GP Cluster data and intelligence report
Polypharmacy and reducing harm from medicines

Contents

Section 1: Introduction

During 2021 HIS undertook an extensive “deep dive” and produced a report. Mercer’s paper on clusters reflected a clear and consistent ask for good data to support key principles of cluster working:

> “Utilise GP Clusters as the means of establishing peer-led, values driven quality improvement activity with both a focus on practice based (intrinsic) quality and contribution to system based (extrinsic) quality.”
>
> “This commitment to improving the quality of care is an intrinsic component of professionalism and a core requirement of appraisal and revalidation."

The national Improving Together Advisory Group has worked with key stakeholders (including Practice Quality Leads (PQL) and Cluster Quality Leads (CQL)) from across the system to design and develop the first Diabetes data and intelligence report. This was followed by Respiratory and now Polypharmacy as the third in the series, focused around reducing the risks of Polypharmacy in adults at higher risk (e.g. frailty, those on greater than 10 medicines, high risk medicine combinations or areas of health inequality). This report draws on existing primary care data sources, with opportunities for shared learning with the additional resources.

Who is this for?

This report is intended for PQLs and CQLs to share with the practice team. Note that patient identifiable data on Scottish Therapeutics Utility (STU) is only accessible at individual practice level and can be used to aid discussions at cluster level. Collation of data for each practice and cluster is explained in the report and can be facilitated by Local Intelligence Support Team (LIST), allowing practice teams and clusters the opportunity to use their data in the practice and local context.

This report and the supporting material and toolkit also provide opportunities for wider discussion and shared learning across CQLs and clusters at HSCP, board and national level with a focus on quality improvement and patient safety.

It is recognised that every cluster and health board will have local service priorities and pathways of care. The report should not therefore be used to make assumptions around performance in any area, but rather to support local discussion around areas of variation - where good practice can be shared, and where there may be opportunities for looking at improvement both within practices, but also the wider local (extrinsic) system.

Why focus on Polypharmacy?

As more people are living longer with more complex multimorbidity, one in six unplanned hospital admissions are as a result of medicine related harm. A UK wide report stated that 15% of people are taking more than five medicines daily. There is a growing need for the system to recognise the safety, clinical, environmental and economic implications for ensuring appropriate polypharmacy management.

This report draws on the national polypharmacy guidance, and uses evidence-based recommendations to set out a "how to" to support practices in implementing regular, standardised polypharmacy reviews within practice.

Why is this important?

- Increasing age, morbidity and number of medications is associated with increased consultation rate https://www.researchgate.net/publication/358355143_How_do_multi-morbidity_and_polypharmacy_affect_general_practice_attendance_and_referral_rates_A_retrospective_analysis_of_consultations

- Multimorbidity is strongly related to adverse drug events, with risk increasing 12-28% for every new specialty involved https://www.researchgate.net/publication/233848147_Multimorbidity_polypharmacy_referrals_and_adverse_drug_events_Are_we_doing_things_well

- It is estimated up to 17% of all hospital admissions are medicines related, and up to 50% of those due to preventable adverse drug reactions. People over 65 years, and on 10 or more medicines are at the highest risk. See Figure 1 and Chart 1.

