RACGP
Royal Australian College *of* General Practitioners

RACGP aged care clinical guide (Silver Book)

5th edition

Part A. Multimorbidity

General principles

- Defining multimorbidity for clinical care purposes requires a pragmatic definition based on patients' needs.
- Multimorbidity is associated with negative clinical outcomes and patient experience outcomes, and increased use of healthcare.
- Most clinical trials do not take into account patients with multimorbidity.
- A structured approach to multimorbidity includes identification, establishing treatment burden and jointly clarifying goals of care.

Practice points

Practice points	References	Grade
Conduct a comprehensive search of the patient's electronic medical records to identify if they have multimorbidity	10	Consensus-based recommendation
Opportunistically screen for multimorbidity during consultations using tools such as The Instrument for Patient Capacity Assessment (ICAN)	11	Consensus-based recommendation
Use validated tools to: • measure the increased risk of hospital admission • assess frailty	13	Consensus-based recommendation
Establish disease and treatment burden using a framework for identifying multimorbidity burden	13	Consensus-based recommendation

Introduction

There are multiple definitions of multimorbidity used for different purposes, some of which are presented in Box 1. The UK's National Institute for Health and Care Excellence (NICE) encountered the problem of multiple multimorbidity definitions during the development of their guidelines.[1] As such, NICE took a pragmatic approach, and targeted their guidelines towards people with multiple conditions that present significant problems to everyday functioning, or where the management of their care has become burdensome to the patient and/or involves a number of services working in an uncoordinated way. Using this definition, the problems faced by patients may be due to the severity or nature of their conditions, but commonly relate to the organisation of the healthcare system and their interaction with it.

For people residing in residential aged care facilities (RACFs), the pragmatic approach taken by the NICE guidelines is of appeal, thus the same approach has been adopted in the *RACGP aged care clinical guide (Silver Book)*.

It is important to recognise that some sub-populations of older people, including Aboriginal and Torres Strait Islander peoples, veterans, and culturally and linguistically diverse peoples, experience differences in multimorbidity prevalence.

Box 1. Definitions of multimorbidity

Multimorbidity is commonly defined as the presence of two or more chronic medical conditions in an individual, and can present several challenges in healthcare, particularly with higher numbers of coexisting conditions and related polypharmacy.[2]

Complex multimorbidity is defined as 'co-occurrence of three or more chronic conditions affecting three or more body systems within one person, without defining an index condition'.[3]

Other definitions are broader and include any combination of chronic disease with at least one other disease (acute or chronic) or biopsychosocial factor (associated or not) or somatic risk. Any biopsychosocial factor, any somatic risk factor, the social network, the burden of diseases, the health consumption, and the patient's coping strategies may function as modifiers of the effects of multimorbidity. Multimorbidity may modify the health outcomes and lead to an increased disability or a decreased quality of life or frailty.[4]

The role of diseases, risk factors, symptoms and severity need to be included in the definition.[5]

