Clean Air for Camden

Launching the new Camden Clean Air Action Plan 2023-26

Friday 10th March 2023, The Doreen Bazell Hall

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Camden

Agenda

Part 1: 12.30-13.15

- Welcome and introduction
- Camden's vision for Clean Air (Cllr Adam Harrison, Cabinet Member for a Sustainable Camden)
- Air quality and health (Dr Mark Hayden, Great Ormond Street Hospital)
- The Camden Clean Air Action Plan 2023-26 (Tom Parkes, Camden Council)
- Break

Part 2: 13:30-14.15

- Camden Clean Air Initiative and the AirScape network (Valeria Pensabene, Camden Clean Air)
- Case study: Improving air quality in Somers Town (Georgia James, Camden Council)
- Concluding words
- Lunch, networking and finding out more

Councillor Adam Harrison

Cabinet Member for a Sustainable Camden

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Dr Mark Hayden

Air Quality and Health

Air pollution is a health issue.

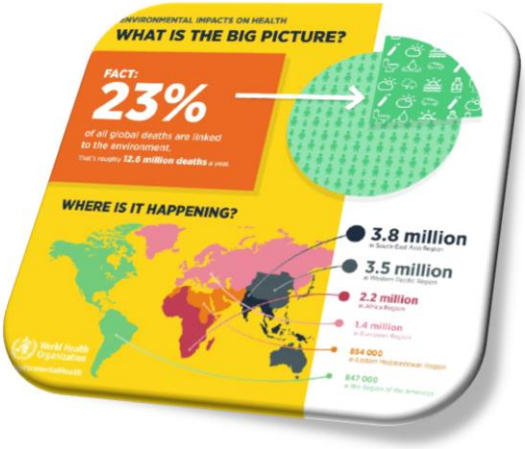
7 million

deaths per year

as a result of ambient and household air pollution exposure

Ambient air pollution
4.2 million deaths/year

Household air pollution
3.2 million deaths/year



Air pollution kills an estimated seven million people worldwide every year. WHO data shows that more than 9 out of 10 people breathe air containing high levels of pollutants.

AIR QUALITY IN LB CAMDEN: A GUIDE FOR PUBLIC HEALTH PROFESSIONALS

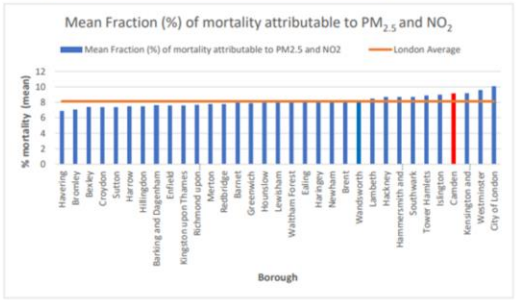
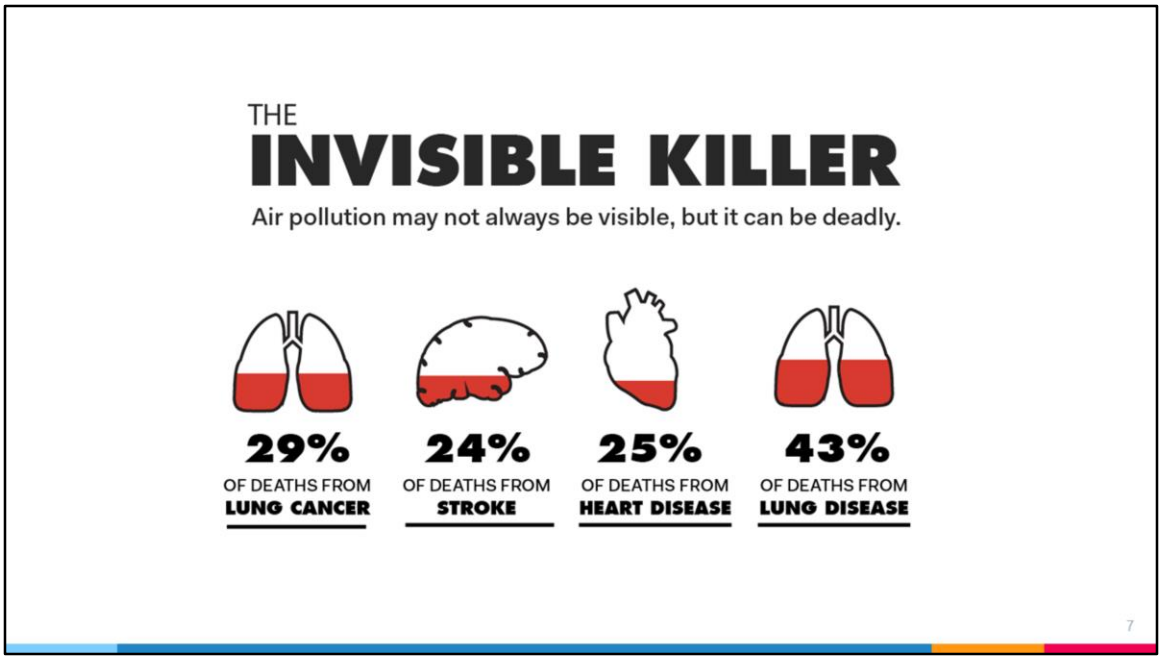


Figure 8 **Mean fraction of mortality attributable to $PM_{2.5}$ and NO_2 in each London borough**

Table 4 Mortality burden and life years lost attributed to exposure to $PM_{2.5}$ and NO_2 pollution in 2019 in wards in the London Borough of Camden.

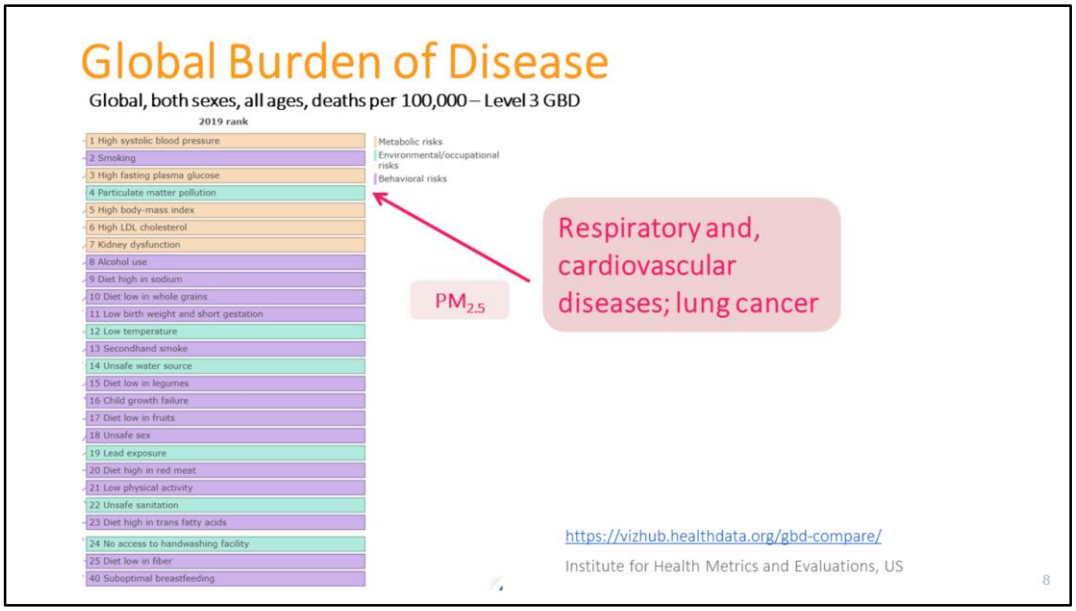
Ward	Population	Deaths (all causes)	Mortality burden (min)	Mortality burden (max)	Life years lost (min)	Life years lost (max)
Belsize	14713	88	7.69	8.45	140.22	154.05
Bloomsbury	11781	82	8.19	8.94	154.57	168.75
Camden Town with Primrose Hill	17149	125	10.98	12.04	194.09	212.73
Cantelowes	14746	108	9.31	10.22	173.66	190.74
Fortune Green	15983	101	8.30	9.21	174.96	194.02
Frognal and Fitzjohns	17522	100	8.48	9.38	117.48	130.15
Gospel Oak	15891	165	14.21	15.71	219.49	242.47
Hampstead Town	17717	110	9.28	10.25	135.64	149.98
Haverstock	16419	162	13.96	15.43	250.00	276.62
Highgate	16157	133	10.71	11.93	178.00	198.21
Holborn and Covent Garden	18235	109	11.06	12.10	240.99	263.61
Kentish Town	18422	137	11.62	12.87	288.67	319.61
Kilburn	16990	194	16.60	18.36	299.95	331.74
King's Cross	12208	72	6.82	7.44	135.67	147.96
Regent's Park	15029	139	12.71	13.89	223.09	243.75
St Pancras and Somers Town	16550	163	15.17	16.59	245.80	268.89
Swiss Cottage	18737	137	12.17	13.33	222.80	244.11
West Hampstead	17255	86	7.25	8.01	133.50	147.50

