NICE National Institute for Health and Care Excellence

NICE guideline

Multimorbidity: clinical assessment and management

NICE guideline

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Your responsibility

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guideline is the basis of QS149, QS153 and QS152.

Overview

This guideline covers optimising care for adults with multimorbidity (multiple long-term conditions) by reducing treatment burden (polypharmacy and multiple appointments) and unplanned care. It aims to improve quality of life by promoting shared decisions based on what is important to each person in terms of treatments, health priorities, lifestyle and goals. The guideline sets out which people are most likely to benefit from an approach to care that takes account of multimorbidity, how they can be identified and what the care involves.

Who is it for?

- Healthcare professionals
- People with multimorbidity, their families and carers

Recommendations

People have the right to be involved in discussions and make informed decisions about their care, as described in your care.

Making decisions using NICE guidelines explains how we use words to show the strength (or certainty) of our recommendations, and has information about prescribing medicines (including off-label use), professional guidelines, standards and laws (including on consent and mental capacity), and safeguarding.

1.1 General principles

1.1.1 Be aware 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.

1.1.2 Be aware that the management of risk factors for future disease can be a major treatment burden for people with multimorbidity and should be carefully considered when optimising care.

1.1.3 Be aware that the evidence for recommendations in NICE guidance on single health conditions is regularly drawn from people without multimorbidity and taking fewer prescribed regular medicines.

1.1.4 Think carefully about the risks and benefits, for people with multimorbidity, of individual treatments recommended in guidance for single health conditions. Discuss this with the patient alongside their preferences for care and treatment.

1.2 Taking account of multimorbidity in tailoring the approach to care

1.2.1 Consider an approach to care that takes account of multimorbidity if the person requests it or if any of the following apply:

- they find it difficult to manage their treatments or day-to-day activities
- they receive care and support from multiple services and need additional services
- they have both long-term physical and mental health conditions
- they have frailty (see section 1.4) or falls
- they frequently seek unplanned or emergency care (see also recommendation 1.3.2)
- they are prescribed multiple regular medicines (see section 1.3).

1.3 How to identify people who may benefit from an approach to care that takes account of multimorbidity

1.3.1 Identify adults who may benefit from an approach to care that takes account of multimorbidity (as outlined in section 1.5):

- opportunistically during routine care
- proactively using electronic health records.

Use the criteria in recommendation 1.2.1 to guide this.

1.3.2 Consider using a validated tool such as eFI, PEONY or QAdmissions, if available in primary care electronic health records, to identify adults with multimorbidity who are at risk of adverse events such as unplanned hospital admission or admission to care homes.

1.3.3 Consider using primary care electronic health records to identify markers of increased treatment burden such as number of regular medicines a person is prescribed.

1.3.4 Use an approach to care that takes account of multimorbidity for adults of any age who are prescribed 15 or more regular medicines, because they are likely to be at higher risk of adverse events and drug interactions.

1.3.5 Consider an approach to care that takes account of multimorbidity for adults 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.

1.4 How to assess frailty

1.4.1 Consider assessing frailty in people with multimorbidity.

1.4.2 Be cautious about assessing frailty in a person who is acutely unwell.

1.4.3 Do not use a physical performance tool to assess frailty in a person who is acutely unwell.

Primary care and community care settings

1.4.4 When assessing frailty in primary and community care settings, consider using 1 of the following:

- an informal assessment of gait speed (for example, time taken to answer the door, time taken to walk from the waiting room)
- self-reported health status (that is, 'how would you rate your health status on a scale from 0 to 10?', with scores of 6 or less indicating frailty)
- a formal assessment of gait speed, with more than 5 seconds to walk 4 metres indicating frailty
- the PRISMA-7 questionnaire, with scores of 3 and above indicating frailty.

Hospital outpatient settings

1.4.5 When assessing frailty in hospital outpatient settings, consider using 1 of the following:

- self-reported health status (that is, 'how would you rate your health status on a scale from 0 to 10?', with scores of 6 or less indicating frailty)

- the 'Timed Up and Go' test, with times of more than 12 seconds indicating frailty
- a formal assessment of gait speed, with more than 5 seconds to walk 4 metres indicating frailty
- the PRISMA-7 questionnaire, with scores of 3 and above indicating frailty
- self-reported physical activity, with frailty indicated by scores of 56 or less for men and 59 or less for women using the Physical Activity Scale for the Elderly.

