

Supplementary Material

Supplementary Table 1: Time-related principles derived from the *Brain health: time matters in multiple sclerosis*³ policy report recommendations

<i>Brain health: time matters in multiple sclerosis</i> recommendation	Time-related principles
Educate family and primary care physicians about the importance of promptly referring people with suspected MS to a neurologist, and ultimately to a specialist clinic, to speed up diagnosis and treatment initiation	<ul style="list-style-type: none"> • Reporting of symptoms to a healthcare professional without delay • Prompt or urgent referral to a neurologist after first report of MS-related symptoms to a healthcare professional
Improve access to specialist care for MS: make diagnostic and monitoring procedures more widely accessible, increase the numbers of healthcare professionals who specialise in the management of MS, and ensure that these specialists provide prompt diagnostic and support services for people with suspected MS and those who have been newly diagnosed with the disease	<ul style="list-style-type: none"> • Prompt MRI scan after referral to a neurologist • Rapid diagnosis after referral to a neurologist • Timely offer of cognitive testing after MS diagnosis
Adopt the latest accepted diagnostic criteria, in order to diagnose MS as early as possible	<i>No principle for Round 1 was derived from this recommendation, it was developed into a consensus statement for Round 4.</i>
Ensure that MS healthcare professionals can take the time to educate people with MS about strategies to manage their disease. Emphasise the importance of a 'brain-healthy' lifestyle, the benefits of early treatment with therapies that can modify the disease course, the likely consequences of inadequate or suboptimal treatment and the goal of minimizing disease activity while optimizing safety	<ul style="list-style-type: none"> • Extended appointment with neurologist following diagnosis to discuss implications of MS diagnosis • Early discussion about the importance of living a brain-healthy lifestyle • Regular reminders about living a brain-healthy lifestyle • Regular check-ups (with a primary care physician or at a neurology clinic) to manage comorbidities
Implement a shared decision-making process that embodies dialogue between people with MS and healthcare professionals. A well-informed and proactive collaboration between people with MS and their healthcare team is vital to successful management of the disease	<ul style="list-style-type: none"> • Early discussion with patient about the benefits of early treatment with therapies that can modify the disease course • Early inclusion of patients in informed, shared decision making • Early discussion with patient about the aims of treatment
Make the full range of disease-modifying therapies available to people with active relapsing forms of MS, regardless of their treatment history, to speed up adoption of the most appropriate treatment strategy that optimizes effectiveness and safety for each individual	<ul style="list-style-type: none"> • Evaluation of suitability/eligibility for treatment shortly after MS diagnosis • Regular review of whether patient meets eligibility criteria for a DMT • Prompt offer of treatment with a DMT after patient becomes eligible (based on national guidelines)
Include evidence from monitoring via regular clinical evaluation and scheduled/unscheduled MRI brain scans in any definitions of disease activity or suboptimal response, in order to assist in the rapid identification of treatment failure and the decision to switch treatment	<ul style="list-style-type: none"> • Regular MRI scans
Ensure that MS healthcare professionals can take the time to monitor disease activity in people with MS	<ul style="list-style-type: none"> • Regular clinical evaluations
Agree and implement standardized data collection techniques, protocols and data sets, nationally and internationally, to track clinical and subclinical events in routine practice. Incorporate these into a clinical management tool to facilitate individualized practice	<ul style="list-style-type: none"> • Regular inclusion of patient data in MS database
Maintain treatment with a disease-modifying therapy for as long as a person with MS would be at risk of inflammatory disease activity if they were not receiving treatment; in the case of a suboptimal response, make a prompt decision about whether or not to switch therapy	<ul style="list-style-type: none"> • Regular review of current treatment/treatment options • Rapid offer of an alternative DMT when response to current DMT is suboptimal • Regular review of the aims of treatment

MRI, magnetic resonance imaging; MS, multiple sclerosis.

Quality standards for MS care

Supplementary Table 2: Variables that reflect the timing of events in the MS care pathway, derived from the principles of brain health-focused care agreed in round 1

