Editorial

# Nationally Informed Recommendations on Approaching the Detection, Assessment, and Management of Mild Cognitive Impairment

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**Abstract**. Prior to the usual clinical symptoms of dementia, there can be subtle changes in cognitive function that differ from the normal age-related cognitive decline, which has been termed mild cognitive impairment (MCI). The increase in the numbers of individuals with possible MCI presenting to health care professionals, notably, General Practitioners (GPs), is going to rise dramatically in the coming years. With ever increasing demands on GPs, it is therefore timely to provide information that can be accessed by health care professionals to assist them in making appropriate diagnoses and to provide the most relevant, evidence-based treatment options. We have provided a comprehensive list of recommendations that aim to address key aspects of MCI in primary care. Specifically, these relate to detection and diagnosis; sharing the diagnosis, monitoring, and follow up; practical interventions to potentially delay progression; and personalizing care—planning, engagement, and patient motivation for the long term.

Keywords: Assessment, diagnosis, guidelines, management, mild cognitive impairment, primary care

## INTRODUCTION

Dementia has been described as the greatest global challenge for health and social care in the current century [1]. In 2017, it was stated that there were about 50 million people worldwide with the condition in 2015,

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and that by 2050 that figure would rise to around 150 million people [1]. Similar projections have been made more recently with the 2022 publication by the Dementia Forecasting Collaborators suggesting that the number of people with dementia would increase from 57.4 million cases globally in 2019 to 152.8 million cases in 2050 [2]. The economic burden is vast, with the cost of caring for people with dementia estimated to rise to US$ 2 trillion per year by 2030 [3].

The recently released Australian Institute of Health and Welfare Report (2021) Older Australians [4] reported that the number of people of all ages living with dementia is estimated to be between 400,000 and 459,000 in 2020. Also, the report added that by 2030 the number of people with dementia is expected to rise to 550,000 with those aged 65–84 being about 52% of the total.

Of significance, prior to the usual clinical symptoms of dementia, there can sometimes be subtle changes in cognitive function that differ from the normal age-related cognitive decline. These manifest as mild decline on cognitive testing, yet the person remains functional in their daily activities, and thus do not meet criteria for dementia. This has been termed mild cognitive impairment (MCI) [5]. It has recently been reported, via a systematic literature review, that the incidence of MCI per 1000 person-years is 22.5 for ages 75 to 79 years, rising to 60.1 for ages 85 years and over [6]. Recently reported prevalence data [7], using a random effects meta-analysis of 34 studies published since 2001. The authors concluded that the MCI prevalence was 6.7% for ages 60–64, 8.4% for 65–69, 10.1% for 70–74, 14.8% for 75–79, and 24.2% for 80–84. Between 40% to 60% of people aged greater than 58 years with MCI have underlying Alzheimer's disease (AD) pathology [8]. Barriers have been identified that impact upon the prompt diagnosis of both dementia in the form of AD and MCI [9]. Such barriers include the potential stigma associated with the disease and an increased risk of suicidal behavior in some patients [9].

Nevertheless, in Australia there have been a number of recent reports of successful educational interventions for General Practitioners (GPs) in relation to the timely diagnosis of dementia and increasing confidence and reduction of negative attitudes towards engagement of GPs with such patients [10, 11]. Unfortunately, there are fewer data pertaining to patients with MCI.

The number of individuals with possible MCI presenting to health care professionals, notably, GPs, is clearly going to rise dramatically in the coming years, and with ever increasing demands on GPs [12], it is therefore timely to provide information that can be accessed by health care professionals to assist them in making appropriate diagnoses and the most relevant, evidence-based treatment options.

The aim of this paper is to provide accurate, contemporary, scientific, and practical information and recommendations relating to the diagnosis and management of MCI with emphasis on the need for a multidisciplinary team approach to management.

## GENERATING THE RECOMMENDATIONS

In order to create the recommendations described in this document, a full single day virtual symposium was held in September 2021. International and national experts in both MCI and dementia were invited to attend and with the 74 health practitioners from primary and tertiary care and two consumer advocates, they contributed to the development of the recommendations via oral presentations and workshop discussion that considered differing aspects of MCI in four focus groups led by authors PM, SN, HB, and PW.

