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PrescQIPP
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Good prescribing – ensuring appropriate polypharmacy

This bulletin supports the 'Ensuring appropriate polypharmacy' flowchart, available at https://www.prescqipp.info/our-resources/webkits/polypharmacy-and-deprescribing/. In conjunction with the flowchart, this bulletin and associated documents aim to support decision making at different stages of prescribing and medication review.

Recommendations

- When either prescribing a new treatment or deciding to deprescribe an existing treatment, prescribers should weigh up risk vs. benefit of the treatment, magnitude of expected benefit, net expected benefit, time to expected benefit, frailty and life expectancy.
- For all prescriptions, the prescriber must make sure that suitable arrangements are in place for monitoring, follow-up and review.
- Agree with the person the expected outcomes and time period of treatment upon initiation of treatment.
- Upon initiation of a new medicine and at a regular medication review, patients and/or their carers should be made aware of the likely adverse drug events (ADEs) to look out for and they should know what to do if they experience them.
- Prescribers should be aware of ADEs requiring review and possible substitution of therapy and be cautious about distinguishing them from a new disease to be treated with a new medication, which can result in the development of problematic polypharmacy or a prescribing cascade.
- In Primary Care Networks (PCNs) prescribers (GPs or pharmacists) should offer patients a structured medication review for those identified under the Network Contract Directed Enhanced Service (DES), including those with complex and problematic polypharmacy.
- In Scotland, people should be referred to their local community pharmacy for a review of long-term medicines included in the NHS Medicines: Care and Review Service.
- In Northern Ireland, patients taking multiple medicines or taking 'high risk medicines' should be identified and, where appropriate, should receive additional information and advice to help take their medicines safely and effectively, with at least annual review.

National guidance related to polypharmacy

In 2013, The King's Fund published a document entitled "Polypharmacy and medicines optimisation—Making it safe and sound". This report proposed the terms 'appropriate polypharmacy' and 'problematic polypharmacy', recognising that polypharmacy has the potential to be beneficial for some patients, but may also be harmful if poorly managed. It outlines advice for medication review and medicines optimisation, highlighting scenarios and medicines that are considered high risk.[1]

The following year in 2014, the All Wales Medicines Strategy Group (AWMSG) produced a document entitled "Polypharmacy: Guidance for Prescribing", which also includes advice on the medication review process and high-risk medication, along with a practical guide to stopping medication in the elderly.[2]

The National Institute for Health and Care Excellence (NICE) published a clinical guideline entitled 'Medicines optimisation: the safe and effective use of medicines to enable the best possible outcomes' in 2015, covering the safe and effective use of medicines in health and social care for people taking one or more medicines.[3]

The Northern Ireland Medicines Optimisation Quality Framework was published in 2016, which provides strategic direction for actions to improve the use of medicines for the benefit of the health and wellbeing of people in Northern Ireland.[4]

In 2018, the third edition of the NHS Scotland document "Polypharmacy Guidance—Realistic Prescribing" was published. This document aims to provide guidance on preventing inappropriate polypharmacy at every stage of the patient journey with a clear structure for both the initiation of new, and the review of existing treatments. This guidance also provides tools to target harm reduction.[5]

The Department of Health and Social Care commissioned Dr Keith Ridge, Chief Pharmaceutical Officer for England in 2018 to lead a review into the use of medication and overprescribing. The review titled "Good for you, good for us, good for everybody: A plan to reduce overprescribing to make patient care better and safer, support the NHS, and reduce carbon emissions" was published in September 2021. One of the recommendations of this review was to expand the use of structured medication reviews in all patient care settings in primary care to target those considered to be at risk of overprescribing.[6]

