Timely Intervention, Monitoring and Education MATTERS in Multiple Sclerosis (TIME MATTERS in MS): developing a globally applicable quality improvement tool

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Background

- The multiple sclerosis (MS) community has widely endorsed a strategy to maximize lifelong brain health by minimizing delays in the MS care pathway.[1,2]
- Recently, an international group of 21 MS neurologists defined **quality standards** for the timings of more than 20 key events in the MS care pathway.
  - They agreed timings to reflect acceptable, good and high-quality brain-health-focused care.[3]
- The present study aimed to:
  - develop the prototype for a **quality improvement (QI) tool** based on these global quality standards
  - **test the clinical usability and applicability** of the tool in different healthcare settings.

Developing a QI tool for clinics

Methods

- MS healthcare professionals from MS clinics in three countries collaborated with a clinical trials specialist to formulate a prototype QI tool.
- The prototype QI tool, developed in an Excel workbook, included worksheets for user information, data input and report generation.
  - To develop the data input worksheet, we assessed the information required to measure the time taken to complete each step in the MS care pathway ('Quality standard'; **Figure 1**).[3]
  - On completion of the required fields, formulae embedded in the data input worksheet computed time intervals of interest, compared data with the quality standards and generated summary reports.
- MS healthcare professionals who were involved in this study provided feedback on the clinical usability of the tool.

Results: prototype QI tool

- The prototype QI tool comprised worksheets to provide information to the user, to input data from patient records and to display the summary reports (**Figure 2**).
  - Summary reports auto-populated when the required fields in the data input worksheet were completed.

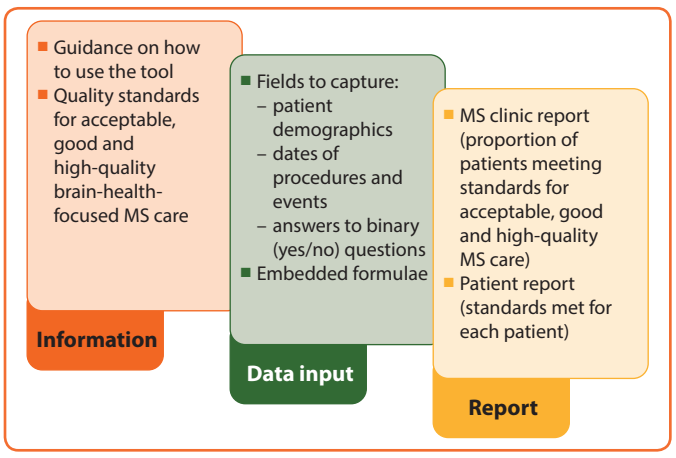


Figure 2. Schematic of the prototype quality improvement tool.

Testing the clinical usability of the QI tool

Methods

- An initial pilot study to trial the QI tool in a range of healthcare systems was carried out in three MS clinics:
  - Eastern Health (Australia)
  - University Clinic Carl Gustav Carus Dresden (Germany)
  - Plymouth University Peninsula Schools of Medicine and Dentistry (UK).
- An investigator at each participating MS clinic reviewed the medical records of 12 adults with MS who met the following inclusion criteria:
  - aged 18 years or older with a confirmed diagnosis of MS
  - attended the MS clinic at least once during the study period.
- To obtain data relevant to each stage of the MS care pathway, the investigators specified that four different patient populations (**Table 1**) should each have three patient records extracted for the study period of 1 January 2016 to 30 June 2018.
  - For MS clinics in which there are no patients with relapsing–remitting MS who do not receive treatment with a DMT, the investigators extracted four patient records from each of the other three populations.
  - To minimize selection bias, investigators selected cases for review chronologically from a list of patients who attended the clinic during the study period.

Patient population	Definition
Patients newly diagnosed with RRMS	Diagnosed with RRMS between 1 January 2016 and 30 June 2017
Patients with RRMS already receiving a DMT	Diagnosed with RRMS, monitored for ≥ 1 year and **receiving a DMT**
Patients with RRMS not receiving a DMT	Diagnosed with RRMS, monitored for ≥ 1 year and **not receiving a DMT**
Patients with progressive MS	Diagnosed with PPMS or SPMS

Table 1. Definitions used for patient populations.

DMT, disease-modifying therapy; PPMS, primary progressive MS; RRMS, relapsing–remitting MS; SPMS, secondary progressive MS.