The focus groups considered: 1) Detection and diagnosis, 2) Sharing the diagnosis, monitoring, and follow up, 3) Practical interventions to potentially delay progression, and 4) Personalizing care—Planning, engagement, and motivation for the long term (for details, see the Supplementary Material).

The presentations and workshop recommendations presented in the symposium were recorded. To address overlap and to ensure consistency, the authors then distilled the output into the recommendations described below. Key considerations were that all such recommendations should be based on high level contemporary evidence, whenever possible. All delegates were invited to vote on any potential recommendations that were thought to be controversial or contentious and the recommendations were only included if a majority voted in favor.

## RECOMMENDATIONS: DETECTION AND DIAGNOSIS

1. Obtaining both a patient and (wherever possible) collateral history from family or supports is critical in classifying a person as having MCI.

2. At a minimum, a computerized tomography (CT) scan of the brain and full blood examination, urea and electrolytes, liver function tests, thyroid function tests, $B_{12}$ and folate should be included in the initial investigation of MCI.

3. Useful cognitive assessments for MCI include the Montreal Cognitive Assessment, Addenbrookes Cognitive Examination-III, Mini-Mental State Examination with Clock Drawing Test, although it is noted that these may be insensitive in those with high premorbid intellect and/or those with high levels of education. For indigenous individuals or those with poor English, alternative screening tests are available.

4. Initial cognitive testing can be done by other primary care clinicians including nurses and allied health such as occupational therapists provided they have had training in cognitive assessment.*

5. When referring a patient with MCI to a specialist, GPs should always provide the results of the initial investigations including a copy of a recommended cognitive screening tool.*

6. GPs should consider referring patients with a clinical syndrome consistent with MCI for secondary consultation. Forty percent of clinical MCI may be due to non-Alzheimer's neurodegenerative diseases including cerebrovascular pathology, synucleinopathies, and fronototemporal lobar degeneration, and underlying psychiatric conditions. These should always be considered and may require more detailed testing or and investigations.

7. Neuropsychological assessments may be helpful for patients who are highly educated or where there is difficult differential diagnosis, such as in those with psychiatric conditions.

8. Neuropsychology can be helpful for identifying strengths and weaknesses to address with cognitive rehabilitation and for management planning (e.g., vocational functioning).

9. Wherever available, magnetic resonance imaging scans should also be performed, even if a CT scan has been conducted.*

10. Where there is a persistent history of clear cognitive deterioration over the previous 6–12 months and positron emission tomography scanning (fluorodeoxyglucopse or amyloid) is not available, other biomarker testing should be utilized. Single-photon emission computed tomography scanning should not be performed as it is insufficiently accurate.

## RECOMMENDATIONS: SHARING THE DIAGNOSIS, MONITORING, AND FOLLOW UP

11. When MCI is identified/diagnosed, it should be openly discussed and explained as being different to normal aging and that it is important to follow up.

12. When sharing the diagnosis of MCI, with the patient's permission, other support or family should be invited to participate and written feedback must be provided. *

13. When sharing the diagnosis of MCI, it is important to differentiate it from dementia, discuss the variability of the course, and educate patients that there are strategies that may improve cognition or delay change, including progression to dementia.

14. When a person has been told they have MCI, it should be stated that there is not an immediate need to routinely address driving unless risk is identified. They should also be informed that MCI may impact on their work and an assessment of potential risk should be discussed.

15. Patients with MCI should ideally be reviewed at between six and 12 months but definitely within 18 months by the GP or the specialist. Triggers for earlier review should include: a) Patient or family concern; b) Recent hospital admission; c) Multi-domain amnestic MCI; d) Neurological signs; e)Mood or behavioral symptoms

16. Referral to specialist for follow up should be considered if there is unexpected change.

17. MCI follow up can be conducted in Primary Care with appropriate training and support.*

18. The following should be included in any follow up visit of those with MCI: a validated cognitive scale that is consistently repeated, a comparative structured informant report and a comparative structured functional assessment.

