

6 October 2017

To whom it may concern,

RE: Senate Community Affairs References Committee inquiry into the availability and accessibility of diagnostic imaging equipment around Australia

Background

MS Research Australia is the largest national not-for-profit organisation dedicated to funding and coordinating multiple sclerosis research in Australia, as part of the worldwide effort to solve MS. Its goal is to accelerate research into the cause, better treatments and prevention, with the aim of ultimately finding a cure for MS.

MS Research Australia also works hard to facilitate the translation of research evidence into clinical practice and policy changes to ensure that the impact of MS is minimised for every person. Where there is robust evidence on the safety and efficacy of treatments, interventions and management strategies for MS we will advocate for their uptake and availability.

In preparing this submission we have consulted with our colleagues in the Australian New Zealand Association of Neurologists MS Neurology Group and MS Nurses Australasia.

International consensus guidelines relating to MRI imaging for people with MS

Early diagnosis and ongoing monitoring are crucial to achieve optimal outcomes for people with MS.

[The Brain Health: Time Matters in Multiple Sclerosis Report¹](#), an international consensus guideline for the treatment and management of MS, clearly sets out the evidence that early diagnosis, early initiation of treatment and ongoing monitoring of disease activity accompanied by appropriate adjustment of treatment, can significantly improve the long term disability outcomes for people with MS. This Report was authored by an international panel of experts and has been endorsed by more than 38 MS organisations globally.

The Brain Health Report presents the evidence base for a therapeutic strategy that aims to maximise lifelong brain health and is centred around a more urgent approach to management, which involves: early intervention with therapies most likely to provide optimal benefit and safety for each person with MS on an individualised basis; regular monitoring of disease activity and safety parameters; and switching therapy based on evidence of disease activity.

All of these elements are heavily reliant on the use of magnetic resonance imaging (MRI). While clinical relapses had been the traditional indicator of disease onset and activity, many countries now accept MRI lesions as evidence of ongoing disease activity and use them as the basis to initiate or switch treatments. It is known that clinical relapses are only the tip of the iceberg in relation to disease activity in MS with only a small percentage of new MRI lesions corresponding with a clinical relapse.

There is now ample evidence that correlations exist between the effects of DMTs on MRI lesions and future disability progression, and MRI lesions and future relapses. In people with Clinically Isolated Syndrome, a precursor to MS, the number of new lesions predicts the risk of a second relapse (that is, conversion to clinically definite MS). For people with MS commencing new treatments the



appearance of new lesions in the short term and medium term following initiation of treatment can predict the longer term occurrence of relapses and disability progression.¹ Therefore ongoing monitoring is crucial to enable the adjustment of treatment to get early and effective control of disease activity.

The international [Magnetic Resonance Imaging in MS \(MAGNIMS\) consortium](#) has published guidelines for the use of MRI in MS diagnosis² and in ongoing monitoring of patients³.

Among their detailed recommendations for diagnosis the key points include use of brain MRI using a magnetic field strength of at least 1.5 Tesla, but preferably 3T, with follow-up brain imaging 3-6 months following the first scan for patients with Clinically Isolated Syndrome. A simple, standardized protocol should provide the necessary information in a reasonable timeframe, i.e. not exceeding 25–30 minutes, and the use of a single dose of gadolinium to detect new and active lesions. Standardised image acquisition and slice positioning between baseline and follow-up are also very important to establish the presence of new lesions that determine the conversion from CIS to clinically definite MS. In addition, Spinal cord MRI should always be performed in patients with spinal cord symptoms at disease onset and spinal cord MRI is helpful when brain MRI results are equivocal or inconclusive.

For ongoing monitoring the MAGNIMS team note that pre-treatment brain MRI measures do not satisfactorily predict treatment response in clinical practice, but scans within the first few months of treatment initiation can predict treatment response in patients receiving first-line disease modifying drugs. Therefore, follow-up brain MRI, 3-6 months following treatment initiation and then every 12 months should be performed.

