



## **Healthcare facilities need to Prioritise Indoor Air Quality and ensure Infection Prevention and Control Guidelines reflect that Covid-19 is airborne**

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### **1. The consequences: Long Covid, reinfections and economic costs**

- In March 2023 1.9 million people in the UK were living with Long Covid (ONS 2023). Data in March 2024 indicates this number has increased significantly since then with 2 million people in England and Scotland found to be living with Long Covid (ONS 2024).
  - Repeated Covid-19 infections significantly increase the risk of serious health consequences
    - Higher risk of death, hospitalisation and multi-organ complications
    - Higher likelihood of developing Long Covid with each reinfection
    - These risks apply regardless of vaccination status
- (Bowe et al. 2022; Bosworth et al. 2023)
- A report from the Nuffield Trust found the sickness absence rate for NHS staff in England in 2022 was 5.6%. This is 29% higher than the pre-pandemic rate of 4.3% in 2019. In total, around 27 million days were lost to sickness absence across 2022, equating to the absence of approximately 74,500 full-time staff (Palmer and Rolewicz 2023).
  - Evidence suggests that NHS sickness rates continue to increase year on year (NHS Digital 2024).
  - Hospital-acquired Covid infections often extend inpatient stays by 8–10 days, straining capacity and increasing costs (McAndrew et al. 2024).
  - Across the UK It has been estimated that Long Covid has led to £5.7 billion in productivity losses and £4.8 billion in informal caregiving costs (Kwon et al. 2024).
  - A report from Cambridge Econometrics (2024) suggested that UK GDP could be reduced by £1.5 - 2.7bn over the period to 2030 due to Long Covid.
  - The Royal Academy of Engineering (2023) looked at the potential impact of influenza-type pandemics and seasonal influenza and estimated that over next 60 years in the UK, the total societal cost (including health, social, and economic aspects) of infection could amount to up to £23 billion per year.

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### **2. Why this is important: Airborne transmission is the main risk**

- Covid-19, influenza and many other respiratory viruses and pathogens are transmitted through the air like cigarette smoke. This is a particular issue in poorly ventilated spaces.
- Global scientific consensus - including the World Health Organization (2024) - confirms airborne transmission as the primary route of transmission for the Covid-19 virus.
- However, UK infection prevention and control (IPC) guidelines still rely on an outdated model based on droplets. Effective precautions are currently only used in confined areas such as aerosol-generating procedures (AGPs) when in fact, breathing itself is an aerosol generating procedure.

**This puts staff, patients and visitors at constant high but avoidable risk.**

### 3. The reality: Healthcare facilities are high risk

- Many UK healthcare facilities suffer from inadequate ventilation, shared air spaces and a lack of indoor air quality monitoring.
  - Research has shown that air filtration and ventilation can significantly reduce the number of hospital-acquired Covid-19 and other infections (Conway Morris et al. 2021; Brock et al. 2025).
  - Airborne viruses can remain infectious in the air for hours, long after an infected person has left the room (Greenhalgh et al. 2021; Morawska et al. 2024).
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### 4. Why action is urgently needed

- Every new Covid-19 infection worsens health outcomes and increases the burden on the NHS.
  - Hospital-acquired infections lead to preventable deaths and prolonged hospital stays.
  - If we don't act, it will be more expensive in the long run - through loss of staff, harm to patients and rising costs.
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### 5. What Needs to Happen

#### ***Changes to IPC guidance***

**IPC guidance** across the UK needs updating to reflect airborne transmission to end the current Covid-19 pandemic, reduce seasonal outbreaks and prevent future pandemics. The changes needed are detailed [here](#)<sup>1</sup> and include:

- Providing FFP3 respirators or PAPRs for frontline healthcare workers.
- Ensuring sick healthcare workers can isolate themselves at home until they are no longer infectious.

#### ***Implementing air quality standards***

**Enforceable high air quality standards** in healthcare settings need putting in place to reduce airborne pathogen transmission. These standards should mandate:

- CO<sub>2</sub> monitoring as a proxy for ventilation with clear actions to be taken when levels rise above acceptable levels<sup>2</sup>. 600-800 parts per million CO<sub>2</sub> is accepted as representing reasonably good ventilation (Federation of European Heating, Ventilation and Air Conditioning Associations 2021).
- High levels of ventilation standards with a minimum 10 litres per person per second and six air changes per hour.
- Air filtration (e.g. HEPA or MERV) when ventilation is insufficient to improve air quality to safe standards.
- Ensuring indoor air quality is visible and accountable in all clinical areas using CO<sub>2</sub> monitors and particulate matter monitors.

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<sup>1</sup> Supporting Healthcare Heroes (2025) Urgent changes needed to UK infection prevention and control guidance: A Position Statement. <https://shh-uk.org/shh-uk-position-statement-urgent-changes-needed-to-uk-infection-prevention-and-control-guidance/>

<sup>2</sup> The higher the CO<sub>2</sub> level the worse ventilation is and the greater the risk of inhaling infected aerosols. Every 400 ppm CO<sub>2</sub> above background/outdoor level of around 400/425 ppm, means an extra 1% of the air is from other people's breath.

## **Education and public health messaging**

- Educate all NHS staff on the risk of airborne transmission, the short and long term effects of repeated Covid-19 infections and mechanisms to reduce reinfections.
- Organise a public health campaign on airborne transmission.

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## **6. Benefits of this approach**

Implementing the approach outlined above will result in:

- **Fewer** hospital admissions with acute Covid-19.
- **Fewer** bed days lost to hospital acquired Covid-19 infections – e.g., in February 2025, Morriston Hospital, part of the Swansea Bay University Health Board, reported 14 infection-related incidents or outbreaks, including six attributed to COVID-19. These outbreaks resulted in a total of 100 bed days lost.
- **Fewer** hospital admissions with the secondary impact of post covid diseases (Long Covid), e.g., heart attacks, stroke, blood clots.
- **Fewer** outpatient appointments needed due to long-term sequelae of a Covid-19 infection such as new onset diabetes, postural tachycardia syndrome (PoTS), breathlessness, myocarditis and chest pain thus reducing waiting lists.
- **Fewer** delayed admissions and **less** people receiving care in corridors.
- **Fewer** ambulances waiting for their patients to be admitted.
- **Fewer** days of NHS staff sickness and a **reduction** in the numbers of healthcare workers leaving the workforce due to Long Covid.

**This plea for indoor air quality is comparable to the call for clean air after the smog of 1956, a time when people realised that the problem was acute after they had run out of flowers and coffins. This is an opportunity to save lives and money and be a hero in the process.**

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