19. At MCI diagnosis, in addition to medication management, lifestyle interventions and management of mood and other chronic diseases, patients should be informed about compensatory cognitive strategies, cognitive remediation, physical exercise, nutritional advice, medical foods, safe alcohol consumption, sleep, the need to cease smoking, the need to cease or reduce medications with anti-cholinergic side effects and the availability of any new disease modifying treatments if approved for their

specific subtype of MCI. They should also be informed of the availability of research participation.

## RECOMMENDATIONS: PRACTICAL INTERVENTIONS TO POTENTIALLY DELAY PROGRESSION

20. Cardiovascular disease can be a significant contributor to MCI and addressing these risks as early as midlife is recommended including obesity, hypertension, hypercholesterolemia, heart disease, and diabetes.**
21. Everyone should be offered an assessment for dementia risk in mid-life using a validated tool (e.g., Australian National University Alzheimer's Disease Risk Index.)*
22. The 45-49-year-old health check, recommended in Australia, is a good opportunity to undertake the risk assessment.
23. Assessment for indigenous groups/Australians should be tailored to their needs and contexts.
24. People with MCI should be advised to undertake physical activity to the level advised by national guidelines.
25. Recommended exercise needs to be tailored for co-morbidity and consideration given to the challenges of ensuring longer-term adherence, variability in access and the potential value of caregivers and online programs to support adherence.
26. A referral to an exercise physiologist should be made where there are comorbidities that will complicate physical activity or where there is strong falls risk.
27. Nutrition should be optimized, including the Mediterranean diet or the closely related Mediterranean-Dietary Approaches to Stop Hypertension Intervention for Neurodegenerative Delay diet.
28. A medical food, Fortasyn Connect, has been shown in one 3-year randomized controlled trial to slow the decline in cognition and delay hippocampal atrophy in those with prodromal AD, and patients with MCI should be informed of these results and the availability of Fortasyn Connect in Australia [13].
29. Patients with MCI are advised to remain cognitively active and if not already engaged, to undertake some cognitive activity.

30. Patients should be evaluated for depressed mood when planning care for MCI.
31. Mindfulness practice should be recommended to everyone with MCI.*
32. Impaired hearing should be detected and addressed.
33. Heavy harmful alcohol consumption should be treated, excess alcohol use should be discouraged and commencing alcohol consumption should not be advised.
34. Screening for sleep disorders, including sleep apnea, followed by education and treatment (where indicated) is recommended.
35. Social engagement should be encouraged and social isolation avoided.
36. A national body such as Dementia Australia should be funded to provide more tailored services for people with MCI.*
37. It is the responsibility of the health care system to ensure that everyone with MCI has access to follow-up and risk reduction advice and interventions.*
38. Education about dementia risk reduction should be increased both to clinicians and the community.
39. Medications that impair cognition, especially those that contribute to excess cholinergic burden, should be deprescribed where possible.
40. There is no proven role for acetylcholinesterase inhibitors in the management of any type of MCI.
41. Peri-operative discussion for patients with MCI to plan management to reduce risk of complications including delirium is recommended.
42. Hospitals should take a pro-active approach to preventing, detecting, and managing delirium.
43. Smoking cessation at all ages should be recommended.
44. Reducing exposure to air pollution is recommended.
45. Cognitive rehabilitation including memory strategies training should be recommended.

## RECOMMENDATIONS: PERSONALIZING CARE—PLANNING, ENGAGEMENT, AND MOTIVATION FOR THE LONG TERM

46. Communicate with people living with MCI using language that is, positive, respectful, consistent, plain and clear, free of jargon, and culturally appropriate.

47. Offer every eligible person diagnosed with MCI a General Practitioner Management Plan which acknowledges the patient experience, utilizes a holistic approach to care, employs person centered goal setting, includes strategies to maintain best possible chronic disease management, emphasizes living well with MCI, and incorporates health behavior change and e-health interventions where evidence based.

