Greater Manchester Provider Pharmacy Delivery Partnership

Greater Manchester Pharmacy Sustainability

Good Practice Guide

Contents

SECTION 1: Good Practice/ Suggestions

This is a guide for integrating sustainability into pharmacy initiatives, projects and delivery, following on from CPD Training delivered by the Greater Manchester Pharmacy Sustainability Group, June & July 2024.

The training was initiated by the Group to ensure that there is a level of awareness in the GM Pharmacy Services on the current status of climate change and as an effort towards Net Zero services, the potential for change within the service to reduce the carbon impact. During the training, over 50 ideas were put forward by Pharmacy colleagues across Greater Manchester from the seven training sessions and condensed them into broad categories.

The purpose of this Good Practice guide is to consider, incorporate and measure carbon impact, as it has similar value to the service as cost savings, quality, patient experience and time.

Patients Own Drugs

- Patient engagement: Educating patients, making them aware and their participation is very important. Contact with patients before admission or at admission.
- Awareness raising campaigns for PODs: TV campaigns, radio campaigns, posters on corridors, social media, basic education posters could be designed on the ward.
- Engagement with NWAS staff in EDs – often ambulance staff have time during handover.
- Specific POD bags: Use specific-coloured bags to show patients drugs brought from home. Consider some alternatives to plastic. Ambulance service has been using specific green bag to distinguish drugs belonging to patients – attempt to keep them safe and with the patient.
- Processes for keeping track of PODs:
    - On admission we ask patients what meds they have at home as well as what they have brought into hospital with them. We record this on the meds rec document. Then when the patient goes home, we refer to this document and only supply meds that they do not have a supply of either in hospital or at home.
    - Accurate recording on medication reconciliation. Has patient brought medication on admission? Can families bring medication into hospital? Only dispensing new medication.

Resources are available to support the Patients Own Drugs campaign.

There are also audit tools to demonstrate the impact of Patients Own Drugs on different aspects of the service. Please contact the Pharmacy Programme Team: **the-christie.gmpharmacy@nhs.net.**

Waste Reduction

- Lower medication waste by supplying the optimum amount to the ward and recycling returned medication from the ward.
- Reduce waste of medication
- Ensure good medicines storage and keep good stock rotation to avoid waste.
- Switch patients to reusable insulin pens rather than penfils.

- There are already processes to recycle the medication. Technicians remove on top up from wards and return if suitable full strips. At some trusts an ATO will go around the wards and empty the medicines waste bins and bring back stock that is worth keeping, i.e. full packs and high-cost drugs.
- Reducing the use of plastic bags. Single-use plastic bags are often used when it's not necessary.
- Reduce plastic bags in the workplace. Segregation of waste, working with Waste Officers.
- Pharmacy packaging
- Reusable packaging to transport drugs from pharmacy to wards
- Recycling using depot injections - similar to how some diabetic injections are being recycled.
- (Insulin and Epi) Pen recycling
- Recycling non-confidential paperwork, and medicines boxes, recycle correctly.
- Medicine stock rooms on the north side of a building to be out of direct sunlight, to stop drugs overheating in summer (extend lifetime).
- Reduction in packaging. Change to more sustainable delivery despatch bags.
- Use of electronic information resulting in the use of paper.
- Educate ward staff and others working in the hospital on correct waste streams.
- Review ward stocks
- Sites and areas audit consumables in use as many have similar use but historically haven't changed as unaware of what is available. Look at companies closer or in UK.

Prescribing Changes & Prevention

- Stop unnecessary medicine /Overprescribing.
- Deprescribing
- Green prescribing
- Supporting Pharmacy staff questioning why meds have been ordered if they have already been dispensed, rather than blanket dispensing.
- Prevention: HBA1c monitoring as standard for patients with severe mental illness to help detect pre-diabetes
- Consider prescribing practice, and not just in hospital, so that patients are already on more sustainable options when admitted.
- Therapeutic switching of risperidone depot injections (a fridge line) to paliperidone. The depot (its prodrug) is generic and not a fridge line and is a less frequent injection.
- IV to oral switches.
- Training people how to take tablets, avoiding liquids and IV (presentation on SPS June 2024). Technicians in some GM trusts are starting to be involved in a PILL School in RMCH to start making moves of switching children from oral liquids to tablets.
- 1-1 patient counselling particularly on discharge from hospital to prevent re-admission to push medicines optimisation.

