

Budget Impact Analysis of Dimethyl Fumarate for the Treatment of Relapsing-Remitting Multiple Sclerosis in Algeria

Mansouri K.¹, AlHomsy R.², Tibouche M.³, Boudache F.⁴, Boualit KM.⁴, Birouk L.⁴, Hammam Y.², Aburmilah A.²

- 1. Professeur – faculté de pharmacie université d'Alger
- 2. Hikma Pharmaceuticals,
- 3. Assistante en neurologie- faculté de pharmacie université d'Alger
- 4. Interne en pharmacie- faculté de pharmacie université d'Alger

Introduction

Multiple sclerosis (MS) is a chronic inflammatory disease of the central nervous system, that often leads to substantial disability in most patients. Relapsing-remitting MS is the most common type of MS at disease onset.

Objective

Dimethyl fumarate (DMF) is the first oral treatment entering Algeria for patients with RRMS. We aim to assess the financial impact of introducing DMF to Algerian market using Budget Impact Model.

Method

A budget impact analysis was conducted over 5 years from Algerian public payer perspective. We evaluated the annual financial consequences of DMF introduction to current existing therapies.

Medication	Strength	Quantity	Monthly Cost (DZD)
Dimethyl fumarate	120mg	14 pills	11,583.26
Dimethyl fumarate	240mg	56 pills	60,223.99
Interferon beta 1-a	44mcg/0.5ml	12 pre-filled syringes	81,828.00
Interferon beta 1-a	30mcg/0.5ml	4 pre-filled syringes	81,828.00
Interferon beta 1-b	250mcg/ml	15 pre-filled syringes	76,141.95
Glatiramer acetate	40mg/ml	8 pre-filled syringes	99,439.00

Incident and Prevalent RRMS cases in Algeria were calculated from published data, and we assumed that 50% of the newly diagnosed RRMS patients will be started on DMF.

	2024	2025	2026	2027	2028
Estimated Algerian Population	47,241,153	48,006,460	48,784,164	49,574,468	50,377,574
Population growth (%)	1.62	1.62	1.62	1.62	1.62
Incidence MS/100000	2.1	2.1	2.1	2.1	2.1
Prevalence MS /100000	40	40	40	40	40
MS diagnosis rate(%)	0.7	0.7	0.7	0.7	0.7
Treated MS patients (%)	0.7	0.7	0.7	0.7	0.7
RRMS treated patients (%)	0.85	0.85	0.85	0.85	0.85
Number of RRMS treated patients (Prevalent Cases)	8581	8581	8581	8581	8581
Number of RRMS treated patients (Incident Cases)	413	420	427	434	441

Market shares were estimated from IQVIA forecast and DMF was assumed to capture an annual share of 10% (first year) then 5% thereafter.