48. Work together with multi-disciplinary health care providers to deliver comprehensive person-centered care. A Team Care Arrangement (usually an MBS item) may be applicable. Relevant health care providers could include: Practice Nurse, Optometrist, Audiologist, Pharmacist Occupational Therapist, Physiotherapist, Exercise Physiologist, Dietician, Dentist, Counsellor, Psychologist.

49. Primary care practitioners are recommended to use an annual standardized quality of life assessments to monitor the impact of the mild cognitive impairment on a person's ability to live a fulfilling life.*

50. People diagnosed with MCI and their family should be offered a comprehensive family assessment after diagnosis to provide education and a plan of care.

51. For the patient with MCI conduct an annual health check to promote health and reduce risk factors of cognitive decline including, hearing and eye check, medication review, chronic disease management, assessment of lifestyle factors, in particular, physical and social activity, mental and emotional health assessment. The impact of cognitive impairment on the ability to perform vocational and caring duties, driving and other responsibilities should be discussed where relevant and considered in management planning.

52. Every person with MCI should be offered written information on useful contacts and services including, My Aged Care (for people 65 and over), National Disability Insurance Scheme (for people under 65), Dementia Australia, Carer Gateway, and https://www.forwardwithdementia.org/au. The Australian Dementia Network includes a national list of memory clinics that can be useful for specialist assessment, resources, and peer networks.

53. Offer information on substitute decision-making and Advance Care Directives to all persons diagnosed with MCI.

54. Enduring Power of Attorneys in various domains should be recommended.

55. Carers and/or family members of people with MCI should be provided with support including, education to increase their capacity to support the person with MCI to live well, information provision on Dementia Australia and Carer Gateway, encouragement to self-care and maintain own health and well-being.

56. There should be a coordinated national approach to distinguishing MCI from dementia with a separate awareness week focusing on de-stigmatization and workforce capacity development.*

57. Appropriate language to de-stigmatize MCI in public health messaging should be used.

58. Access to support programs for people living with MCI and their carers should be established equitably across regional, rural, and metropolitan locations.

59. Specialized MCI Counsellors or Community Care Coordinators to act as a "one-stop-shop" to care co-ordinate referrals and services and support engagement of person with service.

60. Specialist cognitive impairment diagnostic and management clinics should be embedded in the community.

61. Build GP workforce capacity for MCI diagnosis and management as part of curriculum for GP training.

62. Provide Medicare funded and public health funded carer support focusing on those with MCI.

When there is an *, this indicates a recommendation considered contentious and subsequently approved at a vote. When there are two **, this indicates the focus group lead and authors have added an additional recommendation.

## DISCUSSION

We have provided a comprehensive and detailed list of recommendations relating to MCI which should be of benefit to health care professionals and especially primary health care workers. A number of the ten recommendations relating to detection and diagnosis have very specific comments relating to the nature and type of biochemical, physical, and cogni-

tive tests that should be performed. While these might be seen as prescriptive the intention is that the range of assessments will provide not only a comprehensive and consistent evaluation of the patient but also valid and useful data for the clinicians involved in the evaluation.

The recommendations relating to sharing the diagnosis, monitoring, and follow up are very practical and offer guidance pertaining to communication with the patient and family. An important recommendation is that, with appropriate training and support, much of the follow up of patients can be undertaken in primary care settings. This recommendation may provide a way of managing the increasing numbers of individuals that will present to GPs with possible MCI in the coming years.

It is noteworthy that the largest number of recommendations relate to practical interventions to potentially delay progression. These recommendations contain, among others, a number of wide-ranging lifestyle changes that need to be put in place including the role and importance of diet, physical activity, and cognitive activity, and highlights the multidisciplinary nature of the care of patients with MCI [14].

Further acknowledgement of the multidisciplinary nature of care within the general practice environment are seen in many of the recommendations pertaining to personalizing care, planning, engagement, and motivation. For example, recommendation number 48 lists no less than 11 different types of health care providers that might be engaged in a care program for individuals with MCI.

This symposium was forced because of COVID-19 to be virtual which limited the extent of participant involvement in the final recommendations.

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## SUPPLEMENTARY MATERIAL

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