

Research briefing (October 2023)

Title: Delivery of an indoor air quality campaign in social housing

Introduction

Poor air quality has been highlighted as the world's greatest environmental health risk¹, linked with serious health consequences. However, most attention has been paid to outdoor air pollution, despite the average person in the UK spending ~90% of their time indoors. Additional to outdoor air pollution coming indoors, there are a range of other sources of poor indoor air quality (IAQ) including emissions from cleaning products, building materials, cooking and heating, and tobacco products. Poor building conditions can also exacerbate IAQ through high humidity leading to damp, condensation, and mould.

A campaign was delivered to improve the air quality of more than 200 homes across Liverpool, St Helens and Warrington in the Cheshire and Merseyside region. Using digital technology, the aim was to improve respiratory health for young children (under 11 years) living in social housing.

Beyond: Cheshire and Merseyside ICB Children and Young People's Transformation programme funded the campaign and its evaluation. Torus Housing Group (Assets) provided match funding to secure additional monitors. The Torus Foundation delivered the campaign through its Healthy Neighbours project.

Methods

In 2022, Lancaster University and NAQTS (National Air Quality Testing Services Ltd.) were commissioned to deliver an evaluation of the campaign. Monitor data was shared with NAQTS who analysed this to understand IAQ in households at the start of the campaign, and to assess IAQ changes following their installation. Interviews and focus groups took place with staff closely involved with the campaign's delivery, and with Torus tenants who had monitors installed.

This is a report of an independent evaluation, funded and commissioned by Beyond: Cheshire and Merseyside ICB Children and Young People's Transformation programme.

¹ [www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health)

Key Findings

- The campaign was largely able to deliver its aims. Monitors were installed in more than 200 homes and follow up contacts completed with around two thirds of participating households. Initial recruitment to the campaign was slow but by widening the criteria for inclusion (from families with children or a child aged 0-5 to under 11 years of age) this facilitated greater uptake among tenants.
- Among tenant interview participants, the motivations for taking part in the campaign ranged from health concerns for family members, to a wish to use the monitor to validate problems with housing conditions. Tenants also sought to assess air quality improvements after remedial interventions, while others were driven by an interest more generally in the health of their home environment.
- The campaign's impact was multifaceted. There was a marked increase in IAQ awareness based on tenants' self-rated knowledge. This newfound knowledge triggered behavioural changes, such as altered cleaning habits though there was also evidence that increased awareness could heighten tenants' anxiety about IAQ in their home.
- The IAQ data presented a general story of improved IAQ in homes across Torus communities. However, there are homes in all locations that are outliers for certain pollutants and above recommended thresholds: these homes could be targeted for further support / advice.
- Impacts on IAQ in the home were complex. While some general trends could be observed, for certain air pollutants trends were not consistent across different locations, highlighting a range of different indoor and outdoor sources that are not consistent in different places. Therefore, a one size fits all approach to advising on IAQ in homes across Torus communities is not advisable.
- That tenants had access to data readings generated through the monitors was important in ensuring transparency with the housing provider, and also provided evidence to support tenants and staff to raise concerns about housing issues.
- Enablers to delivery included the campaign's situation within a Healthy Neighbours project involving local community organisations, and a multi-pronged approach to engagement (leafleting, door knocking, community events/spaces and word of mouth). The time and ongoing input invested by Torus Foundation staff also played a key role in the campaign's successful delivery.
- Challenges encountered in the campaign included some tenants facing difficulties in receiving and interpreting regular air quality reports. Technical problems, like relocating monitors, also cropped up and a few tenants unplugged their monitors, leading to data

gaps. Concerns about temperature drops and outdoor pollution affected some tenants' willingness to increase ventilation by opening windows.

Implications for Practice, Policy and Research

Service delivery: Projects delivered in partnership with communities, community organisations and housing providers are more likely to achieve improvements in IAQ and/or health rather than the use of monitors alone. A community-based approach can support better signposting to support and intervention, for example, related to housing problems (e.g. damp) or financial problems (e.g. fuel poverty) affecting IAQ. Sufficient time, resource and capacity should also be factored into implementation to support ongoing engagement, installation and follow ups.

Empowering communities: Where people have direct access to the monitor readings from their homes (rather than housing providers acting as 'gatekeepers' to this information), this can promote transparency and trust between housing providers and tenants and can empower tenants to make demands for safer living conditions.

Health Inequalities: Improving IAQ is shaped by people's ability to make choices and their living environments. While people need to be equipped with knowledge and awareness about healthy IAQ behaviours, organisations should also identify and address barriers that may prevent this, as well as consider structural factors influencing IAQ such as housing quality, and outdoor air quality.

Support and training: IAQ is less well understood among both professionals and the public compared to air pollution more generally. Staff and volunteers delivering IAQ projects require training and ongoing support to ensure they are confident in communicating messages about IAQ.

Research and evaluation: There is a need for research on IAQ interventions, requiring robust mixed methods studies to understand their effects on health and IAQ. Findings from this study also point to the need for further research into the sources of poor IAQ to understand the contribution of localised outdoor air quality as well as behavioural factors.

Find out more

If you would like to find out more about the evaluation and other research on IAQ, contact Douglas Booker (dbooker@naqts.com) and Emma Halliday (e.halliday@lancaster.ac.uk).