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Large Carbon Footprint of pMDIs



Metered-dose inhalers (pMDIs) are only prescribed to a small proportion of the population and yet they account for nearly 6% of the carbon footprint of the NHS. This disproportionately harmful effect on global warming is because of the hydrofluoroalkane (HFA) propellants they use.

There are three main ways to reduce use of HFA propellants:

Pick the right inhalers

Optimise each patients' treatment and prescribe the most cost-effective low carbon inhalers suitable for the patient e.g. dry powder inhalers (DPIs) or soft mist inhalers, considering their licensed indications.

Make every inhaler count

Ensure people use all the doses in each inhaler and improve their technique to maximise effectiveness.

Return inhalers to pharmacy for safe disposal

Inhalers returned to pharmacy are incinerated which inactivates the HFAs, whereas inhalers that go to landfill will leach their HFAs into the environment over time. Encourage patients to return any used or unwanted inhalers to the pharmacy for safer disposal.

“Our current pMDI prescribing is equivalent to 2 million car journeys from Belfast to Dublin every year”

“Changing from a pMDI inhaler to a DPI has the same effect as installing wall insulation in your home.”

QOF Points to Support Lower Carbon Inhalers

An indicator relating to Salbutamol prescribing has been included in QOF for 22/23. From 1st April 2022, the QOF offers fourteen points to encourage the prescribing of salbutamol inhalers with a low carbon footprint. The table below shows estimated carbon emissions for the common salbutamol inhaler types. Pressured metered dose inhalers (pMDIs) have a significantly higher carbon footprint than Dry Powder Inhalers (DPIs) or soft mist inhalers.

Room for change

In NI, more than two million inhalers are prescribed every year. Over 60% of inhalers are issued as pMDIs, in contrast to the likes of Sweden which only prescribes 13% as pMDIs.

Safe switching

Practices should not undertake bulk switches of Salbutamol inhalers. There are inherent risks in switching patients' inhalers without discussing the change with them or counselling them face-to-face. Discussions with the patient provide an opportunity to assess therapeutic control and inhaler technique. Linking with local community pharmacies can help support any changes.

Salbutamol Inhaler	Device Type	Carbon emissions per inhaler (kg CO ₂ e)	Cost per inhaler
Ventolin Accuhaler 200mcg	DPI	0.58	£3.60
Easyhaler Salbutamol 100 mcg	DPI	0.62	£3.31
Easyhaler Salbutamol 200 mcg	DPI	0.62	£6.63
Salbulin Novolizer 100 mcg	DPI	3.75	£4.95
Airomir 100 mcg	pMDI	9.72	£1.97
Salamol CFC Free 100 mcg	pMDI	11.95	£1.46
Salbutamol CFC Free 100 mcg	pMDI	25.24	£1.50
Ventolin Evohaler 100mcg	pMDI	28.26	£1.50

Practices should access the Support Resources at [Respiratory – Primary Care Intranet \(hscni.net\)](#)

The table in the [PresQIPP guidance](#) details whether the switch would involve a change in drug, device, licensed indication or age range.

Ear Drops for Acute Otitis Media

The updated [NICE Acute Otitis Media Guidance \(NG91\)](#) recommends eardrops containing [phenazone 40 mg/g with lidocaine 10 mg/g](#) as a treatment option if there is no eardrum perforation or otorrhoea. The NI Formulary and [Microguide App](#) have been updated to reflect this change and also to remind prescribers to encourage self-care (where appropriate), before prescribing antibiotics.

Antibiotic resistance (AMR) is one of the biggest threats facing us globally and locally. Acute otitis media is a self-limiting infection mainly affecting children. Symptoms typically last for about 3-7 days, most children and young people improve within three days without antibiotics. Complications such as mastoiditis are rare. NICE highlights patients who may be more likely to benefit from antibiotics. Prescribers should reserve antibiotics for these situations, to help tackle AMR and keep antibiotics working.

Resources

- For preferred treatment options see the [NI Formulary](#). Download the MICROGUIDE app via the app store or google play and select 'Northern Ireland Primary Care' when prompted for trust
- Antimicrobial resources are available on the [Primary Care Intranet](#) and [Patient Zone](#)
- [TARGET](#) has produced a series of webinars and resources to support practices discuss antibiotics with patients, "Do I need an antibiotic?", "Back up/delayed antibiotic prescriptions: when to use them in primary care settings"
- Remote assessment decision points can be useful for example R2D2

R2D2



- R**ecurrent episodes?
- 2** Age under 2 years?
- D**ischarge perforation or otitis externa?
- 2** ears – bilateral

Actions

- Advise that the usual course of acute otitis media is about three days, but may be up to one week
- Recommend regular, maximum doses of paracetamol or ibuprofen as appropriate
- Consider eardrops containing [phenazone 40 mg/g with lidocaine 10 mg/g](#) for pain if there is no eardrum perforation or otorrhoea
- Consider no antibiotic or a back-up antibiotic prescription
- Highlight that antibiotic use may lead to resistant organisms
- If an immediate antibiotic is prescribed advise on the possible adverse effects such as diarrhoea
- Advise to seek medical help if symptoms worsen rapidly or significantly, do not start to improve after three days or if the child or young person becomes very unwell

NICE GUIDANCE

[NICE TA 801](#) Pembrolizumab plus chemotherapy for untreated, triple-negative, locally recurrent unresectable or metastatic breast cancer

[NICE TA 804](#) Teduglutide for treating short bowel syndrome

[NICE TA 808](#) Fenfluramine for treating seizures associated with Dravet syndrome

MANAGED ENTRY DECISIONS

Delafloxacin (Quofenix®)

Brivaracetam (Briviact®)

Bedaquiline (Sirturo®)

Teduglutide (Revestive®)

Diroximel fumarate (Vumerity®)

Ibrutinib (Imbruvica®)

Venetoclax (Venclyxto®)

Risankizumab (Skyrizi®)

Imlifidase (Idefirix®)

Roxadustat (Evrenzo®)

Abemaciclib (Verzenio®)

Durvalumab (Imfinzi®)

Tralokinumab (Adtralza®)

Upadacitinib (Rinvoq®)

Cemiplimab (Libtayo®)

Lenvatinib (Kispixy®)

Ruxolitinib (Jakavi®)

Pralsetinib (Gavreto®)

see [Managed Entry section](#) of NI Formulary

This newsletter has been produced for GPs and pharmacists by the Regional Pharmacy and Medicines Management Team. If you have any queries or require further information on the contents of this newsletter, please contact one of the Pharmacy Advisors in your local SPPG office:

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