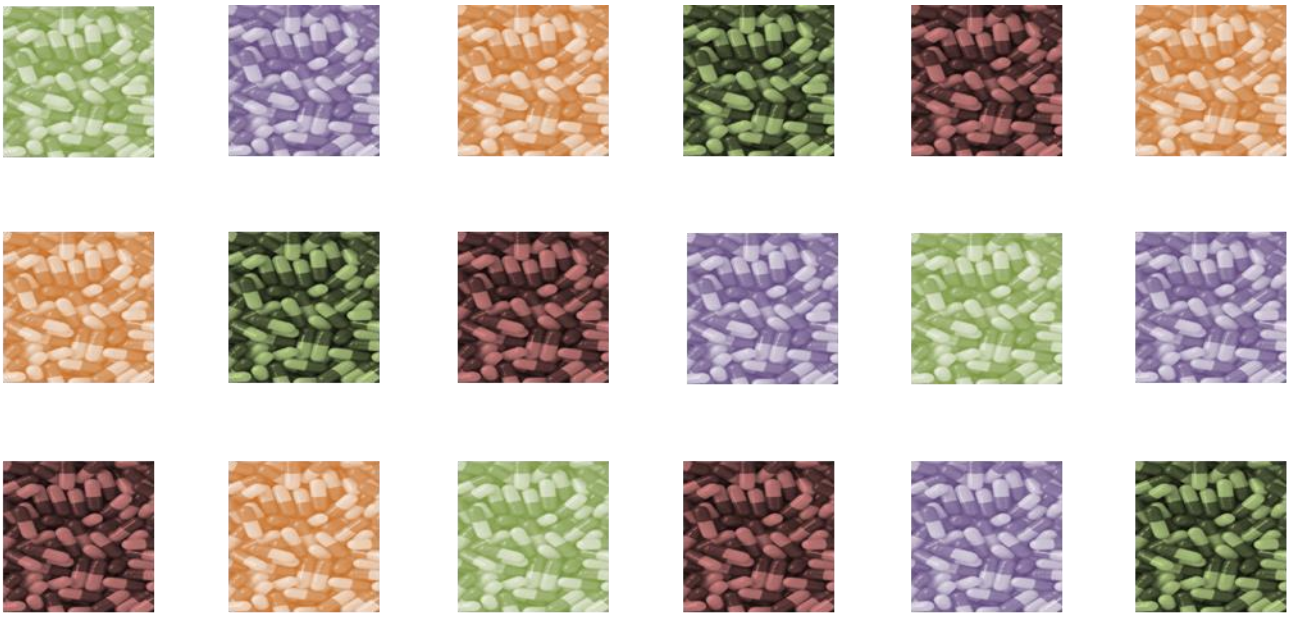
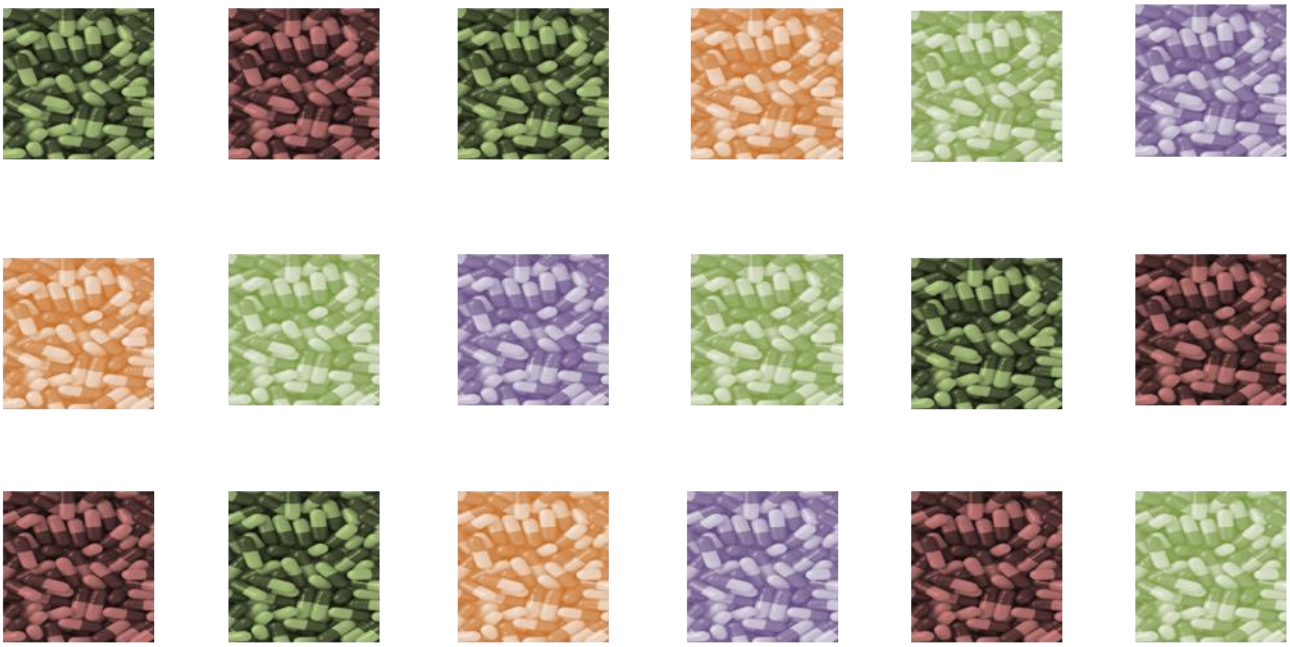


# Quality Prescribing For Respiratory

## A Guide for Improvement

## 2018 - 2021



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REALISTIC MEDICINE

NHS SCOTLAND

## Foreword

This guide has been written by Scottish Government and NHS Scotland to promote high quality prescribing of medicines to treat asthma and COPD (Chronic Obstructive Pulmonary Disease), and equally importantly, non-pharmaceutical approaches to management of these conditions. The document is aimed at Primary Care clinicians, Managed Clinical Networks and Board Medicines Management Teams and builds upon the previous 2014-16 strategy.

There were nearly 600,000 GP appointments relating to asthma or COPD last year. Respiratory medicines are the second most costly BNF chapter in Scotland, and although Boards have made significant progress in improving the quality and efficiency of care, further opportunities remain.

*Realistic Medicine (2016)* is a key driver of strategy for NHS Scotland and includes a number of relevant goals:

- Reducing the burden of overtreatment
- Reducing unwarranted variation
- Ensuring value for money
- Combining the expertise of patients and professionals
- Improving the patient-doctor relationship
- Identifying and managing clinical risk

These goals are significant, and this document aims to support their delivery. It is vital that, alongside pharmaceutical care, there is a focus on education and information to enable patients to take responsibility for their care.

Specific aspects of this document have been written with a view to supporting policy on a Single National Formulary for Scotland. The document also helps to support the enhanced clinical role of Pharmacists, as detailed in *Achieving Excellence in Pharmaceutical Care*.

It is recognised that many people in Scotland benefit from pharmaceutical care of asthma and COPD: this guide aims to maximise that benefit and ensure safe, appropriate care.

This document is welcomed as an opportunity to further improve the quality of care to patients with asthma and COPD. There are recommendations, aimed at Clinicians, Boards and Clusters, designed to continue improvement. We are grateful to all those who contributed to the working group and to the review and development of the document.

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The Scottish Practice Pharmacy and Prescribing Advisors Association

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## Introduction

### What is the purpose?

The purpose of this guide is to promote quality improvement in prescribing of respiratory medicines across primary care in Scotland, particularly focussing on delivery of safe, person-centred care.

In addition, it promotes self-management of respiratory conditions and disseminates prescribing quality indicators that can be used to monitor and review prescribing and variation in practice.

The scope includes adult and paediatric patients. It is not intended to replace any current clinical guidance and should be read alongside *SIGN BTS 153* and *GOLD COPD* guidance.

Respiratory medicine is a dynamic field with new agents and evidence being added on a regular basis. Clinicians and Boards should ensure they are aware of any relevant changes.

### What are the benefits to patients?

The document should promote a focus on respiratory prescribing leading to structured review of appropriateness, efficacy and tolerability of treatment, and therefore promote optimal care. Through consideration of self-management, there is the potential to improve patient engagement and the associated risk of short and long term adverse effects.

In line with international evidence, there is a general shift away from a single condition approach to medicines strategy, and it is therefore important to consider this document in the context of Polypharmacy Guidance and a holistic approach to care. It is important that any guide ensures that recommendations are comprehensible, based on current guidance and are patient focused. It must be accepted that guidelines are written to provide general advice and there may be some patients who require a more individual approach.

### What are the benefits to clinicians?

The document contextualises clinical information using prescribing data to allow Boards, Clusters and individual practitioners to reflect on prioritised areas, including addressing unwarranted variation. The document is not intended to be a clinical guideline and does not replace *SIGN BTS 153*.

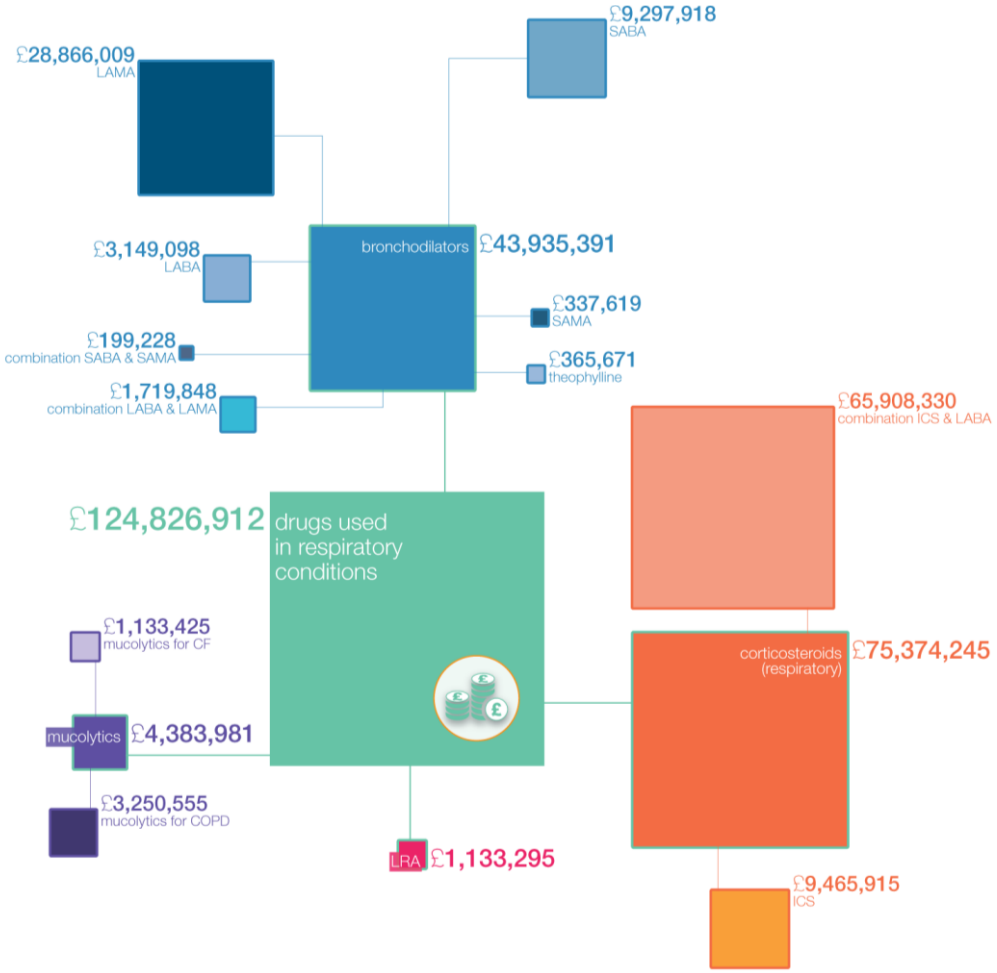
### Why is this important?

Asthma affects 6.4% of people in Scotland. Like the rest of the UK, Scotland has a high prevalence of asthma compared to the rest of the world. Prevalence is increasing, as is the volume of prescribing. Asthma deaths are rising: asthma was the underlying cause of 133 deaths in Scotland in 2016, up from 72 in 2014.[1] There were an estimated 468,000 consultations for asthma in Scotland in 2012/13.[2]

[1] National Records of Scotland
[2] www.scotpho.org.uk/health-wellbeing-and-disease/asthma/key-points

In all there were an estimated 105,000 consultations for Chronic Obstructive Pulmonary Disease (COPD) in Scotland in 2012/13.[3] It is estimated that by 2029, there will be an additional 54,000 people in Scotland with COPD.[4] The condition is under-diagnosed, with a diagnosis often only being established in the moderate to severe stages of the disease.[5] It is a progressive disease that not only affects breathing but also causes weight loss, nutritional disturbances and muscle problems.

The chart below shows relative spend on areas of respiratory prescribing in Primary Care in 2015/16. The total figure of £125m represents over 10% of the Scottish Primary Care prescribing spend. £107m of this figure is made up of inhaled preventative treatments. Boards should ensure appropriate focus on safe and effective prescribing in these areas.

