



**Healthy London
Partnership**

Toolkit for NHS organisations: supporting the NHS to reduce its impact on air pollution

Case studies and examples to support organisations to reduce their impact on air pollution

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Thanks for pledging to reduce your organisation's contribution to air pollution

92% of our world is exposed to polluted air causing an estimated 7 million premature deaths every year.

Air pollution in the United Kingdom has long been considered a significant health issue. Many major cities like London are found to be significantly and regularly above legal and recommended levels. Air pollution in the UK is a major cause of diseases such as asthma, lung disease, stroke, and heart disease, and is estimated to cause forty thousand premature deaths each year, which is about 8.3% of deaths, while costing around £40 billion each year

NHS organisations may be some of the largest in any given local area, with one of the biggest estates, and one of the largest workforces. They may hold contracts worth millions of pounds with many different companies to provide goods and services. They are a major player in the local economy.

Because of their size, they could well be a major polluter in the local area. But their size could also be part of the solution, both through actions, and expectations of the companies that supply them with those goods and services.

This toolkit is designed to help you to think of ways that your NHS organisation can help London to reduce the level of air pollution to help make London one of the healthiest cities in the world and to reduce the impact air pollution has on asthma in children in London.

The toolkit pulls together a range of ideas to implement. The innovations range from those that are quick, easy and free to those that may require more work to implement or some additional funding. We have also outlined some innovations that can help you to save your organisation money. All the innovations have been taken from case studies which have been implemented elsewhere or from research which proves they are effective. Links to more information are included.

01

Ideas which are free to implement

Types of innovations an NHS organisation could implement



Information giving



Procurement



Nature



Behaviour change



Travel



Innovation



Buildings/ Estates



Measuring your impact



Encouraging staff and patients to take action

Encouraging staff and patients to take action is an easy and fast way to help to reduce levels of air pollution:

- Encourage staff to travel to work in a different way:
 - Cycle to work schemes
 - Walk to work schemes
 - Use of public transport
 - Carpooling
 - If you work in a hospital with shuttle transport between sites, encourage staff to use it
- Let staff and patients know about alternative routes to your sites that avoid congested roads
 - Produce maps for staff and patients to key places around your site (e.g. to the nearest tube/train station or the nearest pharmacies)
- Let patients know about the local transport routes and timetables to and from the site, such as this one: <https://www.bhrhospitals.nhs.uk/plan-your-journey>



Driving does not only increase levels of air pollution for walkers. Drivers are in fact exposed to higher levels of air pollution in their cars than people walking, so cause more harm to themselves than to others. Walking therefore reduces air pollution exposure for society in general and drivers in particular.

Encouraging staff and patients to take action

Encourage staff and patients to take action whilst at work but also let them know about local activities and schemes that can help to reduce the levels of air pollution in London through their day to day life.

These are some examples of initiatives/schemes you can signpost people to:

- Displaying your local [air quality/sustainability campaigns](#) or initiatives
- **BlalaCar** – trusted carpooling platform <https://www.blablacar.com/>
- **Zip car** – car sharing and hiring in London <http://www.zipcar.co.uk/car-hire-london>
- **Toogoodtogo** – an app that signposts people to food which is sold at reduced prices from food stores at the end of the day to avoid food waste <https://toogoodtogo.co.uk/en-gb>
- **Streetbank** – a platform for sharing or giving away items you don't use very often with your neighbours, rather than buying more things you won't use <https://www.streetbank.com/splash?locale=en>. See also [freecycle](#).
- **National Park City** – a group of volunteers across London aiming to make London a greener and healthier place to live <http://www.nationalparkcity.london/>
- **National Garden Scheme** provides unique access to over 3,700 exceptional private gardens in England and Wales, and raises impressive amounts of money for nursing and health charities through admissions, teas and cake. <https://ngs.org.uk/>
- [Click Collect London](#) - Encourage your employees to use Click and Collect services instead of having items delivered to their home or to work it reduces congestion and the impact on air quality.



