EE652

Budget Impact of Lecanemab for Alzheimer's Disease Patients Among Medicare Beneficiaries in the United States: A Subgroup Analysis

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CONCLUSION

Lecanemab, a therapeutic option for adults with Alzheimer's disease (AD), exhibited a minimal impact on U.S. health plan budgets. Notably, the potential for enhanced patient adherence was observed with a regimen of six annual doses. The financial investment in AD intervention showed a more pronounced impact among female patients, particularly within White and Black demographics, and those with early-stage AD. Conversely, a lesser effect was noted among male patients as well as within Asian and Native American populations.

BACKGROUND

- Nearly 6.7 million Americans 65 and older will have Alzheimer's in 2023. Thus, 73% of the population is 75 years of age or older. [1]
- The projected frequency of AD worldwide in 2050 is 12.7 million.[1]
- In the US, clinical management of AD includes three symptomatic approaches: acetylcholinesterase inhibitors, N-methyl-D-aspartate receptor inhibitors, and the more recent monoclonal antibody therapy.[1,2,3]
- Alzheimer's and other dementias will cost the US $345 billion in 2023, of which $222 billion will come from Medicare and Medicaid.[1]
- This study aims to determine the economic effect of Lecanemab on the total health care costs for treating AD across gender, race, and disease severity level in the US.

METHODOLOGY

- A budget impact model (BIM), accounting for gender, racial, and severity level differences, was created to calculate the financial effect of using Lecanemab to treat AD.
- A cohort of Medicare beneficiaries was chosen and modeled over 5 years in both with and without Lecanemab scenarios. Inputs included market share, costs, length of therapy, and patient compliance projections.
- The difference in annual costs and PMPM / PTMPM was used to determine the budget impact with deterministic sensitivity analyses to examine how changes in parameters affected the model results.

RESULTS

- The estimated budget impact of introducing Lecanemab for treating eligible patients with AD in the US from the total population of Medicare plan members over five years is $24 billions, with an incremental PMPM cost of $6.1 and a PTMPM cost of $67.5 (Panel A).
- We controlled the effects of gender (Panel B), race (Panel C), and health states (Panel D). We found differences across severity levels, whereas the only differences across gender and race pertained to the overall budget impact.
- Sensitivity analysis suggests a modest increase in budget, mainly due to improved compliance and acquisition costs.

DISCUSSION

- This study reported the five years overall budget impact and across subgroups, e.g., gender, race, and health stages.
- To our knowledge, this study is the first of its kind addressing the subgroup differences in a budget impact analysis. This study evaluated the economic effect of Lecanemab on the US Medicare plan payer.

Panel A: Overall-BIM Results

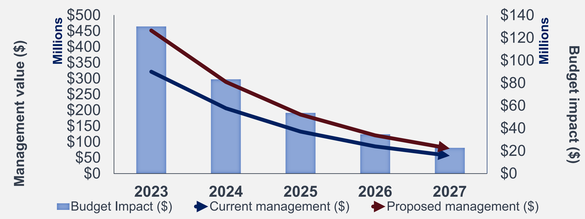

Figure 1: Five-Year BI Analysis of introducing Lecanemab: Base Case Results

Table 1: A 5-year BI, PMPM BI, & PTMPM BI of Lecanemab, Base case results ($)

Cumulative	BI	PMPM BI	PTMPM BI
	Total ($)	Total ($)	Total ($)
Acquisition	$23,811,794,562.5	$6.0	$66.9
Administration	$291,371,226.4	$0.1	$0.8
Initiation	-$12,095,217.2	$0.0	$0.0
Health state costs	-$70,123,101.4	$0.0	-$0.2
Adverse events	-$25,009,019.9	$0.0	-$0.1
Total	**$23995938450**	**$6.1**	**$67.5**

Notes: *BI = Budget Impact, PMPM: Per Member Per Month, PTMPM Per Treated Member Per Month.*

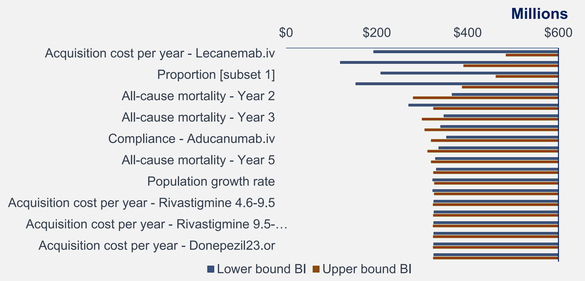

Figure 2: Five-Year BI Analysis of Lecanemab: Tornado diagram up to 2027 ($) Mio

Panel B: BIM Results by Gender

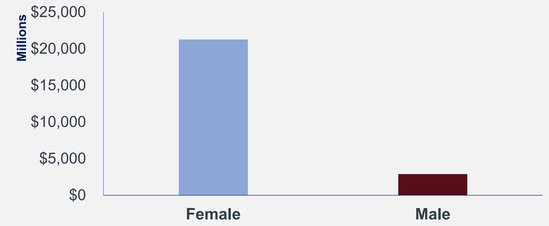

Figure 3: Five-Year BI Analysis of Lecanemab: Comparative Study by Gender

Panel C: BIM Results by Race

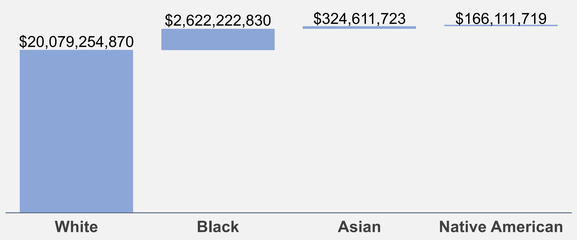

Figure 4: Five-Year BI Analysis of Lecanemab: A Comparative Study Across Race

Panel D: BIM Results by Severity Level

Table 2: A 5-year BI, PMPM BI, & PTMPM BI of Lecanemab, Base case results ($), by severity level

Cumulative	BI		PMPM BI		PTMPM BI	
	MCI - MOD	MOD - SEV	MCI - MOD	MOD - SEV	MCI - MOD	MOD - SEV
	Total ($)	Total ($)	Total ($)	Total ($)	Total ($)	Total ($)
Acquisition	$31,263,440,597.0	$14,932,688,174.6	$7.9	$3.8	$105.1	$99.9
Administration	$411,717,871.9	$195,451,802.0	$0.1	$0.0	$1.4	$1.3
Initiation	-$19,070,430.5	-$6,491,192.9	$0.0	$0.0	-$0.1	$0.0
Health state costs	$724,612.7	-$19,857,583.0	$0.0	$0.0	$0.0	-$0.1
Adverse events	-$41,830,117.0	-$15,623,049.4	$0.0	$0.0	-$0.1	-$0.1
Total	**$31,614,982,534**	**$15,086,168,151**	**$8.0**	**$3.8**	**$106.2**	**$100.9**

Notes: *MCI = Mild Cognitive Impermeant, MOD = Moderate, SEV = Sever*

References

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3. Alzheimer's Disease Program, Chronic Disease Branch Division for Disease Control and Prevention Services, Texas Department of State Health Services. Clinical best practices for early detection, diagnosis, and pharmaceutical and non-pharmaceutical treatment of persons with Alzheimer's Disease. Publication No 44-14023. February 2013. Available at: http://dshs.state.tx. us/alzheimers/pdf/Early-Detection-Final.doc

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