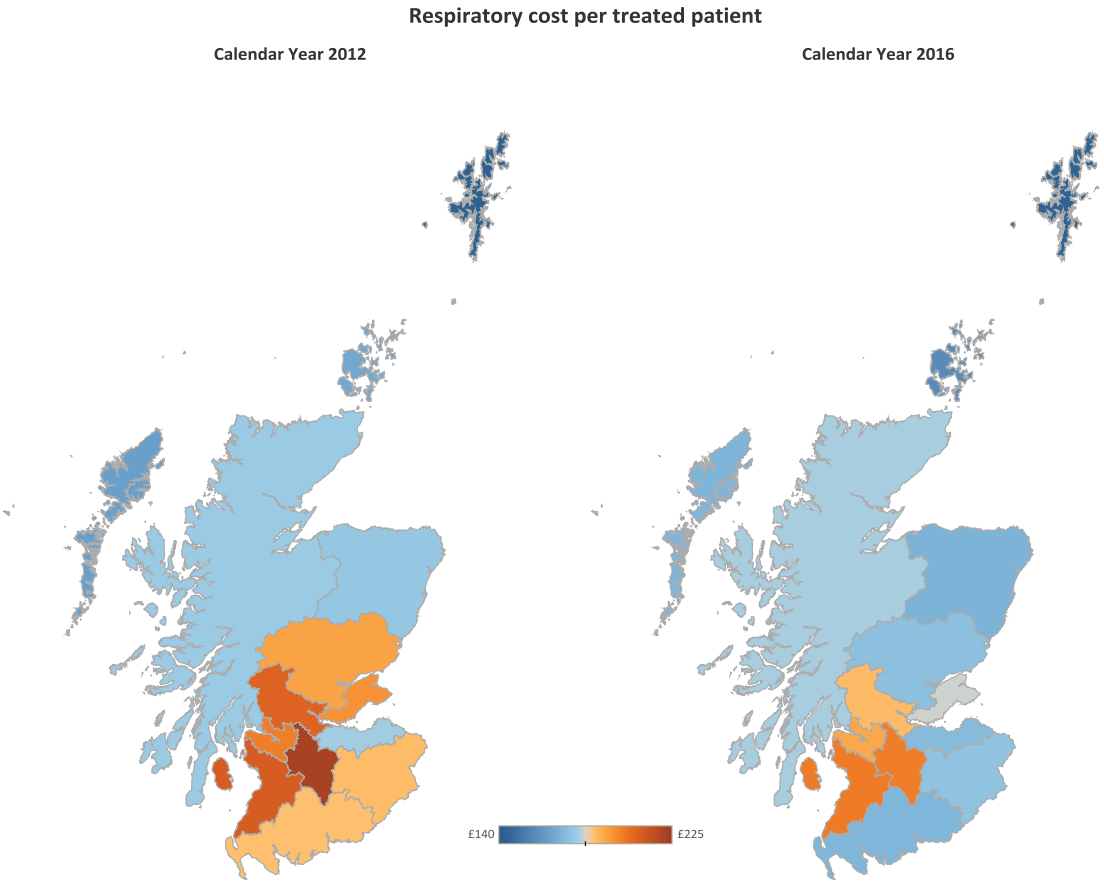



[3] ISD 2017
[4] Chronic Disease Intelligence to Optimise Service Planning in Scotland – July 2017
[5] www.scotpho.org.uk/health-wellbeing-and-disease/chronic-obstructive-pulmonary-disease-copd/data/primary-care-data

**What are the benefits to organisations?**

Due to increasing prevalence, Boards are seeing an increase in both volume and spend on respiratory medicines. By BNF chapter, respiratory medicines are the third highest spend at present in Scotland.

Included is a suite of data indicators which can help focus resources on areas which need review. Case studies provide examples of how to implement improvements in respiratory prescribing. The maps below demonstrate both the change in cost per treated patient across the country, as well as the variation in this metric between Boards.



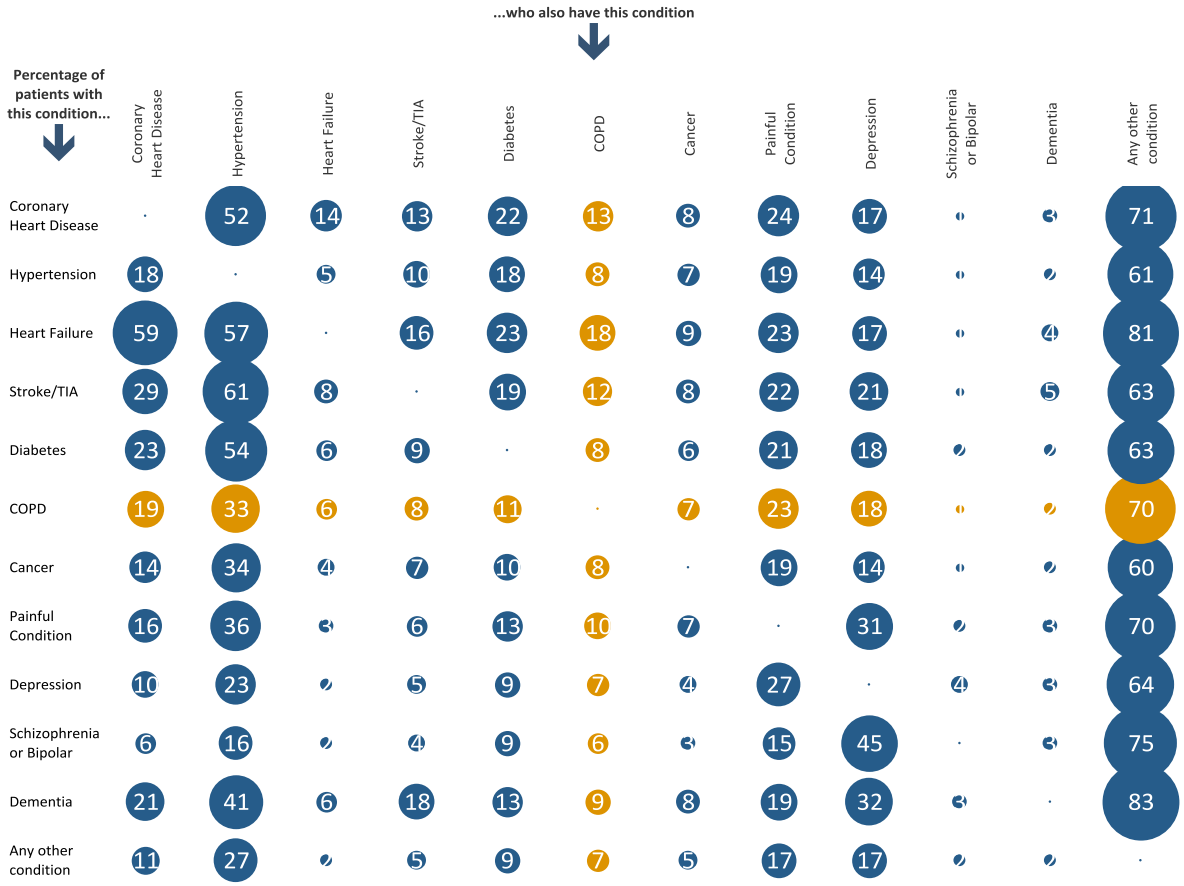
## Patient Centred Respiratory Prescribing

### Polypharmacy

Medication is by far the most common form of medical intervention, with 300,000 prescriptions issued every day in Scotland. The term polypharmacy itself just means *many medications* and has often been defined to be present when a patient takes five or more medications. However, it is important to note that polypharmacy is not necessarily a bad thing. Polypharmacy can be both rational and required. It is therefore crucial to distinguish appropriate from inappropriate polypharmacy. Inappropriate polypharmacy is present when one or more drugs are prescribed that are not or no longer needed or where there are dangerous interactions between medicines.[6]

Scottish Government *Polypharmacy Guidance* can be found here. It is now more common for patients in Scotland to have two or more long term conditions than only one. The chart below indicates the relative co-prevalence of conditions. COPD is one of the most common co-morbidities of other long term, conditions, including heart and respiratory disease, cancer and diabetes.[7] Data for asthma is not currently available, but similar issues would apply.

Multiple conditions in Scotland [8]




[6] Polypharmacy Guidance 2015, Scottish Government
[7] Barnett K, Mercer SW, Norbury M, Watt G, Wyke S, Guthrie B. The Lancet;380(9836):37-43
[8] Mercer, Guthrie, Wyke: Scottish School of Primary Care

## Recommendations

### Clinicians should…

**Develop a clear management plan** collaboratively with patients, including regular review dates. Expectations should be addressed and clarified based on *what matters to me*.

**Pursue non-pharmaceutical approaches** wherever possible, either alone or in conjunction with medicines. Self-management should be actively encouraged and supported for appropriate patients.

**Follow a clinically appropriate approach to initiation of medication**, discussing risks and benefits and incorporating agreed criteria for stopping/continuing medication. Inhaler technique remains a key component of co-production of positive clinical outcomes. Therefore, review of technique should be undertaken as a priority.

**Review effectiveness, tolerability and adherence** on a regular basis. Medicine burden should be reduced where possible, in line with *Polypharmacy guidance*.

### Boards should…

**Consider the guidance** within this document alongside the data provided on relative prescribing positions and trends. Prescribing action plans set out local priorities for how Boards will continue to improve quality of medicines management – these action plans should, where appropriate, encourage use of this document to drive that improvement.

**Nominate a local lead** from within Medicines Management and **a local clinical lead** from within the local Managed Clinical Network or Respiratory Community. The two leads should work closely together to drive delivery and implementation of the recommendations within this document.

**Ensure the primary/secondary care interface is appropriately developed**. Given the considerable influence that local secondary care prescribing culture has on primary care clinicians, it is vital to ensure engagement with secondary care clinicians. Encourage ownership of primary care data by clinicians in both settings.

**Review local prescribing pathways** and support clinicians, based on updated SIGN guidance.

**Ensure non-pharmacological management is promoted** within prescribing action plans.

### Clusters should…

**Engage with local Medicines Management Teams** to review data and consider utilising a Quality Improvement based approach to delivering change. Prioritise this area of prescribing as an opportunity for engagement.

## Guidance for Clinicians

Clinicians should optimise prescribing of medicines, reduce harm for patients and to reduce wasteful unjustified variation. There are a number of principles which should be considered:

- Asthma and COPD are individual to the patient and any therapeutic management plan needs to place the patient at the centre. The approach should be based on assisting the patient to achieve goals which have been identified in partnership with the prescriber, adopting the *what matters to me* principle.
- Prescribers should help patients to develop self-management and non-pharmaceutical approaches to the successful achievement of goals, where appropriate.
- Difficult and honest conversations may be required to establish an understanding with the patient that it is highly unlikely that the therapeutic management plan will result in full resolution of their symptoms, but it may assist them with coping.
- Inhaler technique remains a key component of positive clinical outcomes. Therefore, review of technique should be undertaken as a priority. This is of particular importance due to the growing variety of inhaler devices – ongoing review is recommended.

### Resources for clinicians

#### My Lungs My Life

*My Lungs My Life* is a comprehensive, free website for anyone living with COPD, asthma or for parents/guardians of children with asthma. The resource is a collaboration between NHS, third sector and the University of Edinburgh.[9]

In addition to general information regarding conditions, videos demonstrating technique on a number of the most commonly prescribed inhaler devices are provided. These may be considered useful when initiating or changing inhalers at a patient level.

#### Don't Waste a Breath

The *Don't Waste a Breath* website, developed by NHS Grampian, provides information for patients on inhaler technique and how to recycle inhalers. This website complements *My Lungs My Life* and is aimed directly at patients.

#### Personal Asthma Action Plans

There is substantial evidence to support the value of personalised actions plans for asthma in both adults and children.[10] Clinicians should refer to local guidance and resources. A generic template is also available from Asthma UK.

#### Stepping down of Chronic Asthma Drugs

Following a period of stable asthma, clinicians should consider stepping down treatment. This resource on the BMJ website provides a helpful reference source.

[9] www.mylungsmylife.org
[10] SIGN 153, Chapter 5

| Principles for prescribing for patients with asthma | |
|---|---|
| **Principle** | **Detail** |
| Non-pharmacological management | • Patients should be supported to stop smoking. Parents should be advised of the adverse effects smoking has on children and offered appropriate support.[11]<br>• Weight reduction is recommended in obese patients and patients should be encouraged to engage in appropriate physical activity. |
| Pathways | • *SIGN 153* pathways are recommended.<br>• Choice of therapy should be directed by formularies and local prescribing guidelines. |
| Patient Understanding | • It is important that patients understand their condition as far as possible and have appropriate expectations. It is vital the short and long term treatment plan, and any changes are discussed with and agreed by the patient along with arrangements for repeat prescribing.<br>• A personalised action plan is key to this approach, with focus on inhaler technique, compliance and avoidance of new trigger factors.<br>• Clinicians should support use of *My Lungs My Life*. |
| Timely Review | • Any drug initiated for asthma should be subjected to timely, frequent and recorded review with the patient.<br>• It should be titrated up to a dose which balances maximum clinical efficacy with minimal risk, and stopped if found to be ineffective or if adverse effects outweigh benefits. |
| Ongoing Review | • Once the dose is stable and effectiveness has been established, ongoing recorded review should occur as clinically appropriate for the individual patient, with follow up as required.<br>• This review should: confirm ongoing need for and effectiveness of medication; screen for side effects; review inhaler technique; and adjust dose or discontinue prescription as appropriate.<br>• A holistic Polypharmacy approach is recommended.<br>• Following a period of stable asthma, clinicians should consider stepping down treatment, as recommended by current guidelines.[12]<br>• Exacerbations should be considered as an opportunity to review therapy and ensure treatment is optimised. |
| Effective Care | • Decreasing therapy once asthma is controlled is recommended.<br>• *SIGN 153* suggests reductions be considered every three months, reducing by 25%-50% each time. |
| High Risk Groups | • Take into consideration any of the high risk patient groups and risk factors when making prescribing decisions. This may include patients prescribed high dose steroids or those with multiple morbidities.<br>• If appropriate, patients on high dose steroids (both oral and inhaled) should be provided steroid warning cards. Patients receiving high quantities of SABAs should be reviewed as indicated by NRAD.<br>• Non-attenders should be followed up – alternative strategies to encourage engagement may be required, for instance engagement through community pharmacy and telehealth. |

[11] SIGN 153 Section 6

[12] Gionfriddo, et al. Why and how to step down Chronic Asthma Drugs. BMJ2017;359:J4438

| Principles for prescribing for patients with COPD | |
|---|---|
| **Principle** | **Detail** |
| Non-pharmacological treatments | • Smoking is the primary causal factor in COPD. Patients should be supported to stop smoking wherever possible.<br>• Any pharmacological interventions should be carried out in conjunction with a structured pulmonary rehabilitation programme.<br>• Clinicians should refer to local guidance.<br>• Clinicians should encourage patients to engage in an appropriate level of physical activity. |
| Pathways | • The *Global Initiative for Chronic Obstructive Lung Disease* (GOLD) pathway is recommended for assessment and management.<br>• Choice of therapy should be directed from formularies. |
| Patient Understanding | • It is important that patients understand their condition as far as possible and have appropriate expectations. It is vital the short and long term treatment plan, and any changes are discussed with and agreed by the patient along with arrangements for repeat prescribing.<br>• A supported self-management plan, with patient education, may be beneficial in some patients.<br>• This may include the provision of emergency drug treatments, such as antibiotics and oral steroids. However, this should only be provided to those patients assessed as having a clear understanding of their conditions and the functions of their medicines. |
| Review | • Any drug initiated for COPD should be subjected to timely, frequent and recorded review with the patient.<br>• It should be stopped if found to be ineffective or if adverse effects outweigh benefits.<br>• A holistic Polypharmacy approach is recommended. This provides the opportunity to step down medicines where appropriate.<br>• Exacerbations should be considered as an opportunity to review therapy and ensure treatment is optimised. |
| Effective Care | • Patients should be treated in a manner appropriate to their symptoms, using the pathways within *GOLD*.<br>• Inhaled steroids should be prescribed in line with product licenses where possible, taking into account health technology appraisal advice from SMC.<br>• Mucolytics should be stopped if there is no clinical impact. |
| High Risk Groups | • Take into consideration any of the high risk patient groups and patient risk factors when making prescribing decisions.<br>• This may include patients prescribed inhaled steroids or those with multiple morbidities. |

Polypharmacy based case studies are available in the appendix.