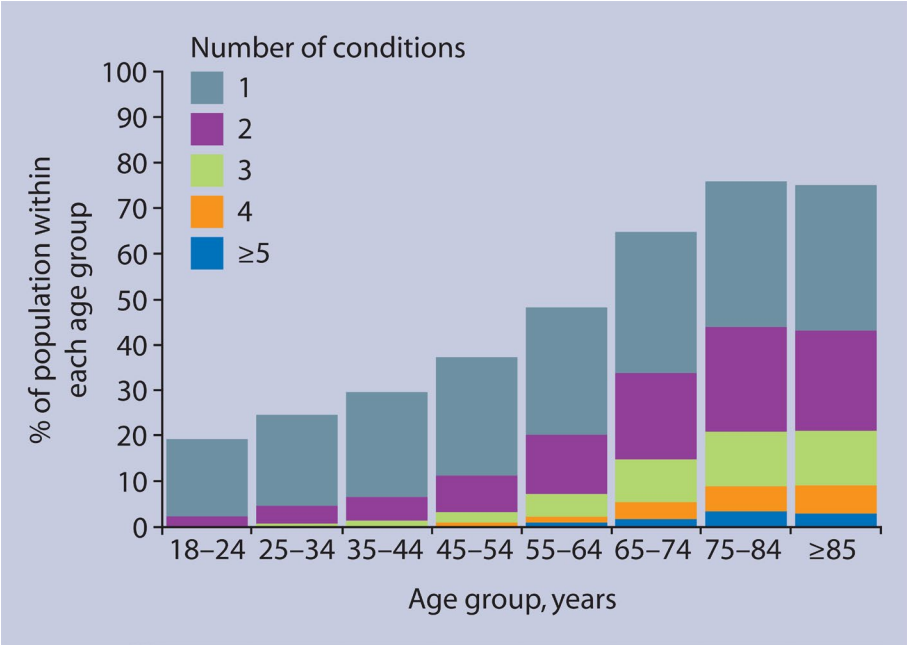
Clinical context

Multimorbidity is common, and most research uses the parameter of 'two or more chronic medical conditions' as the definition for multimorbidity. The prevalence of multimorbidity is reported to be in the order of 25%, and the prevalence has been found to increase with:

- increasing age (Figure 1)
- socioeconomic deprivation
- the female gender.

As physical conditions increase, the likelihood of a mental health condition increases (refer to Part A. Mental health).

Figure 1. Prevalence of multimorbidity versus age[6]



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The prevalence of multimorbidity varies based on the definition. If multimorbidity is defined by the number of:[7]

- medical conditions
  - 25.7% of the general population had two or more diagnosed chronic conditions
  - 15.8% of the general population had three or more diagnosed chronic conditions
- body systems affected by these chronic conditions
  - 23.0% of the general population had two or more body systems affected by chronic conditions
- complex multimorbidity (as noted in Box 1)
  - 12.1% of the general population had complex multimorbidity.

In a large Australian study of older people, 82% of respondents reported having at least one chronic disease, and more than 52% reported having at least two chronic diseases.[8] Respondents experiencing any chronic diseases had an average of 2.4 comorbid diseases. Three defined groups of chronic diseases were identified as:

- asthma, bronchitis, arthritis, osteoporosis and depression
- high blood pressure and diabetes
- cancer.

In addition, heart disease and stroke were classed in a separate group, or have 'attached' themselves to different groups in different analyses.

The authors of the study concluded that 'the consistency of the findings suggests there is co-occurrence of diseases beyond chance, and patterns of co-occurrence'.[8]

Issues associated with multimorbidity

People who have multimorbidity are found to experience:[9]

- reduced quality of life
- higher mortality
- polypharmacy
- higher treatment burden

- greater likelihood of uncoordinated and fragmented care
- vulnerability to safety issues due to poor health, advanced age, cognitive impairment, limited health literacy and comorbidity of depression or anxiety
- greater use of services
  - higher consultation rates with healthcare professionals and general practitioners (GPs)
  - higher number of hospital admissions.

In practice

The World Health Organization (WHO) surmised that:[9]

> *Clinical guidelines review and summarise evidence about the most effective treatments for specific conditions and provide recommendations for their use. However, guidelines are almost always focused on single conditions. For instance, among others, there are individual guidelines for diabetes, asthma and stroke. Guidelines rarely take into account multimorbidity. The randomised trials on which guidelines are based very often exclude people with multiple conditions from taking part. The socioeconomic characteristics of participants in the trials are rarely reported, making it difficult for primary care providers to use the evidence for their diverse patient case mix. The potential for interactions between medications and between conditions makes the application of single disease-based clinical guidelines potentially hazardous for people with multiple conditions.*

This raises the need for a set of guiding principles to support practitioners in the identification, assessment and management of patients with multimorbidity.[1] The guiding principles need to take into account:

- an awareness of multimorbidity and the broad clustering of conditions, including
  - physical health conditions
  - mental health conditions
  - ongoing conditions
  - symptom complexes (eg chronic non-malignant pain, frailty)
  - sensory impairment
  - alcohol and drug disorders
- the concept that treatment options for the range of conditions a person may have will be based on single disease/condition guidelines, which will most likely be drawn from research on people without multimorbidity. This may also lead to conflicting opinions from different specialists
- that management of additional risk factors for future disease can place unnecessary burden on people with multimorbidity
- that there is a need for a genuine patient-centred approach, including
  - a discussion about how the person's health conditions and their treatments interact and affect quality of life
  - a discussion about their goals, preferences and priorities for care
  - a discussion about the benefits and risks of treatments (not researched in a group with multimorbidity)
  - identifying opportunities for improving coordination and integration of care for the individual
  - minimising treatment burden to improve quality and safety.