Engine idling

Stopping engine idling is an easy and free way to help to reduce the NHS contribution to air pollution. Engine idling is keeping your engine on whilst stationary for a length of time. It increases the amount of exhaust fumes in the air. Research indicates that if you are waiting longer than 10 seconds, switching your engine off and on again can reduce unnecessary pollution. This could involve vehicles waiting outside your organisation, including:

- Patient transport
- Patients' own vehicles, or friends/family members picking them up
- Staff transport
- Deliveries to the organisation

Sending messages out to staff and patients through newsletters, signs and posters at reception and elsewhere, and, for example, using volunteers, can help to remind drivers to turn their engines off while they wait.

Why not work with other organisations in your area or across your network to try to promote this further? For example, see if schools, colleges, or local authority buildings can help maximise the impact, and work out how much pollution you have prevented together.

[Idling Action London](#) is jointly led by the City of London Corporation and the London Borough of Camden. The campaign is funded by the [Mayor's Air Quality Fund](#).



Case Study – Clean Air, Yeah! Great Ormond Street Hospital

Great Ormond Street NHS Foundation Trust (GOSH) and Global Action Plan [launched](#) the first ever [Clean Air Hospital Framework](#) in 2019. This is a strategy aimed at improving air quality in and around hospitals in order to create a healthier environment for patients and their families, staff, and the local community.

They also worked with patients on a project that aimed to promote cleaner air around the hospital. They created a suite of tools to encourage drivers to turn their engines off in front of the hospital and to encourage visitors to stop coming to the hospital in polluting vehicles.

A case study from the Sustainable Development Unit (SDU) on their air pollution work demonstrated how, in staff presentations, they encouraged drivers not to idle their engines, and by designing eye catching signs and illustrated walking maps, they helped patients to find their way to the hospital more easily.

[Read the case study here](#)

GOSH also produced a video about children's views on pollution and what can be done to improve it for patients:

<https://www.youtube.com/watch?v=r9kEYY0mFrs>



TfL toolkits

- As part of [TfL Cycling Workplaces](#), organisations (with five or more staff) can get the following for free:
 - Free cycle parking products (the workplace funds installation)
 - Cycle safety seminars – to help start cycling and provide key skills
 - On bike cycle training at work (taster and 121s) – to build confidence and skills
 - Cycle safety checks – to ensure bikes are safe
- TfL's [Walking Tube map](#) shows the walking times between adjacent stations on the same tube line in zones 1-3. A [steps](#) version shows the approximate number of steps.
- You could also reward your staff with 50% off [London Cycling Campaign membership](#)

Cycling Workplaces

Kick start cycling in your business

As an employer in London, you are entitled to free support and services to help you promote cycling in your workplace.



Showing your support for the Mayor's air quality campaign

One simple way of helping to improve London's air quality is by supporting some of the campaigns that are already going on. This may include those mentioned in this toolkit or the Mayor's [air quality initiatives](#) for the capital. Ways of getting involved could include writing public letters of support for the initiatives and the positive impact they could have on health.

Local boroughs have to complete a Local Air Quality Management framework each year to review and improve the air quality within their areas. A report outlining the findings and action taken by local boroughs can be found below. For more local information, contact your local borough to see how you can align your organisation's plans to that of the local borough.

[LOCAL AUTHORITIES AND AIR QUALITY A summary of action taken by London boroughs to improve air quality \(2019\)](#)

[Finalisation of revised London local-air-quality-management](#)

Air Quality: Partnership working

More than two million Londoners living in areas exceeding legal air limits – including 400,000 children

9, 400 died in capital last year due to air pollution

The Mayor has introduced [ULEZ \(Ultra Low emission zone\)](#) and [an electric vehicle infrastructure](#)

[Mayors Green Fund](#) (£1.27m) to create green spaces, community gardens and playground pollution barriers

- 29 schools – restricting road use, upgrading boilers, tackling idling engines, [school air quality audits](#)
- Promoting walking and cycling
- [Plants](#) and [hedges](#)
- [Air quality maps](#)
- [Air Quality monitors including in school backpacks](#)

Clean Air, Better Business

The [Clean Air, Better Business](#) campaign is run by the Cross River Partnership, a public-private partnership which has been delivering regeneration projects in London since 1994.