## Guidance for Boards

### Respiratory Prescribing 'Cost & Volumes'

The table below shows respective costs of medicine classes in primary and secondary care, for NHS Scotland.

Table showing respiratory prescribing cost by class of medicine, Financial Year 2016/17.

| Class of Respiratory Medicine | Primary Care | Secondary Care |
|---|---|---|
| COMBINATION ICS & LABA | £65,144,890 | £1,984,525 |
| LAMA | £28,649,106 | £1,459,608 |
| ICS | £9,339,415 | £200,207 |
| SABA | £9,211,469 | £265,195 |
| LABA | £2,972,648 | £67,908 |
| MUCOLYTICS FOR COPD | £3,289,447 | £96,929 |
| LRA | £1,129,811 | £9,738 |
| MUCOLYTICS FOR CF | £1,143,789 | £10,560,538 |
| COMBINATION LABA & LAMA | £2,247,752 | £116,790 |
| SAMA | £324,142 | £56,424 |
| THEOPHYLLINE | £360,688 | £20,586 |
| COMBINATION SABA & SAMA | £190,503 | £31,619 |
| MISCELLANEOUS | £109,201 | £85,715 |
| OMALIZUMAB | £6,404 | £2,741,432 |
| **Sum:** | **£124,119,265** | **£17,697,214** |

The majority of spend in Primary Care consists of preventative management of long term conditions. In secondary care, over half is spent on specialist treatments, reflecting low volume- high cost medicines. This reflects the differing priorities and challenges in the respective sectors.

Within the data, the boxplot charts should be interpreted as follows:

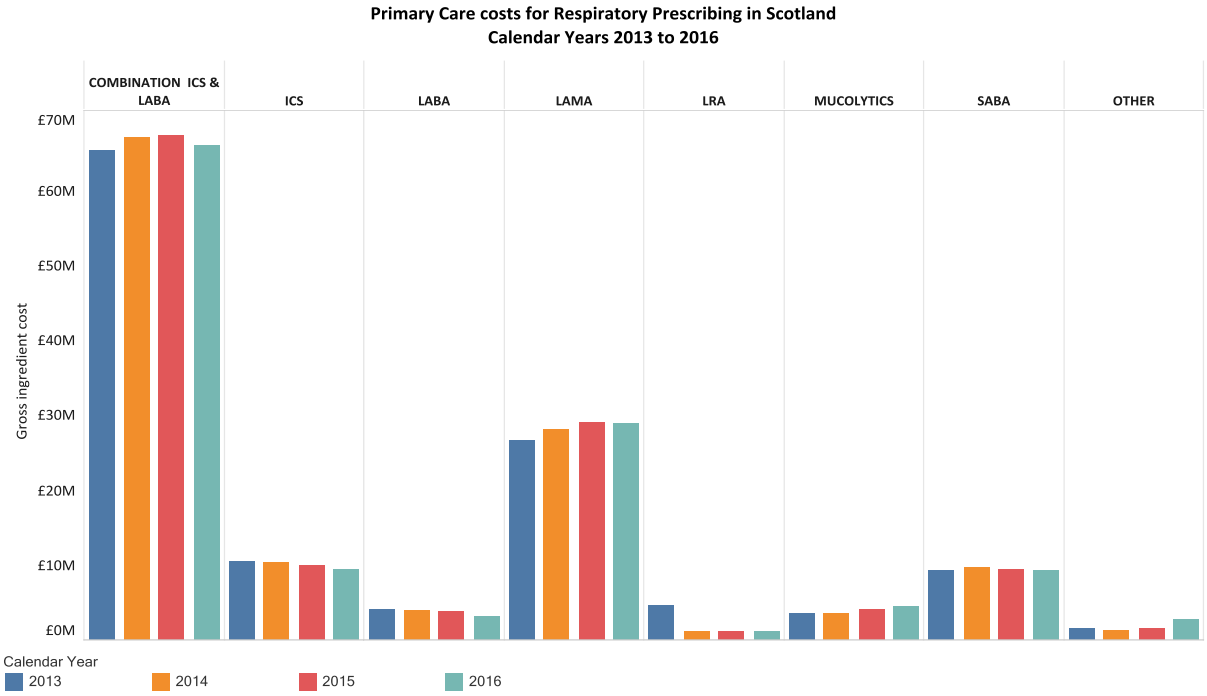
- Median GP practices in NHS Board– dark grey bar
- Interquartile range or middle 50% of GP practices in NHS Board – blue box
- Maximum and minimum – whiskers, unless greater than 1.5 of interquartile range
- Outliers – (○) GP practice value greater than 1.5 but less than 3.0 of interquartile range
- Extreme outliers – (•) GP practice value greater than 3.0 of interquartile range

The three year charts utilise the mean position of the Board, each year.

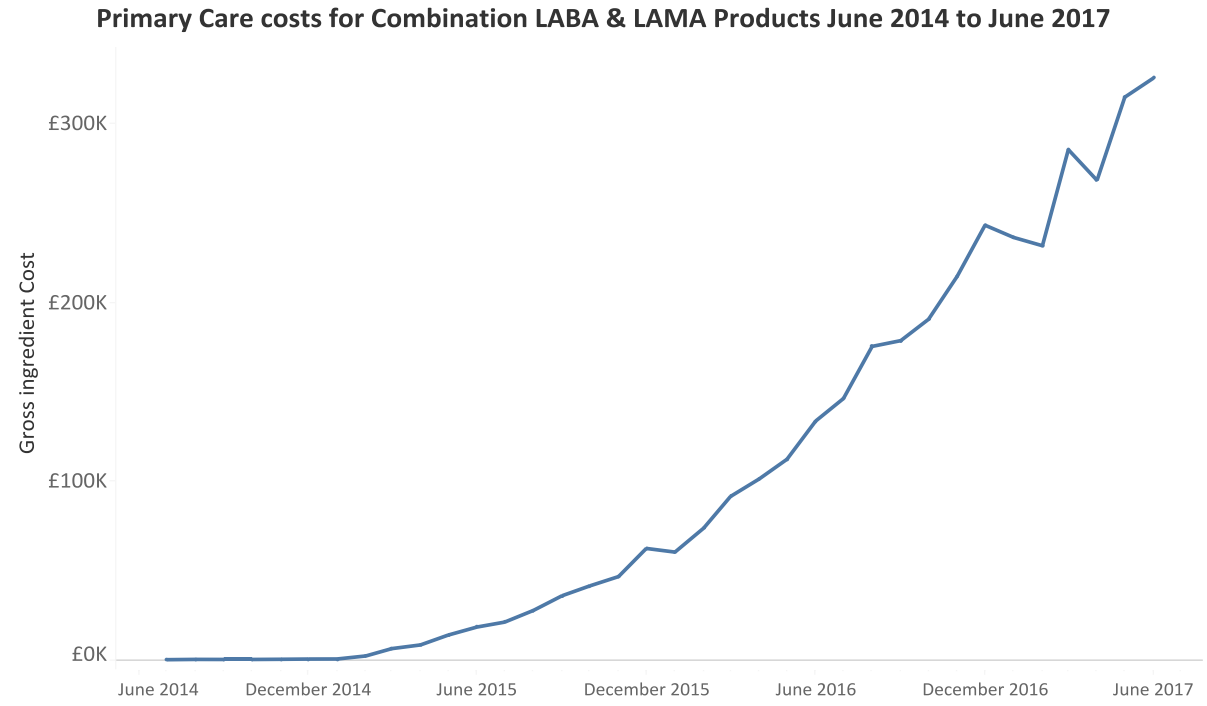
PRISMS/PIS data is based on medicines dispensed and does not necessarily correlate to use of medicines.

The data provided must be considered within the context of local populations and local healthcare arrangements, and provides an indicator of clinical practice. Due to the complex nature of the prescribing being analysed it is not possible to provide advice on *what good looks like*.

The chart shows trends within respiratory medicines, in primary care in NHS Scotland.




The graph above shows that the spend on preventative treatments takes up the bulk of prescribing in primary care. Combination ICS and LABA inhalers remains the area of highest spend with LAMA inhalers the area of highest growth.
The graph below shows the increase in LABA/LAMA combination inhalers since 2014.




Triple therapy inhalers (ICS/LABA/LAMA) for COPD are now available. Boards should be aware of this development and note that this may influence clinical practice and prescribing trends, depending on SMC advice and future integration into clinical guidelines.

## Prescribing Indicators and Measures

The next section discusses and provides a variety of prescribing data, broken down into focus on safe, effective and efficient care. This facilitates inter Board comparison and identifies trends of improvement. Board level case studies are also provided. When developing local initiatives, Boards may wish to make use of the resources available on the PrescQIPP website. This includes a wide variety of information and tools.

In 2016 the Therapeutics Branch of Scottish Government engaged with Boards to understand the successes and areas of potential improvement, following implementation of the Respiratory Prescribing Strategy 2014-16. This showed that there was consistency in approach to engagement. At an individual prescribing indicator level, success has been achieved through development of relationships between primary and secondary care. A number of Boards, including NHS Tayside, NHS Grampian and NHS GG&C, have developed local initiatives with community pharmacy to support improvements in respiratory prescribing. The recommendation for Boards in the future will be to develop a culture of shared ownership of primary care prescribing data, recognising the role and influence of secondary care clinicians.

### Safe Respiratory Prescribing in Primary Care

NHS Scotland has a long standing approach towards improving safety of respiratory prescribing in primary care, particularly towards stepping down high dose steroids for patients with asthma.

The previous strategy included information on prescribing out with guidelines. This provided, within its therapeutic principles, the need to review patients on high dose steroids for asthma and the appropriateness of steroids within treatment of COPD.

This document aims to continue focus in the following key areas:

- High dose steroids in adults with COPD and asthma
- High dose steroids in paediatric patients with asthma
- Patients over-prescribed reliever treatments
- Prescribing of inhalers by brand

These are described in more detail in this chapter.

**Boards should reflect on these areas, the available local and national data and ensure appropriate priorities are delivered within plans, including, prescribing action plans.**

## High strength corticosteroid inhalers as a percentage of all corticosteroid inhalers

### Asthma

High strength ICS has been a long standing priority for prescribing improvement in NHS Scotland. It remains a *National Therapeutic Indicator*.

There are safety concerns regarding the inappropriate use of high strength corticosteroid inhalers and the importance of ensuring that the patient's steroid load is kept to the minimum level, whilst effectively treating symptoms. It is recognised that some patients will require treatment with high-dose ICS.

There are recognised, potentially serious, systemic side effects from ICS. The most concerning is adrenal suppression, but others include: growth failure; reduced bone density; cataracts and glaucoma; anxiety and depression; and diabetes mellitus.[13,14]

Of particular concern is the use of high-dose ICS in children. A UK observational study found that high-dose ICS prescribing occurred in 5.6% of the under 5s and 10% of the 5 to 11 year olds. In addition very high-dose ICS (> 800 micrograms beclometasone or equivalent) was prescribed to 3.9% of the under 5s and 4.9% of the 5 to 11 year olds.[15]

Advice in early 2016 for children on ICS can be summarised:

- Regular growth monitoring (unreliable indicator of adrenal suppression)
- High-dose ICS should be used only under the care of a specialist paediatrician
- Adrenal insufficiency should be considered in any child with shock and/or reduced consciousness who is maintained on ICS

Patients should be maintained at the lowest possible dose. This is a dynamic process requiring **stepping down therapy.** Reductions in dose should be considered every 3 months, reducing the dose by 25 to 50% every time. **This report uses the updated definition of high dose steroids (both for adults and children) as of August 2016.**[16]

### COPD

The place in therapy of inhaled corticosteroids for COPD is covered under the *GOLD guideline*. Prescribing of steroids in COPD should also take into account individual product licenses/marketing authorisations and health technology appraisal advice from SMC.

At present, there is a developing evidence base for the respective benefits of LABA/LAMA and LABA/ICS inhalers. This may influence future clinical practice and prescribing trends.