- Guidelines for asthma are likely to change to maintenance and reliever therapy (MART) with one inhaler (instead of a SABA + separate ICS+/-LABA inhalers. This presents an opportunity to switch patients to DPIs. Ventolin brand salbutamol MDI has one of the worst carbon footprints (higher than Salamol MDI). Ventolin is required for treating patients on alcohol detox units.
- Encouraging prescribers of the benefit of changing patients' medicines for those with a lower carbon footprint.
- Streamlining where patients get their medications from.
- Managing the number of wholesale deliveries (considering the supply chain and carbon impact for products).
- Central delivery area for companies delivering to dual sites. Reducing costs of delivery charges.
- Reducing the number of deliveries of meds, balance of holding stock vs ordering when required.
- WFH where possible, for meetings which don't require us to be on site.
- Avoiding unnecessary travel between sites if work can be managed remotely.
- Managing the number of inhaler suppliers.
- Reduce travel between sites.
- Car sharing.
- Fund further free electric charging points to NHS sites.
- Timely repairs to the building infrastructure.
- Central holding of stock for multiple wards in a shared and convenient location to reduce the stock held.

SECTION 2: Guidance for Carbon Footprinting

Cheat Sheet for Measuring Carbon

(Summer 2024)

The guidance below is copied from **Centre for Sustainable Healthcare** – Measuring Environmental Impact Document (found within the **Resources** section of their website).

What is a carbon footprint?

A carbon footprint is the sum of greenhouse gas (GHG) emissions attributable to a given process. Six different types of gases are commonly included; as each has a different global warming potential, the quantities are expressed in "carbon dioxide equivalents" (CO_2e). This is shown in Table 1 below.

The impact of a QI project on the NHS carbon footprint can be estimated by converting data for example on services, consultations, hospital admissions, travel and other activities into kilograms of CO_2e.

Carbon footprint (kg CO_2e) = activity or resource use x GHG emissions factors

A GHG emissions factor is the average emission rate of a given resource. Emissions factors can be found in databases, some of which are publicly accessible (e.g. those published by the **UK Government Department of Business, Energy & Industrial Strategy,** BEIS).

Planning your carbon footprint study

Step 1. Define the goal and scope of your study.

Do you want to understand the make-up of the carbon footprint of the entire service or just to quantify the impact of your specific QI project? Will you want to be able to compare with other projects or services? Think about how you will use the study results as this will affect the data you choose to collect.

Step 2. Identify the resource that you will measure (set boundaries, create inventory)

This will be based on: which resources you expect to change as a result of your project, the practicalities of data collection, and the available emissions factors for conversion into CO_2e.

First consider the resources/activities required to deliver the service before and after your change. These may include, patient and staff travel, energy, medications, medical equipment/supplies, non-medical equipment/supplies. Tables to do this can be found in the Studying the System Section. You can use this table to review the potential impact of your change on different categories of resource use – and to consider how it could be measured. Include any resources needed to introduce the change – e.g. new equipment.

It is also important at this stage to consider what emissions factors you will apply in Step 4, in order to convert your data into CO_2e (see sample emissions factors at end of the document). You are unlikely to have emissions factors available for individual medications or items of medical equipment and may therefore need to track changes in financial spend for these categories. Depending on your QI project, it might be easiest to estimate the carbon impact from changes in units of healthcare activity, such as outpatient appointments, A&E attendances, inpatient bed-days.

Finally, write down what you are including in your carbon footprint study and what you are not. Without this, it is not possible for others to interpret your results or make comparisons.

Step 3. Measure the resource utilisation (collect data).

Gather the data for each resource category that you have identified and calculate the change in utilisation as result of your QI project.

Step 4. Attribute a carbon cost or footprint to the resources used (apply emissions factors).

Using Table 2 ‘Calculating change in carbon footprint’ in the Measuring environmental impacts form, enter the data you collected in Step 2 on activity/resource and the emissions factor you have selected – now multiply these together and add up the results!

