



PCRS Position Statement

Environmental issues in respiratory disease management

PCRS support initiatives to improve air quality and minimise short- and long-term damage to the environment, particularly those with an impact on climate change resulting from greenhouse gases. We believe that such initiatives should cover a variety of issues including better patient education to support adherence with preventer use in asthma, routine spacer use if using pressurised metered dose inhalers (pMDIs), recycling schemes for inhaler devices, and switching from pMDIs to dry powder inhalers (DPIs) or soft mist inhalers (SMIs) where the change is clinically appropriate, safe and acceptable to patients. We do not support policies that advocate ‘blanket switching’ of patients from one inhaler type to another in a practice or an area. Nor do we advocate attempts to phase out the use of pMDIs altogether as this would be detrimental to patients needing to use inhalers when their control is poor and in emergencies. We encourage any decisions about inhaler choice to be made on an individual basis between clinicians and patients.

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Background

In recent years there has been an increasing focus on the impact of the environment on medical conditions, and on the impact of the practice of medicine on the environment. Both of these are relevant to respiratory medicine. This paper will outline the key issues in the context of respiratory disease, with specific focus on the use of inhaler medication, and give the PCRS position on them.

Key issues

Impact of environment on respiratory conditions

Both external and internal environments can be implicated in the aetiology and control of respiratory conditions. There are macro level issues such as climate change as well as localised issues to do with air quality that are impacting lung health. Poor outdoor air quality is an increasing cause of concern in lung disease, and measures led by international agreements and UK based initiatives are working to improve the air that we breathe. In 2010, the three leading risk factors for global disease burden were high blood pressure (7.0% [95% uncertainty interval 6.2–7.7] of global disability-adjusted life years [DALYs]), tobacco smoking including second-hand smoke (6.3% [5.5–7.0]), and household air pollution from solid fuels (4.3% [3.4–5.3]).¹ The International Primary Care Respiratory Group has a FRESH AIR initiative focused on improving air quality in low income countries, with a focus on all types of smoke.²

Environmental pollutants such as traffic fumes and industrial waste are targeted by policies designed to improve air quality for all which will particularly benefit people with lung conditions.

The ban on smoking in public places has had a significant impact on the experience of people with lung disease, but smoking tobacco continues to be a causal factor in some lung conditions, and the impact of environmental tobacco smoke in the home or in cars remains a major concern, particularly for children. PCRS works closely with partner organisations such as ASH to support initiatives to reduce the prevalence of smoking and to minimise the risk of harm from tobacco dependency.

Indoor and household pollution can also be an issue both in the instigation of lung disease and in exacerbating existing lung conditions. There is increasing awareness of workplace substances being harmful to the lungs and removal of the patient from exposure can actually cause a condition such as asthma to disappear, if caused by a workplace trigger.

Impact of respiratory management on environment

The other side of the environment story is that the treatment of lung disease may also be contributing to harming the environment. In 2016, the British Thoracic Society (BTS) issued a statement on lung disease and the environment, which they have updated in 2019.³ This sets out their perspective on how the respiratory community could seek to minimise the impact of lung disease on the environment and the measures that clinicians and the NHS could take.

The NHS too is increasingly engaged with how it can reduce harm to the environment and has identified inhalers as an area for attention. Low levels of inhaler recycling results in a considerable amount of plastic and metal going into landfill, and the use of HFC (hydrofluorocarbon) propellants in pressurised metered dose inhalers (pMDIs) contributes to global warming. The NHS set up the NHS Sustainability Development Unit (NHS SDU) in 2008 to champion sustainable practices in the NHS and enable the NHS 'to fulfil its potential as a leading sustainable and low carbon service'.

