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Economic Analysis of NHS England's Policy to Reduce the Carbon Impact of Inhalers by Encouraging a Rapid Prescribing Switch from controller Pressurised Metered Dose Inhalers (PMDIs) to Dry Powder Inhalers (DPIs)

***Author(s): Bar-Katz V**, Woolley NJ, Vitello E, Frontier Economics Ltd., London, UK*

Background

In 2019, the UK life sciences sector employed 256,000 people in 7,000 sites, through 6,300 businesses and generated £80.7bn in turnover.[1]

The UK inhaler market equates to approximately 81m inhaler devices which amounted to a turnover of £1.09bn in 2019.[2]

The NHS has pledged to achieve net zero by 2040 for emissions they control directly, with an ambition to reach an 80% reduction by 2028 to 2032.[3]

As part of this target, NHS England has identified the inhaler market as one area of potential decarbonisation and has introduced a policy to rapidly switch patients' controller inhalers from pMDIs to DPIs.[4]

The current policy may have not considered the impact on the UK life sciences sector, and whether it will have unintended consequences to the inhaler market – will it reduce the motivation of companies to invest in inhaler development and therefore limit the rate and range of environmentally friendly inhalers introduced?

Question: Is the current NHS rapid switchover policy the optimal option for decarbonisation of the inhaler market, and what are the potential impacts and alternatives?

The impact on innovation, costs, emissions, and patients.

Potential High impact on investment

Rapid switchover may disincentivise the industry to invest in future low emissions pMDI technologies, such as hydrofluoroalkane (HFA) 152a propellant, which is estimated to reduce pMDI emissions by 90%, and may delay their introduction.[5]

No significant emissions reduction

The potential delay in the introduction of future low emissions pMDI technologies would impact emissions reductions in the inhaler market, including emissions from reliever inhalers which are not captured by the current policy. As a result, when compared to business as usual, the switch policy is unlikely to create significant additional emissions savings.

£460 million NHS financial costs

Although some controller DPIs are priced the same as pMDIs, on average, controller DPIs are more expensive than controller pMDIs.[6] The proposed switch would therefore imply a direct increase in the NHS' expenditure on inhalers.

Potential High negative health impacts costs

Finally, a rapid switchover that is not centred around patients' well-being might negatively impact patients' health and potentially create exacerbations[7] which would require additional NHS activities, potentially adding direct cost and emissions to the NHS.

Conclusions

Enabling the life sciences sector to play a stronger role in the decarbonisation of the UK inhaler market by safeguarding market participants' incentive to innovate is likely to lead to similar carbon reduction while minimising unintended consequences

R&D Funding	*Emissions*	*Patients*
The current policy:		
Will reduce the size of the pMDI market which may decrease incentives for R&D investment in the UK	Is focused on reducing emissions only in the controller inhaler market	Is not centered around patient outcomes and may potentially lead to negative health impacts
While any policy that aims to reduce emissions in the inhaler market should:		
Maintain incentives to innovate, thereby maintaining or increasing R&D funding allocated to the creation of pMDIs containing low GWP propellants	Incentivise pMDIs containing low GWP propellants to enter the market in both the reliever and controller segments, reducing emissions from the inhaler market overall	Consider the patient voice and enable them to have choice in their treatment – this is critical to compliance and should not be overlooked

It is crucial that industry develops new pMDIs containing low GWP propellants as soon as possible, which would be more likely if incentives for investment in R&D are maintained and encouraged. Centrally driven policies that encourage switching patients without a clinical need might hinder those incentives for investments in the inhaler market.

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

Vladislava Bar-Katz at v.bar-katz@frontier-economics.com

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. 'Bioscience and health technology sector statistics', 2019, Office for Life Science
2. IQVIA data, 2019
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. For example, through the GP contracts. NHS England. 'Update to the GP contracts agreement 2020/21 – 2023/2024', February 2020, Available at: www.englan d.nhs.uk/wp-content/uploads/2020/03/update-to-the-gp-contract-agreement-v2-u pdated.pdf. Accessed May 2021.
5. Koura Zephex. Zephex HFA152a. Available at: www.zeph ex.com/zephex -152a/. Accessed May 2021.
   Koura's statements refer to the reduction in the emissions from the propellant alone. However, emissions from the propellant accounts for about 96% to 98% of the cable-to-grave pMDI (Salbutamol and non -salbutamol) emissions
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6. Please see section 'Inhaler purchase costs' in the paper for further details.
7. Based on Figure 3, Frontier Economics Report, Annexe D.