Identification of multimorbidity

As with a systematic approach to care for any chronic disease, it is helpful to identify the group of patients who will benefit most from a multimorbidity approach. For those living in RACFs, this may include the majority of residents. Nevertheless, explicit identification is an important first principle to delivering systematic care. Given the multiple contributors to multimorbidity, the identification of patients with multimorbidity needs to take a multi-faceted approach. The approach should be based on:[10]

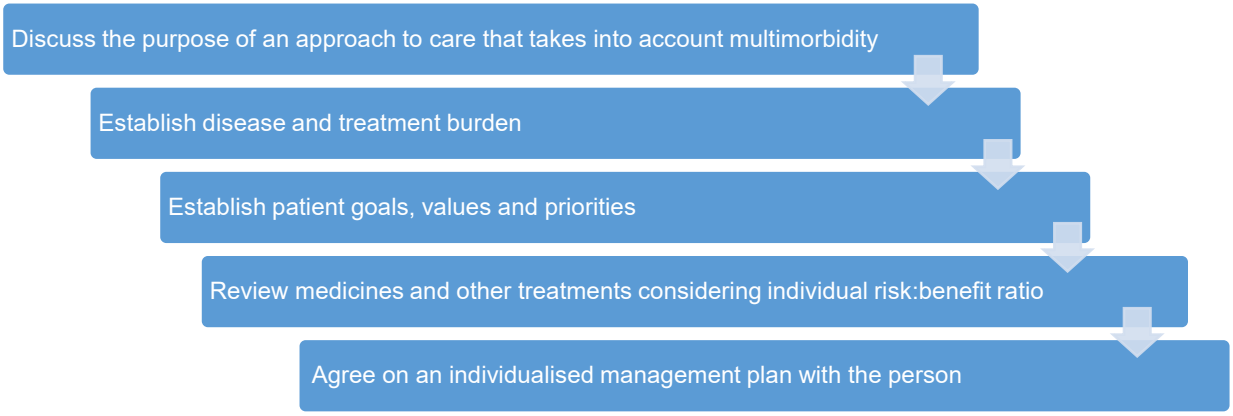
- a search of the patient's past records, including electronic medical records

- identifying patients who have hyper-polypharmacy (defined as 15 or more medications). Patients on fewer than 15 medications but at high risk of adverse events may also benefit from management using a multimorbidity approach (refer to Part A. Polypharmacy)
- the use of validated tools – recommendations include
  - tools to measure the increase in risk of hospital admission – there are a large number of such tools that have been reviewed by the NSW Agency for Clinical Innovation.[11] The lack of integration with electronic medical systems and integrated datasets may limit the ability to use them optimally
  - tools to assess frailty (refer to Part A. Frailty)
- opportunistically screening during consultations. Using a tool such as The Instrument for Patient Capacity Assessment (ICAN)[12] 'shifts the focus from the medical condition of the person to their situation in life, identifies what the person values doing and being, explores how healthcare and other resources serve or limit this person, and recognises and cultivates opportunities to advance the person and their situation'.[13] For clinicians, this tool recommends asking three questions
  - What are you doing when you are not sitting here with me?
  - Where do you find the most joy in your life?
  - What's on your mind today?

Approaches to multimorbidity

Figure 2 illustrates the approach to managing multimorbidity.

Figure 2. Approach to multimorbidity management



Purpose of approach to care

Discuss with the patient, their carers and/or alternative decision makers that the purpose of a multimorbidity approach (and the aim of healthcare in general) is to improve the quality of life. Quality of life with multimorbidity may be improved by reducing treatment burden and optimising care by identifying:[13]

- ways of maximising benefit of existing treatment (eg identifying those at high risk when using osteoporosis medication to manage risks of fracture)
- treatments with limited benefit that may be stopped (eg herbal therapies)
- treatment and follow-up plans with high burden (eg routine follow up with specialists)
- medicines with higher risk of adverse events (eg warfarin and novel oral anticoagulants [NOACs] in a person with a high risk of falls)
- alternative arrangements for follow-up appointments to coordinate care or optimise appointments (eg home visits, community healthcare nursing support, remote pacemaker assessments or telehealth).

Establish burden of illness and treatment

As a minimum, GPs could consider:[14]

- healthcare tasks being imposed on the patient and/or their carers/family
- factors (eg personal, social, financial) that could exacerbate the burden of treatment in this patient

- consequences of the healthcare tasks imposed on this patient.