SECTION 3: List of Useful Resources

a. Your medicines matter:

Medicines Waste Campaign supported by the GM Pharmacy Sustainability Group, to encourage patients to bring in their medicines when admitted to hospital for medicines reconciliation, taking while in hospital, and for planning the medicines required for discharge. **Your Medicines Matter :: Greater Manchester Diagnostics Network**

b. Carbon Footprint of healthcare activities & fuller guidance on how to carbon footprint:

Centre for Sustainable Healthcare**:** **https://www.susqi.org/templates** scroll down to the document "Environmental outcomes: carbon footprinting for healthcare".

In the appendix, provides the carbon factors relating to healthcare, including medical supplies, anaesthetic gases, inhalers, PPE, non-medical suppliers, travel, energy, water, waste disposal, & units of healthcare activity.

c. Carbon Factors used for national NHS report by the Greener NHS Teams

Available to download through NHS Futures Greener NHS pages.

Carbon factors for all elements of the NHS Carbon footprint
https://future.nhs.uk/sustainabilitynetwork/viewdocument?docId=186167109&done=OBJChangesSaved

Carbon factors for the supply chain (i.e. anything purchased) per eClass or SIC code of product
https://future.nhs.uk/sustainabilitynetwork/viewdocument?docid=179391429&done=DOCCreated1&fid=40486576

Clinical activity carbon emissions factors for care pathway appraisal
https://future.nhs.uk/sustainabilitynetwork/viewdocument?docid=205833669

c. Carbon footprints of drugs: Yewmaker MCF Formulary

https://www.yewmaker.com/mcf-classifier

The method of this carbon calculation focuses on the drug's production process only, so does not account for transport miles, for example. The method calculates each medication's 'process mass intensity' and global warming potential, and groups medicines in a low/medium/high carbon category. More detailed method notes can be found **here**.

d. Carbon footprint of paracetamol tablet vs IV

https://www.sciencedirect.com/science/article/pii/S0007091223007250?via%3Dihub

Davies et al, 2024 used a life cycle assessment to compare IV to tablet form paracetamol. This includes production, formulation, packaging, sterilisation, distribution, use, disposal.

e. Carbon Factors of everyday activities and things: How Bad are Bananas book:

"How Bad Bananas: The Carbon Footprint of Everything" book by Mike Berners-Lee **https://howbadarebananas.com/**

f. Centre for Sustainable Healthcare:

Courses, case studies, resources and green plans. **https://sustainablehealthcare.org.uk/**

g. Principles of sustainable healthcare in pharmacy practice:

Pharmaceutical Journal: **Principles of sustainable healthcare in pharmacy practice - The Pharmaceutical Journal**

h. Taking the temperature of embedding environmental sustainability in pharmacy practice:

Pharmaceutical Journal: **Taking the temperature of embedding environmental sustainability in pharmacy practice - The Pharmaceutical Journal**

i. RPS Greener Pharmacy Toolkit:

Royal Pharmaceutical Society: **RPS to develop sustainability guidance for pharmacy teams**

j. Respiratory Carbon Impact Dashboard

ePACT2, access required: **Oracle Analytics Interactive Dashboards - Respiratory - Carbon Impact Dashboard**

k. GM Low Carbon Inhalers Dashboard

Tableau access required: **Low Carbon Inhalers: Total Carbon Footprint - Tableau Server**

l. NHS GM Medicines Waste Campaign

Patient Led Ordering: **Reducing medicine wastage in Greater Manchester. | Greater Manchester Integrated Care Partnership**

m. GM Asthma

Greater Manchester Asthma Guideline for all adults 18 and over 2024 **GM-asthma-guideline-2024-for-web.pdf**

SECTION 4: GM Pharmacy Programme Resources

The GM Pharmacy Sustainability training is available as a video via the QR code, however there is also the presentation itself if trusts wish to run the training themselves, or as GM, in the future.

greatermanchesterdiagnostics.nhs.uk/application/files/5617/2319/2999/GM_Pharmacy_Sustainability_-_CPD_Training.mp4

To share other ideas, or access further resources for GM Pharmacy Programme and Sustainability, please access the GM Diagnostics website (**Pharmacy :: Greater Manchester Diagnostics Network** or QR code) or **email: the-christie.gmpharmacy@nhs.net**

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