References:
https://www.london.gov.uk/sites/default/files/camden_air_quality_for_public_health_professionals.pdf



This infographic shows the population attributable fraction from air pollution per disease outcome. This shows that 29% of all lung cancer deaths, 24% of deaths resulting from stroke, 25% of all deaths from heart disease and 43% of all deaths from lung disease are attributable to exposure to air pollution.

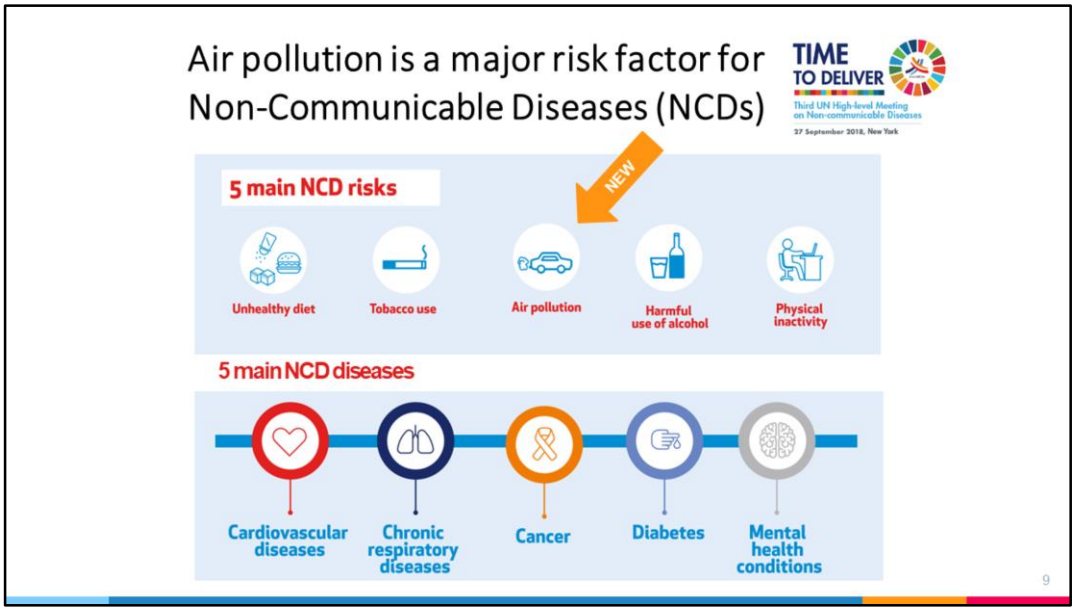
References:
https://breathelife2030.org/flat-html/
https://www.who.int/health-topics/air-pollution#tab=tab_1



This is the breakdown of the risk factors as global causes of death considering all ages and both sexes shows air pollution (indicator is PM2.5) as the four highest cause of death among all health risks, ranking just below high systolic blood pressure, tobacco smoking and high fasting plasma glucose; each year, more people die from air pollution related diseases than from road traffic injuries or malaria.

The air pollution health related diseases – mortality wise – for which there is strong evidence of a causal role of air pollution as a environmental risk are: cardiovascular diseases like ischemic heart disease and stroke, respiratory diseases like chronic obstructive pulmonary diseases and acute low respiratory infections, and lung cancer.

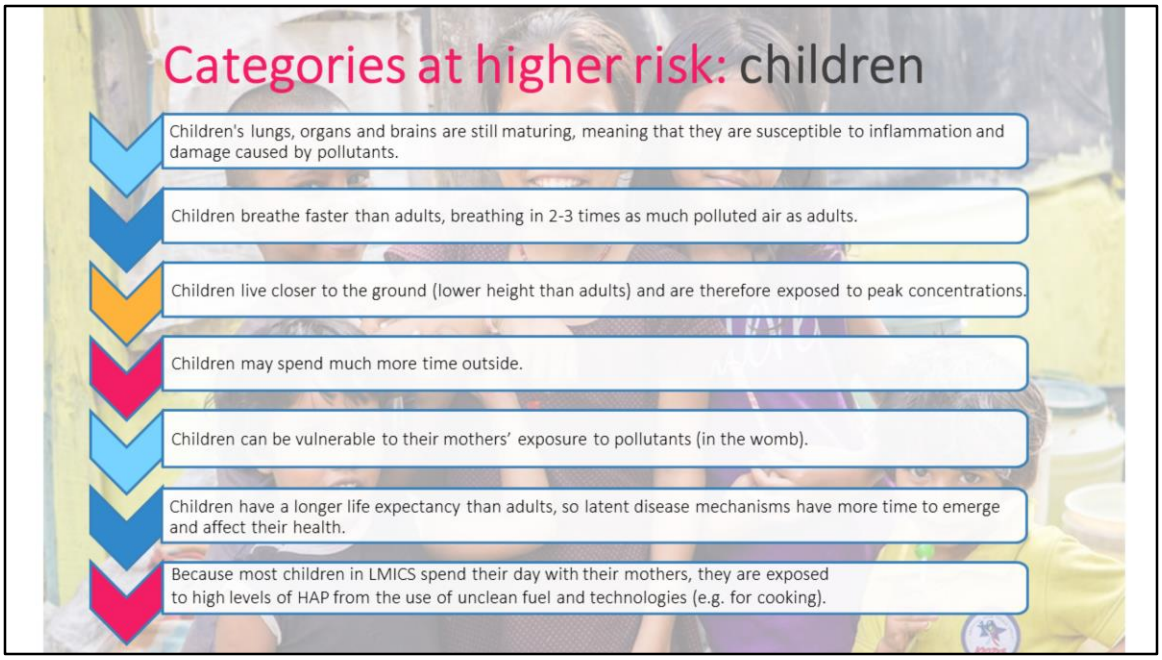
References:
https://www.who.int/healthinfo/global_burden_disease/about/en/
http://www.healthdata.org/gbd/about



In September 2018, the United Nations General Assembly staged the third High-level Meeting on the prevention and control of noncommunicable diseases (NCDs), which undertook a comprehensive review of the global and national progress achieved in putting measures in place that protect people from dying too young from heart and lung diseases, cancers and diabetes. A Political Declaration was adopted transforming the historically 4 x 4 agenda (4 risk factors and 4 main diseases) into a 5 x 5 agenda, including air pollution as a risk factor and mental health as a disease.

References:

- Political declaration of the third high-level meeting of the General Assembly on the prevention and control of non-communicable diseases A/73/L.2 https://www.un.org/ga/search/view_doc.asp?symbol=A%2F73%2FL.2&Submit=Search&Lang=E
- https://www.unscn.org/uploads/web/news/NCD-HLM-Brochure-WHO.pdf



Children are at greater risk than adults from the many adverse health effects of air pollution because of a combination of physiological, environmental and behavioural factors.

