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Rethinking Multiple Sclerosis Drug Dispensing in Romania: A Cost-Consequence Model to Inform Policy Decisions

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KEY FINDINGS & CONCLUSIONS

In Romania, all multiple sclerosis (MS) therapies, including self-administered treatments, are dispensed exclusively through 24 hospital-based MS centers under the National MS Program. Because these centers are unevenly distributed, patients living in counties without an MS center may need to travel substantial distances to collect their medicines, in some cases every month. We estimated the consequences of a dual dispensing model in which MS centers would retain responsibility for diagnosis, treatment initiation, and monitoring, while retail pharmacies would dispense eligible self-administered therapies.

Results show that an estimated 11,100 to 20,200 MS center visits per year could be avoided, depending on the range of therapies included; patients would avoid 1.8 million km to 3.3 million km of travel per year, equivalent to EUR 223 to EUR 650 per patient in travel costs; patients on therapies that require a monthly prescription would benefit most from the retail dispense as their MS-center visits would fall from 12 to 2 per year. Around 70% of patients were of working age (18 to 50 years).

The effect on the payer budget would add about EUR 0.11 million per year if all eligible therapies moved to retail or would save about EUR 0.16 million per year if the change applies to therapies that require a monthly prescription.

INTRODUCTION

Romania's National MS Program relies on 24 hospital MS centers as the sole dispensing points for all reimbursed MS therapies, including oral and self-injected treatments. Patients must attend these centers to renew their prescription and collect their medicines even monthly for some therapies. Because not every county has an MS center, the travel burden varies with the patient's county of residence.

Each visit is reported as a day-hospitalization and reimbursed at the corresponding national tariff, whether it includes a clinical assessment or is limited to prescription renewal and dispensing.

Other national health programs (e.g., oncology, thalassemia) already operate mixed dispensing pathways, retaining hospital-based care only for initiation, monitoring, and complex cases while allowing retail pharmacies to dispense eligible medicines.

The objective of this study was to evaluate the potential budget impact and wider consequences of introducing a dual dispensing model for eligible MS therapies in Romania, using real-world data and a cost-consequence framework to inform healthcare policy decisions.

METHODS

This retrospective cost-consequence analysis used national administrative data to compare hospital-only dispensing with a dual pathway: retail pharmacies would dispense eligible oral and subcutaneous MS therapies, while MS centers retained diagnosis, treatment initiation and monitoring (Figure 1). The model used 2025 as the reference year and a 12-month horizon, with separate outcomes for payers, patients, MS centers and manufacturers. The cohort comprised 7,506 unique patients in the National Institute for Health Services Management (NIHSM) day-hospitalization database (January 2024–June 2025). Of these, 69.4% were aged 18–50 years, with a mean 3.56 day-hospitalizations per patient annually.

Two alternative scenarios were evaluated and excluded hospital-administered therapies. Scenario 1 covered all 11 self-administered therapies (*cladribine*, *dimethyl fumarate*, *fingolimod*, *glatiramer acetate*, *interferon beta-1a*, *interferon beta-1b*, *ofatumumab*, *ozanimod*, *peginterferon beta-1a*, *siponimod* and *teriflunomide*), prescribed monthly or every three months to 78.6% of patients (approximately 5,900). Scenario 2 covered *dimethyl fumarate*, *ofatumumab* and *ozanimod*, used by 14.8% (approximately 1,100) under cost-volume agreements. Cost-volume agreements are managed-entry agreements under which manufacturers reimburse part of the expenditure to the National Health Insurance House (NHIH). These therapies were analyzed separately because they require monthly prescribing, resulting in most frequent MS-center visits, and are subject to a specific payback mechanism.

The model estimated resource use by international nonproprietary name (INN), following prescription intervals in the national MS therapeutic protocol. Assumed annual MS-center visits were 12 for monthly prescriptions and 4 for three-monthly prescriptions, versus 2 monitoring visits under dual dispensing. Across the full cohort, weighted reductions were 2.69 day-hospitalizations per patient in Scenario 1 and 1.48 in Scenario 2. Each avoided day-hospitalization required one replacement outpatient neurology consultation near the patient's residence for prescription renewal. National unit costs were EUR 46.20 (RON 231) per day-hospitalization and EUR 18.72 (RON 93.6) per consultation, at RON 5 per EUR.

