National and State Population-Level Estimated Economic Impact of Ocrelizumab on Cumulative Disabilities Avoided and Work Productivity Under Different Access Scenarios in the United States

Elmor D Pineda, Katherine L Rosettie, Fadoua El Moustaid

Genentech, Inc., South San Francisco, CA, USA

OBJECTIVE

To estimate impacts of ocrelizumab treatment among newly diagnosed people with multiple sclerosis (pwMS) nationally and in select prescription drug affordability board (PDAB) states on cumulative disability avoidance, disability-related costs and work productivity costs over time.

KEY TAKEAWAYS

Based on current DMT utilization estimates, preferred 1L ocrelizumab treatment access was projected to have greater impact on preventing disability progression over 10 years among newly diagnosed pwMS vs non-preferred anti-CD20 access.

The predicted substantial socioeconomic benefits rely on policy implementation that enhances earlier patient access and more timely treatment with high-efficacy DMTs.

This treatment impact model demonstrates the importance of holistically evaluating the population-level impact of high-efficacy DMTs and value to pwMS and society.

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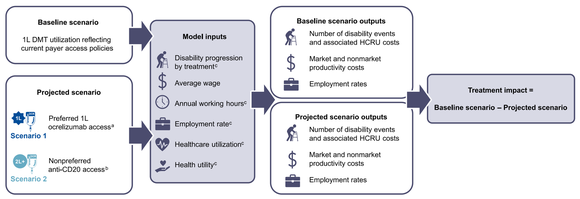
BACKGROUND

- MS is a chronic, demyelinating disease that can lead to permanent and progressive neurological disability and is frequently diagnosed in young adulthood (20–40 years) during prime working years[1]
- Reaching significant disability, use of a walking aid and use of a wheelchair each represent a significant point in MS progression and are associated with declines in quality of life with an inability to independently perform activities of daily living, decreased work productivity and increased healthcare spending
- Ocrelizumab is an anti-CD20 monoclonal antibody approved for the treatment of adults with relapsing MS or primary progressive MS,[2] which has shown favorable outcomes and economic benefit, especially when received as 1L treatment[3–5]
- Several states in the US have enacted legislation to allow for state-level decisions on affordability of drugs, or PDABs, which may cause state-specific access restrictions to highly efficacious DMTs such as ocrelizumab
- Four states (Colorado, Maryland, Minnesota and Washington) have an established PDAB with authority to establish a UPL or cap a drug's in-state purchase price and reimbursement amount for applicable purchasers and payers. A fifth state, Oregon, has an established PDAB without an authority to set a UPL, but it is possible that UPL-enabling legislation could advance
- Treatment impact models translate trial outcomes into long-term real-world impact at the population level by providing a more holistic quantification of the value medicines bring to patients and society and could be valuable in estimating national- and state-level impacts of ocrelizumab treatment on cumulative disabilities, work productivity and MS-related costs

METHODS

The Treatment Impact Model Simulates Disability and Work Productivity Outcomes

- Outcomes are estimated under baseline and projected scenarios over 10 years (2024–2034) by applying a new incident treatment cohort each year
- National- and state-level market shares were applied for 1L DMT treatment to the incident cohort entering the model each year



[a]1L DMT utilization reflects a proportional distribution of non-anti-CD20 market shares to ocrelizumab. [b]1L DMT utilization reflects a 20% reduction in anti-CD20 shares and proportional redistribution across the remaining treatments. [c]As assessed by EDSS.