The Government's Environmental Audit Committee (EAC), in their 2017 scrutiny of F-gases, recommended a 2022 NHS target of 50% of all inhalers to be of 'low global warming impact', as well

as an increase in the recycling of used inhalers with residual F-gas propellants to 50% of all those prescribed by 2020.⁴ The NHS SDU has taken this up and developed a position paper on reducing the impact of inhalers on climate change. The NHS SDU inhaler taskforce has recommended more moderate targets to reduce the carbon footprint of NHS inhalers by 50% by 2030.

PCRS involvement to date

PCRS has taken a considered approach to the whole area of environment and health, acknowledging that it is a complex issue extending beyond respiratory health, and that as a society focused on respiratory disease and community/primary care, there are others better placed to influence the agenda on environment and lung disease.

In the last 18 months, PCRS has contributed to the environment debate and the NHS SDU by working with the UK Inhaler group and having a seat at the NHS SDU table. Duncan Keeley wrote to the EAC in a personal capacity after their debate, in an attempt to put some perspective into their focus on pMDIs as a major culprit in global warming, and represents us on the NHS SDU committee, alongside the UK Inhaler Group.

We work closely with ASH to support any initiatives to reduce tobacco dependency and to minimise harm and take every opportunity to highlight the implications of tobacco smoking for people with respiratory disease.

While we do not expect to be heavily involved in the debates around climate change and lung disease, it seems timely to set out our position on the most important issues from our perspective as a society involved in supporting optimal respiratory care.

PCRS position

1. As a point of principle, we support initiatives to improve air quality, and minimise short- and long-term damage to the environment, particularly those with an impact on climate change resulting from greenhouse gases. However, we believe that a well-balanced and proportional approach to the contribution of inhalers to the much larger problem of global warming should be taken, bearing in mind that the NHS SDU estimates that only 4% of NHS greenhouse gas emissions are accounted for by inhaler usage, and only 3% of overall greenhouse gas emissions in the UK are accounted for by NHS activity.
2. We also support initiatives which seek to reduce the environmental causes of lung diseases, and also any which reduce or eliminate the factors which exacerbate existing lung disease.
3. The most recent BTS/SIGN guideline (2019) has introduced a statement about the global warming potential (GWP) of fluorinated gas propellants (HFCs) which are contained in pMDIs. We would prefer to see a broader statement about how to reduce the overall GWP contribution of asthma treatments. This would cover a variety of issues: early and accurate diagnosis with better education for HCPs diagnosing and managing respiratory disease, better patient education and adherence with preventer use in asthma, routine spacer use if using pMDIs, minimising propellant per dose where the change is acceptable to patients, recycling schemes for inhaler devices, switching from pMDIs to dry powder inhalers (DPIs) or soft mist inhalers (SMIs) where the change is clinically appropriate, safe and acceptable to patients. A multifaceted approach of this kind is more likely to be effective in reducing propellant use. Alternative low GWP propellants for pMDIs are also under development.
4. Propellant-free inhalers such as DPIs and SMIs do not contain propellants, so therefore have no global warming potential in comparison to pMDIs. PCRS supports measures to reduce potential harm to the environment from inhaler use. We are aware that there are countries where

propellant-free inhalers make up a greater proportion of inhaler use than they do in the UK. We therefore support the use of DPIs and SMIs where a DPI or SMI is acceptable to the patient and has the same efficacy and safety profile for an individual patient.