NIHSM records identified patients' counties of residence and attended MS centers. The Haversine formula estimated straight-line distances from county capitals to centers, multiplied by a 1.3 circuity factor to approximate road distance. Round-trip distances, weighted by the observed patient distribution across counties and centers, were multiplied by annual avoided visits. Travel costs were EUR 0.40 (RON 2) per km[1].

At stock-keeping-unit (SKU) level, the model compared maximum CANAMED hospital and retail unit prices excluding VAT, adjusted for channel-specific manufacturer payback. Payer and manufacturer components, multiplied by 2025 SKU volumes, were aggregated by scenario. Payback included 25% clawback and 1.7% solidarity tax for originators, and 15% claw-back and 0.6% solidarity tax for generics or biosimilars. For cost-volume medicines, the statutory payback grid reflected estimated treated patients relative to the eligible population, excluding confidential contract-level terms.

RESULTS

Both scenarios reduced MS-center utilization and patient travel but differed in population reach and in the extent to which higher retail prices offset savings from avoided day-hospitalizations.

In Scenario 1, approximately 20,200 day-hospitalizations would be avoided annually. Avoided hospital costs of EUR 0.93 million would exceed the EUR 0.38 million cost of replacement outpatient consultations, generating EUR 0.56 million in care-pathway savings. However, higher retail prices would increase payer expenditure by EUR 0.66 million after payback, resulting in a net additional payer cost of EUR 0.11 million per year, or approximately EUR 19 per eligible patient. Patients would avoid 3.3 million km of travel and save approximately EUR 223 each in annual travel costs.

Scenario 2 included fewer patients, those whose therapies require montly prescription. Annual MS-center visits would decrease from 12 to 2 per patient, avoiding approximately 11,100 day-hospitalizations and generating EUR 0.31 million in care-pathway savings. Because the payer component of the retail–hospital price difference was lower for these therapies, at EUR 0.15 million, the scenario would produce a net payer saving of EUR 0.16 million. Patients would avoid 1.8 million km of travel and save approximately EUR 650 each,

Table 1. Annual outcomes of dual dispensing compared with the current hospital-only pathway, by scenario.

Outcome (per year)	Scenario 1 11 molecules; 78.6% of patients	Scenario 2 3 molecules, monthly prescription 14.8% of patients
Day-hospitalizations avoided (n)	~20,200	~11,100
Day-hospitalization cost avoided (EUR M)	+0.93	+0.51
Added outpatient consultation cost (EUR M)	-0.38	-0.21
Net saving on care pathway (EUR M)	**+0.56**	**+0.31**
Retail-hospital price gap, payer / manufacturer (EUR M)	-0.66 / -0.20	-0.15 / -0.05
Net payer impact (EUR M)	**-0.11**	**+0.16**

Positive values indicate savings and negative values additional costs. EUR M, million euros

Travel burden varied by county, reflecting the distribution of MS centers and observed patient referral pathways. Suceava county illustrates this pattern: among 205 patients, 22.0% were treated within the county, whereas 47.8% attended centers in Iași, 17.1% in Bucharest, 7.8% in Mureș, and 5.4% in Cluj (Figure 2). The benefits of dual dispensing would therefore be greatest for patients who currently travel long distances for medicine collection.

Figure 1. Comparative patient pathway for monthly-prescription therapies under the current hospital-only setting and Scenario 2 (Rx with monthly prescription)