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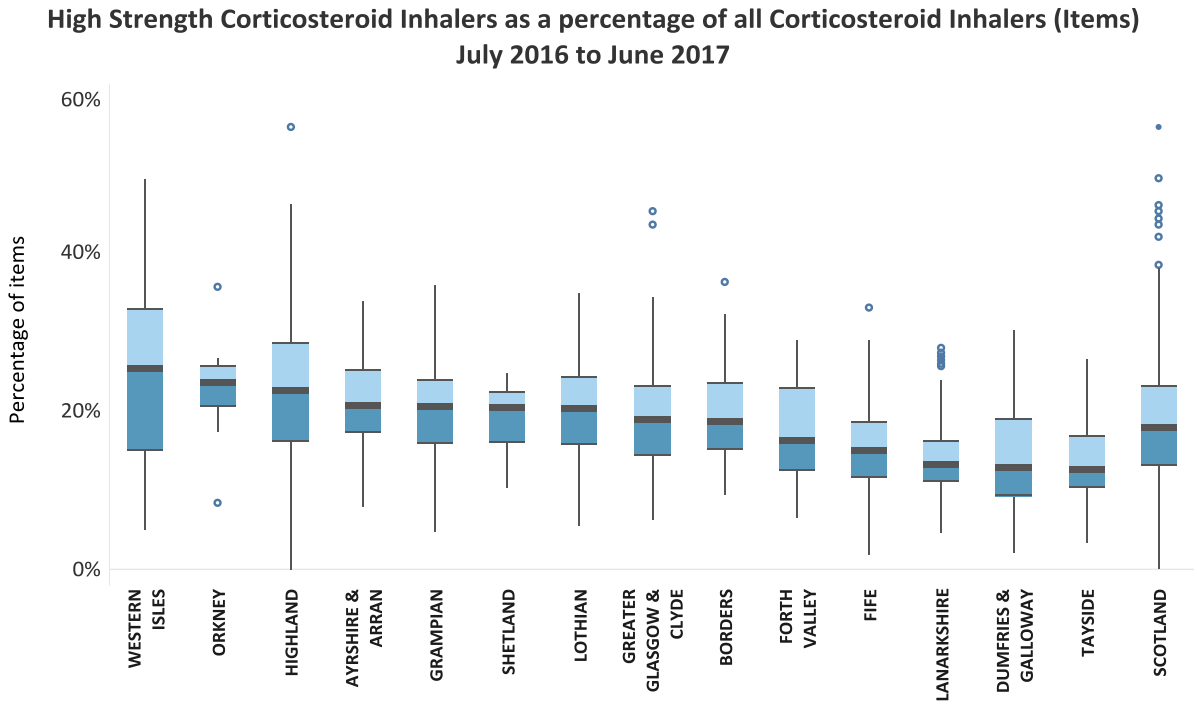
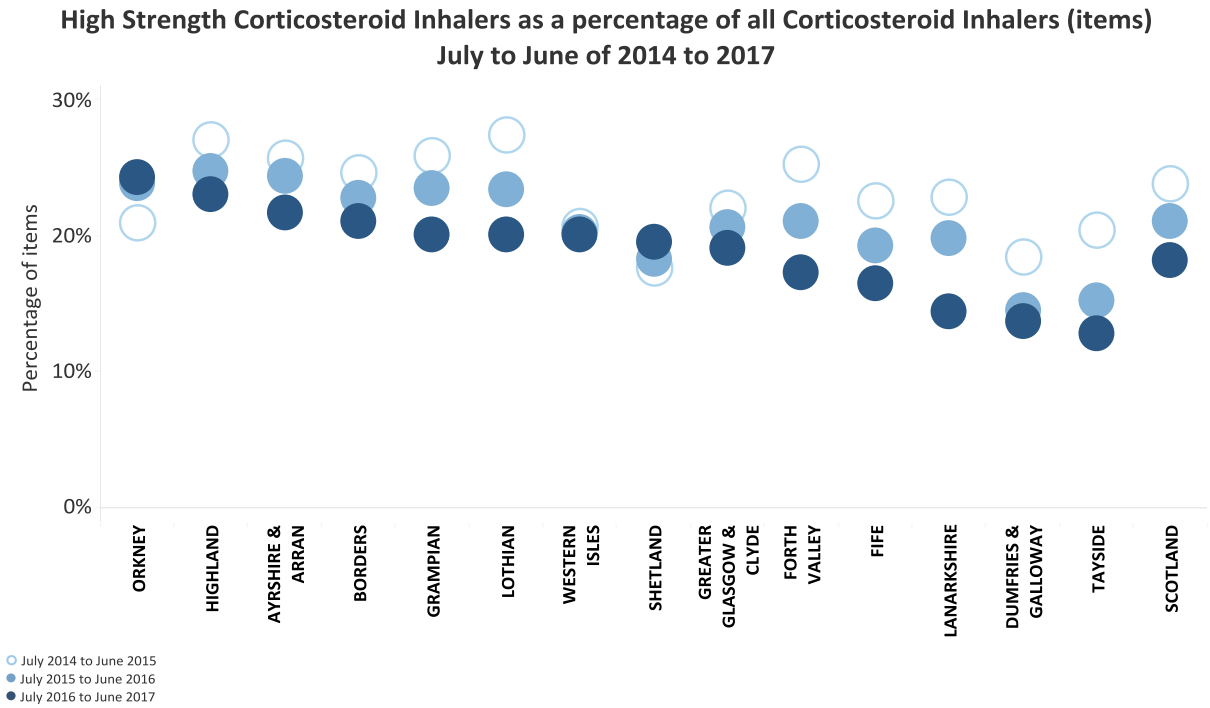
[13] BNF 72
[14] AM J Med 2010; 123: 10016
[15] Thomas M et al. *Br J Gen Pract 2006*; 56: 788-90
[16] http://www.sign.ac.uk/assets/sign153.pdf

The charts below demonstrate inter and intra Board variation in prescribing of high strength ICS.



**Case Study – NHS Forth Valley – High Strength ICS**

**Background**

In 2014, in terms of the Respiratory NTI: High strength corticosteroid inhalers, Forth Valley (FV) was an outlier in comparison to the other 13 Boards in NHS Scotland, having the highest level of high strength inhaled corticosteroids (ICS) as a percentage of all corticosteroid inhalers (items) in Scotland.

**The Key Components**

Current prescribing practice was reviewed and several approaches adopted as detailed below, to support change to established practice and improve the quality, safety and efficacy of primary care prescribing.

- The Respiratory MCN updated the FV formulary choices for Asthma and COPD.
- Secondary care initiated new patients on updated formulary choices.
- Roll out and promotion of FV asthma and COPD management guidelines to practices (Practice Nurses (PNs) /GPs/ Pharmacists) at CREATE sessions and NES events.
- Development and circulation of asthma and COPD stepwise inhaler treatment management charts and step down guides for patients with stable asthma.
- Development of prescribing review guidance and support tools for practices including:

1. Review of patients with COPD prescribed high strength ICS with a view to changing to reduce high dose ICS exposure and minimise risk of adverse side effects.
2. Audit of high strength ICS combination inhaler use in patients with a diagnosis of asthma: to assess whether patients were being appropriately managed according to the BTS/SIGN 141 Step up/Step down guidelines.
3. Review of High strength single agent corticosteroid inhaler use.

**Respiratory Nurse Champion**

A Respiratory Nurse Champion (RNC) was recruited to champion high quality prescribing and associated good practice for respiratory conditions in primary care. The RNC was tasked to deliver ongoing education and support to targeted GP practices who continued to remain above the Scottish average and/or had made little or no change to their position in the previous 2 years. Prescribing support provided detailed monitoring reports for the outlying practices together with various support tools to aid practices to make informed changes to prescribing habits. The activities above have provided opportunities for the RNC to build good working relationships with GP practices across FV.

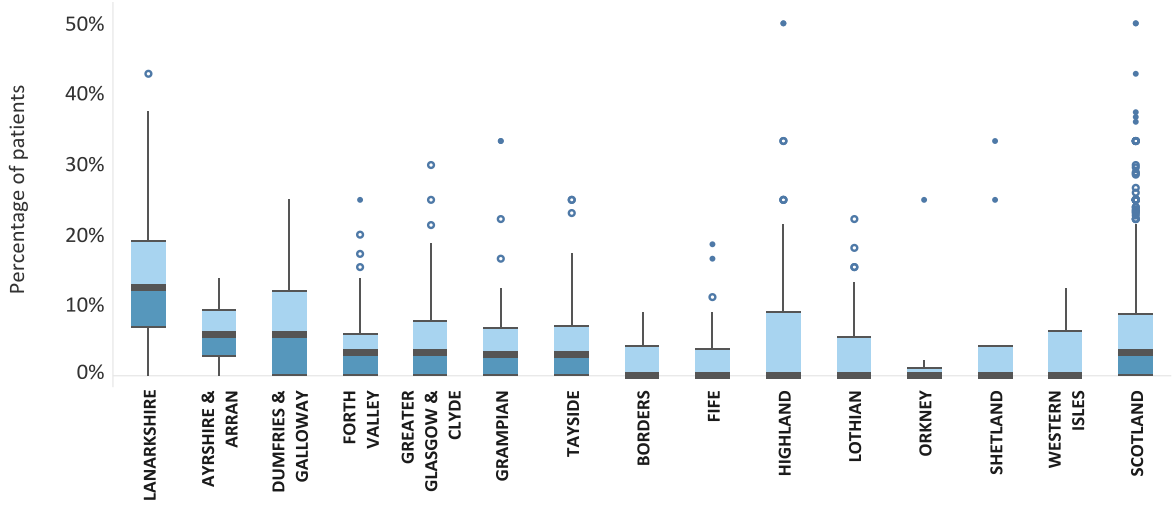
**Benefits**

- FV has seen a significant reduction in high strength ICS use in the last 4 years. Similarly there has been a significant increase in the use of formulary inhalers in Primary Care.
- The RNC is very much seen as being the ‘face’ of the Respiratory prescribing work within practices, helping to educate, change practice and influence prescribing.

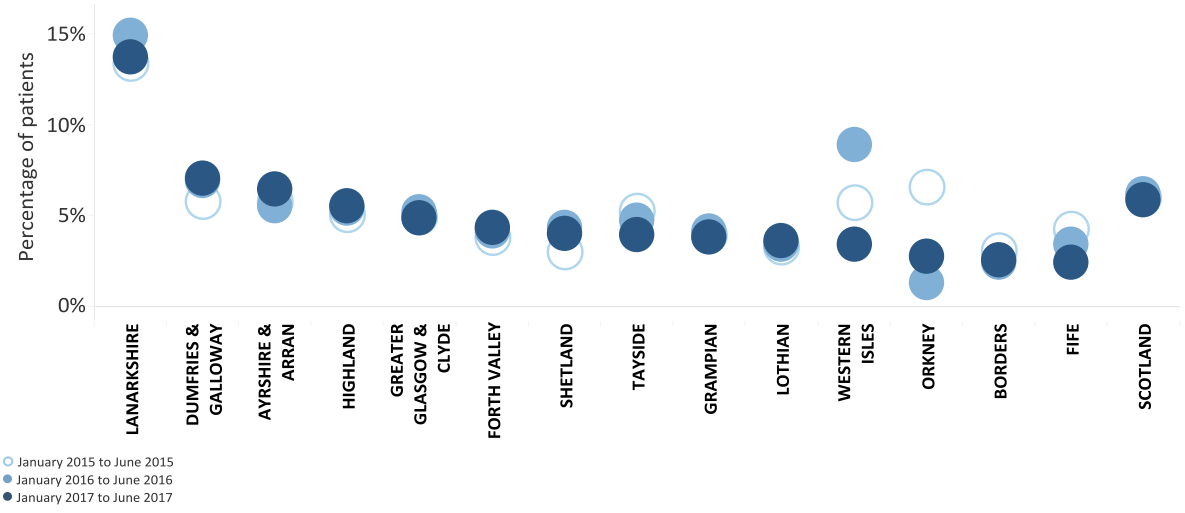
## Children under 12 years old of age prescribed high strength ICS as a percentage of all children under 12 years of age prescribed ICS

There are significant safety concerns of using high-dose ICS in children under the age of 12 years where the risks of growth retardation and adrenal suppression are the greatest. The measure looks at the amount of high-dose ICS (as defined for an adult) prescribed to children under the age of 12. This practice should only be done in exceptional circumstances, and under specialist supervision. The pre-2016 SIGN/BTS definition of high-dose corticosteroid has been used.

**Number of patients under 12 years of age prescribed a corticosteroid containing inhaler considered as only suitable for prescribing under specialist input as a proportion of all patients under 12 years of age prescribed a corticosteroid containing inhaler (as defined by 2016 BTS/SIGN guidelines)**
**January 2017 to June 2017**




**Number of patients under 12 years of age prescribed a corticosteroid containing inhaler considered as only suitable for prescribing under specialist input as a proportion of all patients under 12 years of age prescribed a corticosteroid containing inhaler (as defined by 2016 BTS/SIGN guidelines)**
**January to June of 2015 to 2017**



**Case Study – NHS Fife**

**Reduction in number of children under 12 years prescribed high dose inhaled corticosteroid as a percentage of all children under 12 years prescribed ICS.**

**Background**

In April/May 2015, options for General Practice medicine management projects included a respiratory safety bundle. Practices could select from a choice of projects including:

- Patients prescribed a LABA inhaler and no other inhaler in the same time period.
- Patients prescribed a combination of LAMA, LABA and ICS inhaler in the same time period.
- Seretide evohaler in COPD.
- Any oral theophylline/ aminophylline.
- Any oral beta2-agonists.
- Any higher dose combination ICS/LABA in children less than 12 years.

Practice specific patient numbers were provided to practices to guide selection of projects.

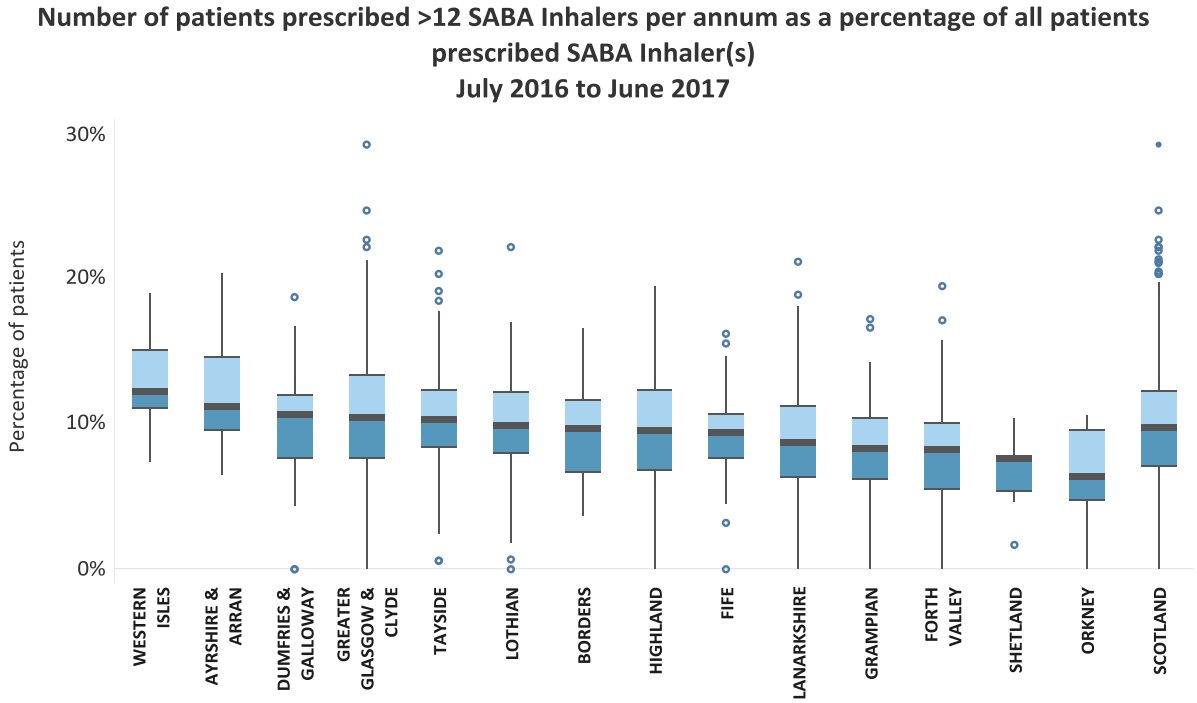
Patients should be reviewed to ensure inhaler strength and dose is appropriate for age. If ongoing treatment is required, consider referral to paediatric respiratory physician (or ensure regular review is occurring if under secondary care).

