- The NHS England guidance: How to produce a Green Plan: A three-year strategy towards net zero, NHS England asked systems and trusts to develop green plans spanning 3 years. These plans are being refreshed in 2025 in line with new statutory guidance: NHS England » Green plan guidance.
- Institute for Health Metrics and Evaluation Air pollution
- Institute for Health Metrics and Evaluation Burden of Proof
- Imperial College London Impacts of air pollution across the life course – evidence highlight note
- Imperial College London, 2023 Review highlights lifelong health impacts of air pollution
- Children's Health in London & Luton https://www.qmul.ac.uk/chill/

## REFERENCES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