

Assessing Billing Hassles for Individuals with ADRD

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Background

- ▶ Alzheimer's Disease and Related Dementias (ADRD) affect millions of older adults in the U.S.
- ▶ Managing ADRD involves frequent healthcare utilization across multiple providers and payers.
- ▶ Billing hassles such as claim denials are widespread and can represent a significant financial and psychological cost.

Motivation

- ▶ Limited evidence on whether ADRD patients face disproportionately higher claim denial rates.
- ▶ Claim denials could reflect systemic barriers, coding complexity, or care coordination issues.
- ▶ People with ADRD may be more susceptible or negatively affected by billing hassles due (among other reasons) to their altered cognitive state
- ▶ The Massachusetts All-Payer Claims Database (APCD) provides a comprehensive data source to study this issue.

Results Summary

- ▶ Claims for patients with ADRD are slightly more likely to be denied
 - ▶ This difference has grown over time
 - ▶ < 20% of the difference is attributable to difference billing patterns
- ▶ Claims for patients with ADRD are **much** more likely to face long payment delays
 - ▶ This difference is stable over time
 - ▶ ~ 75% of the difference is attributable to difference billing patterns

Related Literature

- ▶ Claim denials are common and costly (Gottlieb, Dunn, and Shapiro, 2018; League, 2023)
- ▶ Administrative hassles can inhibit access to care (Dunn et al., 2023)
- ▶ Administrative ordeals often screen out needy, vulnerable potential beneficiaries (Deshpande and Li, 2019; Homonoff and Somerville, 2021; Arbogast et al., 2022)
- ▶ ADRD patients are subject to disparities in other dimensions (Tsuda et al., 2014; Daras et al., 2017; Kassahun, 2018; Fabius et al., 2025)

Data Source

- ▶ **Massachusetts APCD (2013–2020)**: includes medical, pharmacy, and eligibility files.
- ▶ Covers all payers other than Traditional Medicare (ESI, individual market, Medicaid, MA).
- ▶ Allows tracking of claims, denials, and patient-level demographics.
- ▶ Two waves of data: 2013–2017, 2016–2020

Cohort Definition

- ▶ **ADRD Cohort:** Patients with diagnosis codes for Alzheimer's or related dementias after first diagnosis
- ▶ **Comparison Group:** Patients with no ADRD diagnosis

Methodology

- ▶ Descriptive analysis comparing administrative hassles for ADRD and non-ADRD patients.
 - ▶ Decompose sources of variation
 - ▶ Assess changes over time
- ▶ **Outcomes:**
 - ▶ Claim denial probability (currently per-claim)
 - ▶ Probability payment is delayed over 60 days
- ▶ **Covariates:** Residualize by procedure, insurer, or both

Descriptive Statistics

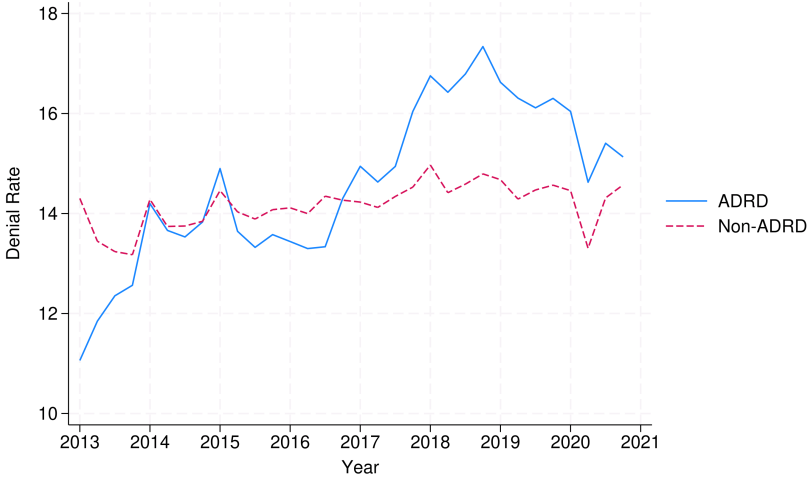
- ▶ 539,000 ADRD patients
- ▶ 0.2 billion claims for ADRD patients, 1.9 billion for non-ADRD patients
- ▶ Overall denial rate: 14.8% (ADRD) vs. 14.2% (non-ADRD).
- ▶ Overall delay rate: 25.3% (ADRD) vs. 16.7% (non-ADRD).