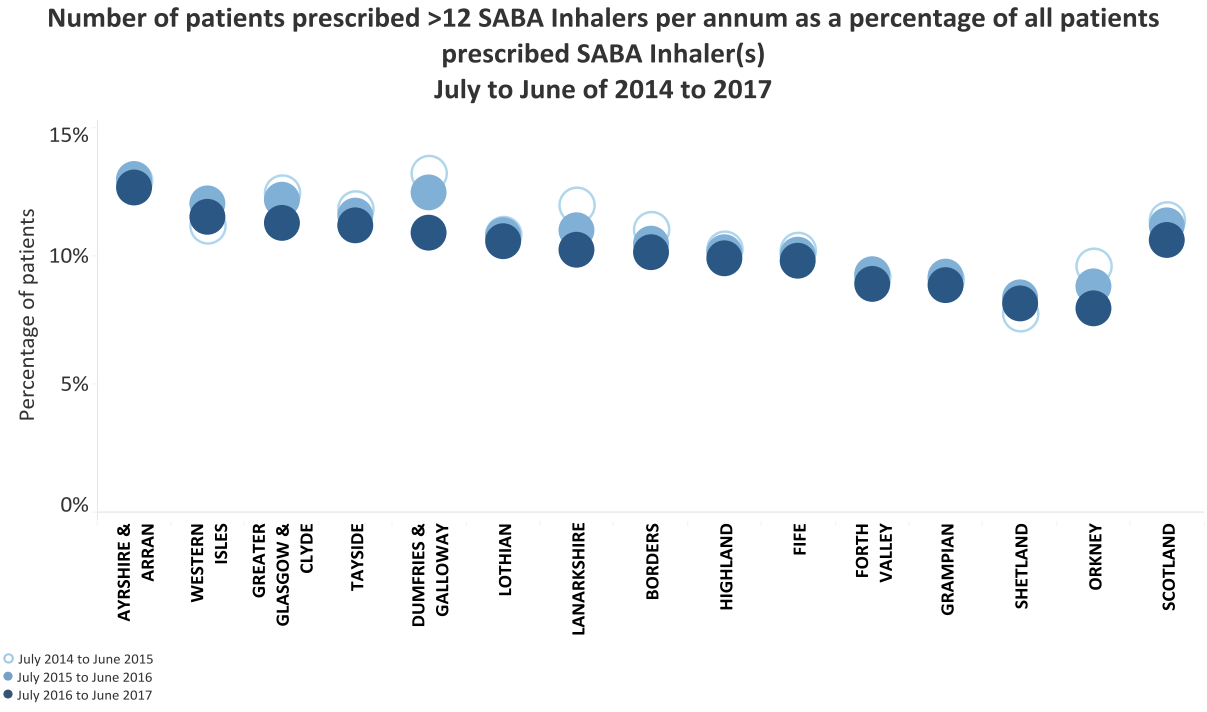
**Outcome**

35 of the 58 GP practices chose to select the respiratory safety bundle, resulting in the reduction in potentially unsafe prescribing noted in the above graph.

## Patients prescribed >12 SABA inhalers per annum as a % of all patients prescribed SABA inhaler(s)

This indicator looks at safety concerns for patients prescribed more than 12 SABAs in a 12-month period. The National Review of Asthma Deaths recommends that these patients be reviewed to assess their control. The measure acts as a guide to identify patients and is unable to distinguish between patients with asthma and COPD, where high SABA use may be necessary.



**Case Study - Dumfries and Galloway**

**Background**

This case study describes the approach by Dumfries and Galloway Health Board to implement the findings of the National Review of Asthma Deaths and review the prescribing of salbutamol inhalers.

**The Key Components**

A new Local Enhanced Service (LES) for prescribing is developed every year and the 34 practices in Dumfries and Galloway are paid for targets achieved. In 2015 – 2016 a 'Respiratory bundle' was developed for the LES, with one compulsory action (Bronchodilator overuse review) and further respiratory options to be selected by the practices (e.g. review of inhaled corticosteroids in children). Support was obtained for the LES from the Dumfries and Galloway Respiratory MCN and the MCN GP lead wrote to all GPs and practice nurses to explain the rationale and encourage practices to participate as part of the Board's response to the National Review of Asthma Deaths.

Searches were undertaken in all practices to identify all those patients with asthma who had ordered 12 or more bronchodilator inhalers in 1 year. Patients who were over-ordering bronchodilators (and under-ordering inhaled corticosteroids) were flagged up for review by the GP or practice nurse. Recommendation was given to amend the letter inviting the patient to review in order to stress the importance of attending and reasons for this. The review appointment included checking compliance, checking inhaler technique, stepping up or down of treatment. Advice on following up those patients who did not respond to review appointments was also given, e.g. utilising the community pharmacist.

Advice was given to amend all salbutamol inhaler prescriptions for people with asthma to a single issue. Posters to explain the rationale behind this were displayed in practices.

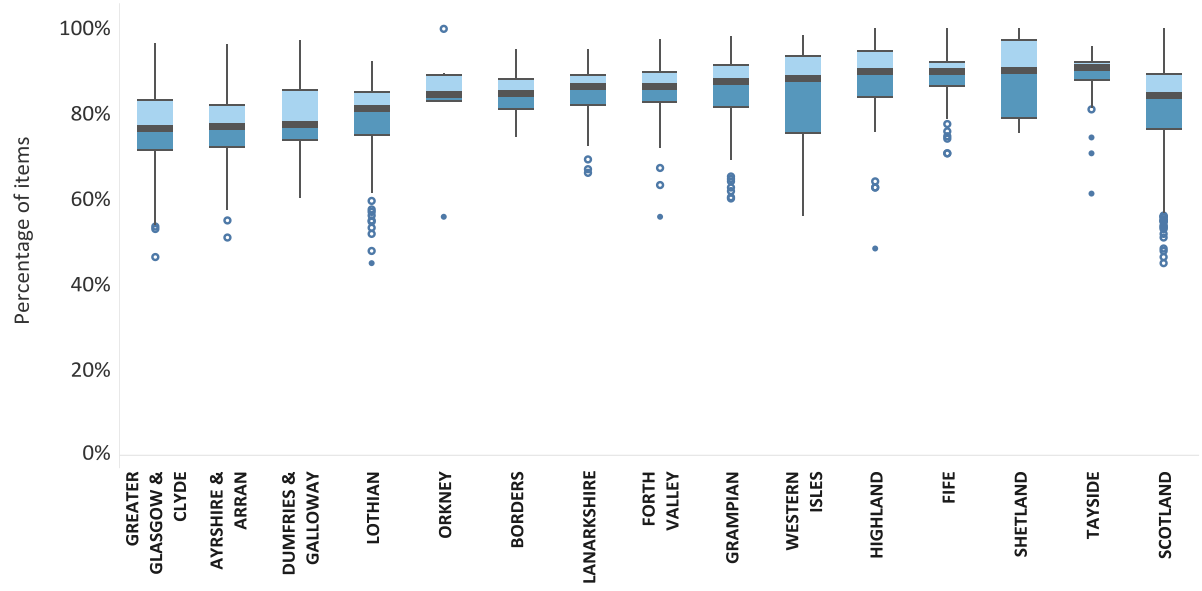
**The Benefits**

The benefits are clearly visible in the above graph demonstrating a reduction in the most recent year.

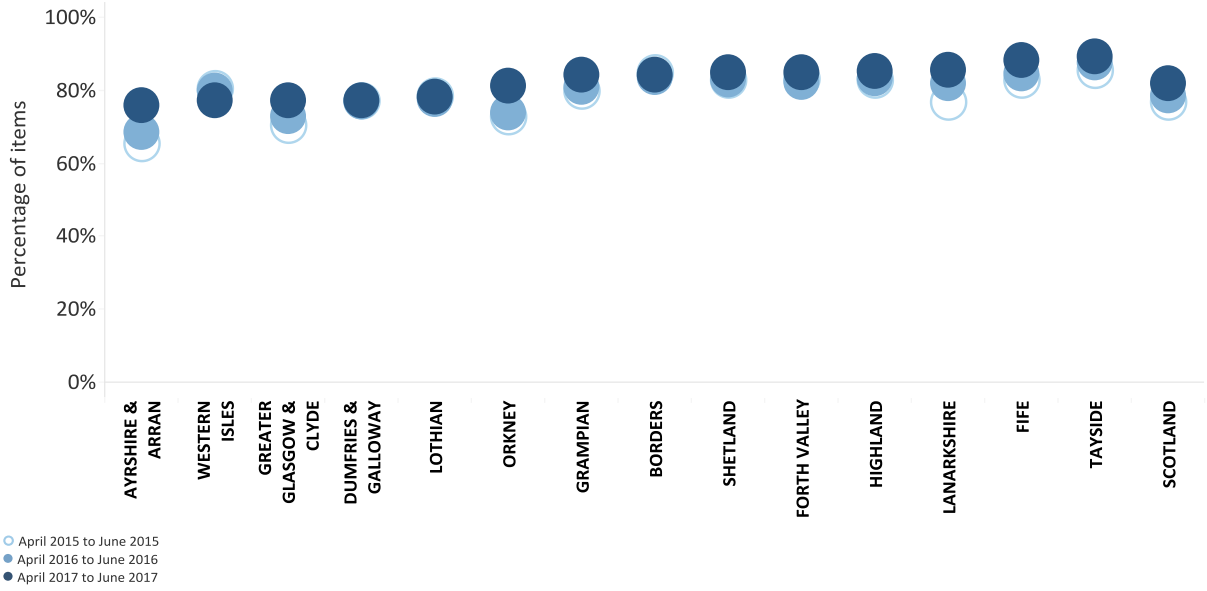
## Percentage of Items from BNF Sub Sections 3.1 & 3.2 Prescribed by Brand (excluding salbutamol)

Prescribing inhalers by brand is a point of best practice from SIGN BTS 153. It is becoming increasingly relevant with an increase in the range of devices available. Adopting a high level of branded prescribing is considered as a surrogate of best practice behaviour. The only recommended exception to this is salbutamol MDI which is agreed as generic prescribing by following Scottish Drug Tariff rules.

**Number of branded items prescribed as a percentage of all items from BNF 3.1 and 3.2 (excluding Salbutamol MDI)**
**April 2017 to June 2017**




**Number of branded items prescribed as a percentage of all items from BNF 3.1 and 3.2 (excluding Salbutamol MDI)**
**April to June of 2015 to 2017**



## Effective and Efficient Respiratory Prescribing in Primary Care

Some Boards have made significant improvements to deliver effective and efficient respiratory prescribing in primary care. Alongside this, industry has delivered a wider range of products since the publication of the 2014 strategy, potentially providing a more competitive marketplace.

As well as choice of inhalers, further effective prescribing opportunities exist within reduction of potentially wasteful prescribing and clinical disinvestments. Therefore, this document aims to continue focus in the following key areas:

- Cost per treated patient for ICS/LABA combination products
- Cost per treated patient for LAMA containing products
- Excessive prescribing of ICS/LABA combination products
- Prescribing of mucolytics in patients with COPD

These are described in more detail in this chapter.

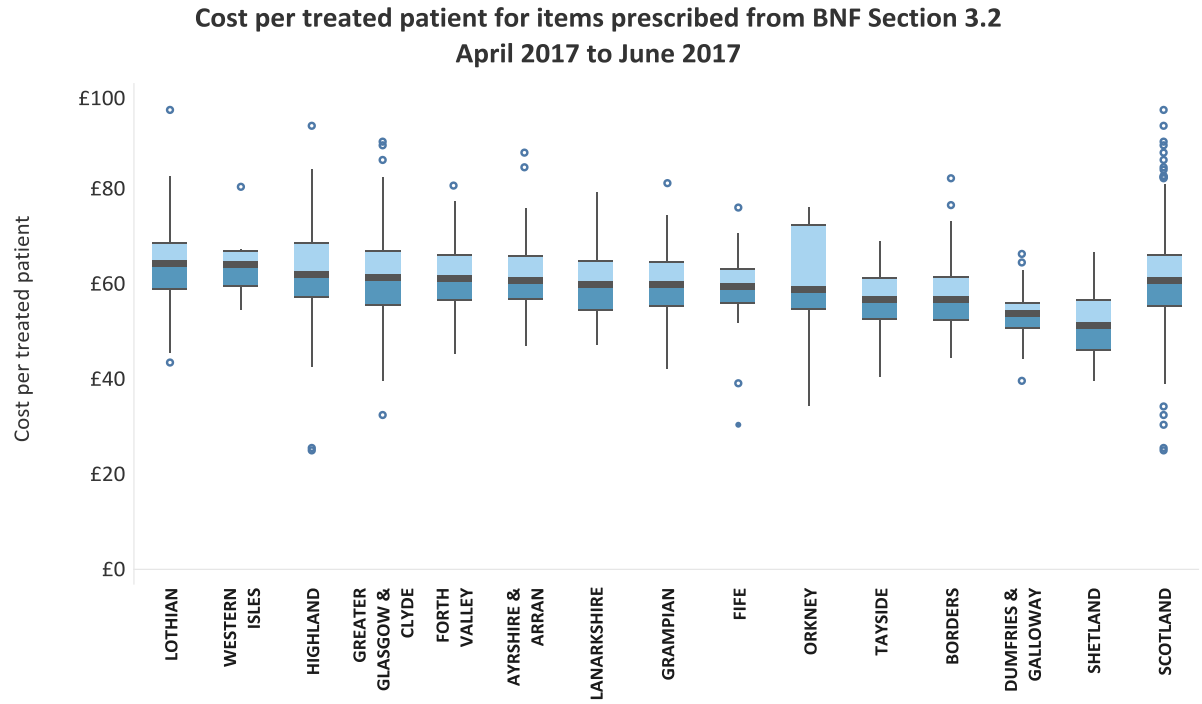
**Boards should** reflect on these keys areas, the available local and national data and ensure appropriate priorities are delivered within local plans, for instance, prescribing action plans.

