



SUSQI PROJECT REPORT

Reducing the environmental impact of inhalers in patients with asthma across a PCN

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Date of Report: 1.8.23

Team Members:

- Mareeni Raymond, GP at The Heron Practice
- Humairaa Said, PCN Pharmacist at The Heron Practice
- Ruth Hallgarten, GP at the Allerton Road Medical Centre
- Joe Larkai, PCN Pharmacist at the Allerton Road Medical Centre
- Bharat Uppala, Woodberry Wetlands PCN Pharmacist
- Anil Ramyeed, Woodberry Wetlands PCN Pharmacist Lead



Background

Woodberry Wetlands PCN consists of 4 GP practices in Hackney. Of the 4 practices, representatives from 2, along with the PCN coordinator, attended an initial meeting to identify common goals. The problem of overuse of SABA inhalers was highlighted.

Hydrofluorocarbon/hydrofluoroalkane propellants from MDIs contribute 3.5% of the total carbon footprint of the NHS. Dry powder inhalers (DPIs) have a carbon footprint 18 times lower than MDIs and clinically, DPIs have been proven to be as effective as MDIs. The NEL asthma guidelines have been adapted to reflect the importance of reducing the use of SABA (short acting beta agonists), switching to dry powder inhalers if a patient has appropriate inhaler technique, and focusing on maintenance and reliever therapy in those patients who are overusing SABA.

There are many reasons why patients might over-request SABA, including misunderstanding their asthma management plan, poor inhaler technique, not realising they still have medicine in their inhaler, and having poor asthma control due to lifestyle and environmental factors. Some patients with asthma may have anxiety which can result in overuse of inhalers.

The “Why Asthma Still Kills” National Review report recommends that all asthma patients who have been prescribed more than 12 SABA’s in the last 12 months be invited for an urgent review of their asthma control. Improving the conversations we have at asthma reviews can empower patients to understand their asthma and control their asthma better, however staff and patients need to be aware of the many factors that might result in overprescribing and medication overuse. Talking about the environmental impact of inhalers, air pollution, active travel and lifestyle changes, as well as changing inhalers so that they are sustainable can improve the way a person views their condition and its management.

The environmental aims would be reduced carbon footprint of inhalers prescribed by switching inhalers and improving asthma control thereby reducing the number of prescriptions of inhalers.



This would in turn lead to reduced emissions as a result of transport to and from pharmacies and GP practices and reduce waste from empty inhalers. Educationally we hoped that staff and patients would better understand the carbon footprint of inhalers and non pharmacological ways to improve asthma control including having a healthy active lifestyle.

The financial implications are reduced costs of inhalers being prescribed and reduced attendances to the practice or hospital for exacerbations of asthma or poorly controlled asthma.

Specific Aims:

To work together as a PCN to improve asthma care for patients using high levels of SABA inhaler to:

1. Improve understanding of new asthma guidelines in staff carrying out asthma reviews
2. Introduce a system that will promptly alert clinicians of SABA overuse (6 or more SABA per year).
3. Arrange asthma reviews with a view to improving asthma care, reducing overuse of SABA and reducing our PCN carbon footprint.

Methods:

Stage 1 - Engaging stakeholders.

We held initial and follow up meetings to identify our aims and to agree on a plan for the project. Anil Ramyeed spoke to the senior prescribing adviser of the medicines optimisations team to find out what work was being done at NEL level to ensure we were not reinventing the wheel, and as there was no respiratory lead at the time and no specific plans shared regarding our aspect of asthma management, we continued to work on our project. Follow up meeting invitations were sent to all PCN pharmacists and the two practices taking part.

Stage 2- Research.

We shared resources between the team members including recent SusQI projects (1,2,3) looking at reducing the impact of SABA inhalers.

Stage 3: Patient reviews

In view of the short time period of the project, we agreed to focus on a small cohort of patients who had requested 6 or more SABA inhalers in the past 12 months. We identified patients on clenil as preventer who were over requesting SABA inhalers and invited them via text messages for face-to-face reviews. 10 patients were identified at Allerton Road and the reviews were carried out by the pharmacist for the 9 patients who attended. Heron practice had a total of 35 patients.

The pharmacists at each practice were briefed about the asthma guidelines and how to discuss greener inhaler prescribing and asthma care and the intention was to incorporate this into discussions with the patient at their reviews. Previously asthma reviews were annual reviews carried out by nurses and pharmacists and doctors in the practices, and where asthma control was poor or inhaler technique might need reviewing, or if an inhaler was changed, a further review might be added at three or 6 month intervals. Reviews had focused on inhaler technique and up-titrating inhalers without taking into account the latest NEL guidelines and greener inhaler guidelines.

