Every Breath We Take: Air Quality News National Conference

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As the date for next year's Clean Air Day was announced as June 15th 2023, it was a pleasure to chair the 2022 National Air Quality News Conference on 9th November, held in the auspicious surroundings of Lords Cricket Ground.

An impressive line-up featured the Mayor of Hackney, Philip Glanville, Geraint Davies MP, Prof Catherine Noakes of the University of Leeds, Christina Calderato of Transport for London, Kate Langford from Impact for Urban Health and Cllr Louise Upton, Cabinet Member for Health and Transport at Oxford City Council, amongst a range of expert speakers and panellists.

Just how many people die prematurely in the UK because of poor air quality is contested.

In 2005 WHO stated that the highest recommended average annual emissions level for PM2.5 was 10 micrograms per cubic metre (µg/m^3), restricting these levels even further in 2021 by revising emissions limits to just 5 µg/m^3.

With much continuing debate over safe levels and the impact of these emissions on health in 2009 the UK's Committee on the Medical Effects of Air Pollutants (COMEAP) estimated around 33,000 premature deaths each year due to a combination of NO2 and PM2.5 emissions, along with an associated loss of total population life of 340,000 life-years.

A more recent estimate based on 41 studies linking air pollution with mortality in 16 different countries suggested 64,000 premature deaths annually (Burnett, R., et al, 2018).

A joint study from the Chan School of Public health at Harvard and UCL came up with the figure of 99,000 premature deaths in the UK in 2012, with this research carried out the year before nine-year old Ella Kissi-Debrah died tragically prematurely from asthma, exacerbated, at least in part, to illegal levels of air pollution in South London near to the South Circular Rd where she lived (as do her two younger siblings to this day).

In 2016 the Royal College of Physicians (RCP, 2016) estimated 40k premature deaths annually with the cost of air pollution in the UK in terms of social and health costs amounting to £20 billion per annum and with mortality contributing only 8% of the total with the rest relating to morbidity – in other words the chronic effects of air pollution which begin before birth and persist throughout life.

In 2019 Research in the European Heart Journal suggested that 15.7% of deaths or 8.8m worldwide are due to poor air quality and that it is the world's biggest killer, even more so than smoking, responsible for 7.2m deaths a year. The researchers, Lelieveld et al, found ambient air pollution causes 790,000 deaths across Europe annually, including 659,000 in the 28 countries of the European Union.

Whatever the number of premature deaths it's too many, it's higher than COMEAP acknowledges — perhaps up to three times higher — and it's shocking to think it runs into many thousands including cutting short the lives of young people as highlighted in the case of nine year old Ella Kissi-Debrah.

It's good to know the Environment Act 2021 has recently strengthened local authorities' responsibilities for ensuring clean air in their areas. LGA notes that existing mechanisms are 'decades old, misaligned with one another, with the need to be reformed to fit with modern sources of emissions'. The LGA also notes the need for additional resources for councils to deal effectively with environmental protection – something which looks unlikely given the recent £55bn tightening following the Autumn Statement.

The Act updates, simplifies and strengthens the local air quality management framework (LAQM), in its efforts to ensure responsibility for solutions to poor air pollution are shared across local government structures and with relevant public bodies. The LGA has been lobbying for as wide as possible an interpretation of relevant 'public authorities' along with as strong a duty as possible for these authorities to co-operate in their shared clean air targets. They're also asking that local authority air quality plans override the national policy of public agencies where they're in direct conflict with air quality goals highlighting that Highways England shouldn't exempt their roads from chargeable clean air zones, except with local agreement.

In addition to these enhancements in local authorities remit when it comes to clean air, Baroness Mouselcoomb's Clean Air (Human Rights) Bill is aiming to enshrine the right to clean air as part of the UK legal framework. It is currently making its way through Parliament having received its second reading in the House of Lords and made it to the report stage on 18th November. It looks to establish the 'right to breathe clean air', requiring the Secretary of State to achieve and maintain clean air across England and Wales. The UK Health Security Agency would be involved in setting and reviewing pollutants and their limits as well as enhancing the powers, duties and functions of various agencies and authorities in relation to air pollution. A Citizens' Commission for Clean Air would be established, with powers to institute or intervene in legal proceedings, whilst also requiring the Secretary of State and the relevant national authorities to apply environmental principles in carrying out their duties under this Act.

