Clinical and Humanistic Burden Associated With Alzheimer's Disease in the United States

An Analysis of Patient Characteristics, Treatment Patterns, and Quality of Life Using a Physician Notes Real-World Database

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RWD11

Introduction

- Alzheimer's disease (AD), a chronic and progressive neurodegenerative disease, accounts for approximately 60% to 80% of all dementia cases[1]
- It is estimated that 6.7 million Americans aged ≥65 years are currently living with AD, and this number could grow to 13.8 million by 2060[2]
- AD diagnosis has historically been symptom-driven; however, it is recommended that computerized tomography and magnetic resonance imaging be conducted to confirm the cause of cognitive impairment
  - Use of positron emission tomography and analysis of cerebrospinal fluid biomarkers are also recommended to confirm pathological changes as outlined in the amyloid/tau/neurodegeneration classification system[1]
- There is a need to understand better the manifestation and progression of symptoms and comorbid conditions leading to and following the diagnosis of AD
- This study characterizes the real-world clinical and humanistic burden of AD

Methods

- Amplity Insights Real-World Database (RWD)
  - >60 million electronic medical transcription records were analyzed from nearly 120,000 healthcare providers at ~40,000 inpatient/outpatient care sites across 50 states and 2 US territories
  - Natural language processing was used to search and analyze the Amplity Insights Database for patients diagnosed with AD
  - This study retrospectively evaluated data from January 2003 through December 2023
- Patient-level characteristics, comorbidities, symptoms, quality of life (QoL), testing, and treatment usage were summarized and described for the following 4 cohorts: All Patients, patients aged 50–64 Years, 65–79 Years, and ≥80 Years

Conclusion

- Analysis of this RWD revealed the pattern of symptoms and comorbidities experienced by patients with AD with impact to QoL and a burden that extended to their caregivers
- Psychological symptoms of AD appear in advance of diagnosis, whereas cognitive symptoms appear around the time of diagnosis
- Analysis and aggregation of raw records provide a unique mechanism by which to track the evolution of symptoms against clinical decision-making in real-world clinical practice
- Use of these data can help identify barriers to patients accessing biomarker evaluation in AD and opportunities to improve the quality of care in different patient populations

DISCLOSURES
All authors are employees of Amplity Health

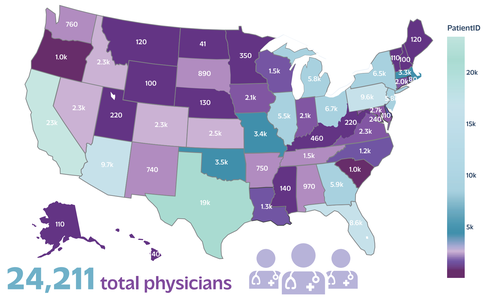
To learn more about this study and further research by **Amplity Health | *Insights***™, please scan this code.

REFERENCES
1. Hampel H, Au R, Mattke S, et al. Designing the next-generation clinical care pathway for Alzheimer's disease. *Nat Aging*. 2022;2(8):692-703.
2. 2023 Alzheimer's disease facts and figures. *Alzheimers Dement*. 2023;19(4):1598-1695.

Table 1: Patient Demographic Information

	All Patients (N=144,687)	50-64 Years (n=5991)	65-79 Years (n=34,559)	≥80 Years (n=73,394)
Age, (years)				
Mean (range)	81 (18–117)	59 (50–64)	74 (65–79)	87 (80–117)
Gender (%)				
Records with value	99	99	99	99
Female	61	55	56	64
Ethnicity, n (%)				
Records with value	58	57	61	62
African American	10	13	11	8
Caucasian	87	83	85	88

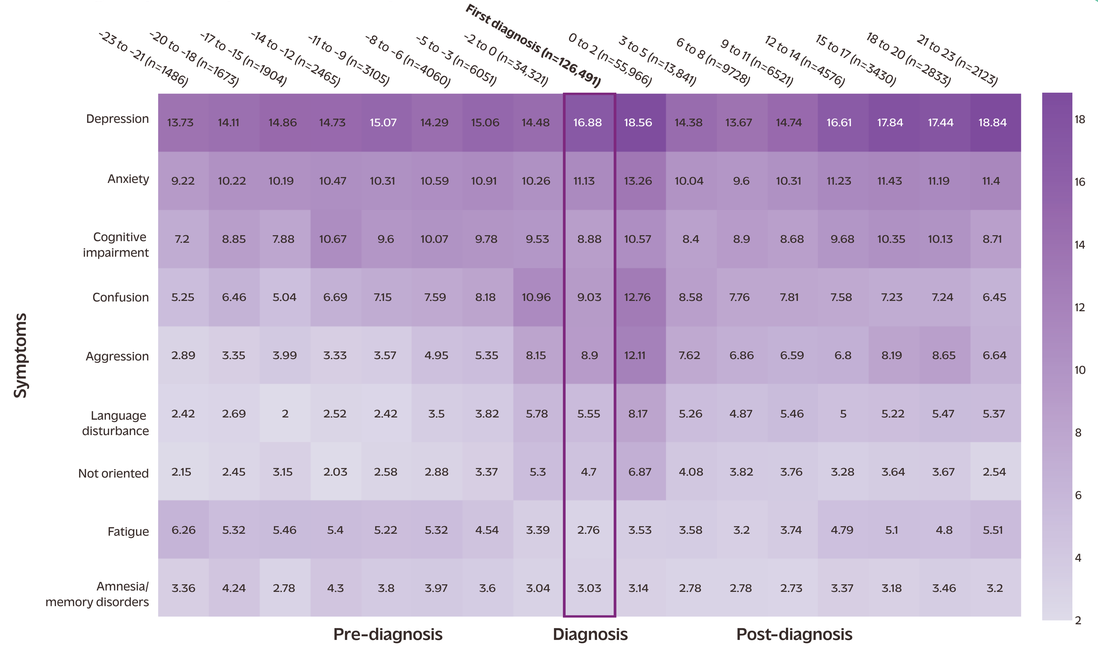
Geographic distribution of physician location