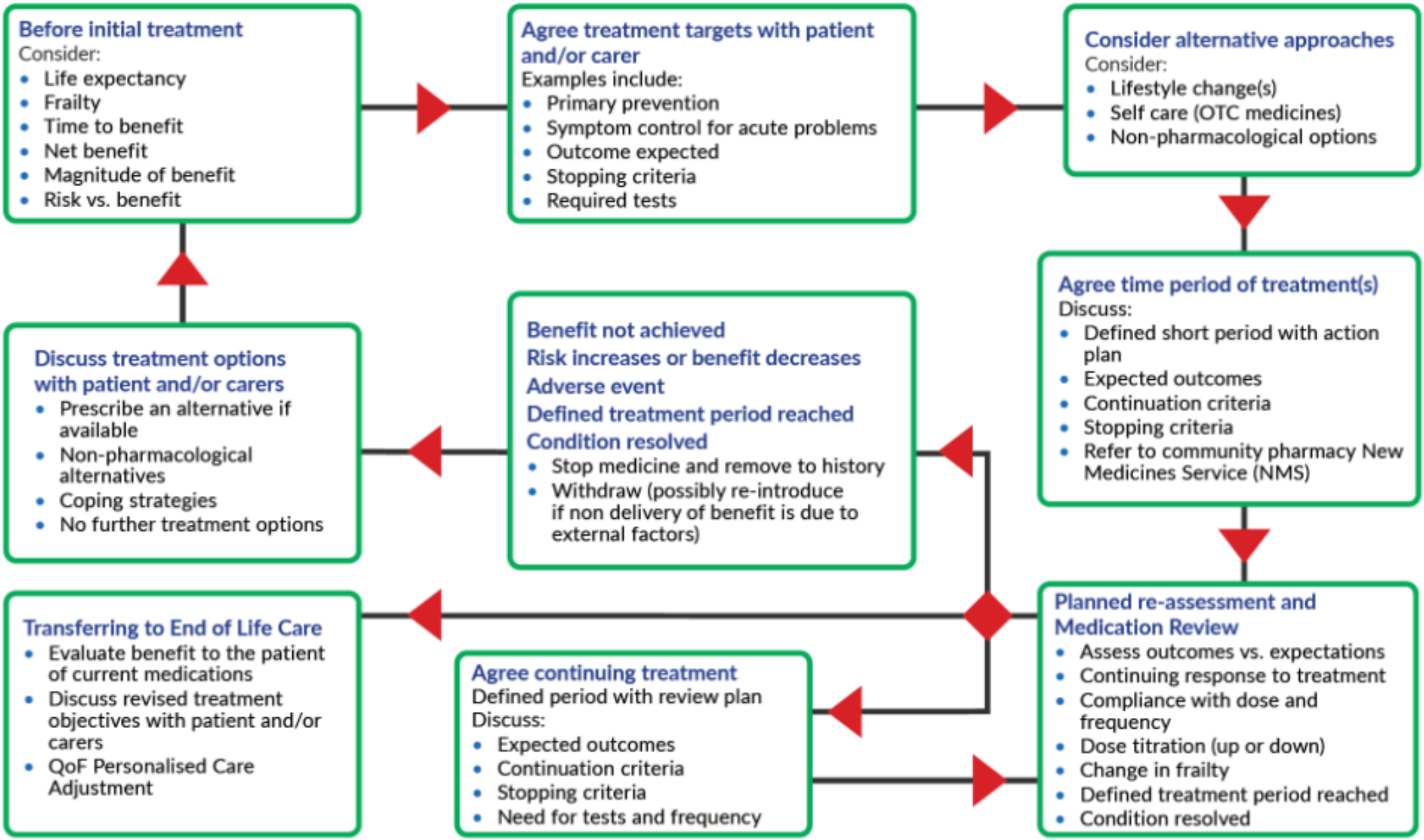
Structured medication review (SMR) is required for those identified under the Network Contract Directed Enhanced Service (DES) in England and is an evidence-based and comprehensive reviews of a patient's medication, taking into consideration all aspects of their health.[7]

The 2021 General Medical Council (GMC) guidance on "Good practice in prescribing and managing medicines and their devices" includes detailed advice about deciding if it is safe to prescribe. Included among the criteria that must be satisfied when a medicine is prescribed, is whether the mode of consultation meets the individual needs of the patient and whether the prescriber has enough information about the patient to prescribe a treatment that meets their needs. This doesn't just apply to new prescriptions, but applies every time an item is prescribed.[8]