1.5 Principles of an approach to care that takes account of multimorbidity

1.5.1 When offering an approach to care that takes account of multimorbidity, focus on:

- how the person's health conditions and their treatments interact and how this affects quality of life
- the person's individual needs, preferences for treatments, health priorities, lifestyle and goals
- the benefits and risks of following recommendations from guidance on single health conditions
- improving quality of life by reducing treatment burden, adverse events, and unplanned care
- improving coordination of care across services.

1.5.2 Follow these steps when delivering an approach to care that takes account of multimorbidity:

- Discuss the purpose of an approach to care that takes account of multimorbidity (see recommendation 1.6.2).
- Establish disease and treatment burden (see recommendations 1.6.3 to 1.6.5).
- Establish patient goals, values and priorities (see recommendations 1.6.6 to 1.6.8).
- Review medicines and other treatments taking into account evidence of likely benefits and harms for the individual patient and outcomes important to the person (see recommendations 1.6.9 to 1.6.16).

- Agree an individualised management plan with the person (see recommendation 1.6.17), including:
  - goals and plans for future care (including advance care planning)
  - who is responsible for coordination of care
  - how the individualised management plan and the responsibility for coordination of care is communicated to all professionals and services involved
  - timing of follow-up and how to access urgent care.

1.6 Delivering an approach to care that takes account of multimorbidity

1.6.1 Follow the recommendations in the NICE guideline on patient experience in adult NHS services, which provides guidance on knowing the patient as an individual, tailoring healthcare services for each patient, continuity of care and relationships, and enabling patients to actively participate in their care.

Discussing the purpose of an approach to care that takes account of multimorbidity

1.6.2 Discuss with the person the purpose of the approach to care, that is, to improve quality of life. This might include reducing treatment burden and optimising care and support by identifying:

- ways of maximising benefit from existing treatments
- treatments that could be stopped because of limited benefit
- treatments and follow-up arrangements with a high burden
- medicines with a higher risk of adverse events (for example, falls, gastrointestinal bleeding, acute kidney injury)
- non-pharmacological treatments as possible alternatives to some medicines
- alternative arrangements for follow-up to coordinate or optimise the number of appointments.

Establishing disease and treatment burden

1.6.3 Establish disease burden by talking to people about how their health problems affect their day-to-day life. Include a discussion of:

- mental health
- how disease burden affects their wellbeing
- how their health problems interact and how this affects quality of life.

1.6.4 Establish treatment burden by talking to people about how treatments for their health problems affect their day-to-day life. Include in the discussion:

- the number and type of healthcare appointments a person has and where these take place
- the number and type of medicines a person is taking and how often
- any harms from medicines
- non-pharmacological treatments such as diets, exercise programmes and psychological treatments
- any effects of treatment on their mental health or wellbeing.

1.6.5 Be alert to the possibility of:

- depression and anxiety (consider identifying, assessing and managing these conditions in line with the NICE guideline on common mental health problems)
- chronic pain and the need to assess this and the adequacy of pain management.

Establishing patient goals, values and priorities

1.6.6 Clarify with the patient whether and how they would like their partner, family members and/or carers to be involved in key decisions about the management of their conditions. Review this regularly. If the patient agrees, share information with their partner, family members and/or carers. [This recommendation is adapted from the NICE guideline on patient experience in adult NHS services.]

1.6.7 Encourage people with multimorbidity to clarify what is important to them, including their personal goals, values and priorities. These may include:

- maintaining their independence
- undertaking paid or voluntary work, taking part in social activities and playing an active part in family life
- preventing specific adverse outcomes (for example, stroke)
- reducing harms from medicines
- reducing treatment burden
- lengthening life.

1.6.8 Explore the person's attitudes to their treatments and the potential benefits and harms of those treatments. Follow the recommendations on patient involvement in decisions about medicines and understanding the patient's knowledge, beliefs and concerns about medicines in the NICE guideline on medicines adherence.

Reviewing medicines and other treatments

1.6.9 When reviewing medicines and other treatments, use the database of treatment effects to find information on:

- the effectiveness of treatments
- the duration of treatment trials
- the populations included in treatment trials.

1.6.10 Consider using a screening tool (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. [This recommendation is adapted from the NICE guideline on medicines optimisation.]

1.6.11 When optimising treatment, think about any medicines or non-pharmacological treatments that might be started as well as those that might be stopped.

1.6.12 Ask the person if treatments intended to relieve symptoms are providing benefits or causing harms. If the person is unsure of benefit or is experiencing harms from a treatment:

- discuss reducing or stopping the treatment
- plan a review to monitor effects of any changes made and decide whether any further changes to treatments are needed (including restarting a treatment).

