A relapsing remitting MS care improvement scenario

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Introduction

Multiple sclerosis (MS) is an area of unprecedented change in the number of disease-modifying drugs (DMDs) that have become available in recent years. Keeping pace with this evolution in the treatment landscape and monitoring requirements has been a huge challenge for clinicians and for reimbursement bodies/NHS. The UK was starting from a 'low base' in comparison to treatment provision across Europe.[1]

Services are currently challenged with:

- Variation in access to services and DMD prescribing.
- Pressures on service capacity.
- Increasing DMD spending.
- Many eligible patients not yet offered DMDs.
- Services without capacity to administer DMDs and perform monitoring for all eligible patients.

New oral and subcutaneous DMDs offer:

- More choice to eligible patients.
- Reduced outpatient and infusion service requirements.
- Potential to improve service capacity.

Areas for focus

- Speedy and accurate multidisciplinary team (MDT) diagnosis is vital for effective treatment.
- Early intervention and appropriate DMD prescriptions.
- Service capacity as DMD demand increase.

Objectives

Our aim is to help commissioners and providers to think strategically by understanding the health outcome and cost implications of different care pathways for people with MS.

- **Commissioners:** understand the issues of managing the local MS population and use budgets efficiently.
- **Non-specialist neurologists and clinicians:** understand the importance of utilising the NHS Treatment Algorithm for MS[2] to ensure appropriate treatment choices.
- **GPs:** understand their key role in MS treatment and management.
- **Patients:** understand their role in keeping well and seeking immediate expert advice if they suspect relapse.

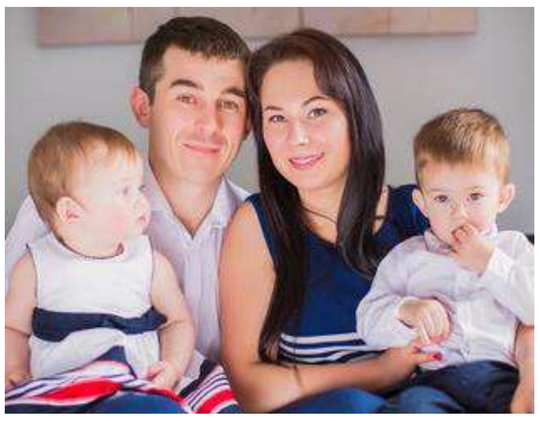
Methodology

This care improvement scenario was produced in partnership with patient and expert clinical stakeholders using the NHS RightCare methodology.[3] A fictional but realistic journey for a patient with highly active relapsing remitting MS (RRMS) was developed. The optimal care scenario illustrates typical care pathway options and identifies common failure points and improvement opportunities. Costs of care are modelled at each stage – for both local health economy and the impact on the patient and their family.

Rachel's optimal journey

The optimal story of Rachel's experience of an MS pathway, with choices highlighted along the way.

Rachel is 32 years old and married to Sam with two young children. She is an A Level French teacher who juggles a busy career with family life. Her symptoms started at 28 years old.



Sub-optimal pathway	2014	Best practice & improvement opportunities
Multiple GP visits, long wait for referral.	GP presentation	E-referral triaged quickly without reliance on letters.
Long waiting time, misdiagnosis by non-specialist delays DMD initiation.	Referral Non-specialist neurologist	GP & non-specialist neurologist refer promptly: aware of "MS Brain Health" best practice timelines.[5]
Emergency A&E admission while waiting for appointment, followed by MS relapse & impaired mobility.	Referral MS specialist diagnoses highly active RRMS	Treatment based on the NHS England Treatment Algorithm for MS.[2]
Employment & finances affected.	Eligible for DMD	
Limited contact with MS nurse who has unmanageable caseload. No opportunity to discuss treatment options.	MS nurse goes through oral and IV DMD options in detail	MS nurse spends time in clinic and by email/phone to help her make a informed decision. Suggests the MS Trust decision support tool.
	Consideration for 1 month to fully understand DMD options	MS coordinator: key admin role takes strain off MS nurses and team.
Chooses IV drug, but struggles to afford the time, travel & childcare costs.	Decides oral drug the right choice – fewer doses and time is her priority	3-monthly GP monitoring saves hospital trips & costs – all health professionals can access results. GP has management checklist from MS nurse.
GP not doing monitoring means visiting hospital & extra service costs. Difficult to manage time, travel & childcare costs.	Begins DMD - delivered at home	
Delayed start on DMD results in accelerated disability, forced to give up work.	MS nurse refers to neuro-rehab team	MS nurse is point of contact – ongoing support for compliance, monitoring & self-management.
Minimal MS nurse contact, less well informed on self-management. Poorer health, more symptoms. Emergency admission followed by relapse.	Appropriate symptom management advice and neuro-psychology support	Savings generated to service by MS nurse far exceed the employment cost.
Mounting stress on relationship leads to separation. Moves into her mother's home.	Outpatient appointments focus on brain health	
High level of impairment, unable to cope, heavily reliant on benefits & mother for her care needs & childcare – creates financial problems for both.	Maintains good quality of life with neuro-rehab support	Regular contact with MS nurse, fast expert support if relapse suspected.
	2018	

Results: How the bills compare

Fig 1. Disease-modifying drug cost[4]