5. Increased utilisation of reusable inhalers or their components presents a further opportunity for decreasing the environmental impact. We support the choice, where appropriate, for devices already on formulary and support further developments in this area.
6. Doing the right thing clinically for individual patients must remain the primary focus of clinicians. In the same way that a clinician may consider the cheaper product if efficacy and safety are equivalent, so clinicians should only take environmental impact into account in selecting an inhaler device with the patient, if all other factors are the same.
7. We do not support policies that advocate 'blanket switching' of patients from one inhaler type to another in a practice or an area. This is not patient-centred and there is clear evidence that this is not good practice.^{5 6} Guidelines recommend that patients use inhalers that they have been trained to use correctly, which are chosen for their suitability to the individual, and that their inhaler technique be checked regularly.^{7 8} We encourage any decisions about inhaler choice to be made on an individual basis between clinicians and patients.
8. It is very important that the role of pMDIs in respiratory emergencies is recognised and protected.⁹ When patients have deteriorating control of their respiratory condition, they may lack the inspiratory effort required to deliver sufficient quantities of the medicine for adequate drug deposition. For this reason, we cannot support attempts to phase out the use of pMDIs altogether as this would be detrimental to patients needing to use inhalers when their control is poor and in emergencies.
9. PCRS recognises that consideration of medication and recycling is a small part of the environmental picture in respiratory care. Wider aspects of care to avoid waste include competent clinicians making an early and accurate diagnosis so avoiding travel to unnecessary appointments and treatment with unnecessary medication, optimising inhaler technique, encouraging high value non-pharmacological treatments and supporting self-care.

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Further information

Delivering Cleaner and Kinder Respiratory Healthcare: PCRS Incoming Chair View. Available at: <https://www.pcrs-uk.org/resource/delivering-cleaner-and-kinder-healthcare>

Parliamentary Environmental Audit Committee. Available at: <https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/469/469.pdf>

BTS statement on Environment and Lung Health 2019. Available at: <https://www.brit-thoracic.org.uk/about-us/governance-documents-and-policies/>

British Guideline on the management of asthma – SIGN /BTS DRAFT December 2018. Available at: <https://www.sign.ac.uk/assets/asthma-consultation-draft.pdf>

NICE COPD guideline 2019. Available at: <https://www.nice.org.uk/guidance/ng115/chapter/Recommendations>

FRESH AIR initiative – International Primary Care Respiratory Group. Available at: <https://www.theipcr.org/display/DoResearch/FRESH+AIR%3A+An+overview>

¹ Lim S, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 201. *Lancet* 2012;380:2224–60

² IPCRG FRESH AIR initiative. Available at: <https://www.theipcr.org/display/DoResearch/FRESH+AIR%3A+An+overview>

³ BTS Environment and lung health position statement, 2019. Available at: <https://www.brit-thoracic.org.uk/about-us/governance-documents-and-policies/>

⁴ Parliamentary Environmental Audit committee. UK progress on reducing F-gas emissions. 2018. "We recommend that low GWP inhalers should be promoted within the NHS unless there are specific medical or clinical reasons for not doing so. Promotion should include raising awareness of low GWP inhalers and training, amongst NICE, the medical community and patients. The NHS should set a target that by 2022 at least 50% of prescribed inhalers are low GWP. It should publish annual progress reports. We were disappointed to find that so few MDIs are disposed of responsibly. We therefore recommend that the Government should work with medical professionals, pharmacists, the pharmaceutical industry and patients to significantly improve the recycling of MDIs; this makes both environmental and economic sense. The Government should ensure that by 2020, at least 50% of MDIs are recycled. The Government should publish annual data showing progress in reaching and exceeding this target. It should also consider medical waste, such as MDIs, in its waste strategy." (Paragraph 27). Available at:

<https://publications.parliament.uk/pa/cm201719/cmselect/cmenvaud/469/469.pdf>

⁵ Thomas M, et al. Inhaled corticosteroids for asthma: impact of practice level device switching on asthma control. *BMC Pulm Med* 2009;9:1. Available at:

<https://bmcpulmed.biomedcentral.com/articles/10.1186/1471-2466-9-1>

⁶ Kaplan A, Price D. Matching inhaler devices with patients: the role of the primary care physician. *Can Respir J* 2018:9473051

⁷ NICE COPD guideline. 2019. Available at: <https://www.nice.org.uk/guidance/ng115/chapter/Recommendations>

⁸ BTS/SIGN guideline for the management of asthma, 2019. Available at: <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/>

⁹ NICE COPD guideline. 2019. Available at: <https://www.nice.org.uk/guidance/ng115/chapter/Recommendations>