



Trends in Out-of-Pocket and Total Healthcare Costs Among Commercially-Insured Patients with Multiple Sclerosis in the US, 2002-2021.

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Background

Multiple Sclerosis (MS) and Its Treatment

- MS is an immune-mediated central nervous system disease
- There is no cure for MS, but more than 10 new disease-modifying therapies (DMTs) have been approved for MS treatment in the US over the last 20 years

Costs of MS Treatment

- The real-world use of newer DMTs is influenced by many factors, including financial constraints
- Key questions remain about how new drug approvals have affected healthcare costs for people with MS, particularly the direct financial burden on patients

Objective

- Evaluate trends in annual out-of-pocket and total healthcare costs between 2002-2021 among US commercially-insured patients with MS

Methods

Study Design and Data Source

- Serial cross-sectional study over a 20-year period (2002-2021)
- Data source was Merative MarketScan (US employer-based health insurance)

Patient Population

- For each calendar year, we identified patients <65 years old with MS who were continuously enrolled throughout the year
- Those with capitated/partially capitated plans were excluded

Healthcare Costs

- Costs were aggregated across inpatient, outpatient, and pharmacy claims over each calendar year
- Costs were then delineated into 4 distinct categories: DMT-related, other outpatient, other pharmacy, and inpatient costs
- Costs were Consumer Pricing Index-adjusted to 2021 prices
- Temporal trends were evaluated using linear regression models

Results

Study Cohort

- 597,040 eligible observations were included from 199,857 unique patients
- Most patients were included in ≤4 calendar years of analysis (median=2, interquartile range [IQR] = 1-4)
- Median age was 48 years (IQR = 40-55 years) and 76.8% were female
- 73.8% used a DMT during the calendar year

Trends in Out-of-Pocket Costs

- Trends in out-of-pocket costs are shown in **Figure 1a**
- Mean annual out-of-pocket costs increased from \$1,783 in 2002 to \$4,016 in 2021 (relative increase of 125.1%, p<0.001 for trend)
- DMT-related costs exhibited the largest growth of any cost category, from \$228 in 2002 to \$2,093 in 2021 (relative increase of 818.0%, p<0.001)

Trends in Total Healthcare Costs

- Trends in out-of-pocket costs are shown in **Figure 1b**
- Trends in annual total healthcare costs were similar to out-of-pocket costs
- Mean annual total healthcare costs increased from \$23,770 in 2002 to \$73,562 in 2021 (relative increase of 209%, p<0.001)
- DMT-related costs accounted for 86.7% of this increase, rising from \$8,895 in 2002 to \$52,059 in 2021 (relative increase of 485%, p<0.001)

