NICE advice

Multimorbidity and polypharmacy

Key therapeutic topic

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Options for local implementation

- Multimorbidity is associated with reduced quality of life, higher mortality, polypharmacy and high treatment burden, higher rates of adverse drug events, and much greater health services use (including unplanned or emergency care).
- Polypharmacy in people with multimorbidity is often driven by the introduction of multiple medicines intended to prevent future morbidity and mortality in individual health conditions. However, the absolute benefit gained from each additional medicine is likely to reduce when people are taking multiple preventative medicines, while the risk of harms increases. Resources and screening tools are available to help guide decision-making about the appropriateness of prescribing and stopping medicines (deprescribing).
- Develop and agree an action plan for multimorbidity and polypharmacy to inform local medicines optimisation strategic and operational plans.
- Support clinicians in developing an individualised, person-centred approach to reviewing people with multimorbidity and polypharmacy, in line with the NICE guideline on multimorbidity. This may be included in local education and support initiatives to assist shared decision making in individualising care.

Evidence context

Multimorbidity

The NICE guideline on multimorbidity explains that multimorbidity refers to the presence of 2 or more long-term health conditions, which can include:

- defined physical and mental health conditions such as diabetes or schizophrenia
- ongoing conditions such as learning disability
- symptom complexes such as frailty or chronic pain
- sensory impairment such as sight or hearing loss
- alcohol and substance misuse.

Measuring the prevalence of multimorbidity is not straightforward because it depends on which conditions are counted. However, all recent studies show that multimorbidity is common, becomes more common as people age, and is more common in people from less affluent areas. Whereas in older people multimorbidity is largely due to higher rates of physical health conditions, in younger people and people from less affluent areas, multimorbidity is often due to a combination of physical and mental health conditions (notably depression).

Multimorbidity is associated with reduced quality of life, higher mortality, polypharmacy and high treatment burden, higher rates of adverse drug events, and much greater health services use (including unplanned or emergency care). A particular issue for health services and healthcare professionals is that treatment regimens (including non-pharmacological treatments) can easily become very burdensome for people with multimorbidity, and care can become uncoordinated and fragmented.

Polypharmacy

Data from NHS Digital show that between 2005 and 2015 there was a 50% increase in the total number of prescription items dispensed in the community in England, although the population grew by only 8%. This means that the average number of prescription items per head of population in England increased from 14 to 20 in that time. This is a simple average and should not be over-interpreted; some people have no or only a few prescriptions per year and others have many more than 20. The figures are also not adjusted for treatment duration per prescription. Nevertheless, they do suggest a general increase in prescribing rates.

Polypharmacy in people with multimorbidity is often driven by the introduction of multiple medicines intended to prevent future morbidity and mortality in specific health conditions. However, the evidence for recommendations in NICE guidance on single health conditions is often drawn from people without multimorbidity who are participating in studies and who are taking fewer regular medicines. The absolute benefit made by each additional medicine is likely to reduce when a person is taking multiple preventative medicines; often referred to as the law of diminishing returns. However, the risk of harms is likely to increase with additional medicines being taken.

The King's Fund report (2013), All Wales Medicines Strategy Group (AWMSG) guidance (2014) and NHS Scotland guidance (2015) on polypharmacy recognise that not all polypharmacy is inappropriate. The King's Fund proposed a classification where treatment with multiple medicines may be either 'appropriate' or 'problematic':

Appropriate polypharmacy

Prescribing for a person for complex conditions or for multiple conditions in circumstances where medicines use has been optimised and where the medicines are prescribed according to best evidence.

Problematic polypharmacy

The prescribing of multiple medicines inappropriately, or where the intended benefit of the medicines are not realised.

Problematic polypharmacy may arise if medicines are used without a good evidence base for doing so, or if (taking into account the person's views and preferences) the risk of harm from treatments is likely to outweigh the benefits, or where one or more of the following apply:

- the medicine combination is hazardous because of interactions
- the overall demands of medicine-taking, or 'pill burden', are unacceptable to the person
- these demands make it difficult to achieve clinically useful medicines adherence
- medicines are being prescribed to treat the side effects of other medicines, but alternative solutions are available to reduce the number of medicines prescribed.

Person-centred care

The NICE guideline on medicines optimisation recommends that all people are offered the opportunity to be involved in making decisions about their medicines.

As discussed in a BMJ article by McCartney et al. (2016), individual people may have values and preferences that are different from their healthcare professional(s) and from people who develop guideline recommendations. NICE guidelines should be understood as 'guidelines, not tramlines'; every guideline states clearly that although healthcare professionals are expected to take it fully into account when exercising their judgement, they should do so alongside the individual needs, preferences and values of their patients or service users. The application of the recommendations in NICE guidelines is not mandatory and the guideline does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient or their carer or guardian.

The NICE guideline on multimorbidity recommends that clinicians think carefully about the risks and benefits of individual treatments recommended in guidance for single health conditions. This should be discussed with the person alongside their preferences for care and treatment.

The guideline also recommends using a tailored approach to care that takes account of multimorbidity for people of any age who are prescribed 15 or more regular medicines, and that this approach is considered for people of any age who:

- are prescribed 10 to 14 regular medicines
- are prescribed fewer than 10 regular medicines but are at particular risk of adverse events.

See the NICE guideline on multimorbidity for full details of the recommendations.

A tailored approach to care that takes account of multimorbidity involves personalised assessment and the development of an individualised management plan. The aim should be to improve quality of life by reducing treatment burden, adverse events, and unplanned or uncoordinated care. The approach takes account of the person's individual needs, preferences for treatments, health priorities and lifestyle. It aims to improve coordination of care across services, particularly if this has become fragmented. Medicines are likely to be just one aspect of a person's care and should not be considered in isolation.

Reviewing polypharmacy and deprescribing

The NICE guideline on medicines optimisation recognises that optimising a person's medicines can support the management of long-term health conditions, multimorbidity and polypharmacy. Deprescribing is the complex process needed to ensure the safe and effective withdrawal of inappropriate medicines (A patient centred approach to polypharmacy NHS Specialist Pharmacy Service 2015).

Resources have been developed to support healthcare professionals who are reviewing people with polypharmacy to help guide decision-making about the appropriateness of prescribing and deprescribing (see table 1). These resources include case examples and practical tools, such as the STOPP/START and NO TEARS tools. The NICE guideline on multimorbidity recommends that the use of a screening tool is considered (for example, the STOPP/START tool in older people) to identify medicine-related safety concerns and medicines the person might benefit from but is not currently taking.

Table 1 Polypharmacy resources

A patient centred approach to polypharmacy. NHS Specialist Pharmacy Service 2015
Polypharmacy guidance. NHS Scotland and the Scottish Government 2015
Polypharmacy: guidance for prescribing. All Wales Medicines Strategy Group 2014
Polypharmacy and medicines optimisation: making it safe and sound. The King's Fund 2013
Personalised care and support planning handbook: The journey to person-centred care. NHS England 2016

Prescribing data

There are currently no medicines optimisation key therapeutic topic (MO KTT) prescribing comparators for this topic. The development of a suitable comparator will be explored by the NHS England Medicines Optimisation Intelligence Group[1].

[1] For details of any update to the comparators refer to the NHS Digital website and the Information Services Portal, Business Services Authority.

About this key therapeutic topic

January 2017: This is a new topic for the 2017 update of medicines optimisation: key therapeutic topics. This document summarises the evidence base on this key therapeutic topic which has been identified to support medicines optimisation. **It is not formal NICE guidance.**

For information about the process used to develop the key therapeutic topics, see the integrated process statement.

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