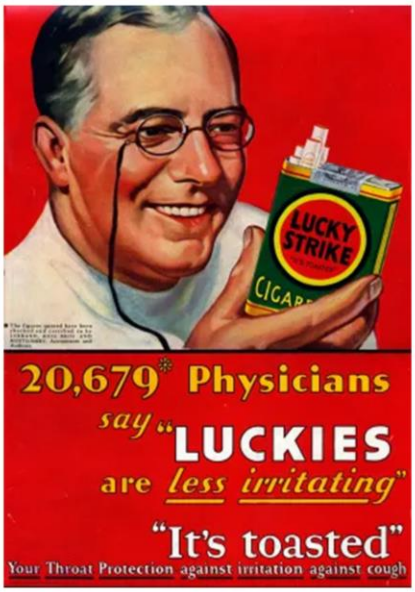
Physiologically, children are human beings that are still developing, meaning that their immune, respiratory and central nervous systems are immature and highly sensitive to environmental stimuli, including air pollution. Children are especially susceptible during fetal development and in their earliest years, while their lungs, organs and brains are still maturing.
Their bodies are rapidly developing and therefore more vulnerable to inflammation and other damage caused by pollutants. The inside lining of the respiratory tract is permeable in young children, making them especially vulnerable to irritants in the airways. An infant also breathes at a rate about five times that of an adult, while children aged 3–5 years breathe at a rate 60% higher than that of adults. Environmental toxicants in the air are therefore delivered to children at higher internal doses relative to adults. Children also have high rates of mouth-breathing, bypassing nasal filtration, which can also expose them to higher levels of air pollution.

Being of a lower height than adults, children live closer to the ground where some pollutants reach peak concentrations. They may also spend more time outdoors, playing and engaging in physical activity in potentially polluted air. In the womb, they are vulnerable to their mothers' exposure to pollutants. Children have a longer life expectancy than adults, so latent disease mechanisms have more time to emerge and affect their health.

Finally, given that infants and children in LMICS usually spend most of their time with their mothers and (when older) can be prevented from attending school, they often spend a large amount of time close to sources of HAP.

Bibliography:

- Air pollution and child health: prescribing clean air: summary. Geneva: World Health Organization; 2018 (https://apps.who.int/iris/handle/10665/275545, accessed 10 August 2022).
- Toxic air is harming our children with every breath they take. New York: United Nations Children's Fund; 2019 (https://www.unicef.org/rosa/stories/toxic-air-harming-our-children-every-breath-they-take, accessed 10 August 2022).


LUCKY STRIKE
20,679* Physicians
say "LUCKIES
are less irritating"
"It's toasted"
Your Throat Protection against irritation against cough


According to a recent Nationwide survey:
MORE DOCTORS SMOKE CAMELS
THAN ANY OTHER CIGARETTE
Your "T-Zone" Will Tell You...
CAMELS Costlier Tobaccos

The NHS

9. The NHS is committing to halving its contribution to poor air quality within a decade while reducing health inequalities.
10. The training of healthcare staff should include the health effects of air pollution and how to minimise these, including communication with patients.

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1124738/chief-medical-officers-annual-report-air-pollution-dec-2022.pdf
https://ellaslaw.uk/

AQ at GOSH - Advocacy

Mayor of London joins patients as Play Street

16 Jun 2022, 4 p.m.

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https://media.gosh.nhs.uk/documents/Clean_Air_Hospital_Framework.pdf

https://www.gosh.nhs.uk/news/ride-for-their-lives-nhs-cyclists-join-together-on-epic-journey-to-save-lives/

Healthy Climate Prescription

- … governments to **update national climate commitments** under the Paris Agreement,…
- … deliver a **rapid and just transition** away from fossil fuels, …
- … **high income countries to make larger cuts** to greenhouse gas emissions…
- … high income countries to provide the **promised transfer** of **funds** to low-income countries to help achieve the necessary mitigation and adaptation measures;
- … governments to **build climate resilient, low-carbon, sustainable health systems**;
- … governments to also ensure that **pandemic recovery** investments support climate action and **reduce social and health inequities**.

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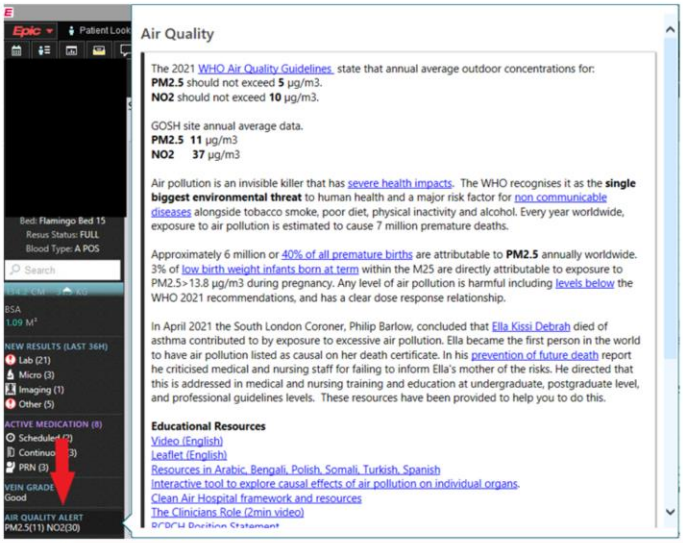
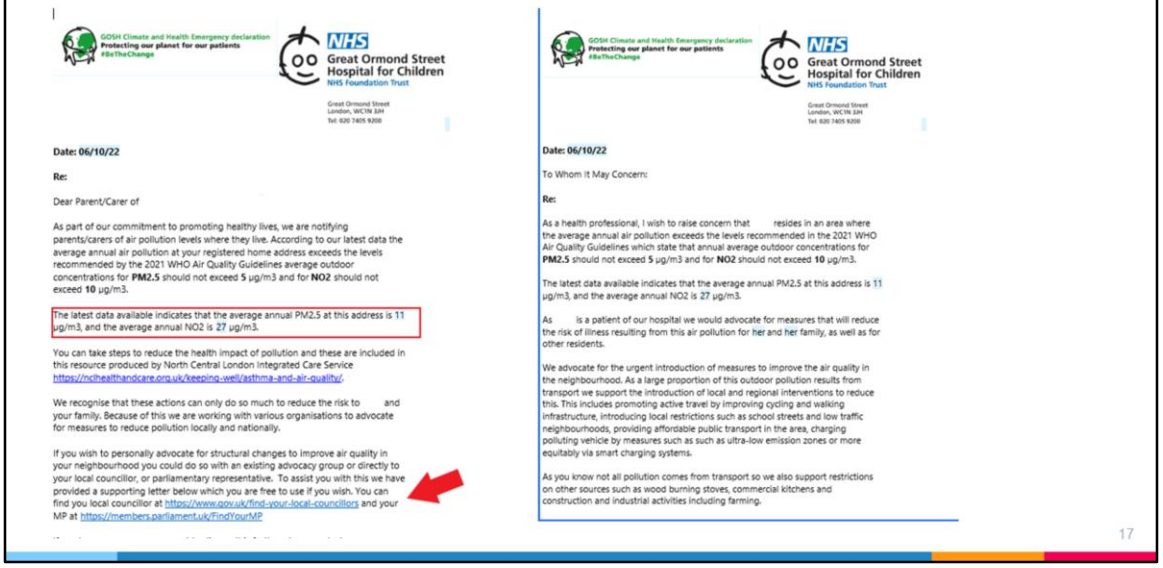
AQ in EMR



Epic

AQ in EMR



GOSH Climate and Health Emergency declaration
Protecting our planet for our patients
#BeTheChange

NHS
Great Ormond Street Hospital for Children
NHS Foundation Trust

Great Ormond Street
London, WC1N 3JH
Tel: 020 7405 9200

Date: 06/10/22

Re:

Dear Parent/Carer of

As part of our commitment to promoting healthy lives, we are notifying parents/carers of air pollution levels where they live. According to our latest data the average annual air pollution at your registered home address exceeds the levels recommended by the 2021 WHO Air Quality Guidelines average outdoor concentrations for **PM2.5** should not exceed **5** µg/m3 and for **NO2** should not exceed **10** µg/m3.

The latest data available indicates that the average annual PM2.5 at this address is 11 µg/m3, and the average annual NO2 is 27 µg/m3.

You can take steps to reduce the health impact of pollution and these are included in this resource produced by North Central London Integrated Care Service https://nclhealthandcare.org.uk/keeping-well/asthma-and-air-quality/.