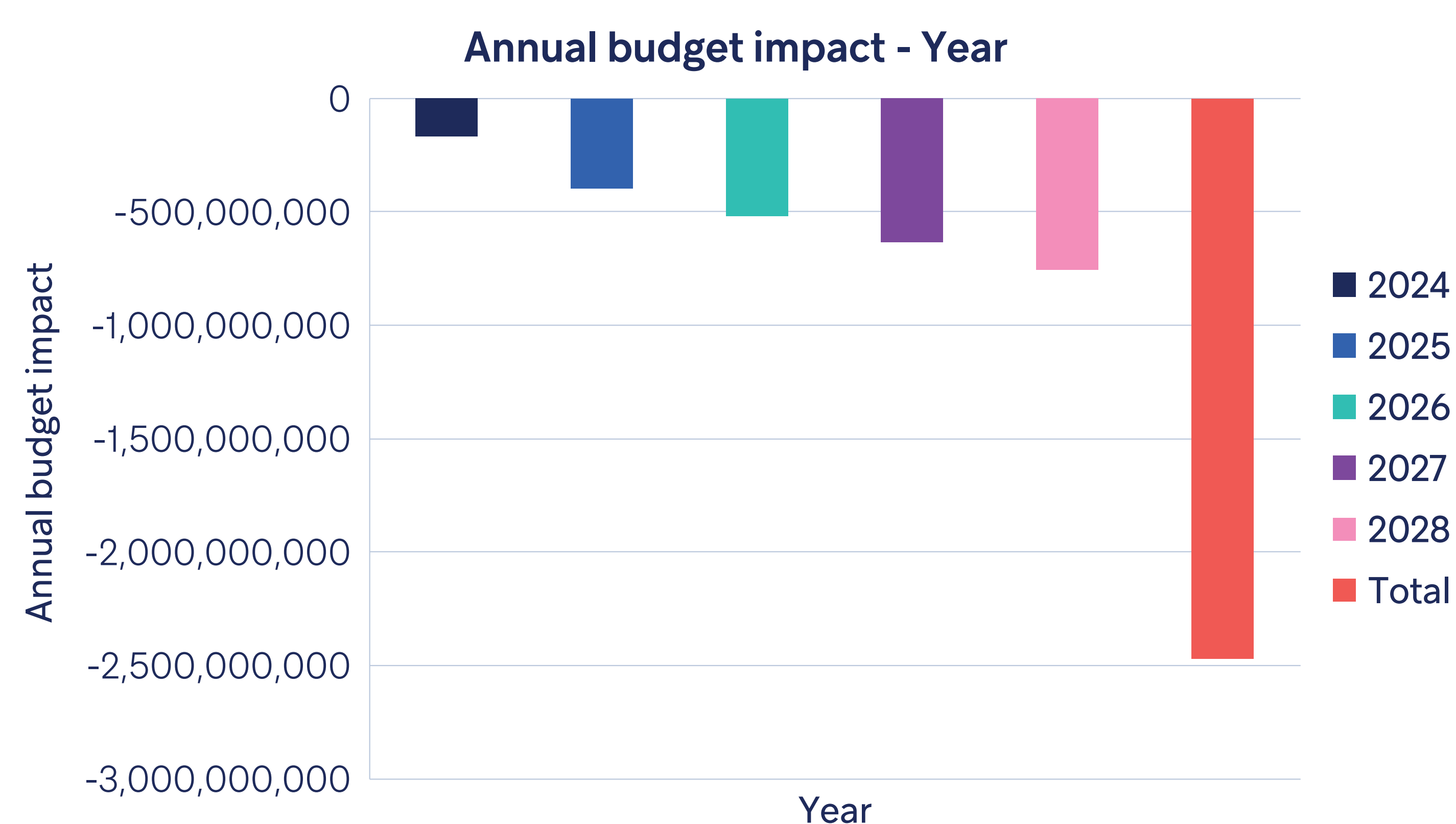
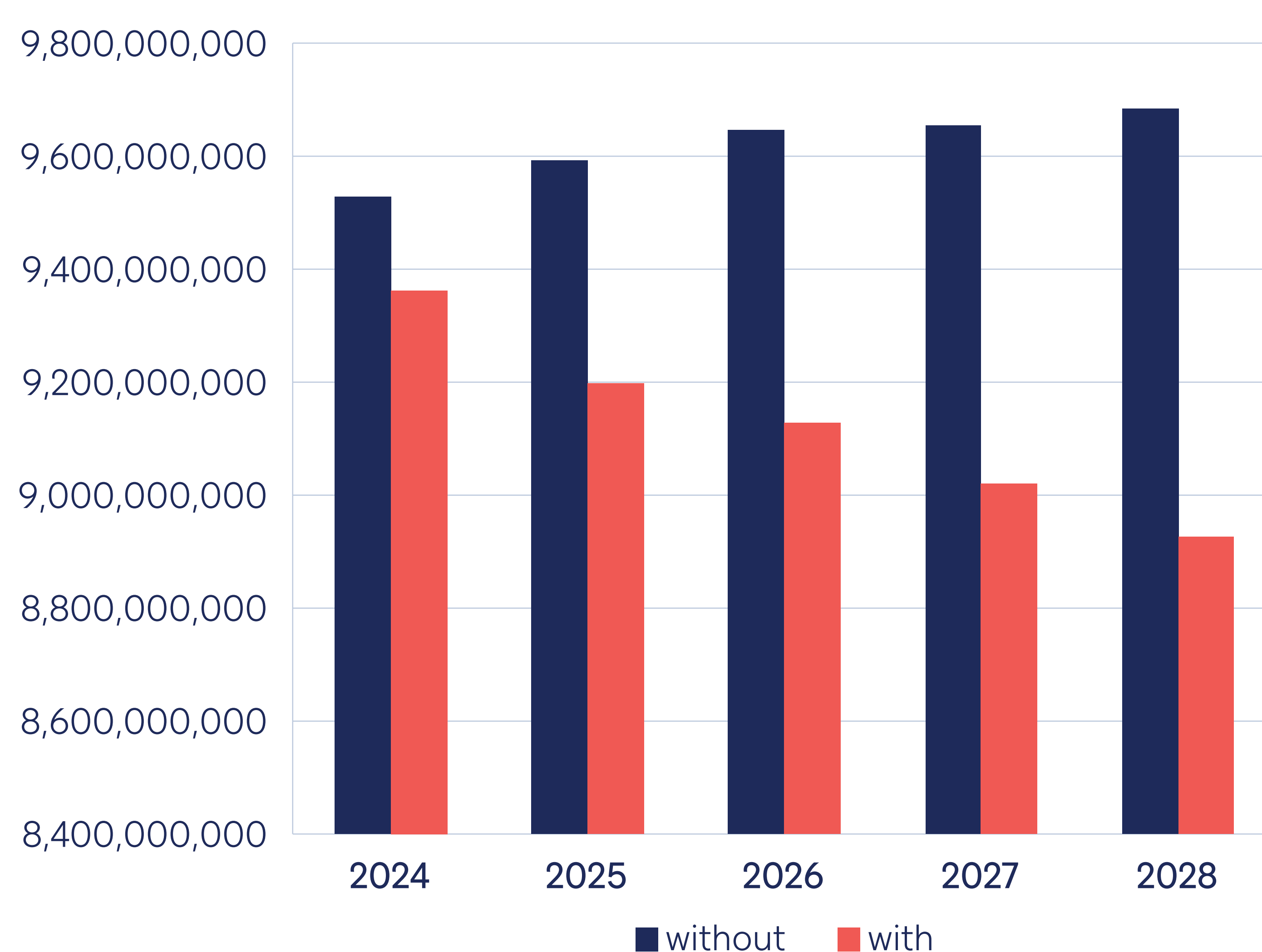
	2024	2025	2026	2027	2028
Interferon beta 1-a 30mcg/0.5 ml	27.9%	26.4%	24.0%	22.5%	20.3%
Interferon beta 1-a 44mcg/0.5ml	35.10%	32.30%	29.60%	27.75%	25.20%
Interferon beta 1-b	17.1%	16.2%	14.4%	13.5%	12.6%
Glatiramer acetate	9.9%	10.2%	12.0%	11.3%	11.9%
Dimethyl fumarate	10.0%	15.0%	20.0%	25.0%	30.0%

Annual cost of medications, adverse effects, Lab tests and medical consultations were included in the model. The costs associated with relapses were not included due to limitations of obtaining these costs in Algeria.

Result

DMF introduction to Algerian market demonstrated a cumulative cost savings of 2,470,028,848 DZD/RRMS population over 5 years, having an average annual budget impact of -1.7% in first year and -5.9% onwards.

Comparator costs without DMF and Comparator costs with DMF



Conclusion

The inclusion of DMF in Algerian public drug formulary is associated with substantial cost-savings to the healthcare budget. Our findings may result in an increased oral treatment access for patients with RRMS.

References:

1. Sclérose en plaques (SEP) [Internet]. Inserm. [cité 18 sept 2018]. <https://www.inserm.fr/information-en-sante/dossiers-information/sclerose-en-plaques-sep>
2. Atlas of MS 3rd edition 07/12/2022. <https://www.atlasofms.org/map/global/epidemiology/number-of-people-with-ms>
3. Algeria Press Service 29 Mai 2022. <https://www.aps.dz/sante-science-technologie/140362-sclerose-en-plaques-appel-aune-meilleure-prise-en-charge-des-malades>