Figure 1: Impact of medicine related harm

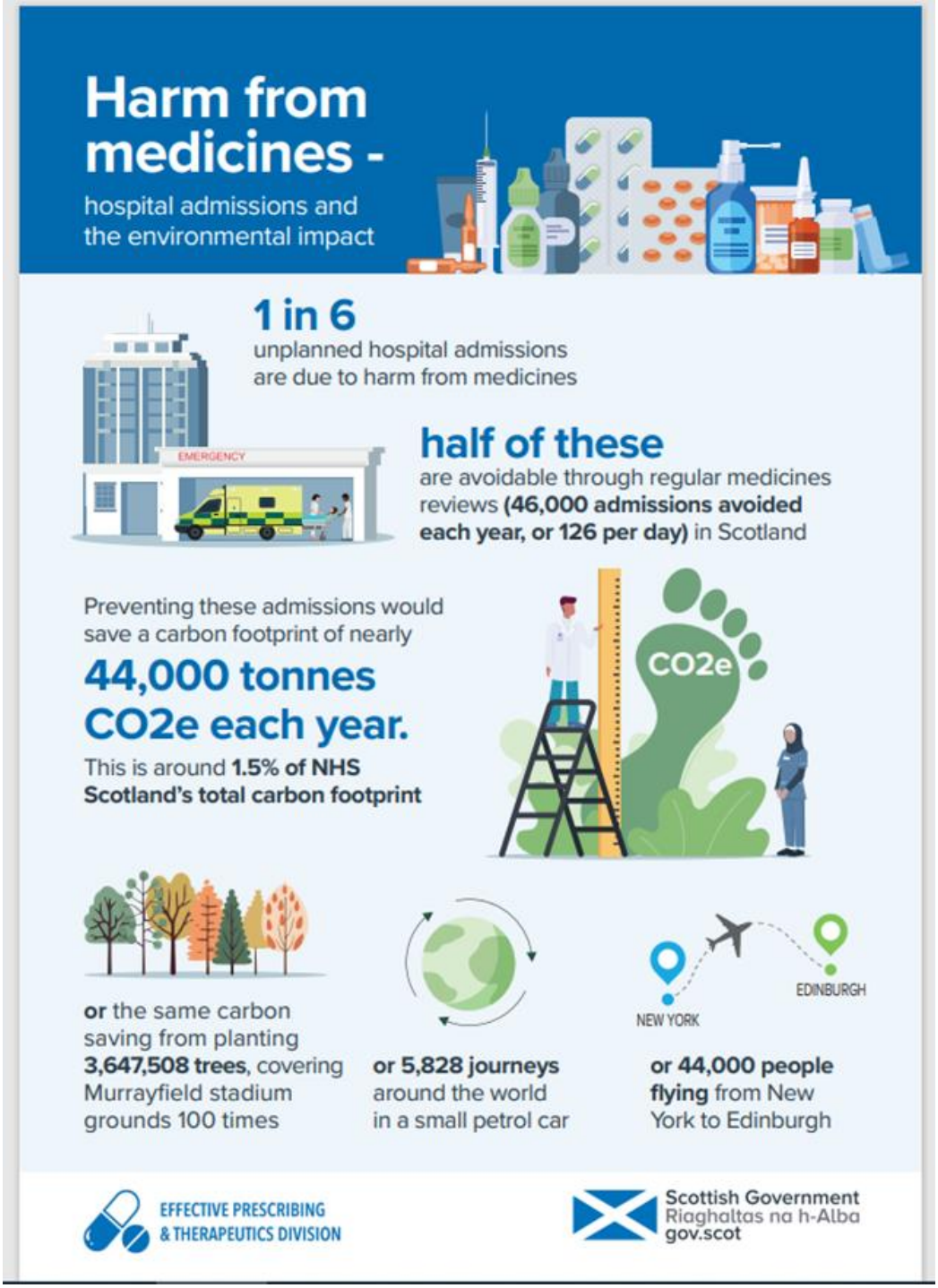
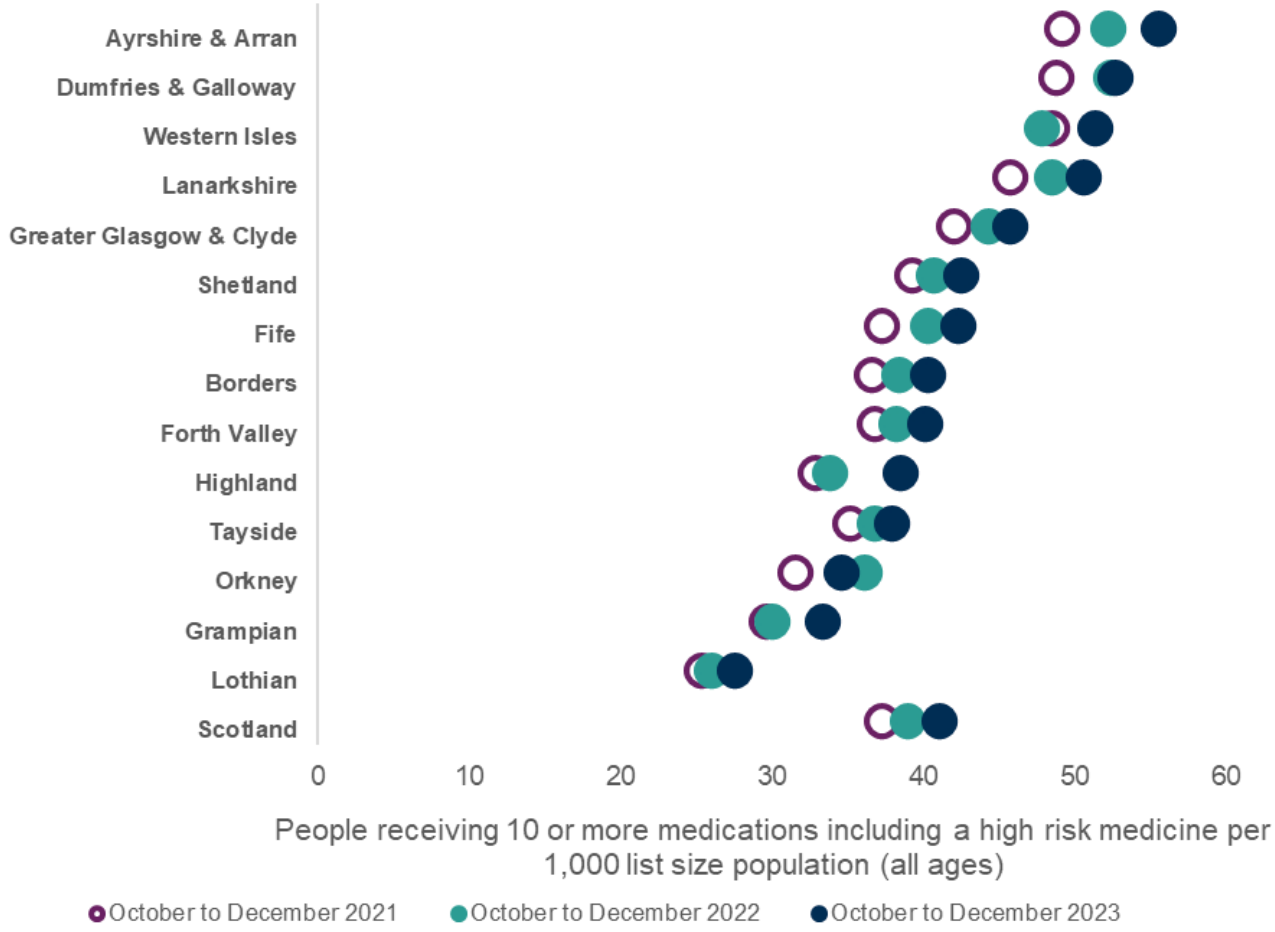