Treatment Impact Model Framework

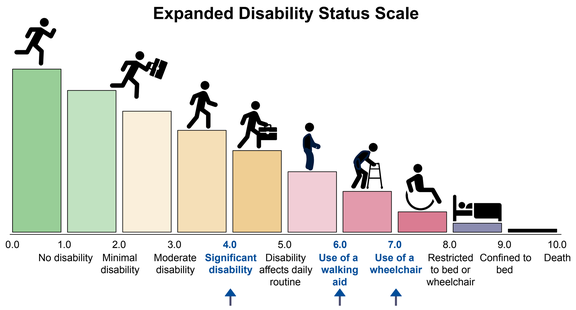
Treatment impact model framework	
Model structure	Markov model with 20 health states (based on CEA)[6,7]
Target populations	Treatment-naive adults (18–55 years old) with RMS (OPERA I/II subgroup [NCT01247324/NCT01412333])[8]
Target geographies	United States (national) PDAB states (Colorado, Maryland, Minnesota, Oregon, Washington)
Intervention	Ocrelizumab (high-efficacy DMT)
Comparators	• Anti-CD20 monoclonal antibodies – Ublituximab (high-efficacy DMT) – Ofatumumab (high-efficacy DMT) • Other – Natalizumab (high-efficacy DMT) – Dimethyl fumarate (moderate-efficacy DMT) – Fingolimod (moderate-efficacy DMT)
Time horizon	10 years (2024–2034)
Model outcomes	Disability event; market (labor force participation) and nonmarket (caregiving and volunteering) productivity costs; employment rates; non-DMT direct medical costs

Treatment Impact Model Inputs for PwMS

Epidemiological data[a]	National	Colorado	Maryland	Minnesota	Oregon	Washington
Incident cases in 2024	10,707	209	220	155	133	209
Annual incidence growth rate	0.71%					

[a]Source: Institute for Health Metrics and Evaluation at the University of Washington. Used with permission.

Model Disability Outcomes

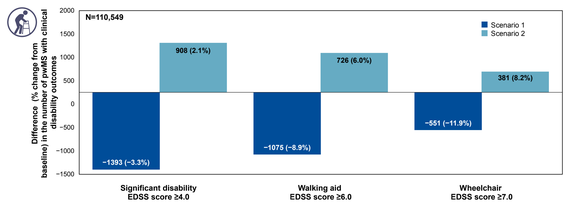


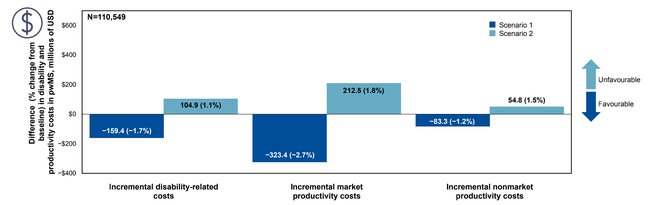
LIMITATIONS

- A published algorithm was used to estimate nonmarket productivity (volunteering, caregiving) because MS-specific estimates were not available in the literature
- A published crosswalk between PDDS and EDSS was used to estimate productivity outcomes by EDSS; however, there is no validated crosswalk between PDDS and EDSS
- Disease progression was based on results from clinical trials, and it was not possible to incorporate information on disease progression in the real world; therefore, results may not be generalizable to all pwMS
- Hazard ratios for progression were based on those observed over 1–2 years in clinical trials, which were then extrapolated over the lifetime time horizon; therefore, results may over- or underestimate disease progression over a lifetime in all pwMS

RESULTS

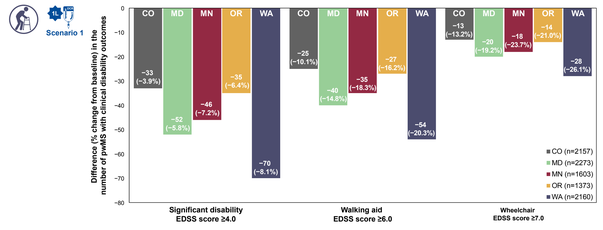
1L Access to Ocrelizumab Was Projected to Prevent Disability Events, Reduce Disability and Productivity Costs and Increase Employment Rates Over 10 Years Among PwMS in the US

