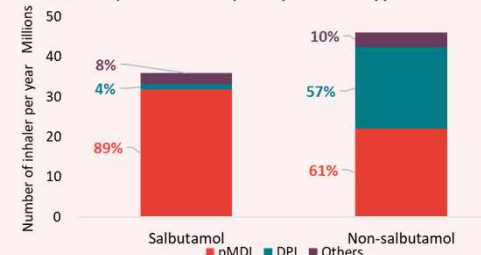
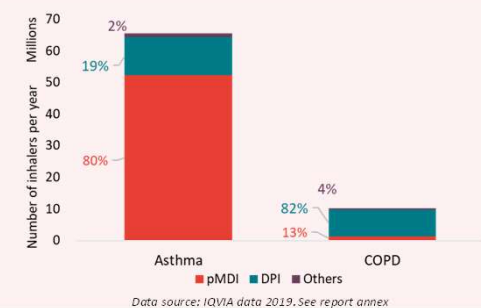


- NHS England has pledged to reach net zero carbon emissions by 2040 for emissions they control directly with an ambition to reach an 80% reduction by 2028 to 2032.¹
- In the strategy document outlining how the NHS would achieve these emissions reductions, medicines and pharmaceuticals have been identified as accounting for 25% of emissions within the NHS, with inhalers accounting for 3% of all emissions.²
- NHS England subsequently introduced policies to promote the rapid uptake of dry powder inhalers (DPIs), by switching patients from pressurised metered dose inhalers (pMDIs) (in the non-salbutamol inhaler market), by financially incentivising GPs to prescribe DPIs.³ Nonetheless 58% of emissions are generated by the salbutamol market,⁴ which is heavily reliant on pMDIs.

Reliever (salbutamol) and controller (non-salbutamol) inhalers – Split by inhaler type: ⁵



Asthma and COPD patients' inhaler usage by type: ⁶



We undertook a scenario modelling study to assess the potential economic impact of the current centrally-driven NHS rapid switchover policy from pMDIs to DPIs in the non-salbutamol market, in order to investigate the policy's possible effect on carbon emissions and patients' health.

Results

(costs and savings from the policy compared to no policy implementation alternative over a decade)

The impact on emissions, patients, and innovation

The rapid switchover is unlikely to result in a substantial reduction in carbon emissions, compared to no policy implementation alternative, and will likely result in rising costs to the NHS due to higher DPI prices on average compared to pMDI prices.⁷

The cost of potential health implications, such as exacerbation of symptoms, would lead to further hospitalisations⁸ and the cost could range from £10m to approximately £140m⁹ while the switch policy would disincentivise industry from creating innovative, new, low global warming potential (GWP) pMDI technologies.

Potential impact on health



The literature about the health implications of switching is limited, and further research is needed



Available evidence suggests that some proportion of patients would have an exacerbation of symptoms due to the switch to controller DPI



An exacerbation of asthma or chronic obstructive pulmonary disease (COPD) may lead to additional hospitalisation, GP appointments and use of a reliever inhaler. All creating additional emissions and further costs to the NHS



£460 Million
NHS expenditure costs



No significant
emissions reduction



Potential **High**
health implication costs

Conclusions – What the NHS should consider for inhaler prescribing policies

What the current, centrally-driven NHS policy does:	What the NHS should consider with inhaler prescribing policies
Considers only a part of the patient pathway	Consider the full patient pathway and the options of emissions reductions along it
Only affects the non-salbutamol market	Consider the effects of reducing emissions in the salbutamol market
Potentially exacerbates patients' symptoms and may increase hospitalisations	Understand the impact on patients' health and consider a patient centric approach
Might reduce incentives for investment in future innovation	Consider the limitation that policies may have on the introduction and supply of environmentally friendly pMDI inhalers

The report is available on request. For more information contact:

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All the information in this poster is based on Frontier Economics, April 2021, "Economic Impact Of Low Emissions Inhalers". The below references indicate more specifically the place in the paper for the given statement, number or chart.

¹ Greener NHS. 'Delivering a 'Net Zero' National Health Service', October 2020, pg 5. <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>

² Greener NHS. 'Delivering a 'Net Zero' National Health Service', October 2020, pg 31. <https://www.england.nhs.uk/greenernhs/wp-content/uploads/sites/51/2020/10/delivering-a-net-zero-national-health-service.pdf>

³ NHS England. Primary Care Networks – plans for 2021/22 and 2022/23, Annex B – Investment and Impact Fund, August 2021, pg 4. <https://www.england.nhs.uk/wp-content/uploads/2021/08/B0828-iii-annex-b-investment-and-impact-fund-21-22-and-22-23.pdf>

⁴ Annex C, Figure 37, Frontier Economics Report, 'Economic Impact of Low-Emissions Inhalers', pg 55.

⁵ Figure 1, Frontier Economics Report, 'Economic Impact of Low-Emissions Inhalers', pg 4. Source: Frontier Economics based on IQVIA data, 2019.

⁶ Figure 5, Frontier Economics Report, 'Economic Impact of Low-Emissions Inhalers', pg 12. Source: Frontier Economics based on IQVIA data, 2019.

⁷ Frontier Economics Report, 'Economic Impact of Low-Emissions Inhalers', pg 28.

⁸ Panigone S, Sandri F, Ferri R, et al. 'Environmental impact of inhalers for respiratory diseases: decreasing the carbon footprint while preserving patient-tailored treatment' BMJ Open Respiratory Research 2020, pg 4. <https://bmjopenrespres.bmj.com/content/7/1/e000571>

⁹ Figure 17, Frontier Economics Report, 'Economic Impact of Low-Emissions Inhalers', pg 34.