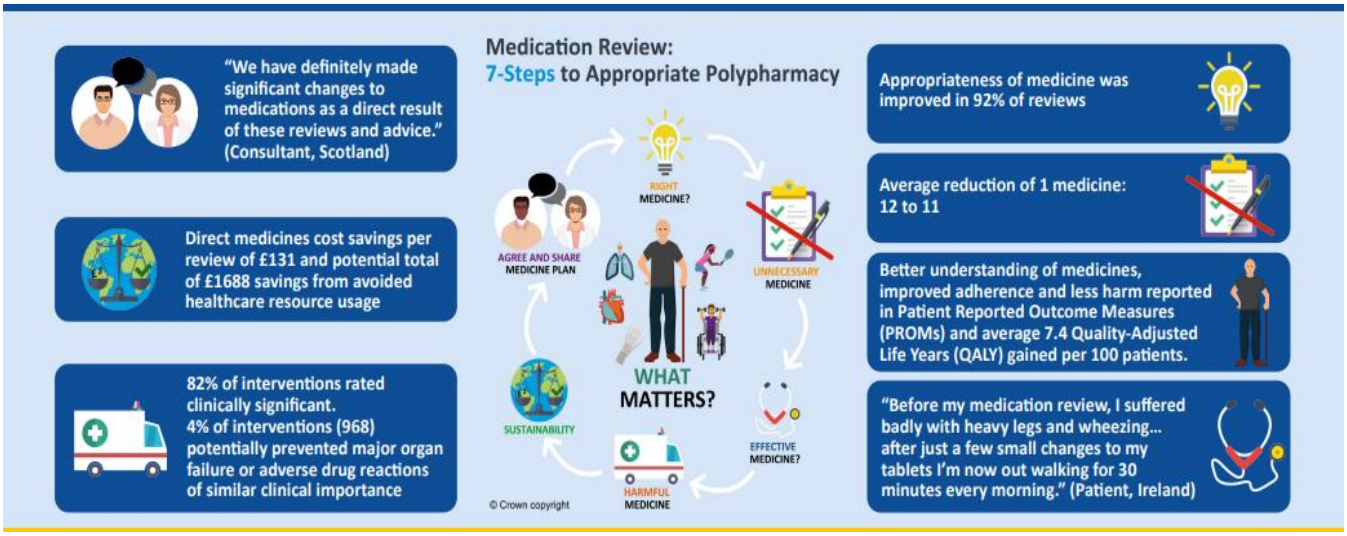
Chart 1: people receiving 10 or more medications including a high-risk medicine per 1000 list size (all ages)



- Polypharmacy is linked with adverse outcomes including falls, higher mortality and hospital admissions, adverse drug reactions and medicine non-adherence, as well as reduced quality of life and higher health care costs.

- The iSIMPATHY study demonstrated that person-centred medication reviews, using the validated 7-Steps methodology led to improved patient outcomes with a QALY gain of 7.4. The iSIMPATHY evaluation report demonstrated reduced medicines waste, more appropriate medication use, and for every 100 reviews undertaken, released savings of nearly £20,000 and an average of £168,000 avoided medical costs. There was an average reduction of one long term medicine per review. See Figure 2.

Figure 2: Summary of iSIMPATHY outcomes



Commitment to polypharmacy reviews

The impact of polypharmacy on people, the NHS and the wider environment means this national priority should encompass all parts of the system, including care homes and hospitals. GPs (as expert medical generalists), GP nurses (managing long-term conditions) and pharmacists (as experts in medicines) have key roles in working with the wider multidisciplinary team to support and enable regular, reliable, standardised polypharmacy reviews that meet their local population needs.

It must be understood by boards/HSCPs that investment is required to undertake effective polypharmacy reviews reliably and at scale. This is necessary to support practice teams to plan (with Q.I. support where needed), provide training and allocate adequate time within workplans to undertake reviews.

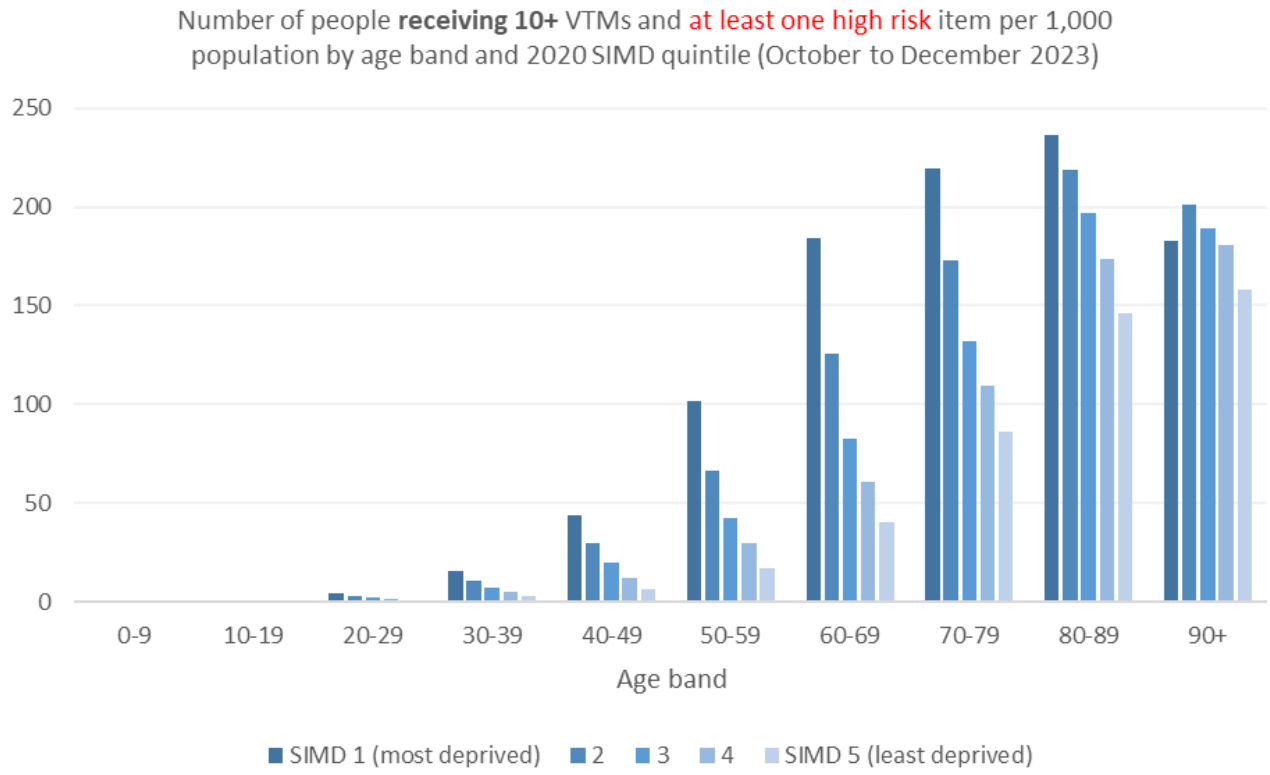
In addition, reflecting on the work of Don Berwick (radical rules for redesign of healthcare), consideration should be given to re-investing a proportion of savings back into continuous service redesign, further enabling value-based prescribing and maximising outcomes. This could encompass investment in equipment e.g. blood pressure monitors, patient education resources, staff time for training, education or service delivery or additional investment to release more resource and enable greater service redesign.