1.6.13 Take into account the possibility of lower overall benefit of continuing treatments that aim to offer prognostic benefit, particularly in people with limited life expectancy or frailty.

1.6.14 Discuss with people who have multimorbidity and limited life expectancy or frailty whether they wish to continue treatments recommended in guidance on single health conditions which may offer them limited overall benefit.

1.6.15 Discuss any changes to treatments that aim to offer prognostic benefit with the person, taking into account:

- their views on the likely benefits and harms from individual treatments
- what is important to them in terms of personal goals, values and priorities (see recommendation 1.6.7).

1.6.16 Tell a person who has been taking bisphosphonate for osteoporosis for at least 3 years that there is no consistent evidence of:

- further benefit from continuing bisphosphonate for another 3 years
- harms from stopping bisphosphonate after 3 years of treatment.

  Discuss stopping bisphosphonate after 3 years and include patient choice, fracture risk and life expectancy in the discussion.

Agreeing the individualised management plan

1.6.17 After a discussion of disease and treatment burden and the person's, personal goals, values and priorities, develop and agree an individualised management

plan with the person. Agree what will be recorded and what actions will be taken. These could include:

- starting, stopping or changing medicines and non-pharmacological treatments
- prioritising healthcare appointments
- anticipating possible changes to health and wellbeing
- assigning responsibility for coordination of care and ensuring this is communicated to other healthcare professionals and services
- other areas the person considers important to them
- arranging a follow-up and review of decisions made.

Share copies of the management plan in an accessible format with the person and (with the person's permission) other people involved in care (including healthcare professionals, a partner, family members and/or carers).

1.7 Comprehensive assessment in hospital

1.7.1 Start a comprehensive assessment of older people with complex needs at the point of admission and preferably in a specialist unit for older people. [This recommendation is from the NICE guideline on transition between inpatient hospital settings and community or care home settings for adults with social care needs.]

Terms used in this guideline

Multimorbidity

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.

The management of risk factors for future disease can be a major treatment burden for people with multimorbidity and should be carefully considered when optimising care.

This guideline covers the optimisation of care for:

- adults with 2 or more long-term physical health conditions
- adults with 1 or more mental health condition and at least 1 physical health condition.

An approach to care that takes account of multimorbidity

An approach to care that takes account of multimorbidity involves personalised assessment and the development of an individualised management plan. The aim is to improve quality of life by reducing treatment burden, adverse events, and unplanned or uncoordinated care. The approach takes account of a 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.

Individualised management plan

An individualised management plan is a management plan covering clinical aspects of a person's care, such as the medicines they are taking and the services they are attending. It includes information about which areas of care are most important to the person and whether treatments have been stopped to reduce treatment burden.

Medicines

Medicines includes topical treatments such as ointments, inhalers, creams and drops, as well as medicines taken by mouth or injection.

Comprehensive assessment of older people with complex needs

A comprehensive geriatric assessment is an interdisciplinary diagnostic process to determine the medical, psychological and functional capability of someone who is frail and old. The aim is to develop a coordinated, integrated plan for treatment and long-term support.

Putting this guideline into practice

NICE has produced tools and resources to help you put this guideline into practice.

Some issues were highlighted that might need specific thought when implementing the recommendations. These were raised during the development of this guideline. They are:

- Using primary care electronic health records to identify people who may benefit from an approach to care that takes account of multimorbidity may require some area-wide provision or coordination of search tools if these are not already built into clinical IT systems.
- Sharing copies of individualised management plans in an accessible format can be done electronically such as through the NHS Summary Care Record, with enhanced functionality now available in 99% of GP practices in England, or by ensuring that the person always has an up-to-date paper copy of their plan at home.
- The most appropriate healthcare professional to develop and implement the individualised management plan may vary by area and depend on the individual needs and preferences of the person with multimorbidity. However, it is important that it is clear in different areas who should generally be responsible.

Putting a guideline fully into practice can take time. How long may vary from guideline to guideline, and depends on how much change in practice or services is needed. Implementing change is most effective when aligned with local priorities.

Changes recommended for clinical practice that can be done quickly – like changes in prescribing practice – should be shared quickly. This is because healthcare professionals should use guidelines to guide their work – as is required by professional regulating bodies such as the General Medical and Nursing and Midwifery Councils.

Changes should be implemented as soon as possible, unless there is a good reason for not doing so (for example, if it would be better value for money if a package of recommendations were all implemented at once).

Different organisations may need different approaches to implementation, depending on their size and function. Sometimes individual practitioners may be able to respond to recommendations to improve their practice more quickly than large organisations.