The MAGNIMS recommendations also include MRI monitoring as a crucial aspect of early detection of potential opportunistic infections. In particular, for natalizumab-treated patients with MS who are at high risk of Progressive Multifocal Leukoencephalopathy caused by the John Cunningham virus, they recommend brain MRI screening every 3–4 months using an MRI protocol that includes FLAIR, T2-weighted and diffusion-weighted imaging.

Implications for access to diagnostic imaging for people with MS in Australia

These important guidelines mean that timely access to more Medicare licensed scanners and more scanners with specialist referral reimbursement licenses is crucial for the optimum care of people with MS in Australia.

Outside of the major metropolitan centres of Sydney and Melbourne, access to Medicare licensed scanners is limited. Providing these additional licenses would allow MS clinics to have more efficient relationships with private providers outside of the hospital settings. In turn this will reduce the delay in diagnosis so frequently experienced by people with MS. Delayed diagnosis and hence delayed initiation of treatment, as discussed above, can have significant consequences for people with MS in terms of the long term disability outcomes.

Also as outlined above, in addition to the important role that MRI imaging plays in diagnosis, it is also vital for monitoring disease activity and optimising treatment choices. Thus consideration of providing some scanner licences for the indications of “MS follow-up” and “MS monitoring” referred from neurologists, would be extremely beneficial.

As noted in the MAGNIMS recommendations, the need for spinal scans in many patients also necessitates the need for longer scanning sequences. This can present a challenge in many circumstances where access to Medicare licensed scanners is limited.



Of particular note in relation to this, is Austin Health in Melbourne, home to a major MS clinic, which despite being within a major metropolis, is also the only public hospital to have only one license. This makes timely access for urgent MRIs, or more lengthy MRIs which require contrast and/or spinal imaging extremely challenging.

In these cases it is often the necessary for rural patients to have their MRIs done locally, which can lead to delays in waiting for access to a licensed scanner rurally, additional travel for patients, and adds additional logistical challenges in having the images transferred to the treating centre.

People with MS are subject to high out-of-pocket medical expenses, and this coincides with a documented decline in employment inclusion and financial stability for themselves and their carers.⁴

Increasing the number of Medicare licensed scanners in rural, regional and metropolitan settings and enabling licenses for imaging for both diagnosis and ongoing monitoring will greatly ameliorate these issues for people with MS. This in turn will facilitate their optimal clinical management and lead to better long term outcomes for people with MS.

Optimal clinical management of MS can ensure that people with MS and their carers can participate fully within the Australian community, reduce the impact that MS can have on lost productivity and reduce the use of health and disability services.

MS Research Australia and our colleagues in the MS neurology and nursing communities appreciate the opportunity to make this submission and applaud the Committee for seeking the views of the wider community as part of this inquiry.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Lisa Melton', with a long horizontal flourish underneath.

Dr Lisa Melton

Head of Research, MS Research Australia, on behalf of MS Research Australia

References:

1. Brain Health: Time Matters in Multiple Sclerosis report - <http://www.msbrainhealth.org/>
2. MAGNIMS consensus guidelines on the use of MRI in multiple sclerosis – establishing disease prognosis and monitoring patients Wattjes MP, Rovira À, Miller D, Yousry TA, Sormani MP, de Stefano MP, Tintoré M, Auger C, Tur C, Filippi M, Rocca MA, Fazekas F, Kappos L, Polman C, Frederik Barkhof, Xavier Montalban; MAGNIMS study group. Nat Rev Neurol. 2015 Oct;11(10):597-606.
3. MAGNIMS consensus guidelines on the use of MRI in multiple sclerosis—clinical implementation in the diagnostic process Rovira À, Wattjes MP, Tintoré M, Tur C, Yousry TA, Sormani MP, De Stefano N, Filippi M, Auger C, Rocca MA, Barkhof F, Fazekas F, Kappos L, Polman C, Miller D, Montalban X; MAGNIMS study group. Nat Rev Neurol. 2015 Aug;11(8):471-82.
4. Covance, Palmer A. Economic impact of multiple sclerosis in 2010 Report. Prepared for MS Research Australia by Covance Pty Ltd, North Ryde, NSW and Prof Andrew Palmer, Menzies Research Institute Tasmania, TAS, Australia: 2011. (view the report [here](#))