24,211 total physicians

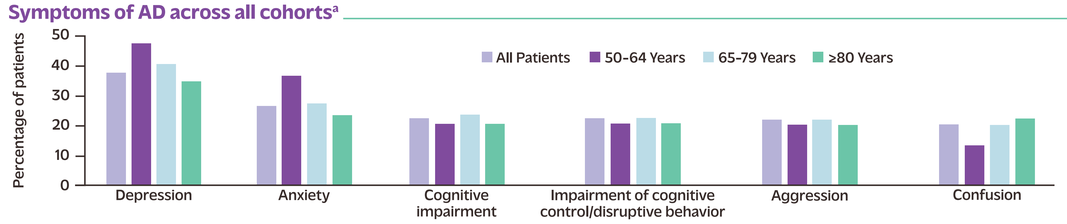
The path to an AD diagnosis can be long, and patients with AD experience psychological symptoms years in advance of diagnosis and continue to experience those symptoms at higher rates post-diagnosis than cognitive impairment and confusion

Percentage of patients per time interval (months)



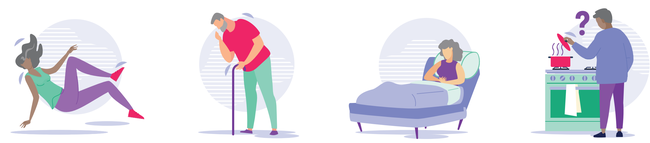
Symptoms of their disease significantly impact patients with AD and carry a significant QoL burden, which extends to their caregivers

Symptoms of AD across all cohorts[a]



[a]Percentages based on number of records that mentioned any symptom for All Patients (n=77,430), 50–64 Years (n=3619), 65–79 Years (n=19,908), and ≥80 Years (n=38,213).

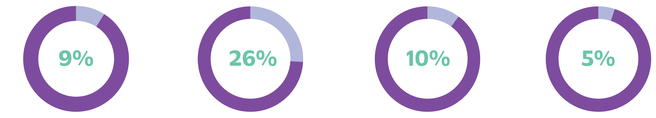
Most commonly reported QoL issues in the All Patients cohort[a]



Falls (71%) | Inability to walk/sit (17%) | Bedridden (10%) | Inability to cook (9%)

[a]Percentages based on number of records that mentioned any QoL parameter for All Patients (n=47,094).

Caregiver burden across all cohorts[a]



[a]Percentages based on number of records that mentioned "caregiver" for All Patients (n=10,948), 50–64 Years (n=520), 65–79 Years (n=2557), and ≥80 Years (n=5880).

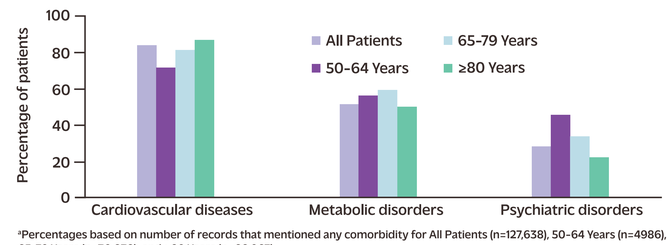
AD diagnostic and treatment decisions appear to remain focused on clinical symptoms versus a biomarker-guided approach

Table 2: Treatment and Testing for AD

Treatment mentions, (%)	All Patients[a]	50–64 Years[a]	65–79 Years[a]	≥80 Years[a]
Donepezil	22	16	25	22
Memantine	17	12	19	17
Rivastigmine	4	3	5	4
Galantamine	1	1	1	1
Lecanemab[b]	0	0	0	0
Testing, %[c]				
Magnetic resonance imaging	92	90	91	93
Cerebrospinal fluid	0	1	0	0
Lumbar puncture	4	8	5	3
Positron emission tomography scan	9	13	10	6

[a]All Patients = 144,687; 50–64 Years = 5991; 65–79 Years = 34,559; ≥80 Years = 73,394.
[b]Only 2 patients took lecanemab.
[c]Percentages based on number of records that mentioned any AD biomarker test for All patients (n=14,714), 50–64 Years (n=1089), 65–79 Years (n=4563), and ≥80 Years (n=6189).

Patients with AD experience a high degree of cardiovascular, metabolic, and psychiatric comorbidities[a]



[a]Percentages based on number of records that mentioned any comorbidity for All Patients (n=127,638), 50–64 Years (n=4986), 65–79 Years (n=30,638), and ≥80 Years (n=66,967).