A process flow chart (see Figure 4) and addition data and implementation resource pack are included with this document to support General Practice Cluster Leads and practice managers to implement polypharmacy reviews in practice, utilising the wider primary care MDT team.

Health inequalities and polypharmacy

There is a relationship between increasing multimorbidity, adverse childhood events[1] and the risk of polypharmacy at an earlier age in deep end practices and deprived communities as shown below.

Chart 2: Impact of deprivation on number of medicines received[2]



Priority at risk groups for review

There are tools in General Practice, for example Scottish Therapeutics Utility, which can be used to identify and prioritise higher risk groups for review. For example:

- Older adults, frailty
- Greater than 5 or 10 prescribed medicines
- People on a high-risk medicine or combinations
- People on the mental health triple whammy (individuals on three or more of opioids, benzodiazepines, z-drugs, gabapentinoids or antipsychotic medication)
- Greater than 3 SABA inhalers prescribed annually (increased risk of hospitalisation and asthma death)

These indicators can also be applied to identify those at risk in a care home setting.

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[1] Senaratne, D.N.S., Thakkar, B., Smith, B.H. *et al.* The impact of adverse childhood experiences on multimorbidity: a systematic review and meta-analysis. BMC Med **22**, 315 (2024) https://bmcmedicine.biomedcentral.com/articles/10.1186/s12916-024-03505-w?s=09

[2] VTM - virtual therapeutic moiety i.e. the most generic representation of a medication that only conveys the medication, e.g. paracetamol.

Section 2. Practice and cluster resources

Figure 3: Quality improvement process

Polypharmacy Implementation Toolkit

An accompanying toolkit has been created to support practices to implement polypharmacy reviews using QI methodology and includes additional tools and practical resources to support use in practice.

Using data to drive change

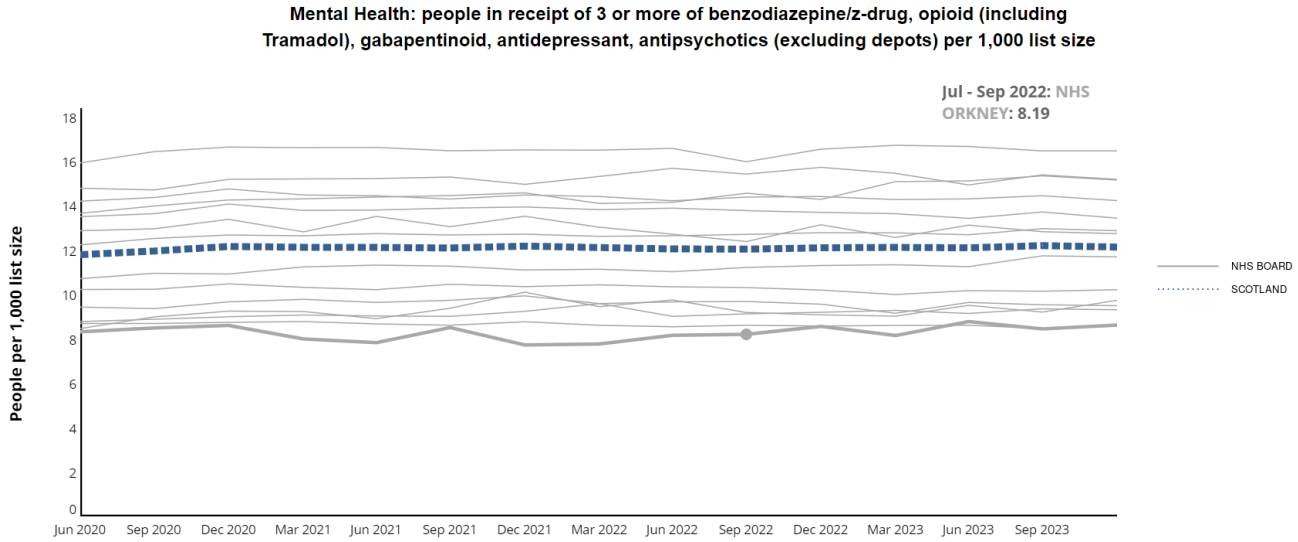
National Therapeutic Indicators and Scottish Therapeutic Utility

A series of prescribing indicators have been developed to aid prescribers in identifying variation in prescribing and allow identification of individuals (STU) for review and optimisation of treatments.

The National Therapeutic Indicators (NTIs) offer a chance to track changes in prescribing across a suite of polypharmacy indicators and high-risk medicines at GP practice, GP Cluster and NHS health board level. The STU software within individual GP practice allows identification of any patient group or individual within each practice that could benefit from review of their treatment. A STU user guide is available and allows links to the patient record, allowing you to make changes to medication within Vision and EMIS clinical systems.

The NTI dashboards can identify where practices or clusters are in relation to key prescribing indicators for polypharmacy and allows benchmarking of cluster or health board regions against similar clusters, or the Scottish average. One of the new indicators developed is the mental health triple whammy, shown below. Practices can then compare their data to others in the cluster to help account for demographic or regional variation in practice.