Here are some pointers to help put NICE guidelines into practice:

1. **Raise awareness** through routine communication channels, such as email or newsletters, regular meetings, internal staff briefings and other communications with all relevant partner organisations. Identify things staff can include in their own practice straight away.

2. **Identify a lead** with an interest in the topic to champion the guideline and motivate others to support its use and make service changes, and to find out any significant issues locally.

3. **Carry out a baseline assessment** against the recommendations to find whether there are gaps in current service provision.

4. **Think about what data you need to measure improvement** and plan how you will collect it. You may need to work with other health and social care organisations and specialist groups to compare current practice with the recommendations. This may also help identify local issues that will slow or prevent implementation.

5. **Develop an action plan** with the steps needed to put the guideline into practice, and make sure it is ready as soon as possible. Big, complex changes may take longer to implement, but some may be quick and easy to do. An action plan will help in both cases.

6. **For very big changes** include milestones and the business case, which will set out additional costs, savings and possible areas for disinvestment. A small project group should develop the action plan. The group should include the guideline champion, a senior organisational sponsor, staff involved in the associated services, finance and information professionals.

7. **Implement the action plan** with oversight from the lead and the project group. Big projects may also need project management support.

8. **Review and monitor** how well the guideline is being implemented through the project group. Share progress with those involved in making improvements, as well as relevant boards and local partners.

NICE provides a comprehensive programme of support and resources to maximise uptake and use of evidence and guidance. See our into practice pages for more information.

Also see Leng G, Moore V, Abraham S, editors (2014) Achieving high quality care – practical experience from NICE. Chichester: Wiley.

Context

Multimorbidity is usually defined as when a person has 2 or more long-term health conditions. 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 matters because it 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 in people with multimorbidity is often driven by the introduction of multiple medicines intended to prevent future morbidity and mortality. However, the case for using these medicines weakens if life expectancy is reduced by other conditions or frailty. The absolute difference made by each additional medicine may also reduce when people are taking multiple preventive medicines. The implications of multimorbidity for organisation of healthcare are highly variable depending on which conditions a person has. Groups of conditions that have closely related or concordant treatment, such as diabetes, hypertension and angina, pose fewer problems for coordination than conditions needing quite different treatment (for example, physical and mental health conditions).

NICE guidelines have been developed for managing many individual diseases and conditions. The aim of this guideline is to inform patient and clinical decision-making and models of care for people with multimorbidity who would benefit from a tailored approach because of the high impact of their conditions or treatment on their quality of life or functioning. This is a particular concern for generalist medical professionals such as GPs and geriatricians and healthcare professionals such as pharmacists and nurses working in those services; the guideline is also relevant to specialist services because many of the patients they care for will have significant other conditions.

More information

You can also see this guideline in the NICE pathway on multimorbidity.

To find out what NICE has said on topics related to this guideline, see our web pages on multiple long-term conditions, older people and medicines management.

See also the guideline committee's discussion and the evidence reviews (in the full guideline), and information about how the guideline was developed, including details of the committee.

Recommendations for research

The guideline committee has made the following recommendations for research. The committee's full set of research recommendations is detailed in the full guideline.

1. Organisation of care

What is the clinical and cost effectiveness of alternative approaches to organising primary care compared with usual care for people with multimorbidity?

Why this is important

The guideline committee felt that primary care was well suited to managing multimorbidity, but agreed that this was often challenging partly because of how primary care is currently organised. However, there was inadequate high-quality research on alternative approaches to organising care for people with multimorbidity. Trials should be undertaken to examine the impact of different strategies on important clinical outcomes, quality of life and cost effectiveness. The committee believed that no single trial could likely address this research need, because there are many plausible interventions and many defined populations in which such interventions might be of value.

Large, well-designed trials of alternative ways of organising general practice based primary care for people with multimorbidity would be of value in defined patient groups (for example, people with multimorbidity who find it difficult to manage their treatment or care or day-to-day activities, people with multiple providers or services involved in their care, people with both long-term physical and mental health problems, people with well-defined frailty, people frequently using unscheduled care, people prescribed multiple regular medicines, and people who are housebound or care home residents).

Such trials should have clear identification and justification of the planned target population, careful piloting and optimisation, and well-described interventions. They need to be sufficiently powered to provide evidence of clinically important effects of interventions on outcomes that are relevant to patients and health and social care services (for example, quality of life, hospital and care home admission, mortality).

2. Holistic assessment in the community

What is the clinical and cost effectiveness of a community holistic assessment and intervention for people living with high levels of multimorbidity?

