The impact of London's Ultra Low Emission Zone (ULEZ) on children's health

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Air pollution exposure is associated with adverse health effects across the life-course. Children and adolescents are particularly vulnerable, with harms including increased risk of pre-term birth, pre-school wheeze, stunted lung growth, delayed cognitive development, new onset asthma, asthma attacks, and major mental health problems in adolescents.

These impacts increase risk of poor health and premature death in adulthood. Air pollution widens health inequalities, because disadvantaged people tend to live in more polluted areas.

Implementing low emission zones and clean air zones has become highly contested and politically contentious. There is an urgent need to bring robust evidence to inform public debate and health policy.

What are we doing?

The CHILL study (Children's Health in London and Luton) tests the hypothesis that air quality improvements arising from the London ULEZ improve the health of children living in highly trafficked urban environments.

CHILL uses a prospective natural experiment parallel cohort design, including 3,414 children recruited prior to ULEZ implementation, from Central London (Intervention) and Luton (Control) areas, to provide the most robust evidence of impacts on lung growth and respiratory health.

With additional funding from North Thames ARC and Barts Charity we have added outcomes, including physical activity and obesity, and cognitive development.

How is it helping?

Early results show major improvements in air quality within the ULEZ, with children significantly more likely to switch to active travel (walking, scooting or cycling) to school, while those in Luton more often switched to travel by car.

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Acknowledgements: NIHR Public Health Research, Barts Charity, MRC. CHILL investigators: Queen Mary University of London, Imperial College London, University of Bedfordshire, University of Southern California, University of Cambridge, University of Edinburgh, Bradford Institute of Health Research. We acknowledge funding and support from NIHR PHR, Asthma and Lung UK, The Asthma Uk Centre for Applied Research, Barts Charity, the Medical Research Council