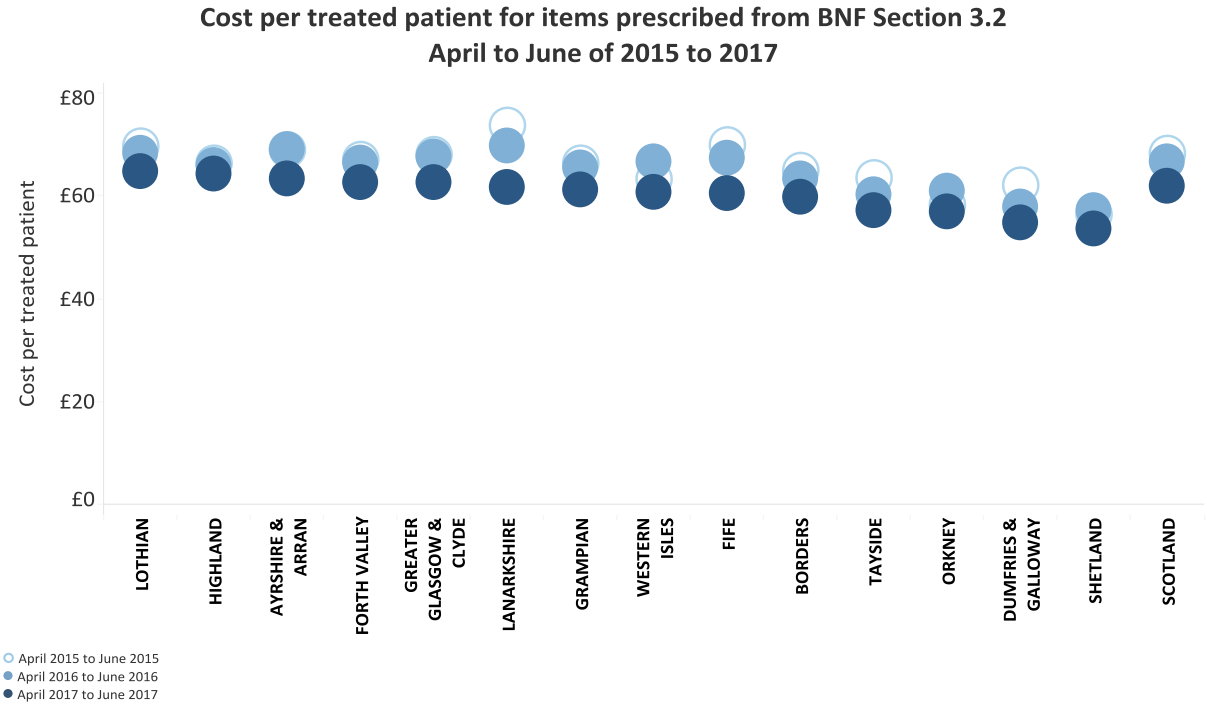
Readers should note that the *cost per treated patient* metrics refers only to patients treated for respiratory conditions. Historically NHS Scotland utilised cost per patient or cost per weighted patient measures to focus on cost effectiveness. The PIS system allows analysis at patient level, which in turn facilitates a more accurate picture of prescribing efficiency. However, the context of the standard limitations of prescribing data (for example, the issue of compliance) is still required.

Costs are based on NHS list prices and does not factor in any Primary Care Rebates Schemes, which are commercially sensitive.

## Cost per treated patient for BNF section 3.2

This is a significant area of spend across NHS Scotland. This measure acts as a surrogate marker of a well-managed and implemented formulary process.



**Case Study – NHS Grampian**

**Background**

Respiratory prescribing per treated patient was recognised by the NHS Grampian Respiratory MCN as a fair and appropriate measure for prescribing behaviour. In 2012, against a background of increasing unit costs, increased disease prevalence and high 'off-license' prescribing (particularly in COPD), the MCN formed a long term working group, collaborating with Pharmacy, Formulary, Secondary Care and Primary Care (medical and non-medical) prescribers to facilitate change.

**Key Components**

Asthma and COPD prescribing were addressed, taking those medicines available on formulary and applying a 4 component filter. Is this medicine:

- Licensed and on Formulary?
- Indicated in national/international guidance?
- Delivered in a device that allows consistency for a patient?
- Cost effective?

Devices were divided into pMDI and DPI, and BTS/SIGN or NICE/GOLD applied, giving a stepwise approach to escalating (and reducing) therapy. Prescribers and patients were (where at all possible) given a choice at each step. The guidance was supported by a programme of educational events at launch and at each subsequent revision, as well as being available on NHS Grampian's electronic platform.

The Grampian Respiratory Improvement Programme (GRIP) further targeted and supported those practices with the highest respiratory profile offering clinical support education audit and mentorship from a small, effective primary care team.

**The Benefits and Next Steps**

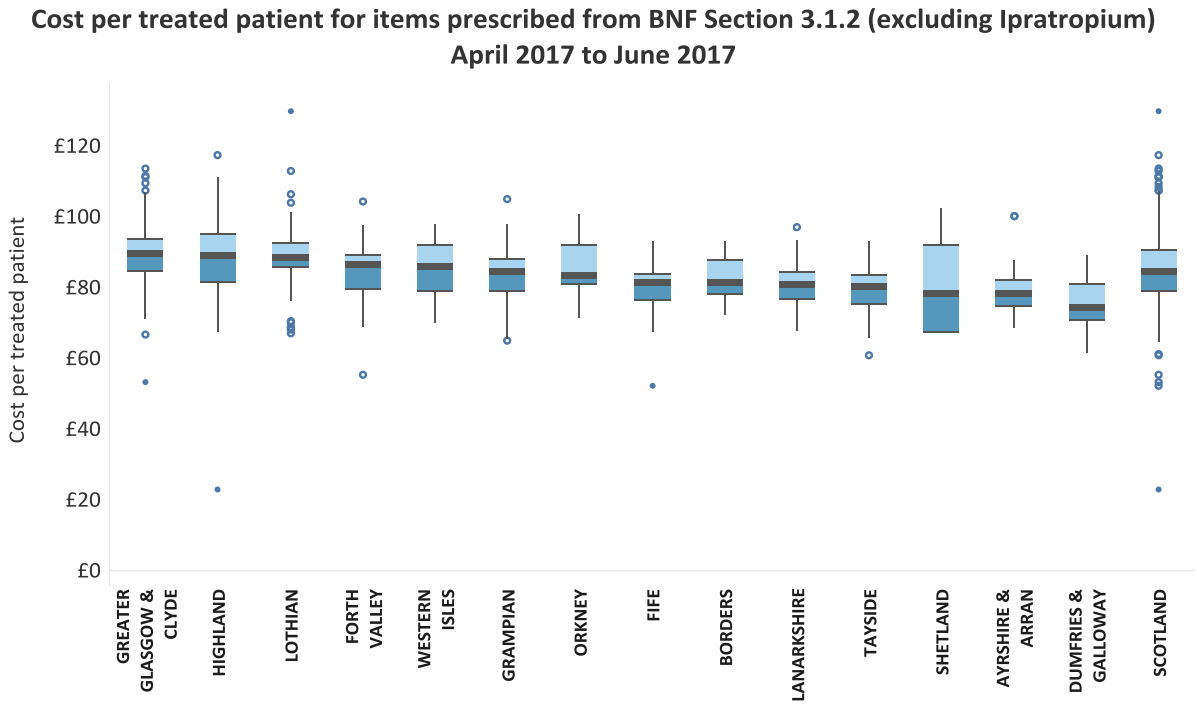
The benefits can be seen in the improvements in costs per treated patients published in this document. NHS Grampian have continued to audit and demonstrate significant reductions in 'off-lable' inhaler prescribing, and have controlled the appropriate introduction of new modalities of treatment, such as LABA/LAMA combinations.

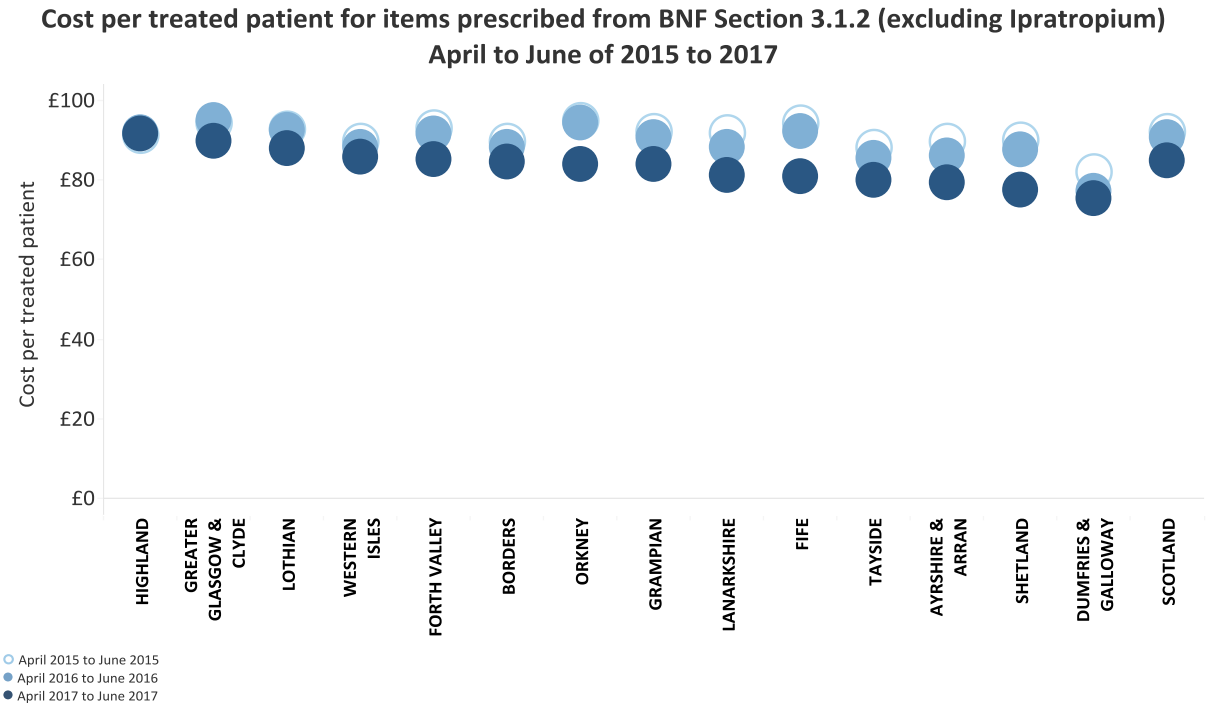
There remains work to be done. New treatment modalities result in revision of guidance. The MCN's *light touch* strategy seems to work with the local prescribing community. This may take longer to be effective, but embeds mutual trust and confidence in the prescribing guidance group and it's prescribing community.

Further GRIP activity would target clearly noticeable cost efficiency activities, but will require continued financial investment in the clinical team.

**Cost per treated patient for items prescribed from BNF Section 3.1.2 (Antimuscarinic bronchodilators excluding Ipratropium) - July - September 2016**

This is an area of significant growth within NHS Scotland. This measure acts as a surrogate marker of a well-managed and implemented formulary process. This includes LABA/LAMA combination inhalers



**Case Study - NHS Ayrshire & Arran**

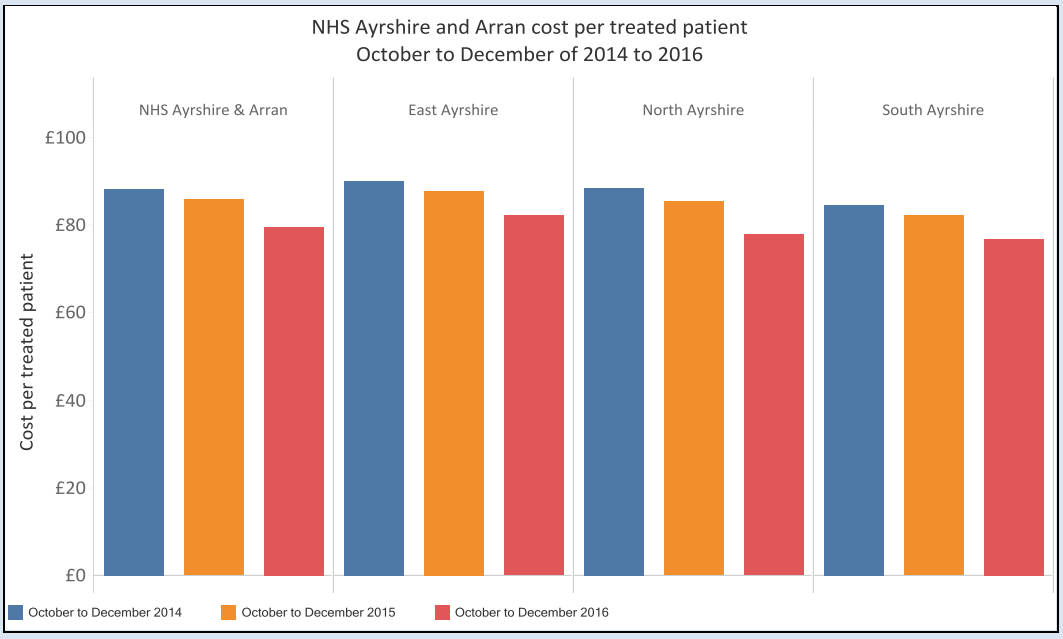
**Background**

This case study is part of a review of respiratory prescribing within NHS Ayrshire & Arran. At present the Board has one of the highest respiratory costs per treated patient and COPD prevalence is amongst the highest. There is a programme of work ongoing to ensure our respiratory care including prescribing is optimum. This case study looks at the prescribing of long acting muscarinic antagonists.

**The Key Components**

Potential savings were identified following formulary review in early 2015. In 2015/16 NHS Ayrshire and Arran launched a Prescribing Incentive Scheme to selected practices in South and East Ayrshire with practices chosen on the basis of potential return on investment due to limited funding available.

The Prescribing Support Team then undertook the review in other practices from 2015/16 and this continues through 2016/17 with remaining practices still in progress (these are mainly practices who previously had no prescribing support input).