Principle	Variable
Reporting of symptoms to a healthcare professional without delay	1. Time <u>from</u> person experiencing first symptoms possibly related to MS pre-diagnosis <u>to</u> reporting the symptoms to any healthcare professional
Prompt or urgent referral to a neurologist after first report of MS-related symptoms to a healthcare professional	2. Time <u>from</u> person first reporting symptoms possibly related to MS to a healthcare professional pre-diagnosis <u>to</u> referral to a neurologist
Prompt MRI scan after referral to a neurologist	3. Time <u>from</u> referral to a neurologist by a healthcare professional <u>to</u> first MRI scan (if MRI scan was not performed before referral) 4. Time <u>from</u> referral to a neurologist by a healthcare professional <u>to</u> completion of diagnostic workup
Rapid diagnosis after referral to a neurologist	5. Time <u>from</u> completion of diagnostic workup <u>to</u> appointment to discuss results 6. Time <u>from</u> referral to a neurologist by a healthcare professional <u>to</u> accurate MS diagnosis for a typical patient
Extended appointment with neurologist following diagnosis to discuss implications of MS diagnosis	7. <u>Length</u> of appointment with neurologist following diagnosis to discuss implications of MS diagnosis
Timely offer of cognitive testing after MS diagnosis	8. Time <u>from</u> MS diagnosis <u>to</u> offer of cognitive screening
Early discussion about the importance of living a brain-healthy lifestyle	9. Time <u>from</u> MS diagnosis <u>to</u> discussion about the importance of living a brain-healthy lifestyle 10. Time <u>from</u> MS diagnosis <u>to</u> referral to additional appropriate services to support 'brain-healthy lifestyle' modifications (may not be applicable for all people with MS)
Regular reminders about living a brain-healthy lifestyle	11. <u>Frequency</u> of active, documented discussion about living a brain-healthy lifestyle 12. <u>Frequency</u> of routine reminders about living a brain-healthy lifestyle
Regular check-ups (with a primary care physician or at a neurology clinic) to manage comorbidities	13. <u>Frequency</u> of check-ups (with specialist, primary care physician, or at a neurology clinic) to screen for and/or manage comorbidities
Early discussion with patient about the benefits of early treatment with therapies that can modify the disease course	14. Time <u>from</u> MS diagnosis <u>to</u> discussion with patients about the pros and cons of early treatment with a DMT
Evaluation of suitability/eligibility for treatment shortly after MS diagnosis	15. Time <u>from</u> MS diagnosis <u>to</u> evaluation of suitability/eligibility for a DMT
Regular review of whether patient meets eligibility criteria for a DMT	16. <u>Frequency</u> of review of whether a patient currently not taking a DMT is eligible for a DMT, based on applicable guidelines
Prompt offer of treatment with a DMT after patient becomes eligible (based on national guidelines)	17. Time <u>from</u> patient becoming eligible for a DMT (based on applicable guidelines) <u>to</u> patient being offered a DMT 18. Time <u>from</u> patient deciding to commence treatment with a DMT <u>to</u> starting a DMT
Early discussion with patient about the aims of treatment	19. Time <u>from</u> MS diagnosis <u>to</u> discussion with patient about aims of treatment
Early inclusion of patients in informed, shared decision making	<i>No variable for Round 2 was derived from this principle, it was developed into a consensus statement for Round 4.</i>
Regular clinical evaluations	20. <u>Frequency</u> of follow-up clinical evaluations by MS team
Regular MRI scans	21. <u>Frequency</u> of MRI scans
Regular review of current treatment/treatment options	22. <u>Frequency</u> of review of whether current DMT is effective/appropriate and consideration of alternatives as appropriate
Rapid offer of an alternative DMT when response to current DMT is suboptimal	23. Time <u>from</u> recognition that response to current DMT is suboptimal <u>to</u> offer of an appropriate alternative DMT
Regular inclusion of patient data in MS database	<i>No variable for Round 2 was derived from this principle, it was developed into a consensus statement for Round 4.</i>
Regular review of the aims of treatment	24. <u>Frequency</u> of review of treatment aims with the patient
n/a*	25. Time <u>from</u> patient experiencing new or worsened symptoms <u>to</u> reporting those symptoms to an MS healthcare professional

*Derived from Delphi Panel free-text comments in Round 1.

DMT, disease-modifying therapy; MRI, magnetic resonance imaging; MS, multiple sclerosis.

Supplementary Table 3: Statements for which consensus ($\geq 75\%$ agreement) was not reached by the Delphi Consensus Panel in round 5 and a summary of the reasons given

Statement	Summary of reasons for Delphi Panel non-agreement
<ul style="list-style-type: none"> Achievable standard: Cognitive screening should be offered to all patients with MS within 3 months of diagnosis Aspirational standard: Cognitive screening should be offered to all patients with MS within 4 weeks of diagnosis 	<ul style="list-style-type: none"> Cognitive performance may be influenced by emotional or treatment-related factors soon after diagnosis Not all centres are able to offer cognitive screening Results are unlikely to influence treatment decisions at an early stage in the care pathway
<ul style="list-style-type: none"> Aspirational standard: The MS team should engage patients with MS in an active, documented discussion about living a brain-healthy lifestyle at least once every 5 months 	<ul style="list-style-type: none"> Every 6 months is sufficient Frequency should be aligned with that of other routine clinic visits
<ul style="list-style-type: none"> Core standard: The MS team should send a routine written reminder to every patient with MS about living a brain-healthy lifestyle at least once every year Achievable standard: The MS team should send a routine written reminder to every patient with MS about living a brain-healthy lifestyle at least once every 6 months Aspirational standard: The MS team should send a routine written reminder to every patient with MS about living a brain-healthy lifestyle at least once every 3 months 	<ul style="list-style-type: none"> Administrative costs Lack of evidence of effectiveness Disruption to patients Preference for face-to-face reminders
<ul style="list-style-type: none"> Aspirational standard: The MS team should review at least once every 3 months whether each patient with MS who is not receiving a DMT is eligible for one, based on applicable guidelines 	<ul style="list-style-type: none"> Every 6 months is sufficient Inconvenience to patients Increased healthcare costs Lack of proven added benefit
<ul style="list-style-type: none"> Aspirational standard: The MS team should perform a follow-up clinical evaluation of each patient at least once every 3 months 	<ul style="list-style-type: none"> Every 6 months is sufficient Inconvenience to patients Increased healthcare costs Lack of proven added benefit
<ul style="list-style-type: none"> Core standard: If a patient's response to their current DMT is judged to be suboptimal, an appropriate, alternative DMT should be offered within 4 months 	<ul style="list-style-type: none"> 4 months is too long a delay

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