We recognise that these actions can only do so much to reduce the risk to and your family. Because of this we are working with various organisations to advocate for measures to reduce pollution locally and nationally.

If you wish to personally advocate for structural changes to improve air quality in your neighbourhood you could do so with an existing advocacy group or directly to your local councillor, or parliamentary representative. To assist you with this we have provided a supporting letter below which you are free to use if you wish. You can find you local councillor at https://www.gov.uk/find-your-local-councillors and your MP at https://members.parliament.uk/FindYourMP

GOSH Climate and Health Emergency declaration
Protecting our planet for our patients
#BeTheChange

NHS
Great Ormond Street Hospital for Children
NHS Foundation Trust

Great Ormond Street
London, WC1N 3JH
Tel: 020 7405 9200

Date: 06/10/22

To Whom It May Concern:

Re:

As a health professional, I wish to raise concern that resides in an area where the average annual air pollution exceeds the levels recommended in the 2021 WHO Air Quality Guidelines which state that annual average outdoor concentrations for **PM2.5** should not exceed **5** µg/m3 and for **NO2** should not exceed **10** µg/m3.

The latest data available indicates that the average annual PM2.5 at this address is 11 µg/m3, and the average annual NO2 is 27 µg/m3.

As is a patient of our hospital we would advocate for measures that will reduce the risk of illness resulting from this air pollution for her and her family, as well as for other residents.

We advocate for the urgent introduction of measures to improve the air quality in the neighbourhood. As a large proportion of this outdoor pollution results from transport we support the introduction of local and regional interventions to reduce this. This includes promoting active travel by improving cycling and walking infrastructure, introducing local restrictions such as school streets and low traffic neighbourhoods, providing affordable public transport in the area, charging polluting vehicle by measures such as such as ultra-low emission zones or more equitably via smart charging systems.

As you know not all pollution comes from transport so we also support restrictions on other sources such as wood burning stoves, commercial kitchens and construction and industrial activities including farming.

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Bibliography:

- Air quality guidelines for Europe, 2nd edition. Copenhagen: WHO Regional Office for Europe 2000 (https://apps.who.int/iris/handle/10665/107335, accessed 10 August 2022).

Tom Parkes

Air Quality Programme Manager

Main air pollutants in Camden

1. NO_2 (nitrogen dioxide): An invisible gas created when we burn fuels in engines and boilers
2. PM (particulate matter): Tiny particles floating in the air (smaller than dust). Produced when burning things (fuels, garden waste, even toast…) and also from chemicals like air fresheners and aerosol sprays

Also

3. O_3 (ozone): An invisible gas formed by the reaction of NO_2 in sunlight
4. Volatile organic compounds (VOCs) – chemicals in cleaning products, furnishings and materials

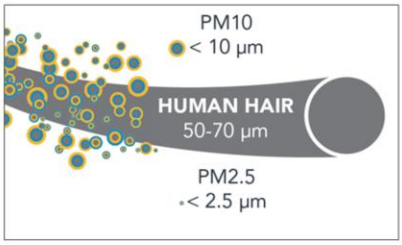
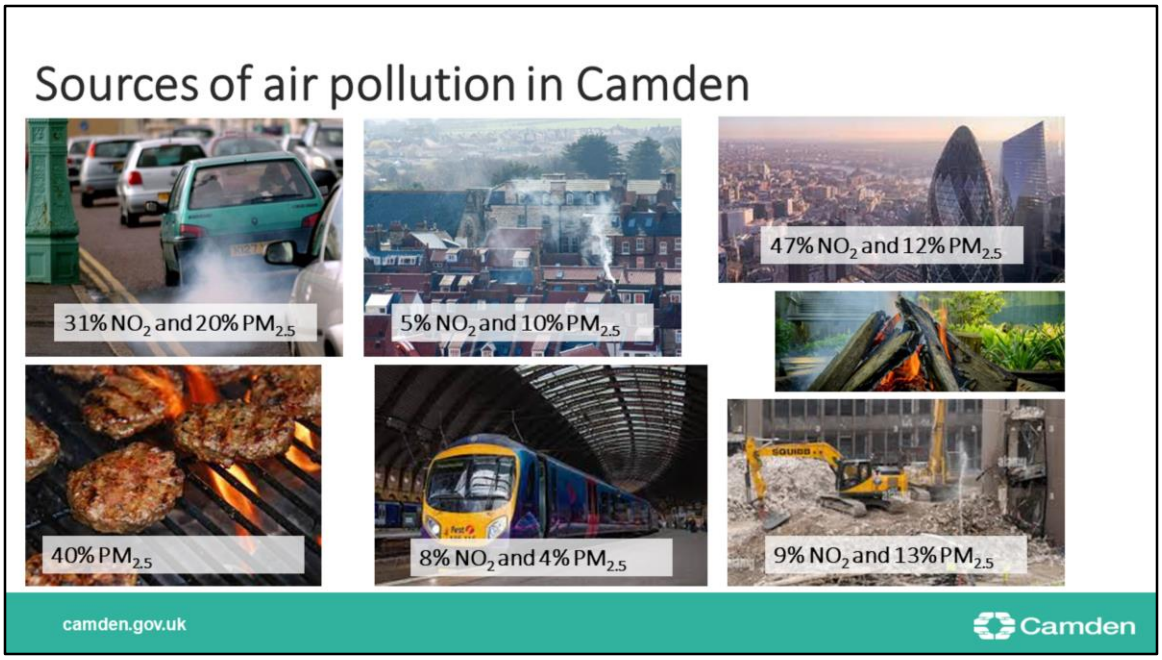


Photo credits:
Ion Science



Road transport – NO2 and PM from petrol and diesel in vehicle engines, PM from tyre friction and brake pads. All from commuting, business travel, recreation, deliveries and freight, services etc.

Heat and power in commercial buildings – NO2 from heating systems, NO2 and PM emergency backup diesel generators

Domestic heating – NO2 from gas boilers, PM from wood burners and open fireplaces

Commercial catering – PM from wood ovens, charcoal grills, deep-fat frying, NO2 from gas stoves

Industrial processes – NO2 and PM from manufacturing, chemicals, burning

Construction and development – NO2 and PM from machines, PM from breaking up materials (e.g. concrete)

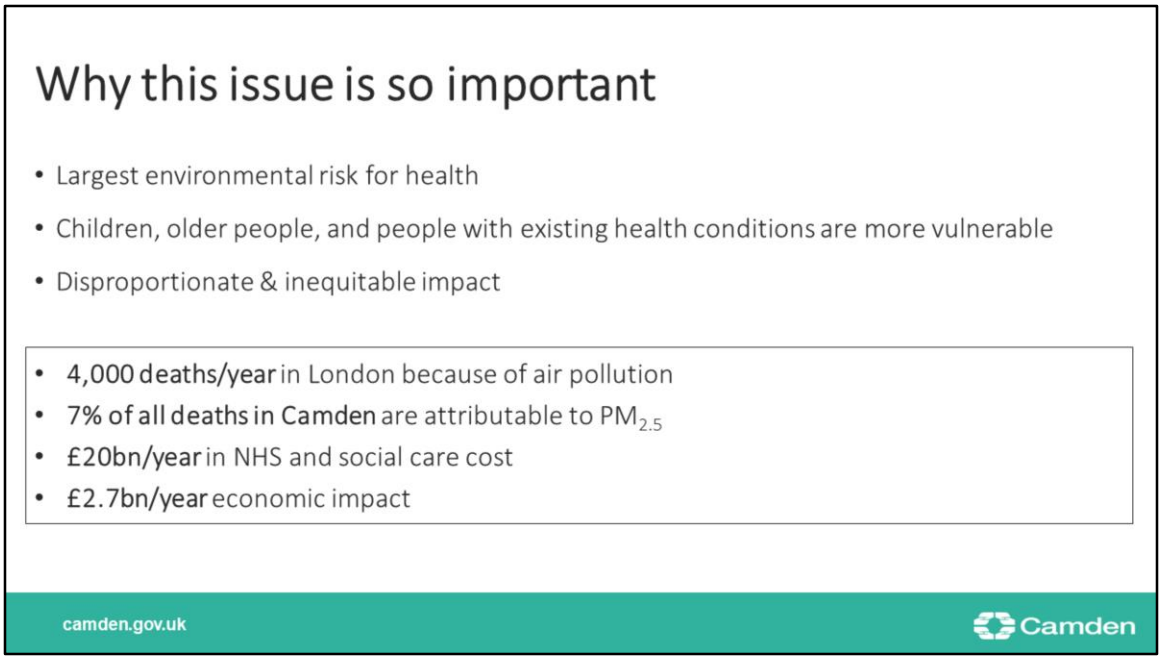
Railways – NO2 and PM from diesel engines, PM from wheel friction and brake pads