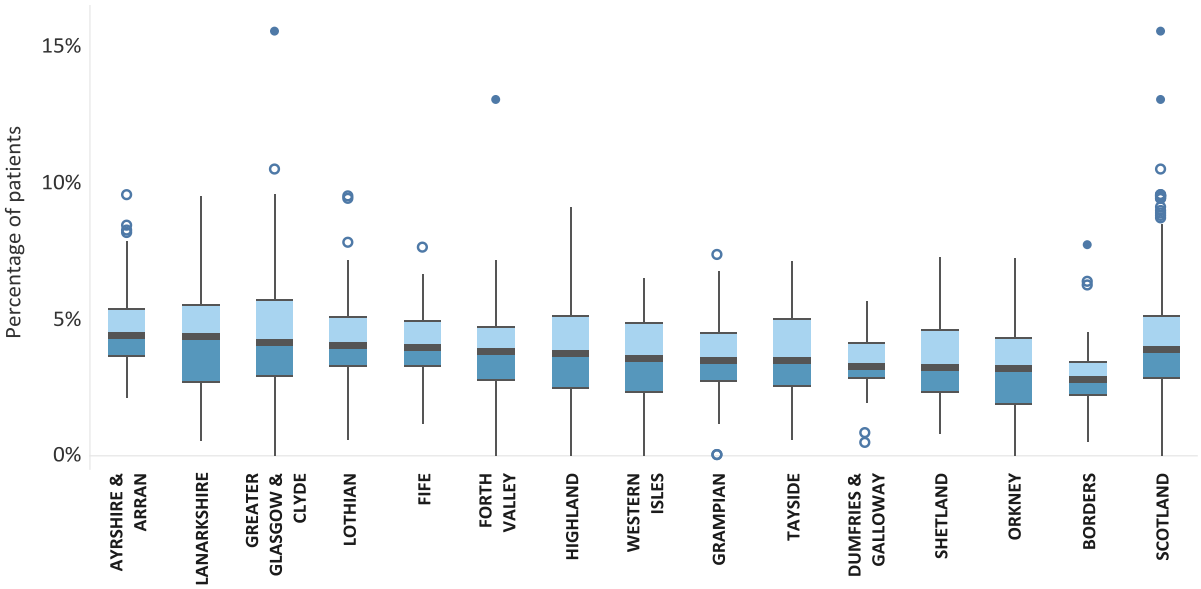

**The Next Steps**

The next step is to review those excluded from the previous switch and those who have switched back. This will include patients with asthma, who were excluded from the original switch.

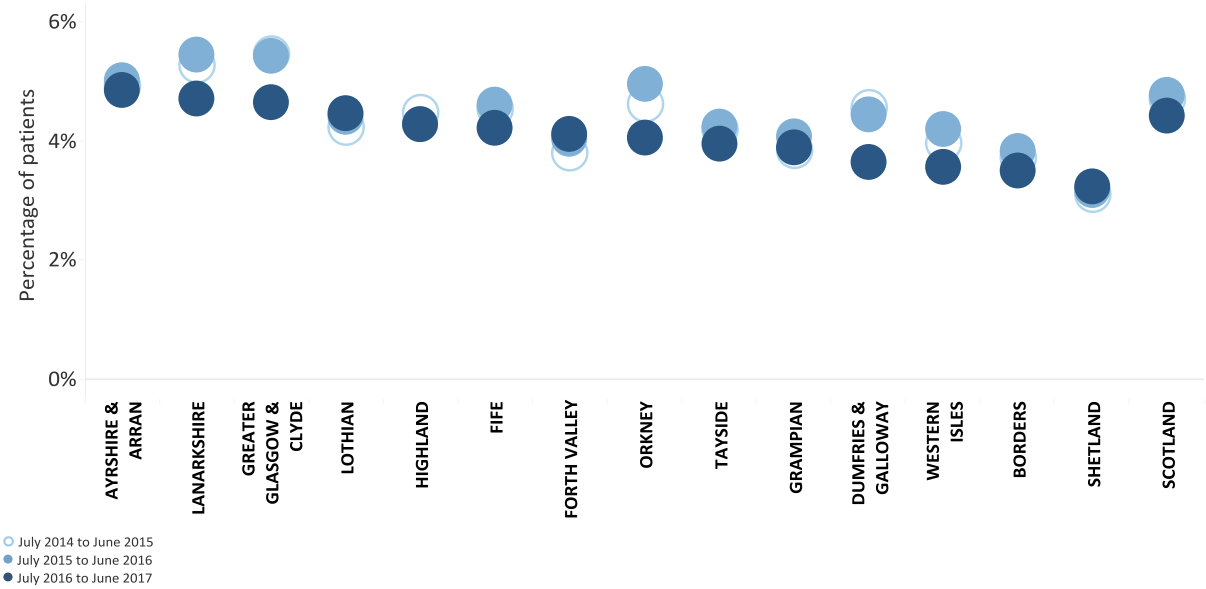
**Number of patients prescribed >14 months' equivalent of Inhaled Corticosteroid inhalers per annum as a % of all patients prescribed Inhaled Corticosteroid inhalers**

Boards continue to endeavour to minimise unnecessary medicines waste. This issue was highlighted in the 2014 strategy. This document provides an appropriate measure of potential waste in a key area. Clinicians would expect patients to receive the equivalent of 12 months of dosing per year, therefore over 14 may represent some waste.

**Number of patients prescribed >14 Inhaled Corticosteroid inhalers per annum as a percentage of all patients prescribed Inhaled Corticosteroids**
**July 2016 to June 2017**




**Number of patients prescribed >14 Inhaled Corticosteroid Inhalers per annum as a percentage of all patients prescribed Inhaled Corticosteroids**
**July to June of 2014 to 2017**



**Case Study – NHS Greater Glasgow and Clyde**

**Background**

In 2016, NHS Greater Glasgow and Clyde prioritised a review of patients receiving more than 14 ICS/LABA inhalers in the previous 12 months.

**Key Components**

This was included in the Board's prescribing initiative for 2016/17. Practices worked with their Prescribing Support Pharmacists to review patients identified using a locally developed tool. The tool interrogates practice prescribing systems with predefined searches.

Each patient was individually reviewed to determine what had led to the patient receiving a greater than would be expected. An appropriate action was then put in place. This ranged from optimisation of prescribing patterns, patient education and engagement with community pharmacy.

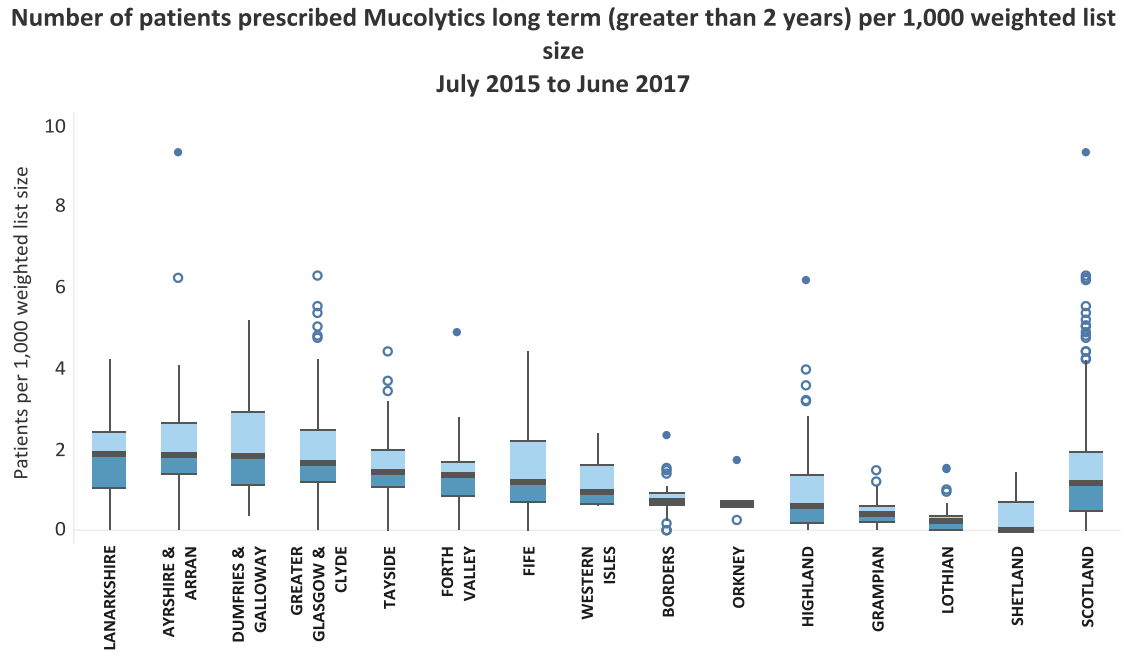
Practices were provided baseline data and challenged to show an improvement in the number of patients receiving high levels of ICS/LABA inhalers.

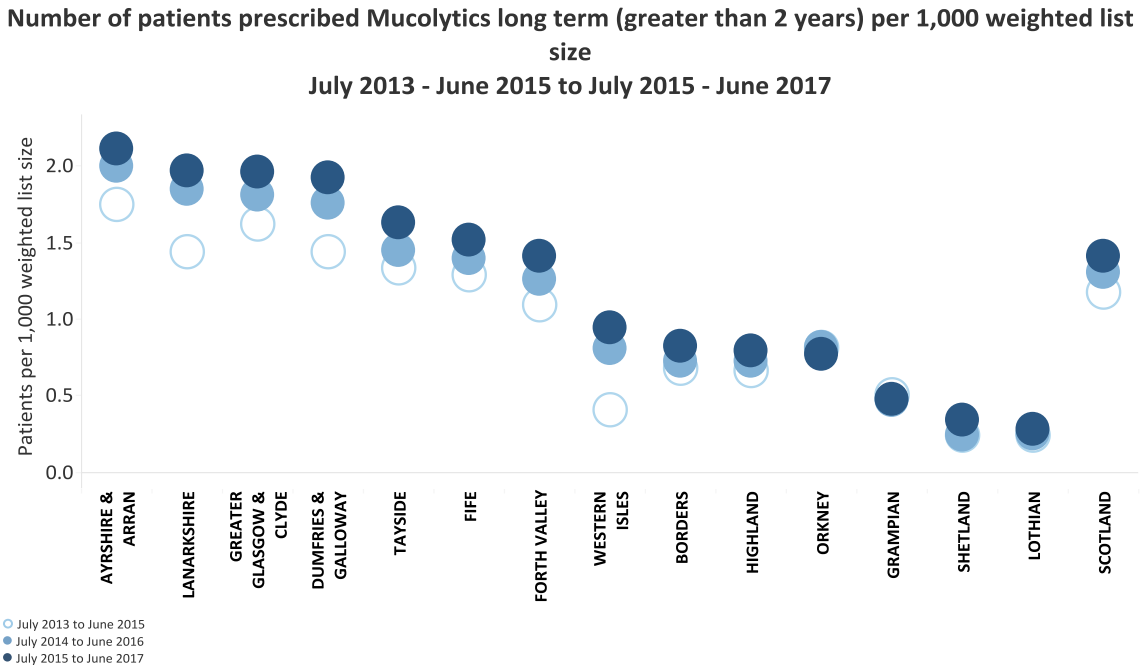
**The Benefits**

This has resulted in an overall reduction in this prescribing measure at Board level. This compares favourably with shifts seen in some other Boards and is reflected in the data shown on the previous page.

## Number of patients per 1,000 for BNF Section 3.7 (Mucolytics)

Oral mucolytic drugs may be considered in patients with a chronic productive cough. Mucolytic therapy should only be continued if there is symptomatic improvement (for example, reduction in frequency of cough and sputum production). Mucolytic therapy should be stopped if there is no benefit after four weeks. They should not be routinely used to prevent exacerbations in people with stable COPD.[17,18] **It is important that a clinical review of mucolytic prescribing is undertaken at four weeks, regardless of where the medicine was initiated – this should be scheduled when prescribing is commenced.** Boards should be cognisant of the importance of cross sector improvement work in this area.