So far 6 have been reviewed by the clinical pharmacist and 6 by the practice nurses. The aim of the reviews were to

- optimise asthma care



- minimise carbon footprint of inhalers by switching to DPI/SMI if appropriate or choosing a brand and regime of MDI with the lowest gas emission.
- educate patients in order to reduce over requesting and wastage.
- returning used/unwanted inhalers to pharmacies

Stage 4: Education

At clinical meetings Dr Raymond shared the project aims and objectives and engaged clinicians at The Heron Practice to opportunistically reduce SABA prescriptions and reinforce the messages from the asthma reviews undertaken as part of the project. At the PCN meeting Dr Raymond shared progress with the other practices in the PCN.

Outcomes

Unfortunately, not all nurses attended the clinical meetings outlining the project and the changes to asthma reviews. As some staff, particularly nurses, had not attended the meetings, some reviews were carried out in the old way. The pharmacists, who had been trained and attended the relevant meetings, considered the environmental aspects of the inhalers, explored the reasons for SABA overuse and aimed to optimise treatment during their reviews.

We created a data collection spreadsheet for reviews.

We recognise the importance of both nursing and pharmacy staff training to embed environmental considerations into asthma reviews. Training sessions, to update staff knowledge on guideline-adherent asthma care, are planned in September for pharmacists and nurses which will be lead by Dr Raymond for the PCN prescribing and nursing team.

Next steps:

The plan is to widen the search to identify all asthma patients requesting 6 or more SABA in the past 12 months. The aim is to review all the patients and trialling a new prescription system for SABA inhalers. The focus will be on patients requesting the most SABA inhalers and/or not ordering their preventer. We could change prescriptive practice by giving patients one SABA during review and send a prescription for 2 more (one/RX) using eRD and set the duration at 180 days. Therefore patients will have access to 3 SABA/12 months and minimise the risk of inappropriate ordering by the patient or pharmacy. During the reviews, patients will be counselled that if additional SABA is needed, they will need to make an appointment with a clinician who can then make the appropriate intervention. The above needs to be discussed with all prescribing clinicians and the local pharmacies so that patients can receive further information if necessary and do not get conflicting advice.

The NEL guidelines and environmental impact of inhaler guidelines can be daunting for clinicians who are used to the old pathways. We could suggest to the EMIS template managers that the templates include prompts to discuss environmental considerations. It is also clear that attendance at clinical training is important and for those who miss the training they should arrange catch up sessions with the relevant trainer. We are planning a wider nursing and pharmacy team meeting across the PCN to update them on the guidelines and the way asthma reviews can be improved.

Measurement:

Patient outcomes:

It was not possible to measure changes to clinical outcomes in 10 weeks, however each practice can continue to measure the number of inhalers prescribed per patient in the next 6 month period compared to the previous 6 month period. Practices can then review at a year to see if the changes have been sustained. It would also be useful to see if hospital admissions/A+E attendances and acute exacerbations of asthma presenting at the practice are reduced over that period compared to the previous year.

Potential patient outcomes of the project are summarised in the results section.

Environmental sustainability:

We used the Prescripp emission factors for different types of inhalers and applied this to changes made in inhaler types and/or reductions in number of inhalers use per patient.

Economic sustainability:

<https://www.dontwasteabreath.com/view/facts>

Social sustainability:

Talking about the environmental impact of inhalers with patients as well as the benefits of active healthy lifestyles will improve the way people view their illness and their long-term behaviours.

Results:

Allerton Road

Of the 10 patients identified, 9 patients have been reviewed so far. This is a summary of the findings:

- Stepping up treatment Treatment was stepped up in 2 patients. In one case Clenil was stepped up to Fostair Nexthaler DPI. In the other patient the dose of inhaled steroid was doubled.
- Compliance issue - Compliance with inhaled corticosteroid was poor in 3 of the patients
- Pharmacy Overordering- SABA was overordered by the pharmacy in 3 patients.
- Inappropriate Rx -2 patients were inappropriately being prescribed duplicate corticosteroid inhalers and one patient was receiving duplicate Long Acting Beta Agonist (LABA).
- Dose rationalisation -Clenil 100 were changed to Clenil 200 in 2 patients to reduce the number of puffs required for the same dose.

Heron practice

Of the 35 patients identified, 12 have been reviewed so far. This is a summary of the findings:

- Combination inhalers - Separate ICS and LABA inhalers were combined into one inhaler in 2 cases as per guidelines. In one patient with high use of ICS, LABA AND SABA, this was not considered or discussed.
- Stepping up treatment - 1 patient was stepped up from ICS to ICS+LABA. It was noted that in this case +2 above cases the dose of ICS was doubled when switching from clenil to Fostair. There was no documented reason to explain why the increase in dose. Could this be a lack of awareness that beclometasone in fostair is approx. twice the potency of standard beclometasone??