	Alemtuzumab	Fingolimod	Cladribine	Natalizumab	Ocrelizumab
Drug costs:					
Year 1	£35,225	£19,477	£26,000	£14,690	£15,967
Year 2	£21,135	£19,477	£26,000	£14,690	£15,967
Year 3	£0	£19,477	£0	£14,690	£15,967
Year 4	£0	£19,477	£0	£14,690	£15,967
Total	£56,360	£77,909	£52,000	£58,760	£63,867
VAT*	£11,272	£0	£0	£11,752	£12,773
Total (incl VAT)	**£67,632**	**£77,909**	**£52,000**	**£70,512**	**£76,640**
Drugs eligible for discounts:					
(PAS/CAA)**	**No**	**Yes**	**Yes**	**No**	**Yes**
Admin & monitoring costs:					
Year 1	£3,397	£671	£590	£7,521	£1,289
Year 2	£1,895	£155	£172	£7,452	£1,220
Year 3	£275	£155	£148	£7,452	£1,220
Year 4	£275	£155	£148	£7,452	£1,220
Total	**£5,842**	**£1,136**	**£1,058**	**£29,877**	**£4,949**
Total costs: list price (drugs + admin & monitoring):					
	£73,474	**£79,045**	**£53,058**	**£100,389**	**£81,589**

Fig 2. Number of DMD administration and monitoring activities[4]

	Alemtuzumab	Fingolimod	Cladribine	Natalizumab	Ocrelizumab
Year 1	58	7	7	20	4
Year 2	53	5	5	20	3
Year 3	44	5	1	20	3
Year 4	44	5	1	20	3
Total	**199**	**22**	**14**	**80**	**13**

Fig 4. Financial summary: overall cost impact[4]

	Suboptimal costs*	Optimal costs**
Drug, admin & monitoring costs	£45,316 – £85,748	£53,053 – £100,389
Health-related activity costs	£8,132	£7,524
Estimated tax loss impact on economy	£22,168	£0
Estimated benefit costs	£24,536	£0
Combined estimated cost	**£100,152 – £140,584**	**£60,576 – £107,912**

*During the scenario timeframe April 2015–Aug 2018, 41 months.
**During the scenario timeframe Aug 2014–Aug 2018, 48 months.

Fig 3. Summary of NHS costs[4,*]

Health-related activities	Sub optimal (£)	Optimal (£)
A&E visit	224	0
Aids and adaptations: walking stick	0	9
Aids and adaptations: wheelchair services	303	0
Ambulance call out	252	0
Assessment: neuro-rehabilitation	0	872
Cognitive behavioural therapy	726	0
Chest infection: hospital admission	709	0
Chest X-ray	25	25
Class: exercise	0	960
Class - managing fatigue	0	1,254
Class: newly-diagnosed information/ therapy	90	0
Hospital episode: urinary tract infection	3,406	0
Intermittent catheters	132	0
Medical review: GP practice	476	408
Neuro-physiotherapist	0	324
Neuro-psychologist	0	1,488
Newly-diagnosed course	0	20
Nurse: continence specialist	45	180
Nurse: MS specialist	351	891
Pain clinic: consultant-led first appointment	121	0
Pain clinic: nurse follow-ups	68	0
Prescription: antibiotics	17	9
Prescription: baclofen	79	24
Prescription: betmegg	484	303
Prescription: iron and vitamin D tablet supplements	229	270
Prescription issued by GP: antidepressants	71	0
Sexual dysfunction clinic	0	54
Speech and language therapist	55	165
Test: cervical smear	23	23
Test: ECG	194	194
Various extra blood tests (HEP, HIV, syphilis, E&Es, VZV)	38	38
Test: immunoglobulin	15	15
Pathway costs*	**£8,132**	**£7,524**

*Excludes DMD drug cost and DMD administration and monitoring.

Discussion

- Speedy and accurate diagnosis alongside clinicians working together in a MDT vital is for effective treatment.
- "Time is Brain" – early referral and treatment within NICE guidance[6] criteria is essential in MS to reduce hospital admissions, and financial and emotional costs.
- Capacity to manage people with MS in infusion clinics and with experienced MS professionals is problematic for some health economies. Greater utilisation of subcutaneous and oral options should be considered. The Accelerated Access Collaborative is supporting MS treatment provision.[7]
- Patients should always be actively engaged and consulted in prescribing of DMDs.
- Rapid access clinics and specialist MS nurses play a crucial role in managing MS patients.
- Outcomes-focused commissioning (e.g. reduction in relapses etc) is important and capturing data to ensure optimised commissioning is essential. Blueteq[8] should be aware of and mitigate against the risks associated with system gamification, i.e. false measurements which suggest outcomes that can be misleading.
- Data collection and monitoring is key: spend on DMDs is around £250 million per annum[8] so it is important to undertake this monitoring in order to optimise patient outcomes and value for money within the NHS.

Learning points

Commissioners

- Understand the capacity of specialists in your service and make sure that you have adequate resources in place.
- Make sure that policies and procedures are in place so that patients are well informed and supported to make the right decisions for them within the constraints and guidance from NICE.
- Carefully monitor drug use/adherence and effectiveness, patient outcomes and service performance.
- Work together: an essential part of optimising the care pathway in MS so that care is intelligently joined up across all the teams involved in patient care.
- Implement the Accelerated Access Collaborative 'rapid uptake products' programme[7] to provide faster access to alternative and innovative treatment options.

Patients

- Spend time with the MS specialists in your area so that you are well informed so can make the best decisions based on your individual situation and condition.
- Use resources from the MS Trust and other organisations to help you to understand all issues and implications with regards to MS drugs.

Clinicians

- Use the NHS England Treatment Algorithm for MS[2] to understand the most recent research findings and guidance to streamline your guidance for MS.
- Ensure your patients have the time and support they need to make decisions that are appropriate for them.
- Implement the NICE Accelerated Access Collaborative 'rapid uptake products' programme[4] to provide faster access to new MS treatments, which will realise service and budget efficiencies.[7]

References

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