Chart 3: Mental health triple whammy



NTIs currently available for polypharmacy:

- Acute kidney injury (renal triple whammy)
- Antibiotics (repeated courses)
- Antibiotics (UTI 3-day courses)
- Anti-diabetic drugs (polypharmacy)
- Anti-psychotics (older people)
- Bone marrow suppression (methotrexate no folic acid)
- Falls fractures and delirium (anticholinergics older people)
- Falls fractures and delirium (oral steroids no bone protection)
- Falls fractures and delirium (sulfonylureas older people)
- Opioid and gabapentinoid dependency (high dose gabapentinoids)
- Opioid and gabapentinoid dependency (high dose opioids 120mg)
- Opioid and gabapentinoid dependency (high dose opioids 90mg)
- Opioid and gabapentinoid dependency (high dose 50mg)
- Opioid and gabapentinoid dependency (long term opioids)
- Inhaled corticosteroids (high strength)
- Poor asthma control (3 or more bronchodilator inhalers)
- Poor asthma control (6 or more bronchodilator inhalers)

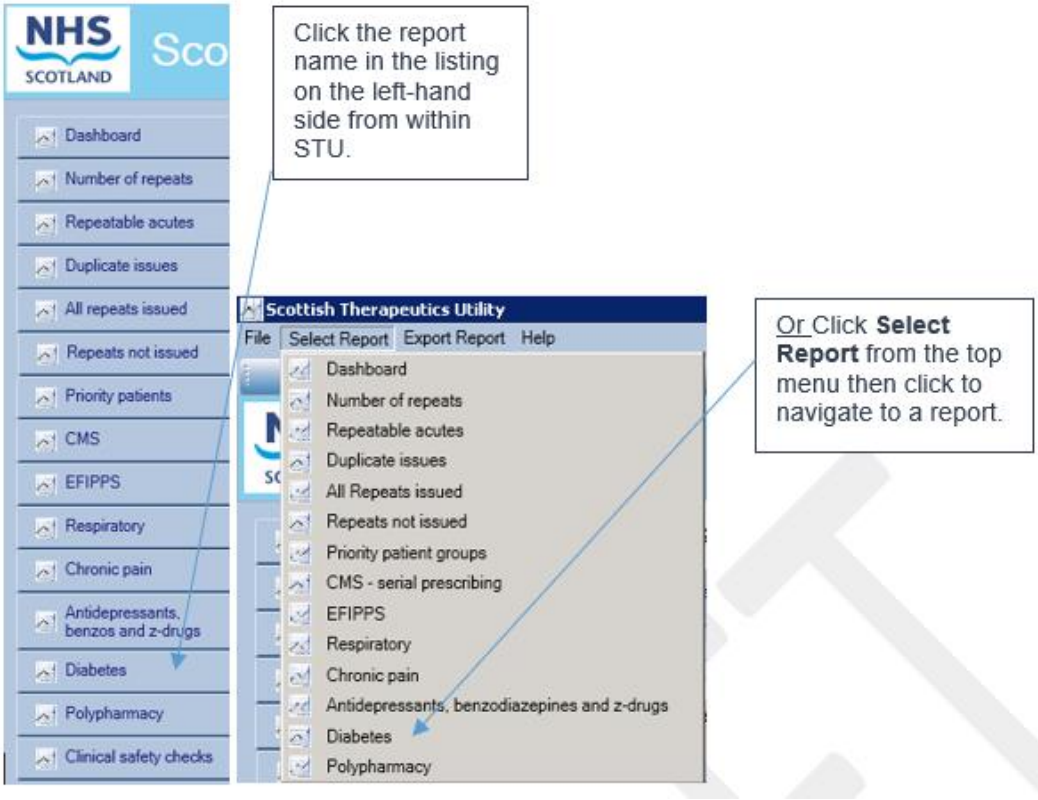
The current NTIs are aligned with similar case finding searches within STU. This allows GP practices to identify those individuals within their practice lists who could benefit from review.

Where to find the Polypharmacy tab in STU

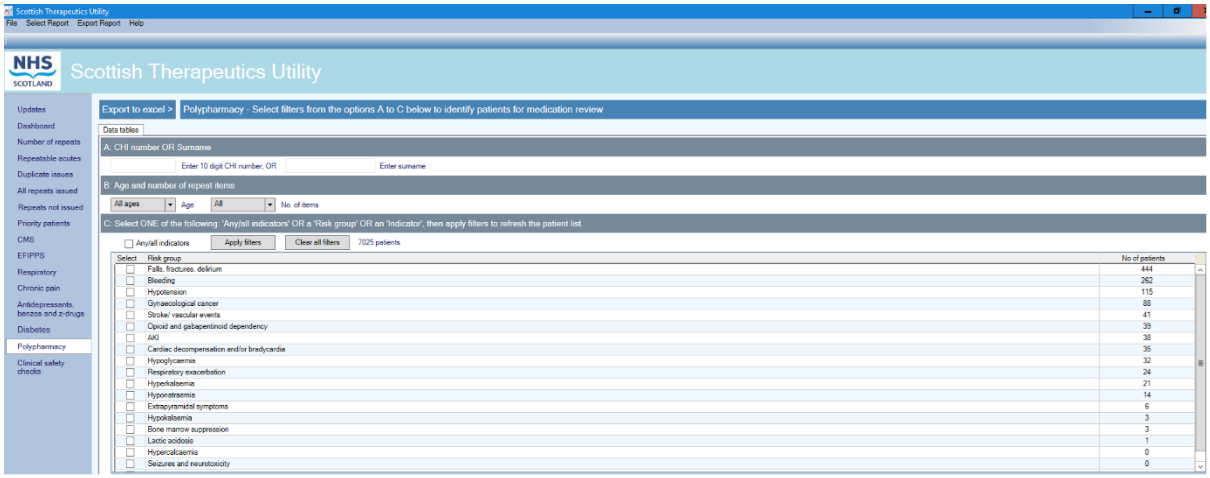
Within the STU platform navigate to the Polypharmacy prescribing section where the various searches identify patients that may benefit from review of their medication.

A full list of STU searches available for polypharmacy can be found in Appendix 1**.**

There are two ways to access the reports in STU:



The top section lists all of the Polypharmacy indicators with summary figures.