Why this is important

There was low quality evidence to indicate potential benefit from community assessments based on the principles of comprehensive geriatric assessment in older people. However, the studies were conducted outside the UK and were not aimed at all adults living with multimorbidity. The guideline committee believed that there was some evidence that holistic assessment and intervention in the community may be of benefit for older people, but that the evidence was of low quality and not adequate to inform strong recommendations.

Large, well-designed trials of holistic assessment and intervention in people with multimorbidity would be of value in defined patient groups in the community (for example, people in nursing homes, people who are housebound, people of all ages with well-defined frailty, people with high levels of multimorbidity or polypharmacy).

Such trials must be rigorous, with clear identification and justification of the planned target population, careful piloting and optimisation, and well-described interventions. They need to be sufficiently powered to provide evidence of clinically important effects of interventions on outcomes that are relevant to patients and health and social care services (for example, quality of life, hospital and care home admission, and mortality).

The guideline committee believed that no single trial could likely address this research need, since there are many plausible interventions and many defined populations in which such interventions might be of value. The committee believed that assessment should follow the principles of Comprehensive Geriatric Assessment or the Standardised Assessment of Elderly People in Europe (STEP) tool, and that interventions would likely involve a multidisciplinary team.

3. Stopping preventive medicines

What is the clinical and cost effectiveness of stopping preventive medicines in people with multimorbidity who may not benefit from continuing them?

Why this is important

There is good evidence from randomised controlled trials of the medium term (2–10 years) benefit of medicines recommended in guidelines for preventing future morbidity or mortality, including treatments for hypertension, hyperglycaemia and osteoporosis. However, there is much less evidence about the balance of benefit and harm over longer periods of treatment. It is plausible that harms outweigh benefits in some people with multimorbidity (for example, because of higher rates of adverse events in older, frailer people prescribed multiple regular medicines, or because the expected benefit from continuing a preventive medicine is reduced when there is limited life expectancy or high risk of death from other morbidities). These people are unlikely to have been eligible or included in published trials showing initial benefit from preventive medicines. The systematic review undertaken by NICE in 2015 did not find any randomised controlled trials of stopping antihypertensive medicines in people with multimorbidity. The review found 1 small randomised controlled trial of stopping statins in people with a life expectancy of 1 year, but the committee did not consider this provided enough evidence to make a recommendation. The review found several randomised controlled trials of stopping bisphosphonates (although not clearly in populations with multimorbidity) and a recommendation was made for this, but no randomised controlled trials were found of stopping calcium and/or vitamin D. Recommendations based on robust evidence on the clinical and cost effectiveness of stopping preventive medicines in people with multimorbidity who may not benefit could have significant budgetary implications for the NHS. No ongoing trials have been identified.

The guideline committee considered that 1 or more large, well-designed trials of stopping preventive medicine in people with multimorbidity would be of value in defined patient groups in the community (for example, people in nursing homes, people who are housebound, people with well-defined frailty, people with high levels of multimorbidity or polypharmacy, people with limited life expectancy). Discontinuation could either be complete (all relevant medicines) or partial (for example, reduced intensity of hypotensive or hypoglycaemic treatment). Such trials have to be sufficiently powered to provide evidence of clinically important effects of interventions on outcomes that are relevant to patients and health and social care systems (for example, quality of life, hospital and care home admission and mortality). The committee believed that given the existing evidence, it would be of greater value to evaluate the effects of stopping discrete medicines or drug classes, rather than stopping all preventive medicines at the same time. The committee also believed that no single trial could likely address this research need, since there are many medicines that could be stopped and many defined populations in which this might be of value.

4. Predicting life expectancy

Is it possible to analyse primary care data to identify characteristics that affect life expectancy and to develop algorithms and prediction tools for patients and healthcare providers to predict reduced life expectancy?

Why this is important

Many people take preventive medicines which are likely to offer small benefits because of reduced life expectancy from other causes. Medicines and other treatments may therefore be adding to treatment burden without adding quality or length of life. The ability to identify people with reduced life expectancy could provide healthcare professionals and people with information that could inform decisions about starting or continuing long-term preventive treatments. Conversely younger people with multimorbidity and reduced life expectancy may benefit from additional preventive treatments. Because this information would be used most often in a primary care setting, the committee considered that a tool derived from information within primary care databases would be most useful.

Update information

September 2016: The accompanying database of treatment effects was updated to correct an error where the absolute benefit of statins for primary and secondary prevention had been transposed.

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Accreditation