One of its key aims is to improve air quality and reduce the city's carbon footprint.

To support this the campaign has developed a suite of documents to help businesses reduce their impact on London's air quality, which includes:

- Options for redirecting personal deliveries
- Delivery and servicing plan case studies
- Information on transportation and supply chains

They have also developed a clean air route finder to help people to reduce their exposure to air pollution:

<https://www.cleanairroutes.london/>

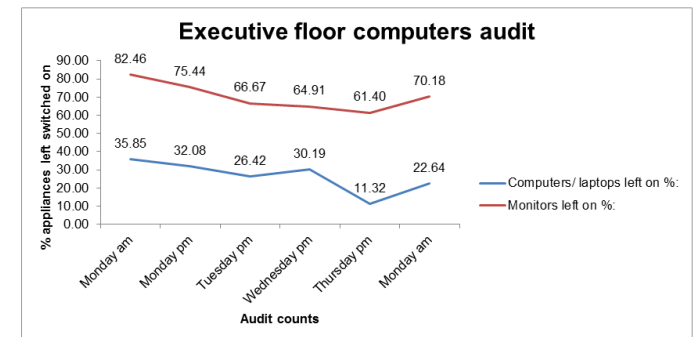


02

Ideas which can help to save the organisation money

Switching Off

- Over the 2015 Christmas period, there was an overall reduction in energy spending across the Royal Free London NHS Foundation Trust from people switching electrical items off, of **£7,856**.
- Interested to see whether these **cost and emissions savings** were replicable all year round, the Trust audited its executive offices and found that, in an office of 60 desks, **£7,952** savings were achievable throughout the year if more people switched their desktops, screens, printers, projectors, air-conditioning, and other electrical appliances off when they went home at night or over the weekend.
- The Royal Free, at the time, had a total staff of over 10,000 people. If almost £8,000 savings were achievable from 60 people, that's a whopping **£1,333,333** over a year that they could save if everybody switched things off at night or at weekends



Reviewing the products you buy in the organisation

Many different products and services which are bought in the NHS can have an impact on the quality of the air both inside and outside. Reviewing the products and services you buy and how they impact the contribution of your organisation to London's air quality could help to reduce your contribution and save your organisation a considerable sum too.

Buying more sustainable products:

http://www.sduhealth.org.uk/documents/case_study/20160913_Case_Study_SDU_procurement_designed.pdf

[Ethically sourced surgical gloves](#)

Thinking about your organisation's energy usage:

[A new approach to procurement: Ultra efficient lighting - Rotherham](#)

[Energy- automatic system for switching off computers in NHS Oldham](#)

- [Energy efficiency, Finance, Estates Management, Carbon reduction in Blackpool NHG Foundation Trust](#)



Reducing waste in your organisation – Barking Havering and Redbridge University Hospital Trust

Barking Havering and Redbridge University Hospitals Trust has run a number of projects over the last few years to reduce its contribution to air pollution. Some examples of the work and its impact are detailed below.

[Reducing waste in theatres:](#)

Messaging to staff and the public and demonstrating success:

[Sustainability: working to reduce our carbon footprint](#)

[Energy Savings:](#)

Travelling to the trust, encouraging the use of public transport and walking routes :

<https://www.bhrhospitals.nhs.uk/plan-your-journey>



Reducing waste in your organisation – Barts Health

Barts Health have also done a lot of work over the last few years to become more sustainable and reduce their impact on emissions **whilst saving £9.2million**. Take a look at these resources they have created to get some ideas:

A video demonstrating how they implemented it:

<https://youtu.be/FCAskWHuye8>

An [infographic](#) with all their innovations and project:

A link to their vision for 2020:

<https://www.bartshealth.nhs.uk/download.cfm?doc=docm93jjjm4n664.pdf&ver=931>



Saving on staff time and travel costs

Encouraging staff to cycle or walk to work benefits their health and the local environment. If you can reduce travel between sites during the day, by encouraging teleconferencing and virtual meetings, you can also reduce costs and increase staff productivity. Something positive that has come out of COVID-19 is this is now commonplace

Examples:

[Saving Staff Time and Travel Costs Through Virtual Meetings - Leeds CCG](#)

[Teleconferencing Derbyshire](#)

[Travel Plan North Lincolnshire & Goole Hospitals Foundation Trust](#)



Bulk deliveries

NHS organisations may have hundreds of contracts with many different suppliers, which can result in many of different deliveries arriving on a daily basis. One of the ways of improving your contribution to air quality is by streamlining your deliveries to the organisation and encouraging deliveries to be arranged in bulk.

This should form a key component of procurement and buying strategies. It also helps to reduce congestion around sites. It can also reduce delays on public transport by reducing traffic, so your patients are more likely to arrive on time and not miss their appointments.



Circular economy

A circular economy is a restorative and regenerative approach to keep products, components and materials at their highest utility and value. The idea is that it removes waste from the system by using resources or their component parts to their maximum capacity. For example, if a part of a machine has broken and can't be replaced, how are all the other working parts of the machine being used to maximise their use. This should also help patient care and experience. Instead of waiting for weeks to replace faulty equipment, get component parts replaced or fixed quickly and save money in the process.

The Ellen Macarthur Foundation is leading research and implementation of these principles by working with large companies, academic institutions and top business leaders to spread good practice. Have your suppliers signed up?

If yes, are they acting this way? Make sure that you hold them to account.

If no, which other organisations use them? Can you group together to influence them to sign up?

<https://www.ellenmacarthurfoundation.org/circular-economy>



03

Ideas which may cost the organisation to implement

A Green Fingered NHS

How you can use plants to improve air quality

Although this does require some expenditure from the organisation, it can be a low-cost way to improve your contribution to London's air pollution. Here are 3 suggestions of different things you can plant:

1. **Plant nitrogen fixing plants** – these are plants which thrive on nitrogen and collect the nitrogen from the air (as opposed to the soil) and store it in their roots: e.g. clover, rooibos, honeybush, indigo, lupins. Legumes and beans also have these properties. Why not grow your own beans and peas at your organisation to support your staff and patients to eat healthily too!
2. **Improve your indoor air quality with plants** – indoor air quality can also contribute to poor health outcomes, consider lavender, eucalyptus, aloe vera, spider plants, and snake plants.
3. **Green Walls, Green Roofs, rooftop gardens and tiny parks** – These initiatives require a little more investment and time but they have a greater impact in reducing the levels of nitrogen and carbon in the air. Many hospitals already have Green Walls and you can see edible bus stops and underground “parks” on the tube in London already.

<http://theediblebusstop.org/> www.energygarden.org.uk



Turn the pollution from your vehicles into ink

Graviky Labs have designed a form of technology which captures the pollutants from the exhaust of a vehicle and upcycles air pollution into sustainable inks, paints, coatings, plastics and construction materials

Graviky Labs have estimated that if all the cabs in London were fitted with the device there would be 30 trillion litres of clean air each year – imagine what it could be if all NHS vehicles in London were fitted with these devices.

<http://www.graviky.com/>



Recycle your coffee cups

Many NHS sites have coffee shops selling takeaway coffee on site. Takeaway coffee cups are renowned for being difficult to recycle. However a new innovation has started to recycle these cups to reduce waste levels.

London started to place coffee cup bins around the city and Liverpool Street Station and in one month they collected 509,091 cups – which can now all be recycled into new products. What impact would this have if all NHS trusts in London did the same?