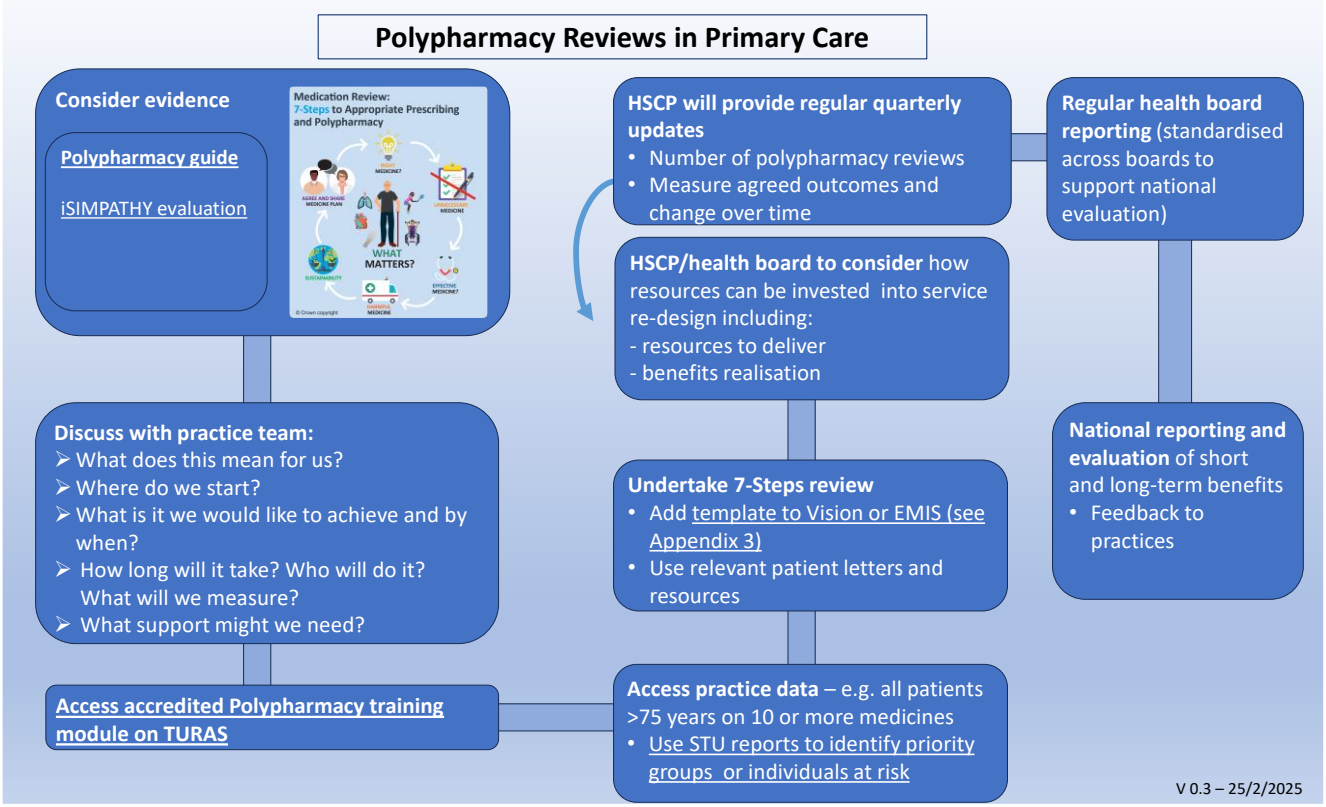
The report has various filters that can be applied, for example

1. Patient age bands can be filtered to 55+, 65+, 75+, 85+
2. Number of medicines can be filtered to prioritise patients on a higher number of medications

Implementing Polypharmacy reviews in Practice

A process flow chart (see Figure 4) and additional resources are included to support general practice teams in implementing polypharmacy reviews in practice utilising the wider primary care MDT team.

Figure 4: Process flow chart to support implementation of polypharmacy reviews



Consider the evidence

The national polypharmacy guide sets out national and international evidence base. This guide is currently being updated and due to be shared for consultation in 2025. The NTIs developed from this work can be used to identify areas of variation. The updated polypharmacy guidance contains numerous hot topics and case studies and details the 7-Steps review methodology that should be used when undertaking polypharmacy reviews.

Figure 5: 7-Steps medication review infographic

iSIMPATHY clearly demonstrated improved outcomes through application of the standardised, 7-Steps review process. A polypharmacy review is a comprehensive and holistic approach, which directly involves the individual in shared decision making and may require to be undertaken in more than one session, with different elements shared across the MDT to improve the efficiency of reviews.

It is distinct from medicines reconciliation and medication review and could be seen as a “gold standard”. Given limited resources, practices need to consider how to support reviews in a way that makes most efficient use of GP, GPN

and pharmacist clinical time, including the use of administrative support or digital support tools available to streamline this work.

Health inequalities

It is good practice to consider potential health inequalities in any planned work or interventions, considering the below to maximise accessibility, engagement and implementation.

- Consider literacy
- Consider health literacy
- Consider digital literacy/exclusion
- Consider language or other translation requirements
- Consider social supports available in practice that might support individuals to reduce unnecessary medicines, utilising these support resources where possible e.g. welfare advisor, community link worker, non-pharmacological alternatives to improve health
- Optimise relational continuity (strong evidence base in deprived areas)

Practice point

HSCPs and prescribing leads should work with CQLs to review data and support discussions using the Polypharmacy Related Measures (NTIs). Utilising STU case finding indicators to identify patients within the practice for review.

Discuss with the practice team

Although practices will vary in the way prescribing systems and processes operate, with varying amounts of pharmacist input, some common points to consider:

- Are current processes to support medication repeats, re-ordering and review working well? HIS resources provide support to review this
- How could these be further enabled to release pharmacy or GP time to undertake more comprehensive polypharmacy reviews?
- What matters to us as a practice team- what would we like to see and how will we know there is improvement?

Accredited training resources

- TURAS training is available accredited by RCP London (3 hours CPD credit)
- PBSGL modules available e.g. Polypharmacy, Diagnosis and management of frailty (Note PBSGL membership is required)

Review practice data, and agree team approach

A data pack is included with this resource and access to practice level national data is available here. Your local prescribing support team will be able to help access practice level data if required. Information about accessing STU case finding reports can be found here.

