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Bradford breathes easier as pollution levels fall

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NIHR-funded research is showing how a Clean Air Zone in Bradford is reducing pollution-related ill health and easing the strain on NHS resources.

64,000 UK deaths linked to air pollution every year

Poor air quality is a [major cause of early death and illness in the UK and globally](https://www.fundingawards.nihr.ac.uk/award/NIHR128833) (<https://www.fundingawards.nihr.ac.uk/award/NIHR128833>). With clear links to lung and heart disease among children and adults, pollution contributes to 64,000 UK deaths each year. Without action to tackle poor air quality, NHS spending on pollution-related conditions will rise from £1.6 billion to [£5.3 billion each year](https://www.gov.uk/government/news/new-tool-calculates-nhs-and-social-care-costs-of-air-pollution#:~:text=The%20health%20and%20social%20care, costs%20were%20%C2%A342.88%20million.) (<https://www.gov.uk/government/news/new-tool-calculates-nhs-and-social-care-costs-of-air-pollution#:~:text=The%20health%20and%20social%20care, costs%20were%20%C2%A342.88%20million.>).

In 2018, Bradford had illegally high levels of vehicle exhaust pollution. This particularly affects those living in the inner city on the lowest incomes, with young children and in ethnically diverse communities.

[An earlier study published by the Born in Bradford research project](https://www.sciencedirect.com/science/article/pii/S0160412018311978#s0095)

(<https://www.sciencedirect.com/science/article/pii/S0160412018311978#s0095>)*, funded by the NIHR Yorkshire and Humber Applied Research Collaboration (ARC), found that over half the population was exposed to higher levels than World Health Organization guidelines permit. In response, Bradford developed a Clean Air Plan to combat the pollution problem. This included introducing a [Clean Air Zone](https://www.bradford.gov.uk/breathe-better-bradford/where-is-the-clean-air-zone/what-is-the-clean-air-zone-and-how-does-it-work/) (<https://www.bradford.gov.uk/breathe-better-bradford/where-is-the-clean-air-zone/what-is-the-clean-air-zone-and-how-does-it-work/>) and charging fees to drive polluting commercial vehicles in the city.

Although inner-city residents had much to gain from lower pollution levels, policy makers needed to understand the possible negative effects for them too. With a 6-year award of £950,000 in 2020, the NIHR Public Health Research Programme funded the [Born in Bradford Breathes study](#)

(<https://bepartofresearch.nihr.ac.uk/trial-details/trial-detail?trialId=11186&location=&distance=>)to investigate people's views and the impact of the Clean Air Zone.

Improving public health and reducing strain on health services

Led by Born in Bradford Director Professor Rosie McEachan at the Bradford Institute for Health Research, the researchers [reported the public's concerns about pollution charges and the cost of upgrading to electric vehicles](https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11337-z) (<https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-11337-z>). When the Clean Air Zone was introduced in 2022, their findings helped shape its policies to support Bradford's residents. This included offering grants to small- and medium-sized businesses to upgrade to electric vehicles.

With the Clean Air Zone now in use, the Born in Bradford Breathes study is investigating whether it does help to improve air quality, health and health inequalities.

Its [early results](https://www.sciencedirect.com/science/article/pii/S0269749123011259?via%3Dihub#sec7) (<https://www.sciencedirect.com/science/article/pii/S0269749123011259?via%3Dihub#sec7>), which are currently in peer review, found that high air pollution increased the demand for health services. For example, up to 1 in 3 GP appointments and 1 in 2 emergency department visits were for breathing issues on high pollution days. Only 1 year after introducing the Clean Air Zone, they reported around 700 fewer GP visits for breathing issues and heart problems per month. This is estimated to save the NHS around £30,000 each month.

“Although the research is still underway, our early results are encouraging. By reducing demand for GP appointments caused by preventable pollution-related illness, we can help ease the burden on our over-stretched NHS”

Professor Rosie McEachan

Supporting policy change for healthier cities

[The study found that the public largely supported the new Clean Air Zone](https://www.sciencedirect.com/science/article/pii/S2214140523000907) (<https://www.sciencedirect.com/science/article/pii/S2214140523000907>) both before it was introduced and up to 1 year afterwards. However, they found less support within deprived areas where communities identified other priorities, such as a lack of public transport.

Their work with those communities, as well as those implementing the scheme, gave them valuable insights to share with other cities planning to deliver similar schemes. Their findings also influenced [Bradford's planning policy](https://www.bradford.gov.uk/planning-and-building-control/planning-policy/supplementary-planning-documents) (<https://www.bradford.gov.uk/planning-and-building-control/planning-policy/supplementary-planning-documents>), leading to an increased focus on

developing green spaces and infrastructure, a network of pollution monitoring stations and initiatives to reduce pollution outside schools.

While they continue to monitor the impact on Bradford's residents, the team received funding to explore [the role of indoor air quality on their health](https://bmjopen.bmj.com/content/13/12/e081099) (<https://bmjopen.bmj.com/content/13/12/e081099>)** with continued support from NIHR Yorkshire and Humber ARC. Their work has also led to Professor McEachan leading a 4-year project investigating how and why people's health is affected by local environment factors, including air quality.***

More results from Born in Bradford Breathes will follow as the study progresses.

*[Born in Bradford](http://www.borninbradford.nhs.uk/) (<http://www.borninbradford.nhs.uk/>) follows the lives of 13,500 children and their families who were born in the city between 2007 and 2011.

**Study funded by [UK Research and Innovation Natural Environment Research Council](https://gotw.nerc.ac.uk/list_full.asp?pcode=NE%2FW002019%2F1&classtype=) (https://gotw.nerc.ac.uk/list_full.asp?pcode=NE%2FW002019%2F1&classtype=).

***Study funded by [UK Research and Innovation](https://www.ukri.org/news/35-million-investment-to-improve-population-wide-health/) (<https://www.ukri.org/news/35-million-investment-to-improve-population-wide-health/>).

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See our [Funding & Awards website](https://www.fundingawards.nihr.ac.uk/award/NIHR128833) (<https://www.fundingawards.nihr.ac.uk/award/NIHR128833>) for more information about the study.

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