Results: insights from the initial pilot study

- We found limited data on some of the events in the care pathway, which suggests that these events are not being documented systematically or that they do not occur in every clinic.
  - Patients may be best-placed to provide accurate data on some of these standards (e.g. length of the initial appointment to discuss the implications of being diagnosed with MS).
- MS specialist nurses and administrative staff documented many of the routine events in the care pathway, highlighting the importance of the whole team in MS care.
- Users of the QI tool commented that detailed electronic patient records aided the identification of data requested in the tool.

Next steps: refining the QI tool

- Following data analysis, we will refine the QI tool to improve its clinical usability.
- We plan to conduct a larger pilot study using the refined QI tool; further refinements are expected before the tool is made available to MS clinics worldwide (**Figure 3**).

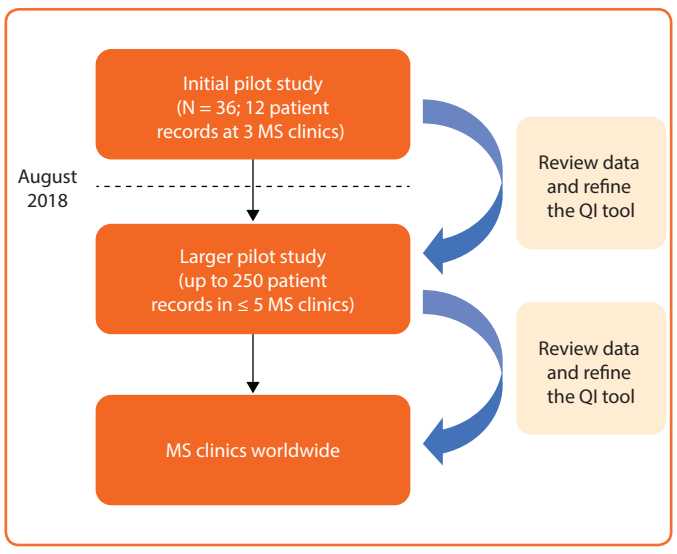
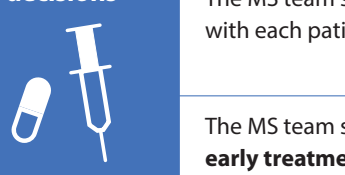


Figure 3. The proposed process to test and refine the quality improvement tool.

The dashed line indicates the stages completed by August 2018.



Quality standard	Data required
The MS team should **discuss the aims of treatment** with each patient within 2 weeks of MS diagnosis	■ Date of diagnosis ■ Date of first discussion on aims of treatment
The MS team should **discuss the pros and cons of early treatment with a DMT** with patients within 3 weeks of diagnosis	■ Date of diagnosis ■ Date of first DMT discussion
The MS team should assess within 3 weeks of an MS diagnosis whether the patient is **eligible for treatment with a suitable DMT**	■ Date of diagnosis ■ Date of first assessment of eligibility for treatment with a DMT
A **DMT should be offered** to a patient with MS within 3 weeks of their becoming eligible for one	■ Date of eligibility for current DMT ■ Date of offer of DMT
Treatment with a DMT should commence within 2 weeks of a patient with MS agreeing this approach with their neurologist	■ Date that DMT was agreed between patient and neurologist ■ Date that DMT commenced
The MS team should review at least once every 6 months whether each patient with MS **who is not receiving a DMT is eligible** for one, based on applicable guidelines	■ For patients not currently prescribed a DMT, date(s) of previous DMT review(s)

Figure 1. Example of information required for the data input worksheet of the quality improvement tool to compare current practice to 'achievable' quality standards related to treatment decisions.

DMT, disease-modifying therapy.

Conclusions

- MS healthcare professionals and a clinical trials specialist have developed a prototype QI tool that will enable MS clinics to compare their services with international quality standards for timely brain-health-focused MS care.[3]
- MS centres in Australia, Germany and the UK have successfully piloted the prototype tool; investigators at participating clinics are analyzing local results to identify areas for improvement.
- Pending further testing, we anticipate that a refined version of this tool will help MS clinics worldwide to bring about improvements in patient care.

References

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Disclosures

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MS Brain Health
Time Matters

To read *Brain health: time matters in multiple sclerosis*, visit **www.msbrainhealth.org**