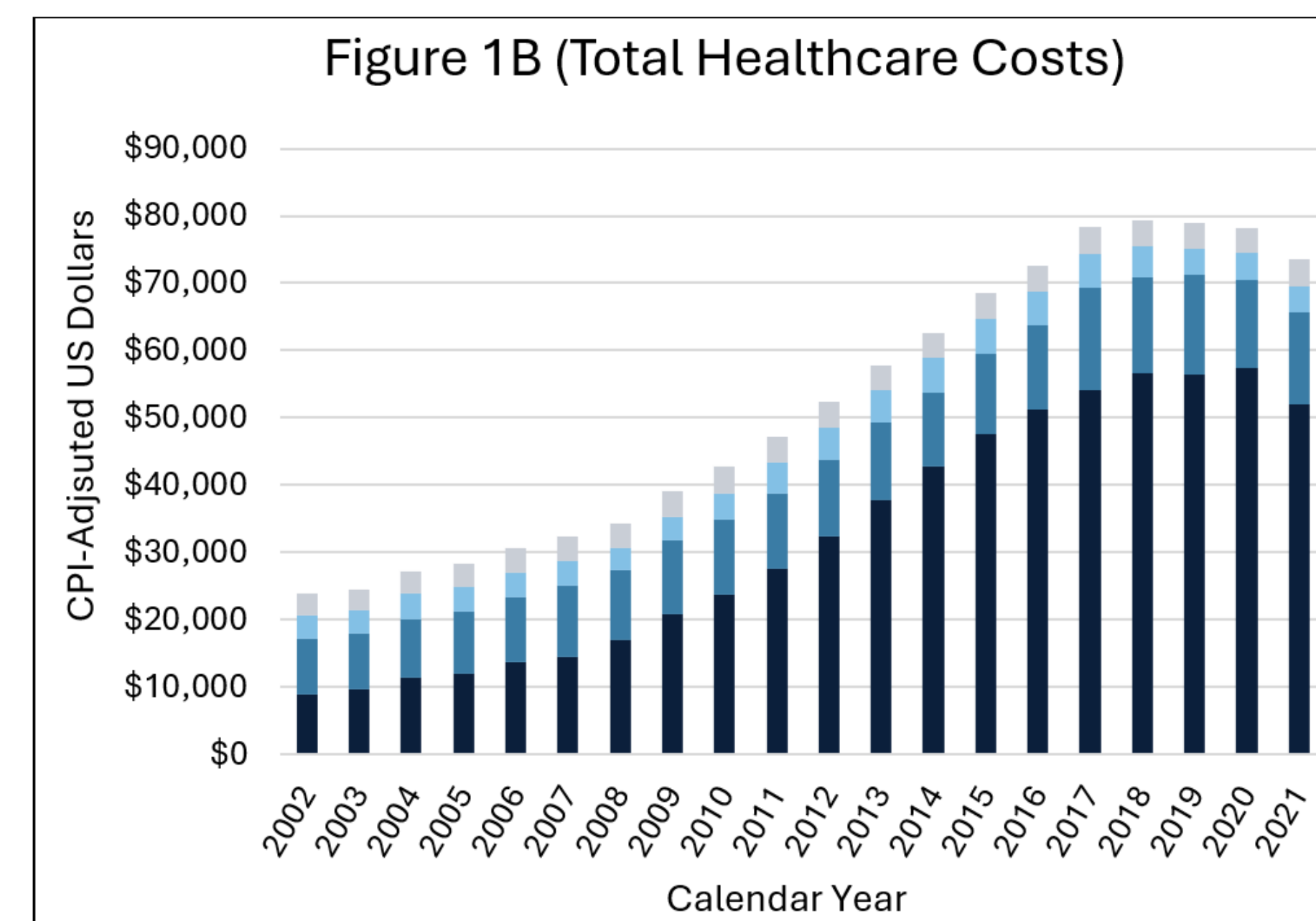
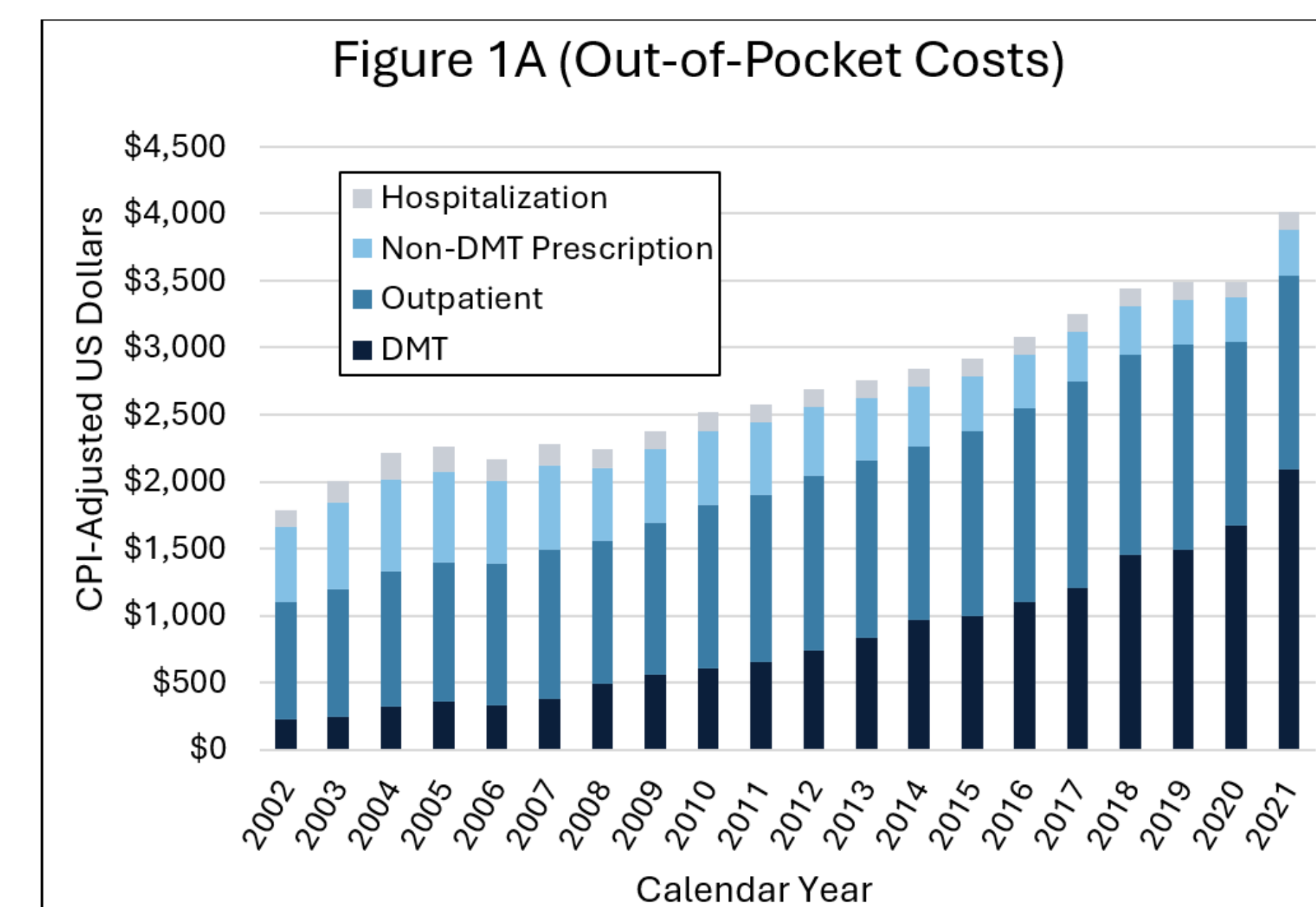