Air travel – NO2 from engines

Boats (river) – NO2 and PM from engines

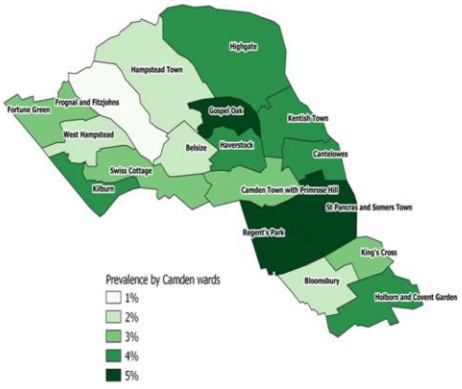
+ a lot of $PM_{2.5}$ pollution coming into London from elsewhere in the UK/Europe

Data from the London Atmospheric Emissions Inventory: https://data.london.gov.uk/dataset/london-atmospheric-emissions-inventory--laei--2019

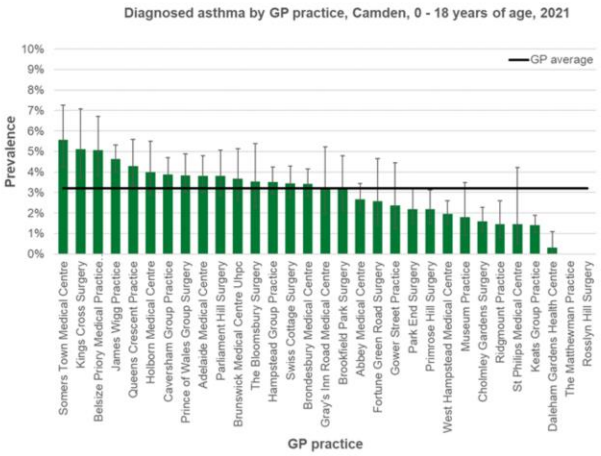


Sources:
https://www.london.gov.uk/programmes-and-strategies/environment-and-climate-change/environment-publications/health-burden-air-pollution-london
https://fingertips.phe.org.uk/search/air%20pollution#page/1/gid/1/pat/6/ati/401/are/E09000007/iid/30101/age/230/sex/4/cat/-1/ctp/-1/yrr/1/cid/4/tbm/1
https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution
https://uk-air.defra.gov.uk/assets/documents/reports/cat19/1511251135_140610_Valuing_the_impacts_of_air_quality_on_productivity_Final_Report_3_0.pdf

Asthma prevalence for CYP 0-18yrs in Camden



Source: CSU data extracted Jan 2021
Note: These figures have been calculated based on the sum values of the LSOAs in each wards. LSOAs are the smallest geographical areas in England and Wales where data is collected.



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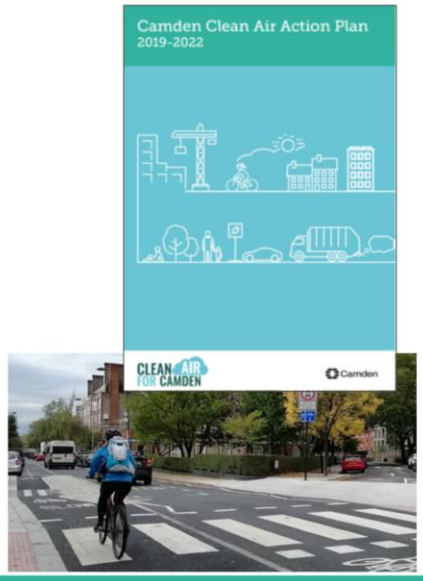
Graphics and content from Camden and Islington Public Health

257 diffusion tubes (NO2)
6 real time monitoring stations (Bloomsbury (Environment Agency), Camden High Street, Coopers Lane, Euston Road, Holborn (BEE Midtown/Central District Alliance), Swiss Cottage (part-owned by Environment Agency))
230 AirScape sensors: https://airscape.ai/map/GB_CMD?p=AQI&v=now
2 Network Monitors (PM2.5) (Abacus Primary School, Swains Lane)

What we have been doing

- Expanded our **air quality monitoring network**
- Installed **electrical power supplies** for vehicles and canal boats
- Created 19 new Healthy School Streets
- Installed 24 kilometres of **new segregated cycling network**
- We have increased the portion of Camden covered by **Safe and Healthy Streets** from 12% to 20%



camden.gov.uk

Camden

Camden Electric Moorings:
https://www.camden.gov.uk/camden-electric-moorings

Healthy School Streets and new cycling infrastructure:
https://www.camden.gov.uk/making-travel-safer-in-camden

What we have been doing

- Improving **Camden's own vehicle fleet** to cleaner alternatives
- We are providing **clean power for ice cream vans**
- We have run **public awareness campaigns** about health risks from wood-burning, vehicle engine idling, and indoor air pollution
- Leading the local government voice **calling for more action from UK Government** to tackle air pollution and protect public health

camden.gov.uk

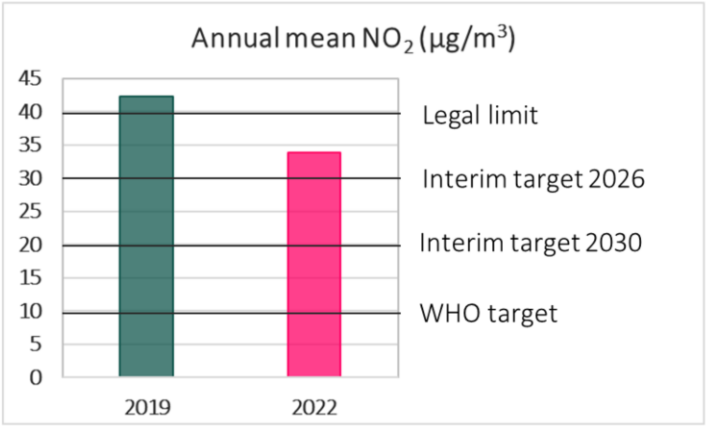
Camden

Idling Action London:
https://idlingaction.london/

Improving Indoor Air Quality: Advice for Homes:
https://www.camden.gov.uk/documents/20142/0/Camden+Improving+Indoor+Air+Quality+-+Advice+for+Homes+FINAL_v2_April21.pdf/b3d7bfea-6ce1-27b2-967a-7d5be3bcb6c7?t=1619615988707

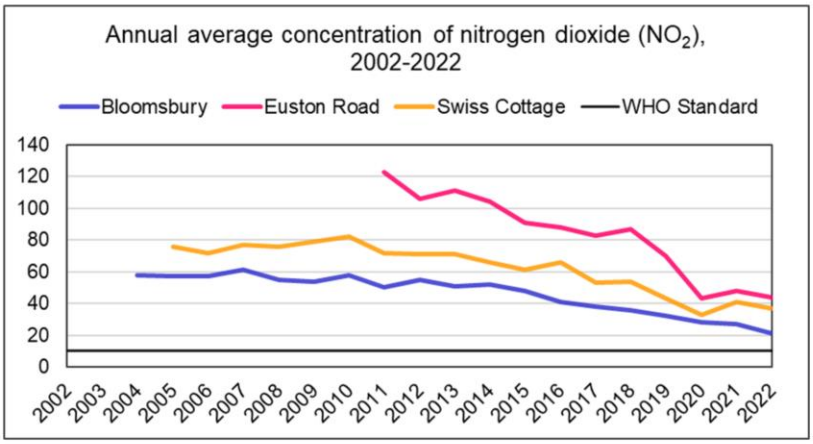
How air quality has changed

- From 2019 to 2022, NO_2 decreased at 149 out of 152 sites (average 19.5% reduction)
- Significant NO_2 reduction at roadside automatic monitoring sites
- Smaller reduction in $PM_{2.5}$