Practical points:
Consider segmenting practice population - what are the priorities? For example, focus on people with frailty, those in care homes, multiple long-term conditions or people taking 10 or more medications with or without a high-risk medicine.

To get the most out of reviews, practices should consider how they will invite people for review. A number of possible routes include:

- During a consultation - recognising a person may benefit from a more comprehensive review of their medicines. Also recognising that individuals who need support with health literacy may need additional time for shared decision making
- Referrals from community pharmacy or a concerned relative
- Planned reviews, targeting priority areas guided by NTI data, Clinical Decision Service (CDS), identifying those on a high-risk medicine or combination can increase likelihood of benefit from a polypharmacy review
- Self-referral (e.g. on 5 or 10 or more medicines) sample waiting room poster available in Appendix 2.

Practical points:
How does the practice invite individuals for a review, e.g. for long-term condition management? Would offering polypharmacy reviews 3 months after LTC reviews be beneficial, to ensure any recent medication changes or blood results are available?

Consider the 'Questions for your review' (PROMs) resource on the manage meds app which allows patients to prepare for their review in advance, ensure reviews are person-centred and reduce time needed for the consultation. There are several additional resources that practices can download and use here:

The Manage My Meds app for patients and carers provides a wide range of resources to support patients and clinicians to manage medicines more confidently and to become active partners in shared decision-making at medicines review.

Manage My Meds includes an interactive tool What to do when you are ill, based on the Medication Sick Day guidance, and a Questions for my Review section based on Patient-Reported Outcome Measures (PROMs). Here patients can feedback on their understanding and confidence around their medicines and how their medicines are impacting on their daily lives. The patient can save the report of their responses and share it with their healthcare professionals to support shared decision-making and a personalised approach in their medicines review. When recommending this to patients consider the need for additional support to prevent digital exclusion.

BRAN questions to ensure person centred approach to prescribing
Realistic Medicine toolkit: patient and clinician polypharmacy and shared decision resources

Complete the review

For the review consider the time requirements, space, location (in GP practice/home visit), is there anyone else who should attend (e.g. patient's carer or welfare power of attorney).

Practical points:

- Anyone having a polypharmacy review should have the following READ code **8B31B** entered.
- A template has been developed for Vision and EMIS systems in Appendix 3 to aid with navigating the 7-Steps medication process and recording any polypharmacy reviews within practice. This can be embedded in GP clinical systems to help with reviews and coding.
- Consider updating future care plan or KIS as appropriate.

How can change be measured over time in cluster or practice?

There are several indicators which practices/clusters/boards can choose to measure or track changes in prescribing and include:

- Numbers of polypharmacy reviews undertaken (READ code 8B31B)
- Numbers of people on 10 or more medicines, with a high-risk medicine (NTI)
- Mental health triple whammy NTI
- Falls, Fractures and Delirium: Number of people aged ≥75 years dispensed > 10 items of strong or very strong anticholinergics per year
- Person reported outcome or experience measures (PROMs) these can be collected via the manage medicines app or website.
- Changes in appointment demand - Number of consultations required for the individual pre and post polypharmacy review

To support local teams there are several data sources, outlined below. In addition, support from Local Intelligence Support Team (LIST), prescribing leads and Q.I. support should be considered. CQLs should work with local teams to agree how data and improvement should be fed back to practices.

Section 3: person-centred resources

Questions for my review on Manage Meds app video
https://www.youtube.com/watch?v=3v6OY-CYoyU&pp=ygUscG9seXBoYXJtYWN5OiBtYW5hZ2UgbWVkaWNpbmVzIGZvciBteSByZXZpZXc%3D

Questions for my review on Manage Meds app video (abridged version)
https://www.youtube.com/watch?v=QwYnb3lw21Q&pp=ygUscG9seXBoYXJtYWN5OiBtYW5hZ2UgbWVkaWNpbmVzIGZvciBteSByZXZpZXc%3D

iSIMPATHY video: role of the pharmacist
https://vimeo.com/773310438

Link to PROMs/questions for my review (online version)
Patient Reported Outcome Measures (Questions to prepare for my medicines review) | Right Decisions (scot.nhs.uk)

Link to PROMs/questions for my review (print version)

20240423-print-version-of-pre-review-questions-for-my-medicines-review-original.pdf (scot.nhs.uk)
20240423-print-version-of-post-review-questions-for-my-medicines-review.pdf (scot.nhs.uk)

For further resources see the Polypharmacy Implementation toolkit available on the Right Decision Support (RDS) service

Appendix 1: List of STU polypharmacy searches available within GP practice

Polypharmacy
On an ACEI or ARB and on a potassium supplement/salt
On an ACEI or ARB, potassium sparing diuretic, aliskiren or potassium supplement/salt and last K+ > 5.5 mmol/l
On aspirin and clopidogrel WITHOUT gastroprotection
On an oral anticoagulant and antiplatelet (with or without gastroprotection)
CKD 4-5 or eGFR is less than 30 ml/min/1.73m2 and on a direct thrombin inhibitor (DOAC) other than edoxaban.
On an oral anticoagulant and latest SBP is over 160mmHg and/or DBP over 100mmHg
Previous gastrointestinal ulcer and on an antiplatelet WITHOUT gastroprotection
Parkinson's Disease OR on levodopa and on metoclopramide or prochlorperazine
Documented dementia (or on donepezil, rivastigmine, galantamine or memantine) and on an antipsychotic on an active repeat OR with two or more acute prescriptions in 84 days.
Patient diagnosed with asthma OR prescribed a SABA in the last 84 days or on active repeat, without a diagnosis of COPD, is on a non-selective beta-blocker (oral or topical)
Aged 75 or older on BP lowering treatment and SBP is less than 110mmHg or DBP less than 65mmHg
On a beta blocker and on verapamil or diltiazem
Heart failure and on verapamil or diltiazem
CKD stage 5 or eGFR is less than 10 ml/min and on colchicine
CKD 4 or 5 or eGFR 30 or less and on digoxin tablets with more than 125 mcg per tablet
Heart failure without AF and on digoxin tablets with more than 125 mcg per tablet
On digoxin and K+ is less than 3.0 mmol/l
Heart failure and on a glitazone
CKD 4 or 5 or eGFR is less than 30ml/min and on metformin
On methotrexate without folic acid
On two different strengths of methotrexate tablets
On methotrexate and acute prescription for trimethoprim or co-trimoxazole in past 3 months.
Previous gastrointestinal ulcer and on an NSAID (with or without gastroprotection)
Aged 65 years or older and on an NSAID WITHOUT gastroprotection
On an antiplatelet and on an NSAID (with or without gastroprotection)
On an oral anticoagulant and on an NSAID (with or without gastroprotection)
On an oral corticosteroid and on an NSAID (with or without gastroprotection)
Heart failure and on an NSAID
On an ACEI/ARB and a diuretic and on an NSAID
Previous breast cancer or other oestrogen-dependent cancer and on an oestrogen.
Previous or current venous thromboembolism (e.g. deep vein thrombosis, pulmonary embolism) OR active or recent arterial thromboembolic disease (e.g. angina, myocardial infarction) and on an oestrogen.
Female with intact uterus and on oestrogen without progestogen

