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Multimorbidity

Multimorbidity is increasingly becoming the norm, particularly in the older population, and presents enormous challenges for patients and their doctors. Guidelines for single conditions may not apply in a person with more than one of these conditions, and aggressively treating several conditions may do more harm than good. For people with multimorbidity, consideration needs to be given to individualising care and designing it around each person's needs and priorities.

Multimorbidity is also referred to as 'multiple long-term conditions'.[1]

What is multimorbidity?[1]

Multimorbidity refers to the co-existence of two or more long-term health conditions, which can include:

- A physical non-communicable disease of long duration, such as diabetes, cardiovascular disease, or cancer.
- A mental health condition of long duration, such as a mood disorder, schizophrenia, or dementia.
- An infectious disease of long duration, such as HIV or hepatitis C.

Additional health conditions that commonly contribute to multimorbidity include:

- Ongoing conditions, such as learning disability.
- Symptom complexes, such as frailty or chronic pain.
- Sensory impairment, such as sight or hearing loss.
- Alcohol or substance misuse.

How common is multimorbidity? (Epidemiology)[1]

With an ageing population, multimorbidity is heading towards being the norm rather than the exception.

- Worldwide, studies show that multimorbidity increases with age and with socio-economic deprivation.[2] [3]
- A meta-analysis of 193 international studies found that the pooled prevalence of multimorbidity was 42.4% across all age groups, with high variation between studies. In people aged under 59 years, 59 to 73 years, and 74 years and over, the pooled prevalence of multimorbidity were 28.0%, 47.6%, and 67.0% respectively.
- Studies of adults suggest that globally, approximately one-third have multimorbidity, rising to over 50% of people with chronic health conditions.
- A retrospective cohort study over 400,000 people in England found an overall prevalence of multimorbidity of 27.2%:
    - Prevalence increased significantly with advancing age.
    - Females had a higher prevalence of 30%, compared to 24.4% for males.
    - In people with multimorbidity, 33.8% had both a physical and mental health morbidity. (56% for people with multimorbidity aged 18–24 years, compared with 23.7% of people aged 75–84 years.
    - The proportion of people with multimorbidity who had a physical–mental comorbidity increased substantially with greater socioeconomic deprivation.

Socioeconomic status affects the risk of multimorbidity, frailty, and disability, but does not affect the risk of mortality after the onset of these adverse health conditions. Therefore, primary prevention is key to reducing social inequalities in mortality.[4]

Impact of multimorbidity[5]

The problems associated with multimorbidity for patients include:

- Fragmentation of care. There are no longer generalists in secondary care, so they may have to see a number of different specialists, including different orthopaedic surgeons for osteoarthritis in different parts of the body.
- Multiple hospital appointments. This is in part due to seeing multiple specialists as above. Transport or time involved may be issues.
- Polypharmacy. Each diagnosis tends to come with a new set of prescriptions. Taking multiple medications is associated with more side-effects and with concordance problems. A 2014 Scottish study found that for patients with two clinical conditions, 20.8 % were receiving 4-9 medications and 1.1 % were receiving ten or more.[6] This increased with increasing numbers of co-existent conditions - in people with six or more comorbidities, these figures were 47.7% and 41.7% respectively. Numbers of medications depended on the conditions, with cardiovascular conditions associated with the most.
- Burden of treatment. Aggressive management of risk factors for more than one condition may confer a huge burden. Differing conditions come with different lifestyle advice. The more conditions, the more it may be difficult to adhere to the advice and the more time-consuming it may become. (For example, a person with diabetes will be given a dietary regime involving reducing sugar intake. If they also have high lipid levels or coronary heart disease, they may be advised to reduce fat intake as well. Many foods which are low in sugar compensate by being high in fat and vice versa, so to reduce both can be a challenge. Exercise restrictions posed by osteoarthritis may make it difficult to exercise advice given for other long-term health conditions.)
- Increased incidence of mental health problems. People with multimorbidity are more at risk of depression and anxiety. This may further affect their ability to manage co-existing conditions.
- Increased risk of emergency admission to hospital.
- Reduced quality of life.
- Increased risk of conditions affecting everyday functioning.
- Increased risk of death at an earlier age than people without multimorbidity .

The challenges for the primary care clinician include :

- Conflicting advice from different specialists. For example, cardiologists may advise medication which adversely affects renal function, and the renal physician may advise stopping medication considered essential by the cardiologist.
- Managing polypharmacy. The more medication the person is on, the more the chance of side-effects and interactions. It may be difficult when assessing a new symptom to establish if it is part of a previously known condition (or the treatment for it) or if it represents a new clinical condition. It is possible to get into a cycle of ever-increasing prescriptions if tablets are prescribed for the side-effects of other tablets.
- Insufficient appointment time to assess and manage multiple complex problems.
- Guidelines for the management of chronic diseases apply to the single condition and may not be relevant for people with other long-term health conditions.[7] This is partly because guidance is based on evidence from clinical trials which often exclude individuals with other morbidity or the elderly.
- Poor communication between specialists and agencies involved.

Principles of care[8]

One review concluded that advancing multimorbidity management in primary care requires a health system approach and a patient-centred approach:[9]

- The health systems approach includes three major areas: improves access to care, promotes generalism, and provides a decision support system.
- For the patient-centred approach, four key aspects are essential: promoting doctor-patient relationship, prioritising health problems and sharing decision-making, supporting self-management, and integrating care.

