The inhaler carbon footprint frequently asked questions have been compiled from questions asked arising from the inhaler carbon footprint webinar series. The answers are the views of the presenters. The recordings of the webinars can be viewed at:

* + The Climate and Ecological crisis: How medicines optimisation teams can respond to this health emergency 11th November 2021 – recorded - <https://www.prescqipp.info/our-resources/clinical-webinars/the-climate-and-ecological-crisis-how-medicines-optimisation-teams-can-respond-to-this-health-emergency/>
  + Inhaler carbon footprint resources: 25th November 2021 – recorded - <https://www.prescqipp.info/our-resources/clinical-webinars/inhaler-carbon-footprint/>
  + Inhalers and the environment for a greener NHS: 1st December 2021 – recorded - <https://www.prescqipp.info/our-resources/clinical-webinars/inhalers-and-the-environment-for-a-greener-nhs/>
  + Improving inhaler technique for a more sustainable NHS: 21st December 2021 -recorded - <https://www.prescqipp.info/our-resources/clinical-webinars/improving-inhaler-technique-for-a-more-sustainable-nhs/>

| **Question** | **Response** | **Category** |
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| Will the webinar be publicly available? | The webinar was recorded and is available on the PrescQIPP website: <https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/> . All of the inhaler carbon footprint resources are publicly available. | Access |
| Is there any link between poorer asthma outcomes when ICS is not implemented at Step 1 (England as opposed to GINA, Wales etc.), aside from significant environmental impact of SABA overuse? | None of the guidance suggests SABA alone. The BTS/SIGN guidance suggests regular low-dose ICS as first step. <https://www.brit-thoracic.org.uk/quality-improvement/guidelines/asthma/> . Unfortunately 1/3 of patients in the UK are on SABA alone. Bloom CI, et al. Asthma-Related Health Outcomes Associated with Short-Acting β2-Agonist Inhaler Use: An Observational UK Study as Part of the SABINA Global Program. Adv Ther. 2020 Oct;37(10):4190-4208. | Clinical |
| I am concerned about switching from Flutiform to Fostair as they contain different steroids. | This is a complex switch and would need to be done face to face with close patient monitoring and inhaler instruction if commenced. | Clinical |
| Any advice on balancing device harmonisation when using DPI by also using DPI SABA vs concern over difficulty using DPI SABA in an exacerbation-any pointers on identifying patients who should stay on SABA MDI/have an SOS SABA MDI? | Patient education and help with self management - recognising deterioration and acting accordingly - will limit the risk of acute episodes. This paper (<https://www.pcrs-uk.org/resource/emergency-mdi-and-spacer-packs-asthma-and-copd> ) considers this question. | Clinical |
| Where do you see the place for salbutamol BA MDI devices? Half carbon footprint than Ventolin, but significantly more expensive than standard MDI /DPI and not true advantage in coordination technique of BA MDI to DPIs ? | If a DPI could be used that would have a lower carbon footprint so I would use DPI first line. Some people don't have an adequate inspiratory flow for a DPI and poor coordination for a MDI so maybe here (or MDI and spacer). | Clinical |
| With limited time in clinic appointments, a move to remote consultations and some pharmacy services suspended, any top tips to counteract this? | Give patients the link to Asthma UK inhaler technique videos or other locally used inhaler technique videos, but suggest they watch it with another family member, and that person can compare the patient's technique with the video and correct accordingly. Suggest the person ask their community pharmacist to show them how to use and check inhaler technique when collecting their inhaler. Really important, especially when doing remote consultation, in communicating that getting inhaler technique correct is most essential in ensuring that medication reaches airways - motivating person to watch videos or speak to pharmacist. | Clinical |
| It’s not just the very old who need MDI - a lot of old and COPD patients may need MDI with spacers | And the young! Also has to be patient choice (with guidance). Experience of working with older patients with COPD is that most can use a DPI well if shown and if given the chance to try a few different devices. All DPIs require different ( and lesser or more) dexterity so this is often about getting the right DPI, not just ruling them out as a class. | Clinical |
| In a lot of cases the 7 steps is not practical - patient can remember 3 or even if in writing do 3. Important to mention that 7 steps depends on ability of patient- better the main 3 are remembered vs 7 not remembered or read. | Give patients the link to Asthma UK inhaler technique videos or other locally used inhaler technique videos, but suggest they watch it with another family member, and that person can compare the patient's technique with the video and correct accordingly. 3 good steps may not be enough for adequate technique. | Clinical |