Figure 1. Mean Annual Out-of-Pocket (Fig. 1A) and Total Healthcare Costs (Fig. 1B) among Patients with Multiple Sclerosis <65 Years Old in the United States, 2002-2021.

Conclusions

- Among US commercially-insured patients with MS, both out-of-pocket and total annual inflation-adjusted healthcare costs increased significantly between 2002-2021
- This increase was driven by rising DMT costs, reflecting an increased financial burden of treating MS with newer DMTs
- This was the first study to evaluate long-term trends in healthcare costs among patients with MS
- Our results highlight the substantial increase in not just total healthcare costs, but the patient burden of costs among those living with MS in the US

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Mackenzie Henderson reports employment at Daiichi Sankyo, Inc. and owns stock in Daiichi Sankyo, Inc. Vikram Bhise has previously served on the Biogen Data Safety Monitoring Board, received grant funding from Horizon Blue Cross Blue Shield, participated in a multicenter trial funded by Novartis and received a consulting fee from Cycle Pharmaceuticals. Chintan Dave reports PI funding from NHLBI (R01HL163163), NIDDK (R01DK139163), and Breakthrough T1D (3-SRA-2022-1257-S-B), fellowship training awards to Rutgers University from GSK, Novo Nordisk, and Johnson & Johnson, and consulting fees from US FDA, Takeda, SpineBioPharma, AbyRX, Priovant, and National Evaluation System for Health Technology (NESTec) unrelated to this presentation