Advancement of multimorbidity management in primary care requires integrating concepts of multimorbidity management guidelines with concepts of patient-centred and chronic care models.

Increasing recognition of the problems attached to multimorbidity has led the National Institute for Health and Care Excellence (NICE) to release guidance for assessment and management of people with multimorbidity. The essential message from this guideline is that care can and must be individualised for each person. The risks and benefits of each treatment recommended for each single condition should be considered in the context of other conditions and discussed with each person, taking into account their priorities and preferences.

Assessment

- Establish the person's aims, goals, priorities, values and preferences. Some may value independence and wish to maintain that as a priority; others may fear stroke and wish to avoid that; some wish to continue to work; some prefer to be on minimal medication; some value quality of life over length of life, etc. Do not assume priorities, as they may well not correlate with those of the GP.
- Record whether the person wishes their spouse/family member/carer, etc, to be involved in decisions and whether information may be shared. Review this decision regularly.
- Establish the level of burden of the conditions and the "treatment burden". How many hospital appointments do they have to attend? How difficult is it to take their medication? Are they having side-effects and if so, how troublesome are they? How much is their quality of life affected? What can't they do which they would like to do? How do the different conditions interact with each other? Are lifestyle changes they have been advised to make troublesome?
- Proactively ask about symptoms of depression or anxiety.
- Assess degree of pain and effectiveness of management.
- Assess the number of medications prescribed and adherence with them. NICE states that adults on more than 15 medicines are at particularly high risk.

- Consider assessing frailty. Informal assessment or tools such as the PRISMA-7 questionnaire may be used.[10]

Optimising management

NICE advises that GP practices actively identify patients with multimorbidity and assign them a named doctor for continuity of care. It advises an approach to care which takes into account multimorbidity if:

- The person requests it.
- The person finds it difficult to manage their treatments or day-to-day activities.
- The person receives care and support from multiple services and needs additional services.
- The person has both long-term physical and mental health conditions.
- The person is assessed as having frailty or has falls.
- The person frequently seeks unplanned or emergency care.
- The person is prescribed multiple medications (10 or more, or fewer than 10 if there is a high risk of adverse events).

Further advice from NICE on specifics of taking an approach to care which takes into account multimorbidity is as follows:

- Consider each treatment for each condition and weigh up the risks and benefits. Discuss these with each individual, taking into account their preferences before coming to a decision together about the appropriateness of each medicine and treatment plan.

- Agree an individualised treatment plan. This should include:
    - Stopping treatments which have limited benefit.
    - Where possible, stopping treatments and appointments which are a burden and stopping medication with a high risk of adverse effects. (Consider non-pharmacological options if possible.)
    - Co-ordinating appointments as much as possible (eg, one appointment for several chronic disease reviews).
    - Prioritising appointments in both primary and secondary care.
    - Recording of goals and plans for future care (including advance care planning).
    - Naming the professional who is responsible for coordination of care.
    - Communication of the individualised management plan and the responsibility for coordination of care to all professionals and services involved.
    - A plan for regular follow-up.
    - Explanation of how to access urgent care.
- Bisphosphonates are the one group of drug singled out specifically. It is advised that there should be a discussion about stopping a bisphosphonate if the person has been on it for three years, as there is no good evidence of benefit for continuing after this time.

The guideline allows GPs to take into account the potentially limited benefit of continuing treatments that aim to reduce future risks, particularly in people with limited life expectancy or frailty. It advises that GPs 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.

It does not make any recommendations on the consultation time needed to deal with complex multimorbidity. The inadequacy of the traditional ten-minute appointment is felt nowhere more than for people with multimorbidity.[11] A 2015 review in the British Medical Journal (BMJ) recommends that consultations for those with complex multimorbidity should be longer, or they should have occasional extended consultations to optimise management.[5] A Kings Fund report into polypharmacy in 2013 also recommended longer appointments for people with multiple morbidity on many medications.[12]

Tools

Arguably the most useful tools a GP has in managing people with multimorbidity currently are their own judgement and clinical experience, along with their knowledge of, and relationship with, each individual.

NICE suggests other tools which may be useful in the assessment and management of multimorbidity:[8]

- Electronic Frailty Index (eFI), PEONY (**P**redicting **E**mergency admissions **O**ver the **N**ext **Y**ear) or QAdmissions tools to identify adults with multimorbidity who are at risk of unplanned admission.
- PRISMA-7 tool to assess frailty.[10]
- Use of electronic prescription records to identify people on large numbers of medications.
- 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.
- 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.

- The screening tool of older people's prescriptions (STOPP) and screening tool to alert to right treatment (START) - the STOPP/START tool.[13]

In future it is hoped that guidelines will be developed or adapted for common combinations of morbidities, although it would be impossible to cover all combinations.[7]

A Cochrane review concluded that there are remaining uncertainties about the effectiveness of interventions for people with multimorbidity in general due to the relatively small number of randomised control trials, with mixed findings overall. However, the results suggest an improvement in health outcomes if interventions can be targeted at risk factors such as depression in people with co-morbidity.[14]

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Originally Published: 20/11/2023	Next review date: 20/09/2023	Document ID: doc_29330

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