| I don’t think videos are as good as f2f for older people in practice. The teaching has to be adapted to the ability of the patient. | Agree completely. We should be aiming to resume respiratory reviews as face to face reviews wherever possible, especially if inhalers are being optimised. | Clinical |
| Unfortunately the Asthma UK action plan minimises MART - it uses terms reliever /preventer. Is there a better PAP more aligned to MART? | The companies that produce Formoterol containing combination inhalers licensed for MART produce MART action plans, although they sometimes only reflect medication and miss off triggers etc. Look at a selection e.g. <https://d8z57tiamduo7.cloudfront.net/resources/Fostair-Asthma-Action-Plan_Version2.pdf> | Clinical |
| Is it practical under MART to rinse mouth as will put patient off using MART vs salbutamol? | Rinse after BD dosing, but not practical with PRN doses. The majority should be planned BD dosing so missing occasional PRN rinse is ok. | Clinical |
| Is the spitting after rinsing an evidence based or anecdotal /practical recommendation? | If the patient rinses and swallows any medication in the mouth will be washed into the GIT and absorbed systemically. Not such a problem in low doses but can cause side effects in high dose. Better to spit it out than swallow and absorb systemically. | Clinical |
| Excellent referring to 'treatment' inhaler rather than preventer. Best to call salbutamol -rescue inhaler for asthma. | I agree | Clinical |
| SMIs are not breath actuated. | They aren’t. | Clinical |
| The Easyhaler has a high resistance and requires a high inspiratory capacity. | They have a high resistance but most patients can use them if instructed correctly. Don't be too taken with the device specific information on the In-Check device. Appropriate selection of device for individual patients, there is no one size fits all. The best way to assess if a person can use an inhaler is to demonstrate technique, then give them a placebo and watch. If you know what correct technique looks like, you can then assess if it can be used effectively. | Clinical |
| Should we not consider the plastic as part of the carbon footprint? inhalers might differ and potentially DPI might be higher on plastic? | The PrescQIPP inhaler data table, attachment 1, provides the breakdown of the carbon footprint into things such as the device and packaging where manufacturers had this information available. You will see from the available data that the propellant’s carbon footprint far outweighs the carbon footprint of other components. | Data |
| Inhaler data is available for England, is it also available for Health Boards in Wales? | Data for Wales is available in the data tool. If you look at the 'select commissioner', click the drop down arrow and you will see all the HBs in Wales are listed. Select your HB and your data will be displayed. | Data |
| Are you planning on releasing any more inhaler switch comparatives, e.g. generic salbutamol to branded? | No further pre-set switches planned. The impact of a switch from generic salbutamol to a branded version can be viewed on the 'Inhaler switch tool' in the data tool. Select the inhaler you want to switch from and the inhaler you want to switch to and then view the cost and carbon footprint impact of the switch at the bottom half of the table. | Data |
| The data table contains everything except resistance of the device like on the In-Check dial. | The bulletin discusses the NICE patient decision aid which advises 'For patients with asthma it is suggested that a DPI device is a suitable option for asthma patients who can breathe in through their mouth quickly and deeply over 2 to 3 seconds.' PrescQIPP does not have information on the inspiratory rate for the devices mentioned. Due to Covid, there has been concern expressed over infection control measures and using the In-Check device as people are breathing into the device, even though disposal mouth pieces are used. An alternative is to use placebo devices from pharmaceutical companies. Many consultants prefer this as a guide as to whether the patient can use the inhaler correctly. Inspiratory flow is only one element in terms of inhaler technique. Inhaler videos are also useful as educational tools but it is really important to watch the patient using their device. | Data |
| Is your data used to measure carbon footprint? Total carbon emissions from all inhalers in the denominator (kgCO2e) | The table headers provide the units of measurement (gCO2e) Where there are large total numbers we have used K=1000 in the figures. The scorecard IIF indicators use KgCO2e. | Data |