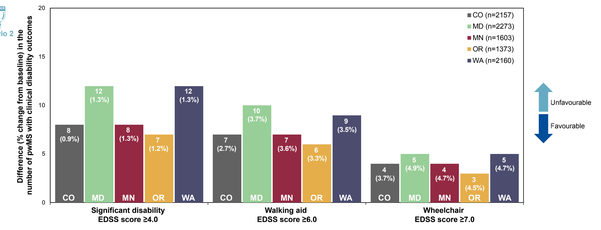


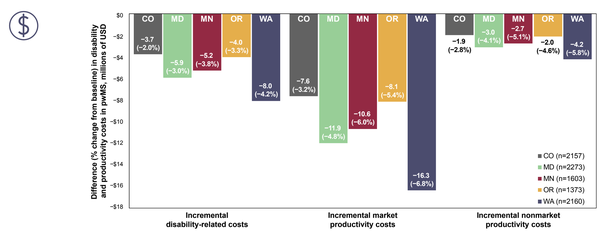


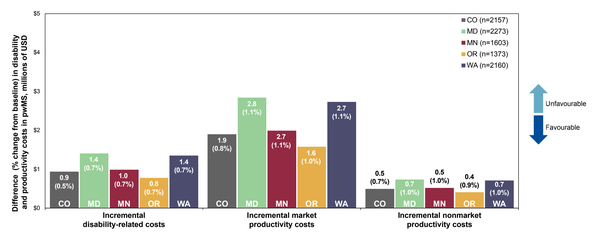
The absolute change in the proportion of pwMS employed over 10 years was **1.18%** for **scenario 1** and **−0.78%** for **scenario 2**

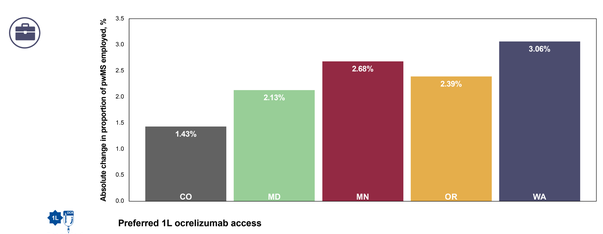
1L Access to Ocrelizumab Was Projected to Prevent Disability Events, Reduce Disability and Productivity Costs and Increase Employment Rates Over 10 Years Among PwMS in PDAB States

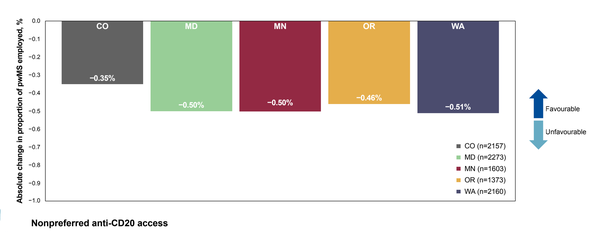












REFERENCES

1. Tullman M. *Am J Manag Care* 2013;19:S15–20.
2. Ocrevus [Prescribing Information]. https://www.gene.com/download/pdf/ocrevus_prescribing.pdf. Accessed May 2025.
3. Geiger CK, et al. *Neurol Ther* 2023;12:1709–1728.
4. Alvarez E, et al. ECTRIMS 2024;Poster P1759.
5. Pineda ED, et al. ACTRIMS 2025;Poster 406.
6. McKenna A, et al. *J Manag Care Spec Pharm* 2023;29:857–861.
7. Lin GA, et al. Final Evidence Report. https://icer.org/wp-content/uploads/2022/04/ICER_MS_Final_Evidence_Report_022123.pdf. Accessed May 2025.
8. Hauser S, et al. *N Eng J Med* 2017;376:221–234.

ABBREVIATIONS

1L, first line; **2L+**, second line or subsequent use; **CDP**, confirmed disability progression; **CDP-6**, CDP at 6 months; **CEA**, cost-effectiveness analysis; **CO**, Colorado; **DMT**, disease-modifying therapy; **EDSS**, Expanded Disability Status Scale; **HCRU**, healthcare resource utilization; **HR**, hazard ratio; **MD**, Maryland; **MN**, Minnesota; **MS**, multiple sclerosis; **NMA**, network meta-analysis; **PDAB**, prescription drug affordability board; **PDDS**, Patient-Determined Disease Steps; **pwMS**, people with multiple sclerosis; **RMS**, relapsing multiple sclerosis; **OCR**, ocrelizumab; **OR**, Oregon; **SPMS**, secondary progressive multiple sclerosis; **UPL**, upper payment limit; **USD**, US dollar; **WA**, Washington.

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DISCLOSURES

ED Pineda, **KL Rosettie** and **F El Moustaid** are employees of Genentech, Inc., and shareholders of F. Hoffmann-La Roche Ltd.

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