

# Inhaler prescribing errors – do they matter?

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## Introduction

Prescribing inhalers is becoming more complex due to the number of products on the market. National guidance does not recommend prescribing inhaler ingredients from the same drug class.<sup>1,2</sup>

MLCSU Central Lancashire Medicines Optimisation Team (MOT) identified inhaler prescribing errors where patients had received prolonged courses of two ingredients from the same drug class, resulting in side effects and hospital admissions.

## Aims and Objectives

The ultimate goal was to reduce the number of duplicate inhaler prescribing errors in Central Lancashire by:

- Auditing all GP practices to
  - Review the appropriateness of inhaler prescriptions containing duplication errors.
  - Determine the number of patients experiencing harm from inhaler prescribing errors, based on side effects recorded and secondary care intervention required.
- Informing clinicians of patients with inhaler errors and providing recommendations for improving patient care.
- Sharing learning across all sectors of the ICS and creating a prescribing guide to reduce the number of future errors.

## Method

EMIS searches were created by the MLCSU MOT to identify patients prescribed inhalers containing two long acting beta2 agonists, two antimuscarinics or two inhaled corticosteroids.

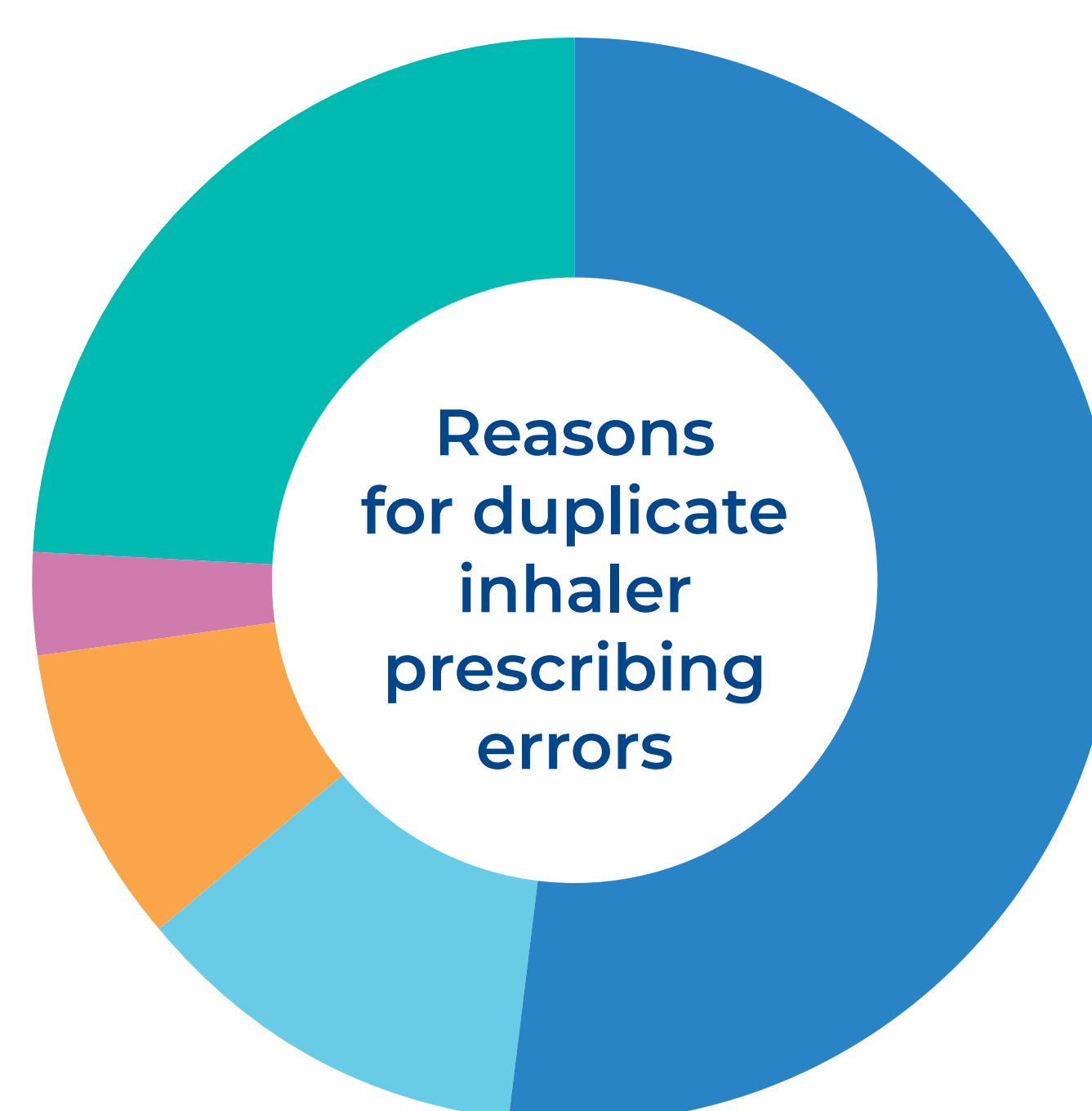
We ran the searches and completed an audit in 47 GP practices. Patients actively collecting multiple inhalers from the same drug class were referred to practice clinicians for a respiratory review to discuss inhaler use and stop the duplication. The audit excluded patients prescribed two inhaled corticosteroids recommended by secondary care for severe asthma, and patients prescribed devices that require separate prescriptions for refill cartridges.