Ensuring appropriate polypharmacy flowchart

The PrescQIPP 'Ensuring appropriate polypharmacy' flowchart has been designed to support decision making at different stages of prescribing and medication review. The flowchart shows the steps in the process to engage patients fully in decisions about their treatment. Examples of key considerations at each step are provided.[9]

Figure1. Ensuring appropriate polypharmacy flowchart



Before initial treatment

When prescribing a treatment (or deciding to deprescribe a treatment), there are several factors to weigh up. These include risk vs. benefit, life expectancy, frailty, time to expected benefit, net expected benefit, and magnitude of expected benefit.[9]

Agree treatment targets with patient and/or carer

Both prescribing and deprescribing should place patients at the centre of the process, to ensure medicines optimisation.[6]

Treatment targets should be discussed with the patients and/or their carer prior to commencing treatment.[9]

This discussion should include explaining the expected outcomes of treatment (e.g. acute symptom control, primary prevention), the required tests/monitoring and the criteria for stopping treatment (e.g. defined treatment length, monitoring showing insufficient benefit, lack of response to treatment).[9]

Consider alternative approaches

Suitable alternative approaches such as lifestyle approaches, other non-pharmacological options, or self-care (including over-the-counter medicines) should be considered and discussed with the patients and/or their carer.[9]

Agree time period for treatment

In order to appropriately manage patient/carer expectations, the time period for treatment should be discussed. If a medicine is prescribed for a defined short period/course this should be fully explained and may require an action plan. The end date should also be specified on the prescription to allow practice staff generating prescriptions and pharmacy staff to monitor this. Any continuation and discontinuation criteria, the review period, drug holidays, the expected duration of treatment and the expected outcomes should also form part of this discussion.[9]

In England, eligible patients who are newly prescribed a medicine to manage a long-term condition should be referred to the community pharmacy New Medicines Service (NMS) for extra help and advice.[9,10]

Planned reassessment and medication review

The prescriber must make sure that suitable arrangements are in place for monitoring, follow-up and review for all prescribed medicines.[8] This may be in primary or secondary care, depending on the medicine.

The reviewers clinical judgement and experience is essential in tailoring the advice given to the needs of an individual patient and to identify other additional medication-related problems.

However, the following questions (from The 7-Steps Medication Review) are likely to be useful as starting points:[5]

- What matters to the patient?
- Which drug therapy is essential?
- Does the patient take unnecessary drug therapy?
- Are the therapeutic objectives being achieved?
- Is the patient at risk of/does the patient suffer from any adverse drug reactions (ADRs)?
- Is drug therapy cost-effective?
- Is the patient willing and able to take the drug as intended?

There should be regular assessment of compliance by checking prescriptions issued over the prior 12 months, outcomes versus expectations, whether there is a continuing response to treatment or whether the condition has resolved and no longer requires treatment, whether the defined treatment period has been reached, whether dose titration (up or down) is needed, and whether there has been a change in the risk/benefit profile, e.g. a change in frailty, defined treatment period reached, condition resolved.[9] As always, these discussions should be centred around shared decision-making.

Agree continuing treatment

Where treatment is to be continued past the initial trial, this should be for a defined period with a review plan at appropriate intervals.[9]

Expected outcomes, continuation and stopping criteria, and monitoring requirements (e.g. the frequency of blood tests) should once again be highlighted to the patient and/or their carer.[9]

Deprescribing

Stopping a medication can be just as challenging, in terms of weighing the benefits or providing support, as starting it. Best practice in prescribing should be applied to both the process of starting a medicine and to the process of stopping a medicine.[6]

Initiation of a medicine should be considered as a trial and discontinuation is always an option.[1] Certain medicines should only be prescribed for defined courses, e.g. benzodiazepines and z-drugs.[5]

Stopping a medicine may be indicated if the desired benefit has not been achieved within the required timeframe, if the risk/benefit ratio has changed so that prescribing is now unfavourable, if the item is not cost-effective and there is a more suitable alternative or NHS prescribing is not indicated, if an adverse event has been experienced that warrants deprescribing, the defined treatment period has been reached (e.g. in line with national guidance or the licensed indication), or if the condition has resolved and no longer requires treatment.[9] When the condition has resolved, stop the medicine and remove to history or withdraw and possibly re-introduce if non delivery of benefit is due to external factors.