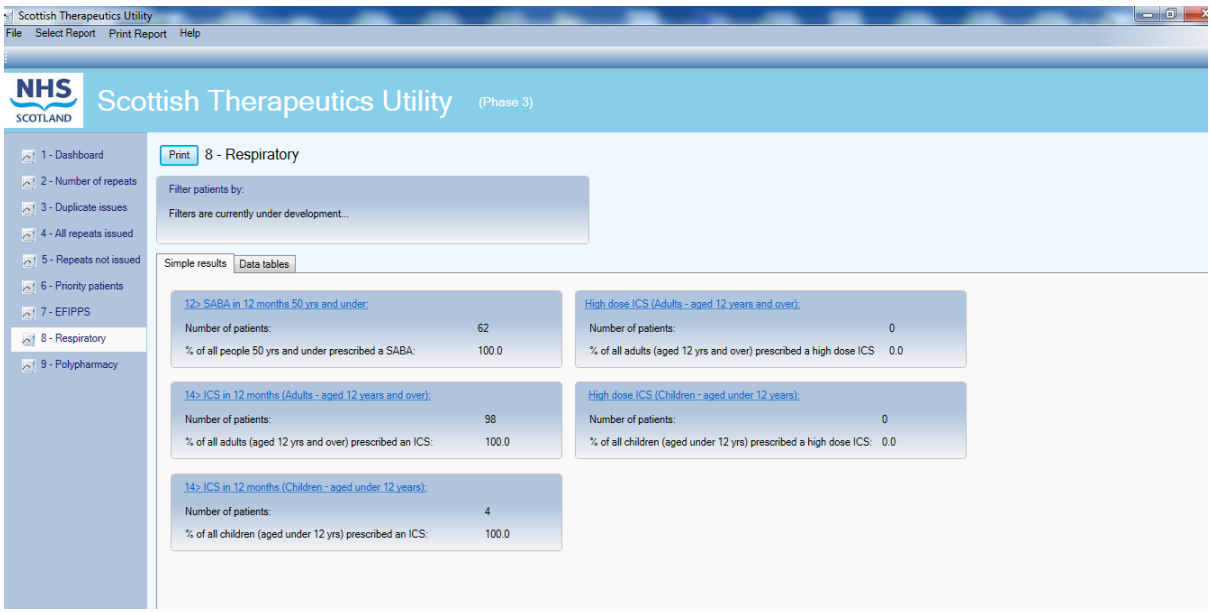



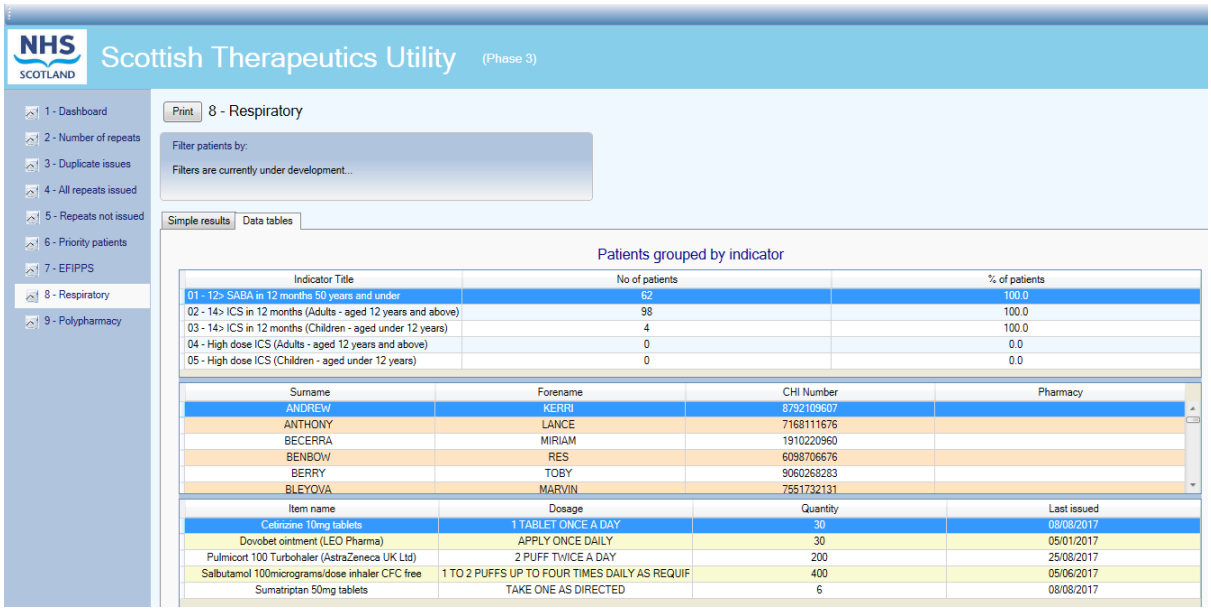

[17] British National Formulary
[18] NICE

## Scottish Therapeutics Utility

The Scottish Therapeutics Utility (STU) is a software programme aimed at improving the quality of repeat prescribing in NHS Scotland. A number of searches are being developed for STU based on the data within this document. These will enable clinicians to quickly identify patients who may benefit from a review of their respiratory medicines. Boards will be notified through their Scottish Practice Pharmacy and Prescribing Advisors Association member(s) when the searches are available.

The screenshots below show how these searches will look within STU.[19]




[19] Screenshots taken from test system – no real patients are displayed

## Polypharmacy Case Studies

| **Patient with asthma** |
|---|
| **Patient Details** |
| 19 year old man |
| **Current medical history** |
| Asthma since childhood<br>Hayfever<br>One hospital admission due to asthma age 6 and one A+E attendance age 8<br>No recent courses of oral steroids |
| **Results** |
| No spirometry or lung function tests<br>BMI 21<br>Previous best peak flow 490 (3 years ago) |
| **Lifestyle** |
| Attends college<br>Plays football<br>Smokes occasionally<br>Lives at home with Mum |
| **Current Medication** |
| Clenil modulite 100mcg two puffs twice a day, last ordered 6 months ago<br>Salbutamol 100mcg inhaler, two puffs when required, ordering 1 or 2 a month<br>Loratadine 10mg tablets, one a day, ordered recently |
| **Most recent consultations** |
| Attended GP as has a cough and wondered if had a chest infection<br>GP asked to attend for respiratory review |
| **Current symptoms** |
| Reports “asthma fine”<br>ACT 15/25<br>Peak flow 450<br>Coughing at night which is causing him to waken (twice in the last week)<br>Using salbutamol inhaler before and during football- Asthma not stopping him from attending college |

| Domain | | Steps | Process | Patient details |
|---|---|---|---|---|
| Aims | 1. | What matters to the patient problems | **Review diagnoses and identify therapeutic objectives with respect to:**<br>• Identify objectives of drug therapy<br>• Management of existing health problems. Prevention of future health | • Aim of treatment should be complete control of asthma to prevent asthma attacks and future respiratory problems<br>• He would like to be able to play football without needing his salbutamol |
| Need | 2. | Identify essential drug therapy | **Identify essential drugs (not to be stopped without specialist advice)**<br>• Drugs that have essential replacement functions (e.g. thyroxine)<br>• Drugs to prevent rapid symptomatic decline (e.g. drugs for Parkinson's disease, heart failure) | • Clenil modulite<br>• Salbutamol |
| | 3. | Does the patient take unnecessary drug therapy? | **Identify and review the (continued) need for drugs**<br>• What is medication for?<br>• with temporary indications<br>• with higher than usual maintenance doses<br>• with limited benefit/evidence of its use in general<br>• with limited benefit in the patient under review (see Drug efficacy & applicability (NNT) table) | • Is loratadine still required? |
| Effectiveness | 4. | Are therapeutic objectives being achieved? | **Identify the need for adding/intensifying drug therapy in order to achieve therapeutic objectives**<br>• to achieve symptom control<br>• to achieve biochemical/clinical targets<br>• to prevent disease progression/exacerbation<br>• is there a more appropriate medication that would help achieve goals | • Although patient reported "asthma fine" his ACT score was low and peak flow had dropped, asthma is not well controlled.<br>• If his asthma continues like this he is at risk of an acute attack and future respiratory problems<br>• Discussed compliance with Clenil (how it works, why you need to take regularly, avoiding future problems, relate to playing football as this is important to patient). Explored reasons why he is not taking<br>• Checked technique with MDI and given spacer for preventer and DPI salbutamol to carry with him |

| | | | | |
|---|---|---|---|---|
| **Safety** | 5. | Does the patient have ADR/ Side effects or is at risk of ADRs/ side effects?<br><br>Does the patient know what to do if they're ill? | **Identify patient safety risks by checking for**<br>• if the targets set for the individual appropriate ?<br>• drug-disease interactions<br>• drug-drug interactions (see ADR table)<br>• monitoring mechanisms for high-risk drugs<br>• risk of accidental overdosing<br>**Identify adverse drug effects by checking for**<br>• specific symptoms/laboratory markers (e.g. hypokalaemia)<br>• cumulative adverse drug effects (see ADR table)<br>• drugs that may be used to treat side effects caused by other drugs<br>**Sick Day rule cards** | • Complete asthma control is an appropriate target for this patient<br>• Discussed any problems with Clenil and if he had experienced side-effects which he had not<br>• Self management was discussed with this patient using an asthma action plan. He was given a written plan based on symptoms and peak flow (previous best peak flow recorded). Given peak flow meter for home for use if feeling symptomatic.<br>• Discussed smoking and the effect on asthma and inhalers, smokes when drinking |
| **Cost-effectiveness** | 6. | Is drug therapy cost-effective? | **Identify unnecessarily costly drug therapy by**<br>• Consider more cost-effective alternatives (but balance against effectiveness, safety, convenience) | • On cost effective inhalers and offered formulary choice of salbutamol DPI which he was happy with |
| **Patient centeredness** | 7. | Is the patient willing and able to take drug therapy as intended? | **Does the patient understand the outcomes of the review?**<br>• Consider Teach back<br>**Ensure drug therapy changes are tailored to patient preferences by**<br>• Is the medication in a form the patient can take?<br>• Is the dosing schedule convenient?<br>• Consider what assistance the patient might have and when this is available<br>• Is the patient able to take medicines as intended<br>**Agree and communicate plan**<br>• Discuss with the patient/carer/welfare proxy therapeutic objectives and treatment priorities<br>• Decide with the patient/ carer/ welfare proxies what medicines have an effect of sufficient magnitude to consider continuation or discontinuation<br>• Inform relevant healthcare and social care carers, changes in treatments across the care interfaces | • Plan agreed- he would take Clenil regularly for 4 weeks and return for review, aiming to not need his salbutamol during exercise<br>• Teach back used to ensure understanding<br>• Patient happy with changes |

## Patient with COPD

**Patient Details**

- 65 year old woman

**Current medical history**

- COPD confirmed a year ago
- One exacerbation in the last year treated with antibiotics and steroids, no hospital admissions
- No previous respiratory problems
- OA of knees and hands

**Results**

- Spirometry confirmed COPD a year ago ($FEV_1$/FVC 0.6, FEV1 52 % predicted)
- Normal CXR a year ago

**Lifestyle**

- Lives with husband who has early dementia
- Support from daughter
- Smokes 20 cigarettes a day
- No alcohol
- BMI 24
- Enjoys gardening

**Current Medication**

- Salbutamol 100mcg inhaler, two puffs twice a day, ordering 2 a month
- Paracetamol 1g PRN
- Ibuprofen gel

**Most recent consultations**

- Attended for COPD review and finding she is struggling with breathlessness

**Current symptoms**

- Breathless on exertion and avoids hills/ stairs
- MRC (degree of breathlessness) grade 4
- Is struggling to do her gardening due to breathlessness
- Coughs in the morning and more phlegm in the morning
- Oxygen saturation fine

| Domain | | Steps | Process | Patient details |
|---|---|---|---|---|
| Aims | 1. | What matters to the patient problems | **Review diagnoses and identify therapeutic objectives with respect to:**<br>• Identify objectives of drug therapy<br>• Management of existing health problems. Prevention of future health | • Aim of treatment should be to improve breathlessness, reduce exacerbations, prevent further decline in lung function and improve quality of life<br>• Discussed what is important to the patient, she would like to be able to garden and worries about the future and how she will care for her husband |
| Need | 2. | Identify essential drug therapy | **Identify essential drugs (not to be stopped without specialist advice)**<br>• Drugs that have essential replacement functions (e.g. thyroxine)<br>• Drugs to prevent rapid symptomatic decline (e.g. drugs for Parkinson's disease, heart failure) | • Salbutamol inhaler |
| | 3. | Does the patient take unnecessary drug therapy? | **Identify and review the (continued) need for drugs**<br>• What is medication for?<br>• with temporary indications<br>• with higher than usual maintenance doses<br>• with limited benefit/evidence of its use in general<br>• with limited benefit in the patient under review (see Drug efficacy & applicability (NNT) table) | • Paracetamol and ibuprofen help with pain in knees |
| Effectiveness | 4. | Are therapeutic objectives being achieved? | **Identify the need for adding/intensifying drug therapy in order to achieve therapeutic objectives**<br>• to achieve symptom control<br>• to achieve biochemical/clinical targets<br>• to prevent disease progression/exacerbation<br>• is there a more appropriate medication that would help achieve goals | • Using salbutamol 3 to 5 times a day via spacer<br>• Technique checked and fine<br>• Smoking cessation explored and help offered<br>• Pulmonary rehab discussed and offered<br>• Started on LAMA (formulary choice) and to be seen in 4 weeks to review for benefit (technique OK and able to manage with hands)<br>• Anxiety and depression discussed, patient was feeling low and anxious about the future. Directed to self help material and review in 4 weeks |
| Safety | 5. | Does the patient have ADR/ Side effects or is at risk of ADRs/ side effects? | **Identify patient safety risks by checking for**<br>• if the targets set for the individual appropriate ?<br>• drug-disease interactions | • Recognising exacerbations discussed and action to take<br>• When required use of salbutamol discussed |

| | | | | |
|---|---|---|---|---|
| | | | • drug-drug interactions (see ADR table)<br>• monitoring mechanisms for high-risk drugs<br>• risk of accidental overdosing | • Pacing discussed and directed to *mylungsmylife* |
| | | Does the patient know what to do if they're ill? | **Identify adverse drug effects by checking for**<br>• specific symptoms/laboratory markers (e.g. hypokalaemia)<br>• cumulative adverse drug effects (see ADR table)<br>• drugs that may be used to treat side effects caused by other drugs<br>**Sick Day rule cards** | |
| **Cost-effectiveness** | 6. | Is drug therapy cost-effective? | **Identify unnecessarily costly drug therapy by**<br>• Consider more cost-effective alternatives (but balance against effectiveness, safety, convenience) | • On cost effective inhalers and offered formulary choice of LAMA which she was happy with and able to use |
| **Patient centeredness** | 7. | Is the patient willing and able to take drug therapy as intended? | **Does the patient understand the outcomes of the review?**<br>• Consider Teach back<br>**Ensure drug therapy changes are tailored to patient preferences by**<br>• Is the medication in a form the patient can take?<br>• Is the dosing schedule convenient?<br>• Consider what assistance the patient might have and when this is available<br>• Is the patient able to take medicines as intended<br>**Agree and communicate plan**<br>• Discuss with the patient/carer/welfare proxy therapeutic objectives and treatment priorities<br>• Decide with the patient/ carer/ welfare proxies what medicines have an effect of sufficient magnitude to consider continuation or discontinuation<br>• Inform relevant healthcare and social care carers, changes in treatments across the care interfaces | • Plan agreed- she would take LAMA regularly for 4 weeks and return for review, aiming to feel less breathless and be able to do some gentle exercise<br>• Felt ready to consider smoking cessation, motivation is to stop breathing getting worse and be able to care for her husband. Directed to smoking cessation services<br>• Willing to attend pulmonary rehab, she thought she might enjoy getting out for a while<br>• Teach back used to ensure understanding<br>• Patient happy with changes |

## Glossary of abbreviations

ACT – Asthma Control Test
BNF – British National Formulary
CF - Cystic Fibrosis
FEV1. Forced Expiratory Volume in 1 Second
COPD – Chronic Obstructive Pulmonary Disease
GOLD - Global Initiative for Chronic Obstructive Lung Disease
HSCP – Health and Social Care Partnership
ICS – Inhaled Corticosteroids
ISD – Information Services Division
LABA – Long Acting Beta Agonist
LAMA - Long-Acting Muscarinic Antagonist
LRA - leukotriene receptor antagonists
MDI - Metered-Dose Inhaler
MRC – Medical Research Council – Breathlessness scale
PIS – Prescribing Information System
PRISMS - Prescribing Information System for Scotland
SABA – Short Acting Beta Agonists
SAMA - Short-Acting Muscarinic Antagonist
SIGN BTS – Scottish Intercollegiate Guidelines Network / British Thoracic Society
SMC – Scottish Medicines Consortium