Table 1 offers a framework to assist in identifying the burden experienced by the patient.[15] Given the high prevalence of mental health with increasing physical conditions, patients should also be screened for anxiety and depression, and GPs should also be alert for chronic pain concerns (refer to Part A. Pain and Part A. Mental health).

Table 1. Framework for identifying multimorbidity burden

Table 1. A measurement framework for burden of treatment in complex patient with multimorbidity[17]

Healthcare tasks imposed on patients	Factors that exacerbate the burden of treatment	Consequences of healthcare tasks imposed
1. Managing medication • Prepare and take medicines • Plan and organise medicine intake • Follow specific precautions before, during or after intake • Store medicines at home • Refill medicine stock **2. Organising and performing non-pharmacological treatments** • Access/use equipment • Plan/perform physical therapy **3. Lifestyle changes** • Force self to eat certain foods • Eliminate some foods • Plan and prepare meals • Be careful of ingredients in meals • Organise physical exercise • Perform some physical activities • Give up some physical activities • Change/organise sleep schedule • Give up smoking • Perform other lifestyle changes **4. Condition and treatment follow-up** • Plan and organise self-monitoring • Plan and organise lab tests • Precautions before/when performing tests • Plan and organise doctor's visits • Remember questions to ask doctor • Organise transportation **5. Organising formal caregiver care** **6. Paperwork tasks** • Take care of administrative paperwork • Organise medical paperwork **7. Learning about and developing an understanding of the illness and treatment** • Learn about the condition and treatment • Navigate the health system	**1. Nature, time required and frequency of healthcare tasks** **2. Structural factors** • Access to resources – Medicine out of stock – Access to lab results – Access to right health provider – Distance to health facilities – Difficulty planning last-minute consultations • Lack of coordination between health providers • Health facility problems (wait times, parking etc) • Not enough research done on particular health condition • Insufficient or inadequate media coverage of the health condition **3. Personal factors** • Beliefs – Anxious about tests and results – Believe some consultations useless – Believe some follow-up tasks useless – Believe treatment inefficient – Feel dependent on treatment – Treatment conflicts with religious beliefs • Relationships with others (except healthcare) – Feels a burden to others – Loved ones impose too many precautions – Loved ones don't help with healthcare – Hides condition/treatment from others – Has to regularly explain condition to others – Seeing other patients triggers fears for the future • Relationship with healthcare providers – Physicians don't know about condition/treatment – Physician doesn't take patient context into account – Healthcare providers don't explain things – Feel providers don't believe what is said – Providers don't consider psychological problems – Providers neglect some problems for others – Feels treated like just a condition, not a person **4. Situational factors** • Out of routine – Plan and organise travel – Store medications when not at home – Take medications when not at home – Access to structures or equipment when not at home – Pregnancy • Other situational factors – Changing physicians – Organise diet to accommodate other people – Follow diet in the presence of other people **5. Financial factors**	**1. Lack of adherence** • Intentional non-adherence due to complexity • Intentional non-adherence due to costs • Non-intentional non-adherence and strategies not to forget treatment **2. Impact on professional, social, family life and leisure activities** • Opportunity cost to professional life • Coping with absence from work • Healthcare activities interfere with career (eg lack of promotion) • Coping with judgement from others • Treatment takes time/energy that interferes with family/friend commitments • Healthcare activities interfere with life as a couple • Treatment takes time/energy or requires precautions that interfere with leisure activities **3. Emotional impact** • Frustration of not being able to do everything wanted • Guilt associated with intentional non-adherence to treatment • Treatment is a reminder of chronic conditions **4. Financial impact** • Direct costs of treatment • Indirect costs of treatment

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Establish patient goals, values and priorities

Build on previous conversations, such as those using the ICAN tool, to encourage and explore with patients (or their carers/families and alternative decision makers) the things that are important to them. The aim of managing multimorbidity is to individualise care based on the patient's personal preferences; therefore, establishing their values, goals and priorities are critical to managing multimorbidity. This should include a discussion about longevity, quality of life, and treatment burden, and an exploration of the person's attitudes to their treatments and the potential benefits and harms of those treatments.

Reviewing medicines and other treatments

When reviewing medications and treatments, it is important to consider the effectiveness of treatment/s, the duration of treatment trials and the populations in the trial.