- MART Regimen -Except for one case, there was no consideration of MART in other appropriate cases.
- Reasons for overordering - 2 patients reported overordering by pharmacy/2 patients admitted discarding partly used inhalers on receipt of new ones.
- Switch to DPI - 2 patients were switched from MDI to DPI. In about 30% of cases, there was no consideration or discussion about possibility of switching from MDI to DPI.
- Spacer - Use of spacer was encouraged in all appropriate cases.

Improving asthma care through patient education and quality reviews will result in less SABA use and reduced consultations for worsening symptoms or exacerbations.

Environmental and economic sustainability:

Allerton Road

Total annual Carbon emission prior to reviews	Total annual (Projected) carbon emissions following reviews (kgCO ₂ e)	Potential annual Carbon reduction (kgCO ₂ e)	Cost (£) implication
2,088 kgCO ₂ e	1,384 kgCO ₂ e	704 kgCO ₂ e	£640 savings

A significant % of the carbon reduction and of the savings were achieved by addressing the inadvertent prescribing/system errors.

Heron Practice

Total annual Carbon emission prior to reviews	Total annual (Projected) Carbon emission following reviews	Potential annual Carbon reduction	Cost (£) implication
4,359 kgCO ₂ e	3,091 kgCO ₂ e	1,268 kgCO ₂ e	Neutral

(<https://www.dontwasteabreath.com/view/preventer%E2%80%94inhaler>)

The potential carbon reduction is based on the 4 patients whose inhalers were changed using combination inhalers and/or switching from MDI to DPI. Of the 6 patients where no changes were made, 2 had declined a switch to a DPI. There was no documented reason why changes were not considered or discussed in the other 4 patients.

Social sustainability:

The clinicians are keen to attend the planned asthma training sessions to update their knowledge on guideline-adherent asthma care.

The involvement of community pharmacy to help manage SABA requests by patients will further ensure that we have a workable system in place.

Discussion:

Barriers / challenges encountered:

clinical training:

- Clinicians training - non-attendance and not following up with those who did not attend the training



- Ensure that all clinicians and practice staff are updated and fully onboard with the new system for SABA prescriptions by adding this to shared folders online and signposting staff to the NEL guidelines on their website

Community pharmacy engagement:

- Cooperation from the community pharmacist and ensuring that their members of staff are aware that SABA should not be requested inappropriately. Unfortunately certain pharmacies request old inhalers and this has been highlighted at previous meetings with them. We will reiterate this in the next PCN meeting where they usually attend.
- Pharmacies to promote safe disposal of inhalers and counsel patients on how to recognise when an MDI with no dose counter is fully used up.
- Joseph highlighted 1 episode of system error/problem - old prescriptions still continuing for one patient despite new more sustainable prescription put in place, despite staff cancelling the order.

Patient engagement

- Patients not responding to review invitations.
- Patients belief i.e. Patients adamant that their asthma is well controlled in spite of regular SABA usage. Patients with the condition for many years refusing to be persuaded.

The prescribing errors picked up during the project were discussed with the prescribing lead GP and have been reported via the 'Learning from patient safety events' website so as to minimise recurrence. It is recognised that these errors can be harmful to patients, a waste of NHS resources and add to the carbon footprint of prescribing.

Next steps:

The plan is to widen the search to identify all asthma patients requesting 6 or more SABA in the past 12 months. The aim is to review all the patients and trialling the new prescription system for SABA inhalers. The focus will be on patients requesting the most SABA inhalers and/or not ordering their preventer.

Conclusions:

The above results also show that system error and/or inadequate reviews can lead to poor asthma care alongside significant financial and carbon waste. Hence the importance of adequate staff training and allowing adequate time for reviews and follow up.

The project has highlighted that under the current system patients requesting excessive SABA are not promptly picked up and reviewed. It will be useful to see if the proposed new system for issuing prescriptions for SABA inhalers leads to any significant improvement in the trial patients.

The key elements that contributed to the success of this project was the proactive approach healthcare professionals took to review these patients whilst continuing to learn about different inhalers and carbon impact. There were teaching sessions for nurses and healthcare assistants as well as GPs to help spread awareness about the impact of inhalers and ways to move forward. The main learning point was patient education and by making patients aware of how the condition works, inhalers and lifestyle this will allow patients to make informed decisions to improve their quality of life whilst also taking into account the environmental impact.



Steps have been taken to continue learning and continue reviewing patients with asthma. Regular nurse meetings with carbon impact on the agenda will help keep our focus on incorporating change into our asthma reviews.

In the future we would like to replicate the project so that practices that did not participate could identify the barriers to engagement and help to overcome these to carry out a wider project.

References

1. Winning team for Swansea Bay, Wales: SusQI Project: Incorporating decarbonisation into Pharmacist-led asthma clinics, Pharmacy Team | Sustainable Healthcare Networks Hub
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5. <https://www.dontwasteabreath.com/view/preventer%E2%80%94inhaler>