Stopping medicines is often feasible in older patients with no adverse consequences.[1] However, to reduce the likelihood of an adverse withdrawal event, some therapies should not be stopped abruptly following long-term use. The number of medicines to which this applies is relatively limited, but tapering may be required with opioids, antidepressants, antipsychotics, anticonvulsants, centrally acting antihypertensives, corticosteroids, hypnotics and tranquilisers.[2] In some cases it may be appropriate to deprescribe in a step-wise manner, one medicine at a time. Some of these medicines may require specialist input, depending on the indication for prescribing.

The need to stop prescribing a medicine may be identified through a planned medication review (e.g. by the GP or a pharmacist), it may be prompted by a report from the patient/their carer (e.g. due to an adverse event, hospital admission, or a fall), it may be prompted by the Integrated Care Board (ICB) or Health Board (HB) (e.g. identifying patients at high-risk from polypharmacy), or it may be the result of the patient moving to end-of-life care.

Recognising side effects and differentiating them from new symptoms

Prescribers should be alert to ADEs. ADEs can be the result of interactions between drugs or, more frequently, 'drug–disease' or 'drug–patient' interactions. Common ADEs that are often not attributed to medication include confusion, constipation, hypotension and falls. Some ADEs may be multifactorial.[1]

The impact of potential harm from ADEs cannot be underestimated and they are associated with significant morbidity and mortality. Less severe ADEs can also be detrimental as they reduce quality of life and may adversely affect patient concordance. In addition, they may limit the choice of available therapies and can cause diagnostic confusion.[1]

ADEs should be reported via the Yellow Card Scheme at https://yellowcard.mhra.gov.uk/

When ADEs are misinterpreted as a new disease and treated with new medication, a 'prescribing cascade' is established. The additional treatment has the potential to further complicate the patient's clinical picture.[1]

Upon initiation of a new medicine and on regular medication review, patients and/or their carers should be made aware of the likely ADEs to look out for and they should know what to do if they experience them.[5]

In order to identify patient safety risks, depending on the prescribed treatment, specific laboratory markers may require regular monitoring to check for possible ADEs (e.g. hypokalaemia).[5] Furthermore, it is important to look out for cumulative adverse drug effects from multiple drugs that cause the same adverse event, and it is also important to look out for the use of drugs that may be used to treat ADRs caused by other drugs (prescribed or over-the-counter).[5]

Complex patients requiring specialist review, treatment or services should be referred accordingly.

Discuss treatment options

Where an alternative treatment is indicated instead, pharmacological and non-pharmacological options should be discussed with the patient/their carer as appropriate, and an alternative considered using the same criteria as for a new medicine. Where no further treatment alternatives are indicated, this should be fully explained and appropriately documented and further coping strategies should be discussed, where applicable.[9]

In circumstances where a medicine is not efficacious or ADEs are complicating therapy, a strategy of substitution is preferred to addition.[1]

Transferring to end-of-life care

A proportion of patients will discontinue treatment because they transfer to end-of-life care. In this instance, the benefit to the patient of any remaining prescribed medications should be evaluated and revised treatment objectives should be discussed with the patient and/or their carer.