*“The audit based on identifying duplicate inhaler was one of the best audits I have come across in a long while. It picked on a very common error that GPs make especially when issuing meds. We take inhalers very casually and usually don’t think much in issuing inhalers or restarting one. It was interesting to note how patients develop side effects from the combination use which all went away on stopping use. Good job team. Well done. Has certainly changed my practice as GP.”*

Dr A. Ashfaq, GP

## Results

- 360 patients** were prescribed two inhalers containing duplicate ingredients from the same drug class.
- 18% (n=68)** were actively using duplicate inhalers. Of these,
  - 7 were at high risk, experiencing side-effects (such as palpitations, full body tremor, uncontrolled hypertension and ECG changes) or requiring admission / referral,
  - 61 patients had no evidence of side effects recorded at the time of the audit.
- 29% (n=104)** had a previously recorded respiratory review with a clinician whilst prescribed a duplicate inhaler and the duplication was not identified or removed.
- 64% (n=231)** of errors were due to general practice prescribing systems
- £22,789 annual savings** generated by stopping 68 inhalers, reducing waste and carbon footprint for the NHS
- A further £49,719 of potential saving made by preventing iatrogenic side effects and associated hospital admissions.



- 52%** Inhaler titrated or device switched, old inhaler not archived
- 12%** Request for old inhaler reauthorised
- 9%** Intentionally prescribed by HCP in Primary Care
- 3%** Started by Secondary Care
- 24%** Other

## Discussion and Conclusion

Prescribing errors with inhaler ingredients are frequently overlooked by clinicians in primary care, secondary care and community pharmacy. Inhaler ingredient duplication is not routinely considered when investigating symptoms which could be attributed to inhaler side effects.

Awareness of the risks of duplicate inhaler prescribing has been raised across all healthcare sectors within the ICB. The MLCSU MOT delivered training sessions, issued prescribing newsletters, produced case studies and created an easy reference prescribing guide. Prompting several GP Practices to re-evaluate their prescribing systems and policies.

This safety-focused project has raised awareness of the frequency and dangers of duplicate inhaler prescribing amongst clinicians. Improving the quality of inhaler prescribing, reducing side effects and the likelihood of further prescribing errors, patient harm and hospital admissions. In addition to reducing waste, carbon emissions and generating substantial cost savings.

## Quick reference prescribing guide to prevent inhaler duplication errors

Name of Drug Class	SABA	SAMA	LAMA	LABA	ICS
	Short-acting beta2 agonist	Short-acting muscarinic antagonists	Long-acting muscarinic antagonists	Long-acting beta2 agonist	Inhaled corticosteroids
Generic drugs names included <small>NOTE: the ending helps identify the class</small>	Salbutamol Terbutaline	Ipratropium (Atrovent)	Tiotropium Aclidinium Glycopyrronium Umeclidinium	Formoterol Salmeterol Olodaterol Indacaterol Vilanterol	Beclometasone Fluticasone Mometasone Budesonide Ciclesonide
Rules to observe when prescribing multiple inhalers	Can be prescribed with any other inhaler	Should not be prescribed with another muscarinic antagonist e.g. SAMA or LAMA	Should not be prescribed with another muscarinic antagonist e.g. SAMA or LAMA	Should not be prescribed with another long-acting beta <sub>2</sub> agonist (LABA)	Two ICS's can be used together under secondary care supervision, often Ciclesonide.
Examples of combination devices available <small>Where errors are most likely to occur</small>			LAMA / LABA Combinations e.g. Duaklir®, Ultibro®, Spiolto Respimat® etc.	LABA / ICS Combinations e.g. Fostair®, Symbicort®, Seretide®, Combisal® etc.	
			LAMA / LABA / ICS Combinations e.g. Trelegy Ellipta®, Trimbow®, Trixeo® etc.		

1. Chronic obstructive pulmonary disease in over 16s: Diagnosis and management: Guidance [Internet]. NICE. National Institute for Health and Care Excellence; 2018 [cited 2023Jan26]. Available from: <https://www.nice.org.uk/guidance/NG115>

2. Asthma: Diagnosis, monitoring and Chronic Asthma Management: Guidance [Internet]. NICE. National Institute for Health and Care Excellence; 2017 [cited 2023Jan26]. Available from: <https://www.nice.org.uk/guidance/ng80>