Corticosteroid or glucocorticoid on current active repeat or >=3 issues in last 12 months without co-prescription of a bone protecting agent
On nitrate or nicorandil and on a phosphodiasterase type 5 inhibitor
On an SSRI and latest Na+ is less than 130 mmol/l
On thiazide diuretic and K+ is less than 3.0 mmol/l
On a thiazide and latest Na+ is less than 130 mmol/l
On a thiazide diuretic and calcium is higher than 2.65 mmol/l
On metoclopramide on repeat
On verapamil (160mg/d or more) and on digoxin.
On a beta blocker or rate-limiting calcium channel blocker or digoxin and latest pulse is less than 55bpm
On an acetylcholinesterase inhibitor and latest pulse less than 60 bpm
On digoxin and latest pulse coded is less than 60 bpm.
CKD stage 3, 4 or 5 or eGFR <60ml/min and on an ACEI or ARB and on an NSAID
CKD stage 3, 4 or 5 or eGFR <60ml/min and on an NSAID
CKD stage 3, 4 or 5 or eGFR <60ml/min and on a diuretic and on an NSAID
On two or more of: ACEI or ARB or aliskiren
On an ACEI or ARB and on a combination of potassium sparing diuretic and aliskiren
CKD 4 or 5 or eGFR is less than 30ml/min and on amiloride or triamterene
CKD stage 4 or 5 and/or eGFR is less than 30ml/min/1.73m2 and on spironolactone or eplerenone
CKD 4 or 5 or eGFR is less than 30ml/min and on aliskiren
CKD 4 or 5 or eGFR is less than 30ml/min and on a potassium supplement
CKD stage 4 or 5 or eGFR <30 ml/min and on trimethoprim or co-trimoxazole
CKD stage 3 or eGFR 30 to 59 ml/min and on spironolactone or eplerenone.
On loop diuretic and K+ is less than 3.5 mmol/l
On a loop diuretic and latest Na+ is less than 135 mmol/l
On insulin or sulfonylurea without glucose monitoring products in the last 84d
Documented dementia (or on donepezil, rivastigmine, galantamine or memantine) and HbA1c less than 53 mmol/mol
Aged 65 or older and on intensive antihyperglycaemic treatment (insulin or oral non-metformin antidiabetic) and HbA1c is less than 48mmol/mol (<6.5%)
Aged 75 or older and on intensive antihyperglycaemic treatment (insulin or oral non-metformin antidiabetic) and HbA1c is <53mmol/mol (7.0%)
Documented dementia (or on donepezil, rivastigmine, galantamine or memantine), and on one or more BP lowering drugs and BP is less than 130/75mmHg.
AF with CHADSVASC score 2 or higher (women) or 1 or higher (men) and NOT on an anticoagulant.
Diagnosed dementia (or on donepezil, rivastigmine, galantamine or memantine) and on one or more drugs with significant sedating or anticholinergic effects
Aged 65 years or older and on THREE or more drugs with significant sedating or anticholinergic effects
Aged 75 years or older and on TWO or more drugs with significant sedating or anticholinergic effects
Aged 65 years or older and on drug(s) with significant sedating or anticholinergic effects (excluding drugs only for epilepsy)

On oral opioids at an average daily dose equivalent to more than 90mg morphine/d
On gabapentin at daily dose greater than 3600 mg/d OR on pregabalin at daily dose greater than 600 mg/d
On lithium and on an NSAID
Patient on new combination of lithium and thiazide diuretic in last 30 days and no electrolytes in that period OR on lithium and thiazide >30 days and no electrolytes in last 90 days.
CKD 3, 4 or 5 or eGFR is less than 50 ml/min/1.73m2 OR body weight (60 kg or less) and on edoxaban.
^Patients prescribed more than 4 prescriptions for antibiotics in the past 12 months
^Women prescribed UTI antibiotics for longer than 3 days
^Aged 75 years and older and prescribed an antipsychotic
^People >=75 years on one or more drugs with significant sedating or anticholinergic effects
^People CKD stage 3, 4 or 5 or eGFR <60ml/min and prescribed metformin and ACEI/ARB and NSAID
^People prescribed an insulin but not SMBG
^People prescribed strong opioids (including tramadol) long term (>2 years)
^People prescribed gabapentinoids, benzodiazepines, z-drugs and opioids

^ in development

Appendix 2: Sample practice waiting room poster

iSIMPATHY

Are you on
5
or more medicines?

Book at reception for a medicines review with our Specialist iSIMPATHY project Pharmacist.

Interreg
Northern Ireland - Ireland - Scotland
European Regional Development Fund

A project supported by the European Union's INTERREG VA Programme, managed by the Special EU Programmes Body (SEUPB).

Appendix 3: Polypharmacy 7-Steps template (can be added to Vision/ EMIS)