In England a Quality Outcome Framework (QOF) personalised care adjustment (PCA) should be used to exclude patients from QOF indicator data.[11]

Costs and savings

In addition to the physical and mental impact on patients, overprescribing can lead to more hospital visits and preventable admissions, and even premature deaths. There is also the cost associated with wasted medicines. Pharmacists reviewing medicines in care homes improved patients' quality of life by reducing unnecessary use amounting to savings of £249 per care home patient in one pilot over a year.[6]

Review options

In England, each Primary Care Network (PCN) must use appropriate tools to identify and prioritise patients who would benefit from a structured medication review (SMR). These patients may also be suitable for prioritisation for review in other areas. They include:[12]

1. Patients in care homes.
2. Patients with complex and problematic polypharmacy, specifically those on ten or more medications.
3. Patients prescribed medicines commonly associated with medication errors*.
4. Patients with severe frailty, who are particularly isolated or housebound or who have had recent hospital admissions and/or falls.
5. Patients using one or more opioids, gabapentinoids, benzodiazepines or z-drugs (potentially addictive medications).

6. Any other patients the PCN thinks would benefit, including those prescribed multiple but fewer than ten medications.

The DES highlights the NHS Business Services Authority (BSA) Medication Safety Indicators document which sets out 20 indicators that have been developed to help reduce medications errors and promote safer use of medicines.[13] The 'denominator' section for each of the indicators lists medicines commonly associated with prescribing errors, which PCNs should use to help identify individuals to invite for a SMR -

- Patients aged 65 or over who are prescribed a non-steroidal anti-inflammatory drug (NSAID) without a gastro-protective medicine.
- Patients aged 18 or over who are prescribed an NSAID and concurrently prescribed an oral anticoagulant (warfarin or a non-vitamin K antagonist oral anticoagulant (NOAC)).
- Patients aged 18 or over who are prescribed an oral anticoagulant (warfarin or a NOAC) with an anti-platelet agent and who are not concurrently prescribed a gastro-protective medicine.
- Patients aged 18 or over who are prescribed aspirin and another anti-platelet and not concurrently prescribed a gastro-protective medicine.
- Patients aged 18 or over who are prescribed a NSAID, a renin-angiotensin system (RAS) drug and a diuretic.
- Patients aged 18 or over who are concurrently prescribed an oral or transdermal opioid and a benzodiazepine, Z-drug, pregabalin or gabapentin.
- Patients aged 18 or over who are currently prescribed an oral or transdermal opioid and NOT prescribed a laxative.
- Patients aged 18 or over who are currently prescribed an oral or transdermal opioid for more than three months.
- Patients aged 65 or over who are prescribed a Z-drug for more than one month.
- Patients aged 65 or over who are prescribed a benzodiazepine for more than one month.
- Patients prescribed an inhaled long-acting beta agonist (LABA) without an inhaled corticosteroid (ICS) either within the same month or the month prior to when the LABA inhaler was prescribed.
- Patients aged 18 or who are concurrently prescribed two or more different medicines which have moderate or high anticholinergic activity.
- Patients aged 18 or over who are concurrently prescribed one or more medicines for dementia and one or more medicines that have moderate or high anticholinergic activity.

These reviews should be undertaken in line with the principles of personalised care, which is integral to the PCN.[12]

The NHSBSA has developed a set of polypharmacy dashboard indicators on ePACT 2 to identify hospital admissions that may be associated with prescribing that potentially increases the risk of harm, and to quantify patients at potentially increased risk.[13] The PrescQIPP searches which support the ePACT2 polypharmacy dashboard can help identify patients that come up on the polypharmacy dashboard indicators in ePACT2.

In Scotland, the Medicines: Care and Review Service is provided by all community pharmacies across Scotland for people with long-term conditions. Any person who gets a regular prescription to treat a long-term condition and is registered with a GP practice in Scotland can register at a pharmacy to use any part of the Medicines: Care and Review service. There are three parts to the service entitled reviewing your medicines, care planning and serial prescriptions. The pharmacist reviews medicines at least annually to ensure they are still working for the patient. Serial prescriptions enable people to get

long-term repeat prescriptions from their GP which are valid for 6 or 12 months. People have to be prescribed regular repeat medicines and the GP needs to agree that serial prescriptions are suitable for the individual. If a care plan is thought to be necessary, the pharmacist will ask about any problems the person is having with their medicines and will set out any actions the person and the pharmacist need to take to help them with their medicines. The care plan is regularly updated with the person. The care plan will include information on the following:[14]