Data from diffusion tube monitoring

Changes in NO_2



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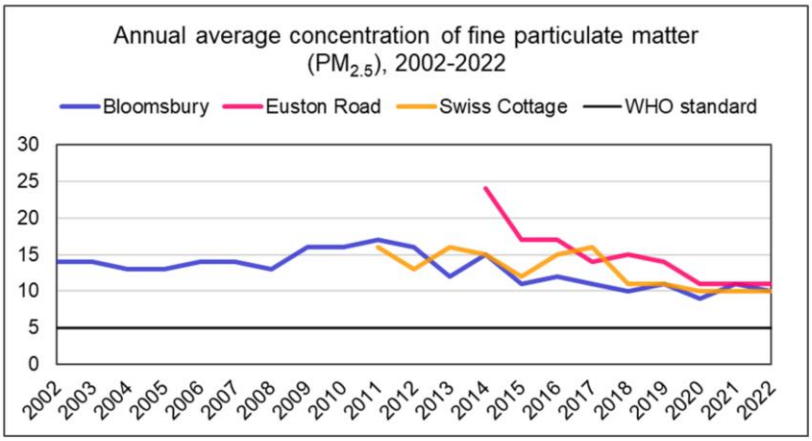
Data from real-time reference standard automatic monitoring:
https://www.airqualityengland.co.uk/local-authority/?la_id=189

Changes in $PM_{2.5}$

- $PM_{2.5}$ harder to tackle – more dependent upon legislation and new powers



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Data from real-time reference standard automatic monitoring:
https://www.airqualityengland.co.uk/local-authority/?la_id=189

The next four years: Camden Clean Air Action Plan 2023-2026

- **WHO 2021 updated targets** – to achieve by 2034
- Delivering **projects and policy changes** to reduce air pollution and exposure
  - Transport (road and rail)
  - Buildings and construction (planning controls, links to the climate programme)
  - Supporting communities and schools (empowering local action)
  - Public health and awareness (building knowledge about air pollution)
  - Lobbying and influence (pushing for better funding and more local powers)
- **Supporting communities, schools and businesses** to help to clean Camden's air
- Increasing focus on **indoor air quality and occupational exposure** – going beyond our statutory duties

View: Camden Clean Air Action Plan 2023-2026

CLEAN AIR FOR CAMDEN

Camden

camden.gov.uk

Camden

Camden Clean Air Action Plan 2023-2026: https://www.camden.gov.uk/documents/20142/0/Camden+Clean+Air+Action+Plan+2023-2026_Final_2022.12.19+%282%29.pdf/ad618e94-0113-696d-5fc6-104d8969ab5a?t=1671619123044

The next four years: Camden Clean Air Action Plan 2023-2026

- Working with the NHS and health and social care professionals
- London Wood Burning Project
- Clean Air for Camden Schools
- Tackling emissions from filming and events
- Kilburn Schools Superzones
- Clean Air for Camden awareness campaign
- Enhancing our monitoring network
- Campaigning and advocacy

Coming up:

Camden Clean Air Initiative and the AirScape network (Valeria Pensabene, Camden Clean Air)

Case study: Improving air quality in Somers Town (Georgia James, Camden Council)

#CleanAirForCamden


The Camden Clean Air Initiative
Camden Council's Clean Air Action Plan Launch Event - 10.03.2023
Reducing Air Pollution across the Borough of Camden

The Camden Clean Air Initiative

airscape™

THE CAMDEN CLEAN AIR INITIATIVE

An ambitious, not-for-profit action group, working to improve air quality in the London borough of Camden

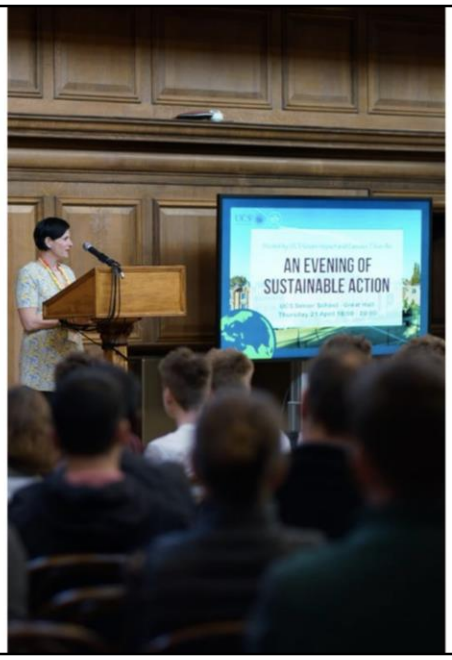
Get started | Let's Go

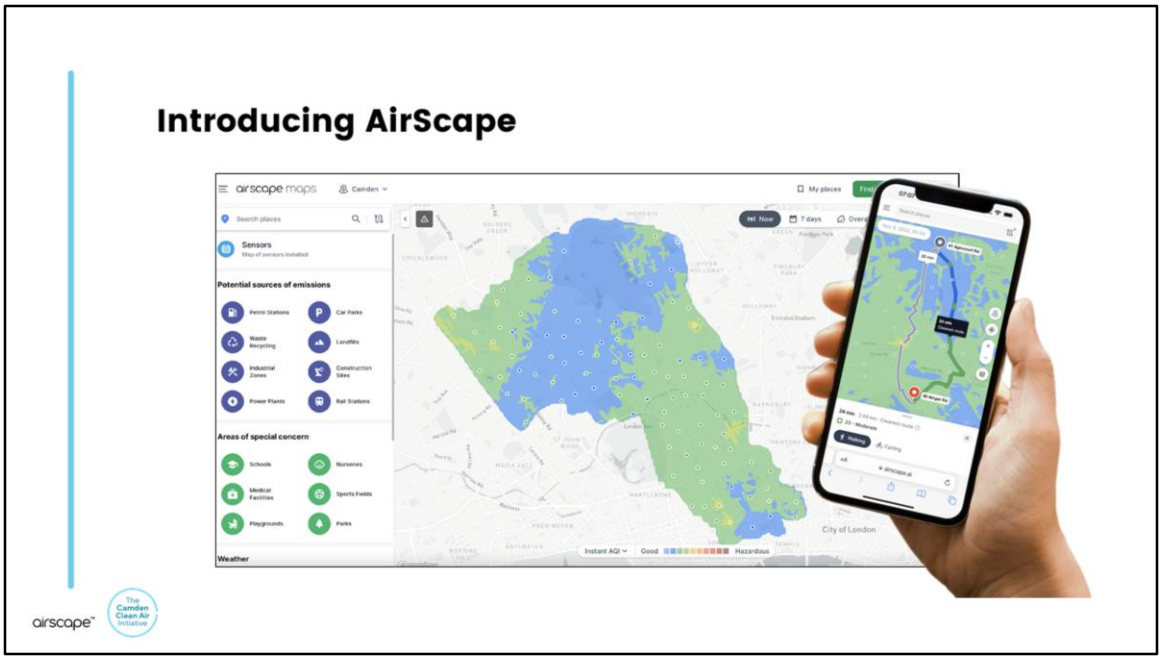
Introducing Camden Clean Air

We run large borough-wide projects as well as local initiatives, provide resources, and act as a voice for all those who care about Camden.