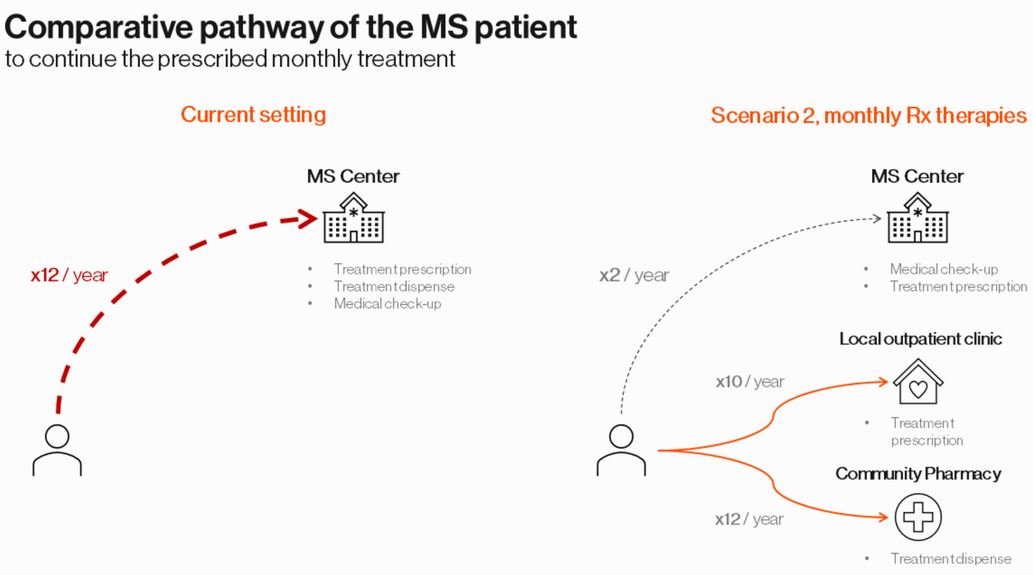
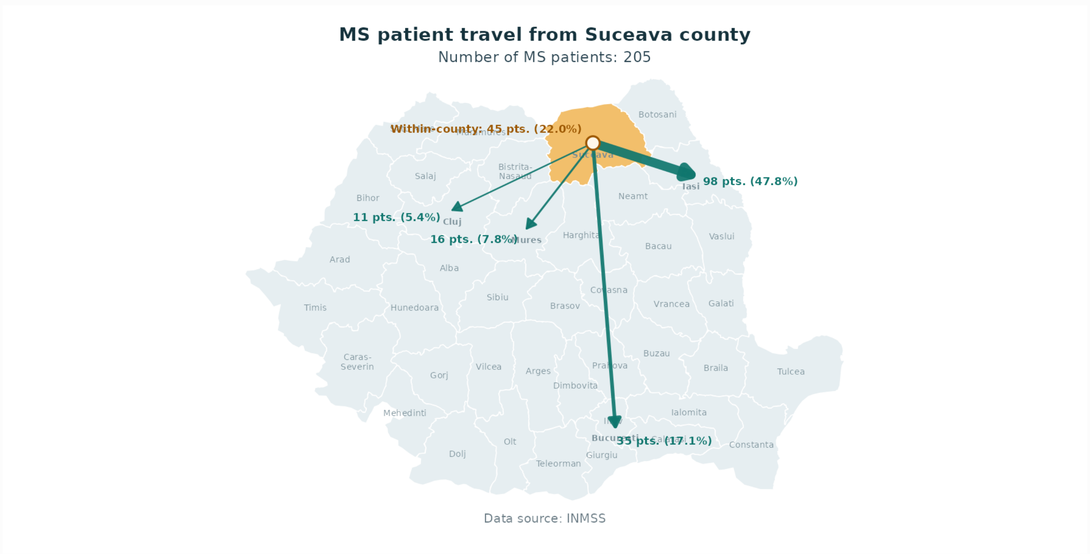


Figure 2. Travel pathways for MS patients residing in Suceava county (n=205). Source: NIHSM



CONCLUSIONS

Under the model assumptions, dispensing eligible self-administered MS therapies through retail pharmacies, while diagnosis, treatment initiation, and monitoring remain in MS centers, would reduce day-hospitalizations and patient travel in Romania.

The effect on the payer budget depends on the scope of the change, ranging from additional cost when all eligible therapies are included to saving when the change is limited to therapies that currently require a monthly prescription. In both scenarios, the largest financial benefit would accrue to patients, through lower travel costs.

Overall, these findings provide an evidence base for future policy discussions on modernizing access to MS treatment in Romania, with the aim of improving patient convenience, optimizing healthcare resource use, and maintaining the central role of specialist MS centers.

References

1. EY Romania. Socio-economic analysis: the impact of multiple sclerosis in Romania. Bucharest: Roche Romania; reference year 2016. (adjusted with inflation)

Data sources. NIHSM provided healthcare utilization, county of residence and attended MS center data. NHIH supplied national tariffs, the national MS therapeutic protocol defined prescription intervals by INN, and CANAMED listed hospital and retail prices. IQVIA 2025 supplied patient shares and SKU volumes. Additional sources were applicable pricing and payback legislation, and Google Maps and SimpleMaps for geographic coordinates.