- Any problems the person may have with their medicines e.g. unpleasant side effects, difficulty swallowing tablets or remembering when to take them.
- Pharmacist actions to help with medicine problems, e.g. easier administration.
- Agreed actions by the pharmacist and patient to help with the problems e.g. patient to speak to their doctor about changing their medicine to easy-to-swallow capsules or a liquid.
- When the problem has been solved or if something else needs to happen.

The Welsh National Standards for Medication Review provide a structured approach to medication review and are benchmarks for quality, optimising patient safety and prescribing practice. The following standards have been developed:[15]

- Standard 1: Involving patients and carers: reach agreement on the aims and goals of treatment
- Standard 2: Safety: Minimising medication-related problems
- Standard 3: Review of medicines: maximising the benefit of medicines
- Standard 4: Reducing waste: activities and actions that contribute to waste and work to address them
- Standard 5: Medication review documentation: completing documentation and updating the patient record

In Northern Ireland, 'A Guide to Support Medication Review in Older People' has been published, which includes medicines that may be appropriate to stop or alter, alongside medicines that may be appropriate to start in older people to support medication review.[16] In addition, the Northern Ireland Medicines Optimisation Framework states that patients taking multiple medicines or taking 'high risk medicines' should be identified and, where appropriate, should receive additional information and advice to help take their medicines safely and effectively, with at least an annual review.[4] It also sets out the following ten standards:[4]

- Standard 1 - Safer Prescribing with Patient Involvement
- Standard 2 – Better Information about Medicines
- Standard 3 – Supporting Adherence and Independence
- Standard 4 – Safer Transitions of Care
- Standard 5 – Risk Stratification of Medicines
- Standard 6 – Safety/Reporting and Learning Culture
- Standard 7 – Access to Medicines you Need
- Standard 8 - Clinical and Cost-Effective Use of Medicines and Reduced Waste
- Standard 9 – Clinical Medication Review
- Standard 10 – Administration

Additional resources

NHS PrescQIPP. Polypharmacy and deprescribing webkit resources. https://www.prescqipp.info/our-resources/webkits/polypharmacy-and-deprescribing/

NHS PrescQIPP. Bulletin 254: Polypharmacy and deprescribing. June 2020. https://www.prescqipp.info/our-resources/bulletins/bulletin-254-polypharmacy-and-deprescribing/

NHS PrescQIPP. IMPACT—Improving Medicines & Polypharmacy Appropriateness Clinical Tool. 2023 - coming soon https://www.prescqipp.info/our-resources/bulletins/bulletin-268-impact/

NHS PrescQIPP. Structured Medication Review (SMR) bulletin. Coming soon

NHS PrescQIPP. Bulletin 256. Dependence-forming medications. April 2020. https://www.prescqipp.info/our-resources/bulletins/bulletin-256-dependence-forming-medications/

Royal Pharmaceutical Society. A Competency Framework for all Prescribers. Last updated September 2022. https://www.rpharms.com/resources/frameworks/prescribers-competency-framework

Summary

Problematic polypharmacy can result in significant adverse drug effects, hospitalisation, addiction, reduced quality of life, falls and even death. It is important that initiation of a medicine is considered as a trial, with discontinuation always being an option. Prescribers should be alert to ADEs requiring review and possible substitution of therapy and be cautious about distinguishing them from a new disease to be treated with a new medication. It is important to undertake regular medication reviews for patients considered to be at risk from their polypharmacy and consider deprescribing, as appropriate, in relation to weighing factors such as risk vs. benefit of the treatment, magnitude of expected benefit, net expected benefit, time to expected benefit, frailty and life expectancy.

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Additional PrescQIPP resources

Briefing	https://www.prescqipp.info/news/bulletin-319-good-prescribing
Implementation tools	

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