We work closely with all community stakeholders, including:

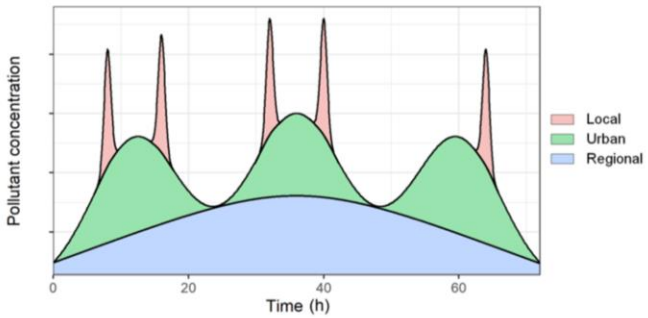
- Residents
- Businesses
- Schools
- Community groups
- Local government



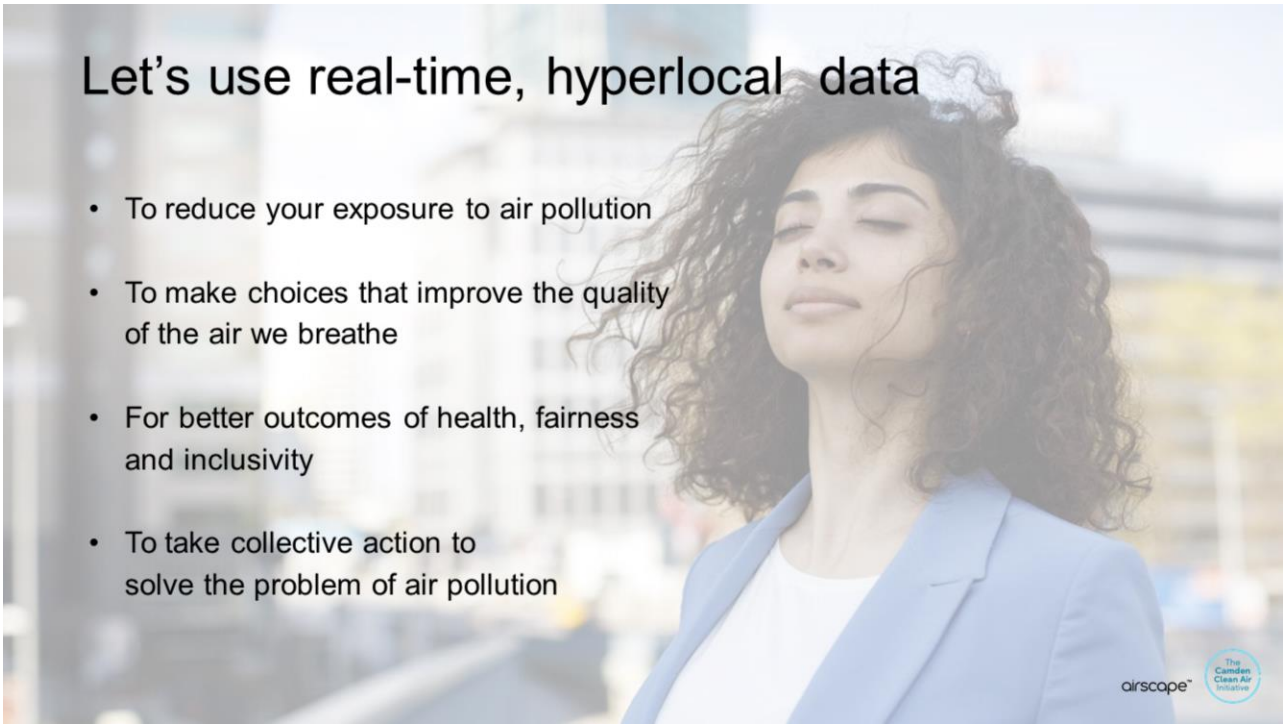


AirScape is free to access and available for everyone:
https://airscape.ai/

Regional vs local air pollution



- Increase of CO2 100 ppm (parts per million or mg/l) 26th Feb, back-trajectories show Icelandic volcano (largest natural source of CO2 in the northern hemisphere) – slow event
- Monitoring stations are located away from local sources to represent an entire region
- Reporting once an hour, they miss the spikes, or it's mixed with the atmosphere before reaching the station (set away from high sources, so as not to misrepresent the borough)
- And you don't get to see any of this data (in real time)



Change your route (usually local to the road), time of exercise, close your windows. Catalyst for change – actions people can take yourself but also in government – we know a lot about clean water and clean eating – why not clean air?

Can you think of ways AirScape can be used by schools and by residents?

01

Schools

- Biology lessons to understand health impact
- Art (design/make posters on health impacts/ways to reduce air pollution)
- History (reading around air pollution topics, e.g. the Great Smog of London in December 1952)
- Geography [the physical and political effects of pollution on the planet]

02

Residents

- Use the data to help choose safer roads to walk or cycle
- Making greener choices [e.g. to educate yourselves and your family, avoiding car travel and using public transport or switching to electric modes of transport.]
- People moving home or school, to consider air pollution in that area

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What about regular businesses, health care professionals and local government?

03

Businesses

- Invest in air purification systems at work
- Incentivize employees who choose green modes of transport to get to and from work
- Offer subsidized costs on greener modes of transport
- Advertise cleaner routes to work
- Construction or transport companies could use the data to analyse the impact their work is having on local communities
- Community action for new HSLs

04

Health care professionals and government/local authorities

- Use the data to analyse correlations between spikes in pollution and an increase in asthma cases.
- Use the data to understand the impacts on air quality of certain measures, infrastructure, or policies they introduce.

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Any Questions?

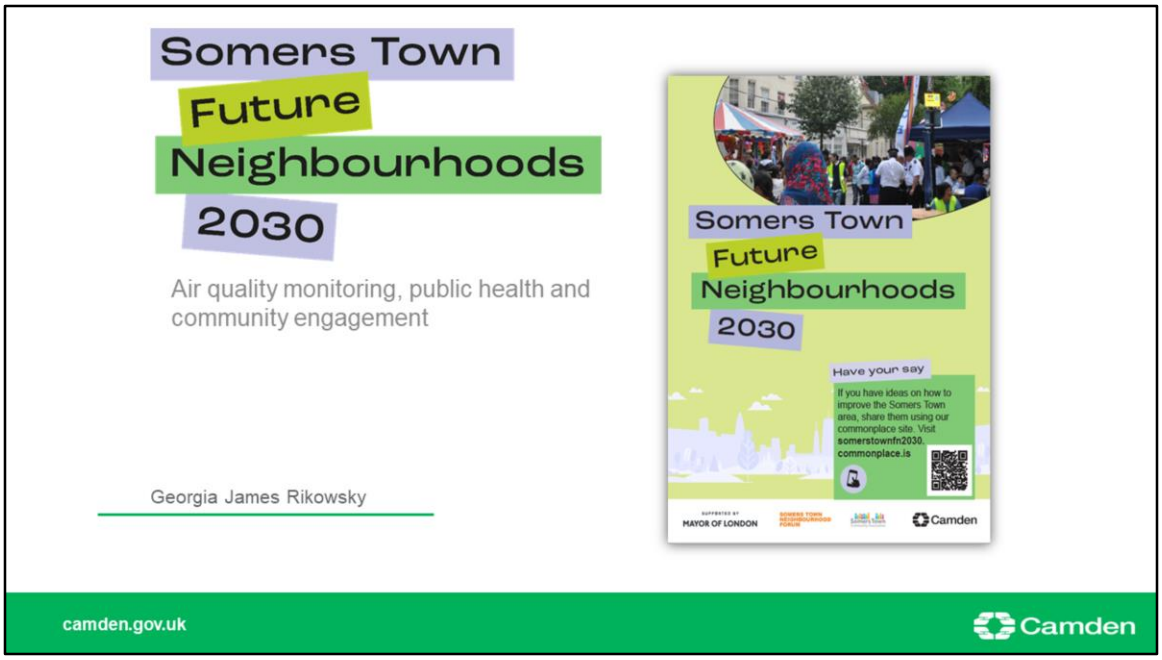
https://camdencleanair.org/
https://airscape.ai/

Camden Clean Air Initiative:
https://camdencleanair.org/

AirScape:
https://airscape.ai/

Georgia James

Environmental Data Officer



Somers Town has received funding from the Mayor of London to become a more sustainable neighbourhood. Future Neighbourhoods 2030 aims to help residents, local businesses and organisations understand how climate change is affecting us, so we can work together on activities that are good for the environment, our pockets and our quality of life.
https://somerstownfn2030.commonplace.is/