This could be as simple as placing bins around your organisation or you could go even further and work with the contracted provider to demonstrate how they are trying to reduce their impact on London's air pollution.

www.nextcupcycle.co.uk



Innovations which help to produce energy and remove particulates

1. Pavegen – This company have developed tiling which can generate kinetic energy and renewable electricity from foot-steps. Installing it in places where there are large numbers of people walking can generate electricity for the organisation. <http://www.pavegen.com/>
2. CityTree – this bench and pollution filter has been developed to remove nitrogen dioxide and particulate matter from polluted air. It is solar powered so completely self sufficient <https://greencitysolutions.de/en/>
3. Airlite – A company which develops paints to reduce air pollution including nitrogen oxide and nitrogen dioxide. <http://www.airlite.com/>



Worried about cost? Involve your Trust charity

For hospitals, Trust charities may be able to help with the potential costs of some of these suggestions. They have a remit to pay for equipment that will improve patient care and patient experience, or to help organisations make financially sustainable investments.

By improving air quality, you will improve the **experience** of patients with respiratory conditions, especially young patients, who feel the effects of pollution more harshly than adults.

Air pollution can aggravate clinical symptoms, so by taking steps to reduce it, you are also more likely improve **clinical outcomes** for patients.

As well as ideas that save money by reducing expenditure on non-clinical costs, improving patient experience and outcomes is another good way to **reduce expenditure** in the long-run.

Remember, all of these are exactly the kinds of things that a Trust charity is there to support with.

Air Quality Monitoring

An air quality monitor is a device that measures the level of common air pollutants. Monitors are available for both indoor and outdoor settings. Indoor air quality monitors are typically sensor based instruments. Some of them are able to measure ppb levels and come as either mixed gas or portable units

[Monitoring and predicting air quality](#)

[Toxic Toby](#) -higher the pollution more he coughs



Air Quality: Innovation

Newham to install air quality monitors at 96 schools to fight air pollution

RACHAEL BURFORD | Monday 29 July 2019 10:54 | 20 comments



Google street view cars monitoring air pollution



Green road blocks to reduce post lockdown traffic



LED Mask Changes Color to Show the Air Quality

A project named [UnMan City](#) was initiated by NGOs and supported by professionals in National Health Service England to fight against the air pollution in London. The project highlights the toxic air crisis by designing a customized [LED](#) light mask which changes color to indicate the air quality.



Useful links

Clean Air Day <https://www.cleanairday.org.uk/>

DEFRA – for latest air quality measurements and pollution forecasts <https://uk-air.defra.gov.uk/>

Free Air Pollution Helpline - Defra also provides a free automated telephone service on 0800 55 66 77. This provides the 5-day descriptive forecast text and latest data by region as well as health advice.

MET Office - Information on how to use the daily air quality index including additional advice for susceptible individuals. <https://www.metoffice.gov.uk/weather/guides/air-quality>

AIR Quality England - latest near-real-time air quality data for UK Government, local authorities and the private sector across England <https://www.airqualityengland.co.uk/>

London Air, the website of the [London Air Quality Network](#), is managed by King's College London. As well as data, forecasts and summaries this website also provides downloadable mobile phone apps allowing Londoners to check out air quality in their city, while out and about

Text Messaging Services such as [“AirText”](#) in London and the South East,

[Sustrans](#) Charity making it easier for people to walk and cycle

[Explore pollution data](#) on a 3D map of the city through Google Earth.

References

Royal College of Paediatrics and Child Health: Position statement

<https://www.rcpch.ac.uk/resources/outdoor-air-quality-uk-position-statement>

Royal College of Physicians

<https://www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution>

World Health Organisation

[https://www.who.int/en/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/en/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)

https://www.who.int/health-topics/air-pollution#tab=tab_1

[Who Air quality-and-health video library](#)

British Heart Foundation:

[Air Quality and the NHS](#)

Thank you for helping



<https://www.standard.co.uk/news/london/london-schoolchildren-could-be-given-face-masks-to-protect-them-from-toxic-air-a3457146.html>

Thank you!