The Silver Book Part A chapters on Polypharmacy and Deprescribing provide an overview of the approach to managing polypharmacy and identifying opportunities to deprescribe. The chapters highlight tools such as the Screening Tool of Older People's Prescriptions (STOPP) and Screening Tool to Alert to Right Treatment (START) to not only identify medication-related safety concerns and potential medication to cease, but also medications that the person currently is not taking that may offer benefit. The accredited pharmacist plays a critical role in supporting this component.

Individualised management plan

The outcome of the preceding four steps should be an individualised management plan that:[12,16]

- documents the patient's goals, values, preferences and priorities
- includes an action plan of medication and treatments that has details of what is being stopped, what is being changed and what is being started
- details information to support coordination of care and identify who is responsible for coordination of care
- arranges follow-up appointments and review of the care plan, including arrangement for continuity of care, given increasing evidence that shows a positive correlation between quality of care and continuity of care.

This guidance offers a pragmatic approach to managing multimorbidity. The evidence for best practice to manage multimorbidity continues to emerge. What is clear is that 'one size does not fit all' and the management of patients with multimorbidity offers a unique opportunity to practice authentic patient-centred care.

References

1. National Institute for Health and Care Excellence. Multimorbidity: Clinical assessment and management. England: NICE, 2016. Available at www.nice.org.uk/guidance/ng56 [Accessed 7 August 2019].
2. Fortin M, Bravo G, Hudon C, Vanasse A, Lapointe L. Prevalence of multimorbidity among adults seen in family practice. Ann Fam Med 2005;3:223–28.
3. Harrison C, Henderson J, Miller G, Britt H. The prevalence of complex multimorbidity in Australia. Aust N Z J Public Health 2016;40(3):239–44.
4. Le Reste JY, Nabbe P, Manceau B, et al. The European General Practice Research Network presents a comprehensive definition of multimorbidity in family medicine and long-term care, following a systematic review of relevant literature. J Am Med Dir Assoc 2013;14:319–25.
5. Willadsen TG, Bebe A, Koster-Rasmussen R, et al. The role of diseases, risk factors and symptoms in the definition of multimorbidity – A systematic review. Scand J Prim Health Care 2016:1–10.
6. Salisbury C, Johnson L, Purdy S, Valderas JM, Montgomery AA. Epidemiology and impact of multimorbidity in primary care: A retrospective cohort study. Br J Gen Pract 2011;61(582):e12–21.
7. Harrison C, Henderson J, Miller G, Britt H. The prevalence of diagnosed chronic conditions and multimorbidity in Australia: A method for estimating population prevalence from general practice patient encounter data. PLoS One 2017;12(3):e0172935.
8. Islam MM, Valderas JM, Yen L, Dawda P, Jowsey T, McRae IS. Multimorbidity and comorbidity of chronic diseases among the senior Australians: Prevalence and patterns. PLoS One 2014;9(1):e83783.
9. World Health Organization. Multimorbidity: Technical series on safer primary care. Geneva: WHO, 2016.
10. Souri S, Symonds NE, Rouhi A, et al. Identification of validated case definitions for chronic disease using electronic medical records: A systematic review protocol. Syst Rev 2017;6:38.
11. Agency for Clinical Innovation. Decision support tool: Summary of patient identification and selection tools. Chatswood, NSW: ACI, 2018. Available at www.aci.health.nsw.gov.au/__data/assets/pdf_file/0008/287441/decision-support-tool-patient-identification.pdf [Accessed 7 August 2019].
12. Boehmer KR, Hargraves IG, Allen SV, Matthews MR, Maher C, Montori VM. Meaningful conversations in living with and treating chronic conditions: Development of the ICAN discussion aid. BMC Health Serv Res 2016;16:514.
13. Minimally Disruptive Medicine. The Instrument for Patient Capacity Assessment (ICAN). Available at https://minimallydisruptivemedicine.org/ican [Accessed 7 August 2019].
14. Trevena L. Minimally disruptive medicine for patients with complex multimorbidity. Aust J Gen Pract 2018;47(4):175–79.
15. Tran VT, Barnes C, Montori VM, Falissard B, Ravaud P. Taxonomy of the burden of treatment: A multi-country web-based qualitative study of patients with chronic conditions. BMC Med 2015;13:115.
16. Barker I, Steenton A, Deeny S. Association between continuity of care in general practice and hospital admissions for ambulatory care sensitive conditions: Cross-sectional study of routinely collected perswon level data. BMJ 2017;356:j84.