Indoor Air Quality Monitor Loans

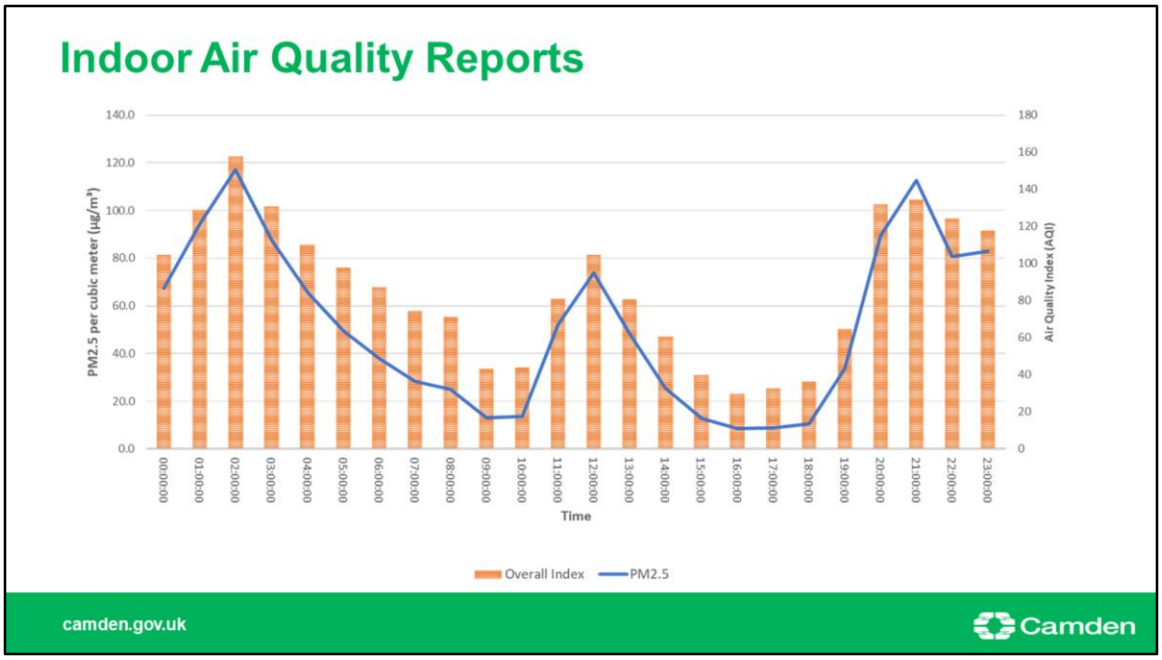
A small device which displays **real-time information about the quality of the air within a home**. It detects particulate matter and volatile organic compounds (chemicals), two common pollutants of the air which can affect our health if we breathe it in.

We might be exposed to these pollutants **when we cook or use gas-fired or wood-fired heating**, or when we use **cleaning products** but there are small everyday **changes we can make to reduce harmful exposure**. Using the monitor helps residents to learn more about what may produce pollution their home, and what can be done to protect yourself from the pollution.

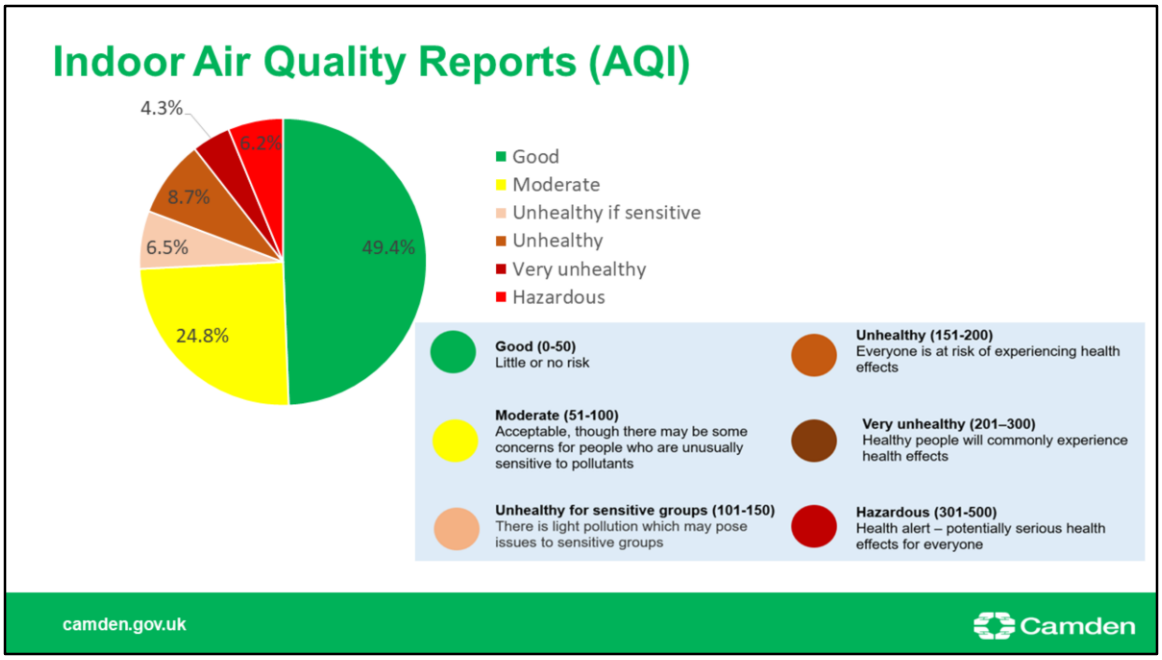
camden.gov.uk

Camden

The sensors measure $PM_{2.5}$ and volatile organic compounds (VOCs) and can display either the measured levels of these pollutants or an overall 'Air Quality Index' rating.



Resident who had the monitor in January.
The graph shows the average 24-hour profile of hourly PM2.5 levels during the one-month loan period. It is clear that there were daily peaks at midday, 8-9pm, and in the early hours of the morning.
Peaks at midday and evening likely due to cooking.



The pie chart shows the proportion of time when PM2.5 levels were in each of the Air Quality Index bandings during the one-month loan period.

Personal Exposure Monitor Loans

A small device which displays **real-time information about the quality of the air we are exposed to when we are travelling around the borough**. The device detects particulate matter and nitrogen dioxide, two common pollutants of the air which can affect our health if we breathe it in.

We might be exposed to these pollutants when we are near petrol or diesel **vehicles on the road**; when we are eating in a **restaurant which cooks food using wood or charcoal**; or when we walk next to a dusty **construction site**. Using the personal exposure monitor helps us learn about what may produce pollution when we are out and about, and what can be done to protect ourselves from this.

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These sensors measure PM2.5, VOCs and NO2

Home Energy Advice Visits

A service where a Green Doctor provides **bespoke home energy and indoor air quality advice** based on a property assessment

They also provide small **energy efficiency devices** to residents such as:

- Radiator panels
- Draught-proofing of doors and letterboxes
- Water saving measures
- LED lightbulbs

camden.gov.uk

Camden

Camden also provides home energy advice services and indoor air quality advice for residents who live outside of the Somers Town area. Contact AirQuality@Camden.gov.uk

What's next?

- Continued delivery of AQ monitor loan service
- Continued home energy advice visits
- Continued resident awareness-raising activities around reducing exposure to / production of air pollution
- Engaging healthcare professionals about local air quality and providing them with the information and skills to talk to those most affected by air pollution in Somers Town

How to get involved?

Visit the Future Neighbourhood website
somerstownfn2030.commonplace.is

Or email AirQuality@camden.gov.uk

Or ring **0207 974 8896**

camden.gov.uk

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somerstownfn2030.commonplace.is
AirQuality@camden.gov.uk

Thank you for joining us!

Find out more:

- Green Doctors home energy advice visits
- Internal Wall Insulation
- Indoor air quality sensor loan
- Personal outdoor air quality sensor
- AirScape

#CleanAirForCamden

AirQuality@Camden.gov.uk

CLEAN AIR FOR CAMDEN

STOP AIR POLLUTION

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