At the Air Quality News National Conference in early November, Cllr Philip Glanville, Mayor of Hackney, (who hailed from Worcestershire in his early years), supported the right to breath clean air, noting the difference in air quality in London during the lockdowns and affirming that no one should have to breathe in dirty air. London Councils were working on the twin priorities of low carbon transport along with their EV charging roll out.

He paid credit to Extinction Rebellion and the role they had played in raising this item up the agenda.

In Hackney their action plans were focussed on climate change and air quality improvements with 150 air monitoring stations in place. Low Traffic Neighbourhoods, EV permits for Car Clubs, School Streets across 80% of schools were also in place. They were targeting reductions in car ownership by 29% by 2040; had just planted 5,000 mature trees on streets around the borough and were introducing cargo bikes for businesses operating there to use instead of vans. Through these measures they'd seen a 9% reduction in traffic with 40% of their roads used by through traffic which didn't add to the local economy but was significantly contributing to poorer air quality.

Professor Catherine Noakes at the University of Leeds noted that Covid had raised the importance of good buildings design if we were to reduce airborne disease in our internal environments, asking how much we were monitoring the quality of air in indoor environments to ensure they remained healthy. The pathways to be considered included ventilation and heating, where the cost was visible,

whilst the health impact was not so clear. Sir Patrick Vallance had commissioned research into how buildings are designed and built to be 'infection resilient', making key recommendations covering:

1. Standards required for design
2. Links between health and well-being
3. In-use standards
4. BSI accreditation
5. Retrofit
6. A programme of communications was required as few spaces were well mixed.

In terms of measurements, CO2 presence was being used as a proxy for ventilation standards and there was a lot of evidence showing that good ventilation helped with health, productivity and performance. Some research indicated a 6-9% increase in productivity with good internal air quality (IAQ). 5.3m work-days were lost each year due to poor respiration with the US losing $40bn due to poor air quality.

Professor Noakes had been involved in a study of 30 Primary schools covering 540 classrooms to measure internal air quality and performance evaluation of air cleaners and UV devices in schools.

The results highlighted the costs to health and the economy of poor air quality through lower productivity, poor health and disruption to education, with this impact needing better recognition through greater communication.

Christina Calderato, Director of Transport Strategy and Policy at Transport for London pointed out there are 500k asthma sufferers, with aspects of social justice being very much to the forefront given it was the poorest who were most likely to suffer. The Low Emissions Zone, the Ultra Low Emissions Zone (ULEZ), one of the largest in Europe, had launched in 2008 and since then it had expanded in size to an area 18 times larger than when originally opened. Between 2016 and 2019 they had seen a 44% reduction in roadside NO2 emissions, 15% reductions in PM2.5s and with 96% of vehicles in the ULEZ being compliant compared to 48% in 2017. With 95% of vehicles in the ULEZ driving elsewhere in the UK, emissions reductions benefits were being felt beyond London.

The London experience had shown scrappage schemes to be very important when this initiative had been introduced with 9,752 cars and motorbikes scrapped receiving between £1-2k scrappage payments; 5,242 vans and minibuses had been scrapped receiving £7-9,500 scrappage payments and 134 HGVs had been scrapped with around £15k compensation for each vehicle.

There had been an additional package of measures including electric buses, zero emissions taxis, EV charging points. It was notable that TfL had set a laudable target for zero deaths on London roads by 2041. In addition 10% reductions in freight had been targeted by 2034. There is a 12-year age limit in place for diesel taxis and TfL were investing in modal shift with 20.5% of all vehicles sales consisting of EVs.

Geraint Davies MP, Chair of the All-Party Parliamentary Group on Air Quality emphasised the importance of clean air as an engine for climate change delivery. However, 6% of the global economy went into subsidising fossil fuels. There was a $60bn cost to health and productivity globally flowing from poor air quality, with the cost of poor health related to air pollution estimated at £20bn in the UK each year. Highlighting findings from the APPG's report 'Air Quality Strategy to reduce Coronavirus infection', he noted that it only took a +1% increase in PM2.5s to see a +8%

increase in death rates from Covid, with more monitoring required to deliver greater action and more subsidies for the green solutions required. The OECD had demonstrated there was a link between economic growth and equality, with greater equality leading to healthier people and healthier economies growing faster. He recommended writing to local MPs to ask them how they were supporting Clean Air and how they were supporting this objective.

References:

Burnett, R., et al. "Global estimates of mortality associated with long-term exposure to outdoor fine particulate matter." Proceedings of the National Academy of Sciences of the United States of America 115, 38 (September 2018), 9592-9597.

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