



Medicines

Context

Medicines account for 25% of GHG emissions in the NHS. To address the GHG emissions associated with medicines, we need to decarbonise medicine production, reduce the carbon footprint of medicine use, optimise prescribing/use and stock-keeping in hospitals and at home, and improve medicine disposal.

Medicines are important and beneficial for many people by supporting them to stay well and lead a fulfilling life. Patient-centred prescribing will improve health outcomes, leading to a reduction in GHG emissions associated with poor care which can result in emergency admissions, complications, and inpatient stays.

Despite these obvious benefits of medicines, it has been estimated that 10% of medicines in primary care alone are overprescribed, which means that the medicine 'is not needed or wanted or where harm outweighs the benefits'.¹⁶ As there are over 1.1 billion prescription items dispensed each year in primary care in England, the scale of waste could be substantial.

Within medicines, metered dose inhalers (MDIs) and anaesthetic gases are part of the small number of medicines that contribute a high proportion of GHG emissions. Owing to their propellant gases, MDIs are responsible for 3%, and anaesthetic gases for 2% of the NHS' GHG emissions.

Among anaesthetic gases, desflurane is the gas with the highest carbon footprint, the global warming potential of which is 2,540 times higher than that of carbon dioxide. Therefore, there is an urgent need to reduce desflurane use. Other anaesthetic gases need to be considered as well. Nitrous oxide has a global warming potential of 265 kgCO₂e¹⁷ and contributes 75% of NHS's total anaesthetic gas carbon footprint. KCH and GSTT are among the highest users of nitrous oxide in London. This might be partly due to nitrous oxide wastage which can be high due to system leakages, ineffective stock management, and clinical wastage.

In respect to MDIs, high-quality, low-carbon asthma care can be achieved by improving asthma control through treatment adherence, improving patients' inhaler techniques, reducing the use of high-volume inhalers, and considering the use of dry powder inhalers (DPIs) during joint decision-making with patients.



Achievements to date

- LGT and KCH have made big strides towards reducing their desflurane use. LGT has stopped using desflurane altogether, while at KCH since April 2021 desflurane comprises only around 4% of the volume of all volatile anaesthetic gases. GSTT has made considerable progress in lowering its use but at the time of writing cannot quantify the reduction.
- South East London ICS is working to address overprescribing with medicines optimisation embedded in all sectors of care. The ICS has established an Integrated Medicines Optimisation Committee (IMOC), which includes a Responsible Respiratory Prescribing Group (RRPG) as a subgroup. The RRPG provides a forum for healthcare professionals from across acute, community, and primary care to work together to develop consistent, sustainable, and cost-effective prescribing guidelines and strategies in respiratory disease for both adults and children. The ICS will be appointing a System Lead Pharmacist for overprescribing to work not only within the ICS but also externally to oversee strategy and change.

Case-study 7



Improving adherence to inhaled corticosteroid and reducing over-reliance on short-acting beta-2 agonists (SABA) (Lambeth)

Between 2016 and 2019, the locally commissioned Integrated Respiratory Team and specialists supported general practice focused on key respiratory processes to improve the quality of care for common respiratory diseases in a primary-care setting. It:

- reduced the percentage of people with asthma receiving 6 or more prescriptions for SABA annually from 29% to 23% of asthma patients (21% reduction)
- increased the percentage of asthma patients using inhaled corticosteroids regularly (11 or more prescriptions annually) from 48% to 60% (25% increase)
- increased the percentage of patients prescribed inhalers receiving an inhaler technique check from 27% to 72% (167% increase)
- increased the percentage of patients using spacers for pressurised MDIs (pMDIs) from 43% to 70% (63% increase)
- increased the percentage of adult asthma patients with a Personalised Asthma Action Plan from 56% to 93% (66% increase)
- reduced the percentage of patients needing high-dose inhaled corticosteroids
- reduced prescribing costs

Most of the impact was achieved through 'Virtual Clinics' and upskilling healthcare professionals in primary care settings



Commitment

- **We will reduce the environmental impact of our medicines through the optimisation of prescribing, the use of low-carbon alternatives, and appropriate disposal**