| Will the inhaler data tool be refreshed on a regular basis so CCGs can see their progress? | The two measures for the IIF indicators are available in the PrescQIPP quality scorecard which is updated on a monthly basis - <https://www.prescqipp.info/our-resources/data-and-analysis/scorecards/> . We normally update the data pack 6 months and then 12 months after publication. | Data |
| License for DuoResp Spiromax has now changed to over 12s in asthma. | This was updated in v2.8 of the inhaler data table. | Data |
| How can I tell if my PCN or practice is above or below as your figures are in the 1000s? | You can compare your PCN or practice with others by selecting the practices or PCNs you want to compare yourselves with. The data selectors allow for a wide range of comparisons. You simply tick them in the box and the data is shown for these PCNs or practices. You can also look at the bulletin mapped which shows this data as a map. Alternatively, look at the PrescQIPP quality scorecard for the two IIF indicators which are updated on a monthly basis and are colour coded. | Data |
| Could you explain how we can check we are on track with the salbutamol inhaler indicator - we are finding it difficult to figure out the data/assess where we are and how many inhalers require review? | The salbutamol inhaler total carbon footprint tab in the data tool provides your baseline data. The data is available at commissioner, PCN and practice level. The PrescQIPP Quality scorecard, updated monthly, has the IIF Salbutamol average carbon footprint per inhaler KgCo2e indicator progress and trend charts included: <https://www.prescqipp.info/our-resources/data-and-analysis/scorecards/scorecards-one-stop-shop/> (subscriber access only)  MS: Indicator data for ES-01 will be available on the PCN Dashboard shortly. This data will be displayed even though IIF indicator ES-01 has been suspended for the remainder of 21/22. | Data |
| With the ES02 indicator - how can this be calculated to see what the target salbutamol prescribed and carbon emission should be? | MS: IIF guidance states the carbon intensities that will be used to calculate ES-02. These are taken from the PrescQIPP work. <https://www.england.nhs.uk/wp-content/uploads/2021/10/B0951-vi-network-contract-des-iif-implementation-guidance.pdf> | Data |
| With regards to taking used inhalers back to community pharmacies. Do they have to pay for their own waste disposal and if they are getting lots of inhaler returns this will increase their costs around waste disposal? | In England, NHSEI commissions collection and disposal of medicines (which would include inhalers) returned to community pharmacies. In Scotland and Wales, NHS Health Boards have this responsibility. | Disposal |
| Do you know if GSK is still doing their recycling programme? I tried to contact them but they never replied | The GSK recycling scheme has closed. Inhalers no longer required should be returned to pharmacy for destruction <https://www.recyclenow.com/what-to-do-with/inhalers-0> | Disposal |
| Are there any nationally funded programs in the pipeline to facilitate return and recycling of used inhalers? | The local NHS England and NHS Improvement team will make arrangements for a waste contractor to collect medicines (which would include inhalers )from pharmacies at regular intervals. <https://psnc.org.uk/services-commissioning/essential-services/disposal-of-unwanted-medicines/> . There are currently no nationally funded inhaler recycling schemes. | Disposal |
| Do any companies do inhaler boxes for used inhalers anymore ? | A number of previous company sponsored schemes have discontinued. All community pharmacies should be collecting inhalers for environmentally safe disposal as this is part of their essential service. | Disposal |
| Do you have searches on GP Vision system which is used in Wales and elsewhere? | No we do not currently have Vision searches. We have struggled to find anyone who has access to the system and who would be able to produce searches for us. If you know anyone who might be interested, please ask them to contact me [karen@prescqipp.info](mailto:karen@prescqipp.info) | Searches |
| Good to hear that changing inhalers takes time. However the IIF targets have already started and there is pressure from some PCNs to switch now without review. It would be better to relax this years targets to avoid blanket switching especially with pressure from industry. | MS: We have agreed a three-year trajectory for ES-01 and ES-02 and the changes asked in 21/22 were quite modest. Our threshold trajectories have been agreed based on modelling of the implied workload for general practice, ensuring that the reward on offer makes it worthwhile to undertake the patient conversations needed to switch patients safely. We have done all that we can to ensure that inappropriate/blanket switching in the absence of patient conversation does not take place – emphasising this point in guidance, providing a three-year trajectory for thresholds, and allowing ‘exception reporting’ for ES-01 by which a practice can remove a patient’s inhalers from the denominator if a dry powder inhaler is not indicated. We are therefore confident that practices and PCNs will do the right thing and only consider a change of medication in the context of a shared decision-making conversation, with suitable training on inhaler technique provided when there is a change of device. | Switches |
| Should we use salbutamol DPIs rather than pMDIs? What about the acute asthma situation- do we also need to provide an 'emergency pack' containing an pMDI and a spacer? | For patients that are able to use a DPI, this would be an appropriate choice of inhaler. Decisions on what to prescribe to individual patients need to be done with shared decision making. Most patients will be able to use their DPI during exacerbations. However a small proportion of patients will get severe exacerbations and not have the inspiratory effort to use a DPI. In this situation they are likely to need a spacer device as well. These patients should be offered an emergency pack of SABA pMDI and spacer. | Switches |
| As a quick strategy is it worth changing all Ventolins over to Salamol pMDI and then at annual reviews start to change patients over to DPI's- it just means patients will have to go through 2 changes? | In the inhaler carbon footprint bulletin, we discuss agreeing switch strategies at Area Prescribing Committee or equivalent meetings so that all key stakeholder views can be taken into account. The IIF indicators have been paused until April 2022 and so this gives more time to agree strategies and discuss lower carbon footprint alternatives with individuals. | Switches |
| How can you find inhaler switches which are in line with the local CCG formulary which are not included in the pre-set inhaler switches? | Local switches can be viewed using the 'Inhaler switch tool'. You can enter any 2 inhaler switches you are considering locally. There are 20 pre-set switches which you can use or otherwise as you agree locally. The 20 pre-set switches were chosen as we felt they could be popular choices, we can't pre-set every combination. | Switches |
| When will the inhaler carbon footprint data tool be updated? It says that it is undergoing an update which should be available this Autumn. | The previous Hot Topic resource on lowering the inhaler carbon footprint has been archived. <https://www.prescqipp.info/our-resources/bulletins/archived-publications/hot-topic-lowering-the-inhaler-carbon-footprint-archived/>  The updated data inhaler carbon footprint tools are available at <https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/> PrescQIPP have been updating with new products and changes. The visual data pack will be updated at 6 and 12 months. | Switches |
| I would be very helpful to have a salbutamol switch inhaler - from high carbon footprint to lower carbon footprint MDI inhaler | Salbutamol inhaler switches are available under the 'Switches / Practice switches from pMDI lower carbon alternatives' tab in the data tool. The bulletin also provides an overview of these. | Switches |
| The In-Check dial device is very helpful in checking the inspiratory capacity of patients for DPIs. However it does not cover all DPIs especially the newer ones like Wokair , Neumohaler and Tiogiva. Is it possible to get this information? | The bulletin discusses the NICE patient decision aid which advises 'For patients with asthma it is suggested that a DPI device is a suitable option for asthma patients who can breathe in through their mouth quickly and deeply over 2 to 3 seconds.' PrescQIPP does not have information on the inspiratory rate for the devices mentioned. | Switches |
| I read this recently (from June 20). Any comments or maybe separately from Andy? <https://letstalkrespiratory.com/the-future-of-inhalers/>  ‘’An intriguing innovation in pMDI technology will be the replacement of HFA-134a (tetrafluoroethane) and HFA-227ea (heptafluoropropane) propellants with HFA-152a (1,1-difluoroethane).2 Using HFA-152a instead of HFA-134a can reduce the environmental impact of inhalers by up to 92%.(Refs 2,3) The suspension settlement and re-suspension behaviour of salbutamol sulphate without any additional vehicle agents has shown to be significantly improved using HFA-152a.2,3 ‘’ | This new propellant is discussed in the inhaler carbon footprint bulletin <https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/> . | Switches |