Actions for Year 1

1. NHS Trusts to measure and monitor anaesthetic gas usage annually (by type) to calculate baseline data across the ICS
2. NHS Trusts to reduce the proportion of desflurane to 5% of the volume of all volatile gases used in surgery*
3. NHS Trusts to reduce the use of nitrous oxide, e.g., by reducing system leaks, improving stock management, and reducing clinical wastage
4. NHS organisations to collaborate on the development of a plan to tackle overprescribing and polypharmacy
5. ICS (IMOC) to analyse medicines data to help identify patients most at risk of overprescribing, polypharmacy, or over-ordering at PCN and practice level
6. NHS Trusts and primary care to implement quality improvement projects to improve asthma control
7. NHS Trusts and primary care to implement quality improvement projects to reduce the environmental impact of inhalers*
8. Primary care in collaboration with the SEL RRPg to run educational events about sustainable respiratory care
9. ICS (RRPG) to set up a working group to review existing local formulary recommendations and associated guidelines for adult asthma and COPD
10. ICS (RRPG) to set up a working group to establish system-wide formulary recommendations and associated guidelines for asthma in children and young people
11. ICS (RRPG) to develop guidelines for inhaler prescribing which will include stronger references to the environmental impact of treatments to help guide healthcare professionals in joint decision-making with patients



South East London ICS

Aim 1: To reduce GHG emissions associated with anaesthetic gas use

Target

- Reducing the proportion of the volume of desflurane to 5% of the volume of all volatile gases used in surgery

Actions for NHS Trusts

- Measure and monitor anaesthetic gas usage annually (by type) to calculate baseline data across ICS by March 2023
- Reduce the proportion of the volume of desflurane to 5% of the volume of all volatile gases used in surgery by March 2023
- Reduce the use of nitrous oxide, e.g., by reducing system leaks, improving stock management, and reducing clinical wastage by March 2023

Aim 2: To reduce medicine waste

Actions for NHS organisations (coordinated by the CCG/ICB)

- Collaborate on the development of a plan to tackle overprescribing and polypharmacy by March 2023

Actions for ICS (Integrated Medicines Optimisation Committee)

- Analyse medicines data to help identify patients most at risk of overprescribing, polypharmacy, or over-ordering at PCN and practice level by March 2023
- Provide training and education in medicines optimisation by March 2025
- Work with pharmacies to expand Structured Medication Reviews by March 2024
- Support community pharmacists to increase discharge medicines service and new medicines service interventions by March 2025



South East London ICS

Aim 3: To reduce the GHG emissions associated with inhaler use

Actions for NHS Trusts and primary care

- Implement quality improvement projects to improve asthma control by March 2023 by:
 - reducing patients' over-reliance on short-acting beta-2 agonists through effective patient education and review of treatments
 - checking and supporting good inhaler technique through Structured Medication Reviews
 - promoting patient adherence to medicines
- Implement quality improvement projects to reduce the environmental impact of inhalers by March 2023* by:
 - considering low-volume inhalers and DPIs in joint decision-making with patients
 - consolidating treatments into combination inhalers
 - use of spacer devices to increase effectiveness of aerosol inhalers where these are required for patient care

Actions for ICS (Responsible Respiratory Prescribing Group)

- Set up a working group to review existing local formulary recommendations and associated guidelines for adult asthma and COPD by March 2023
- Set up a working group to establish system-wide formulary recommendations and associated guidelines for asthma in children and young people by March 2023
- Develop guidelines for inhaler prescribing which will include stronger references to the environmental impact of treatments to help guide healthcare professionals in joint decision-making with patients by March 2023
- Support quality improvement programmes to improve the quality of asthma care while reducing its environmental impact by March 2023
- Work with pharmacies to expand Structured Medication Reviews for asthma management by March 2024

Actions for primary care

- Primary care in collaboration SEL RPPG to run educational events about sustainable respiratory care by March 2023

South East London ICS

Aim 4: To reduce the environmental impact of medicine and inhaler disposal

Actions for ICS (Integrated Medicines Optimisation Committee)

- Work with NHS Trusts and pharmacies to set up an inhaler recycling/disposal scheme in all boroughs and Trusts across the ICS by March 2025
- Develop an ICS-wide communication campaign to increase awareness of the need to return unused medications and empty inhalers to the pharmacy for disposal by March 2025



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