| A number of large pharmacy chains dispense Ventolin (a high carbon MDI) for salbutamol MDI. This creates possible issues when doing a switch to Salamol as patient will have a different inhaler. Is it possible to check at a national level with the national pharmacy chains so we are aware of the impact before switching? | Prescriptions would need to be written by the brand name Salamol pMDI so that this inhaler is dispensed. We have advised in the bulletin that organisations discuss any planned switches with their local pharmacies, wholesalers and suppliers. If a prescription is written generically they could get a different inhaler every time the prescription is dispensed.  MS: We’ve consulted extensively with clinical experts on this issue and the universal view we’ve received is that there are no clinical risks or issues associated with switching from Ventolin to Salamol – although it may conflict with patient preference and therefore the need to talk this change through with patients may create workload both in community pharmacy and in general practice. However, we are quite comfortable with the implication that switching of this kind will happen – indeed our indicator has been carefully designed precisely to ensure that it does happen (i.e. it has been designed to ensure that there is an incentive to switch away from dispensing of high-carbon salbutamol options, when generic salbutamol MDI is prescribed). | Switches |
| Do you have any further information regarding potential shortages of Salamol and Airomir if lots of patients are switched to these brands? | Advice on discussing any planned switches with key stakeholders is included in the bulletin <https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/> . Teva have said that they will be able to cope with an increased demand of Salamol pMDI if the changeover is phased in. We recommend in the bulletin that organisations should discuss any planned changes with local pharmacies, wholesalers and companies. | Switches |
| Community Pharmacists are concerned about supply issues. There are not many low carbon SABA inhalers on the market. Is manufacturing being increased to meet the increased demand? | Teva has said they can cope with a phased switch over to Salamol pMDIs. It is important to discuss switch plans with local pharmacies, wholesalers and companies to ensure a smooth changeover. | Switches |
| Can salbutamol not be bulk switched to Salamol? | Advice on discussing any planned switches with key stakeholders is included in the bulletin <https://www.prescqipp.info/our-resources/bulletins/bulletin-295-inhaler-carbon-footprint/> . Teva have said that they will be able to cope with an increased demand of Salamol pMDI if the changeover is phased in. We recommend in the bulletin that organisations should discuss any planned changes with local pharmacies, wholesalers and companies. | Switches |
| We need also to think about patients preference which ultimately supports adherence. | Yes of course, that is one of the key messages in the bulletin and the NICE patient decision aid for Asthma supports this. | Switches |
| A lot of generic salbutamol is dispensed as Ventolin to which patients have a lot of loyalty. So any switch to Salamol pMDI will be challenging. It there a switch letter that can explain this to save reinventing the wheel? | Aarti Bansal replied that ‘a group of us are working with the Health Foundation to produce a set of patient-facing materials including this specific question. The higher volume in Ventolin gives a different feel. However patients sometimes think the medicine is working is they feel it at the back of their throat - which is actually a sign it is not getting to their lungs!’ | Switches |
| Regarding Ventolin to Salamol pMDI switches, it is worth considering Drug Tariff pricing for salbutamol being based on Category C Ventolin prices. Many multiple pharmacies are likely to have a deal with obtaining Ventolin evohaler. Also if patients are automatically switched to Salamol pMDI, I expect this would have implications on national stocks. | Yes, different pharmacies will have different deals which may mean they prefer dispensing Ventolin Evohaler when salbutamol inhalers are prescribed generically. For prescribers, it is worth finding out what the local pharmacies in your area can do and then either prescribe generic salbutamol or Salamol pMDI/Airomir. In Sheffield the CCG has looked into supply issues and decided they will batch switch all patients with an information leaflet. In addition, just a caution that the brand Salamol pMDI (and not Salamol Easi-breathe), will need to be prescribed to obtain the carbon footprint savings for using this device. Prescribing as generic salbutamol pMDI will have a lower carbon footprint than Ventolin Evohaler, but it is much less of a saving than if Salamol pMDI was prescribed. | Switches |
| Often these opportunistic conversations happen in remote consultations-has there been any research on the effectiveness of switching inhaler device without F2F inhaler technique teaching/check? (with careful patient selection of course eg young active people, using training videos) | Is it worth thinking about community pharmacists providing a new medicine service and show people how to use inhalers? Or consider booking for person to come in and see practice pharmacist/nurse/resp lead to go through technique face to face. This time invested in getting inhaler technique right will be worth it. | Switches |