Difference in Denial Rate

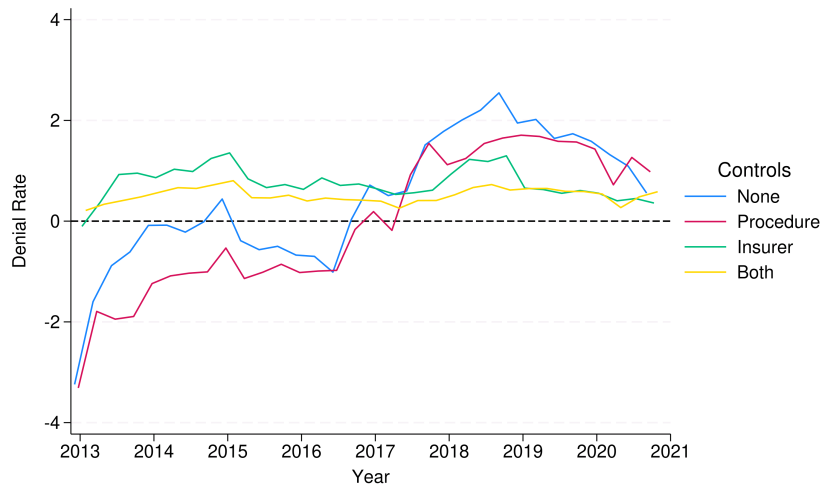
	(1) Denial Rate	(2) Denial Rate	(3) Denial Rate	(4) Denial Rate
ADRD	0.656*** (0.000)	0.150*** (0.000)	0.747*** (0.000)	0.515*** (0.000)
Controls	None	Proc.	Ins.	Proc.-Ins.
Control Mean	14.17	14.17	14.17	14.17
Coeff. as % of Mean	4.6%	1.1%	5.3%	3.6%
Claim Lines	2.1b	2.1b	2.1b	2.1b

- ▶ 16% of difference attributable to differences in insurer and procedure

Denials Over Time



Denials Over Time

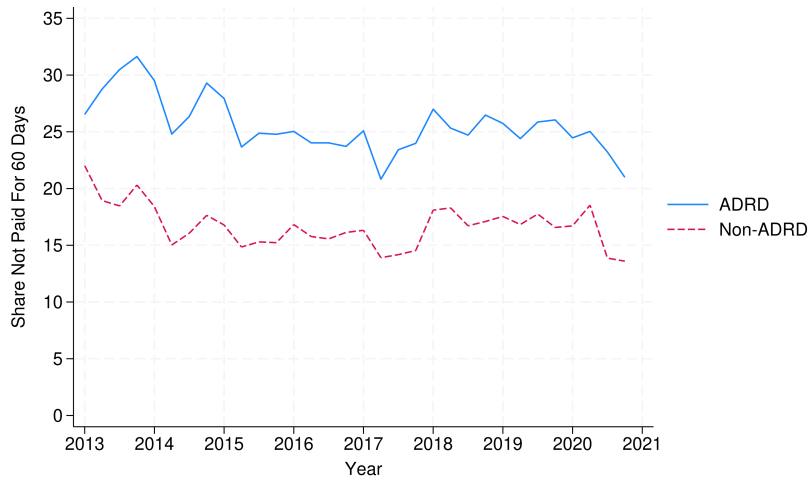


Difference in Delays

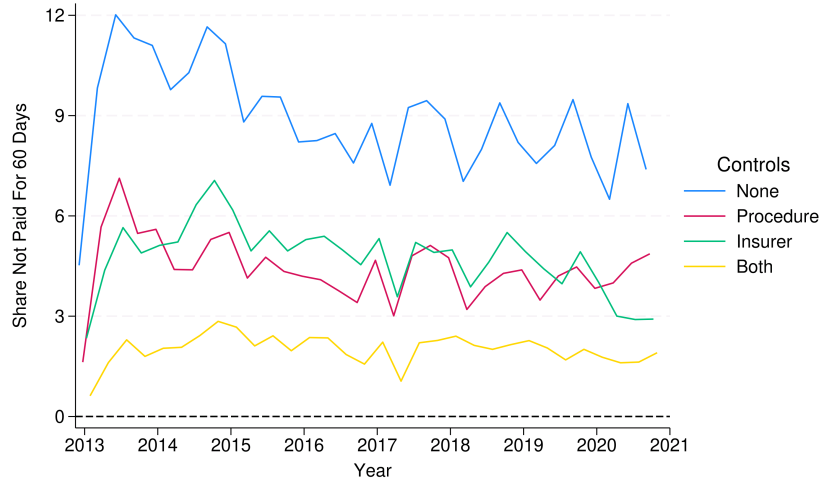
	(1) Delay Rate	(2) Delay Rate	(3) Delay Rate	(4) Delay Rate
ADRD	8.576*** (0.000)	4.359*** (0.000)	4.704*** (0.000)	2.012*** (0.000)
Controls	None	Proc.	Ins.	Proc.-Ins.
Control Mean	16.70	16.70	16.70	16.70
Coeff. as % of Mean	51.4%	26.1%	28.2%	12.1%
Claim Lines	2.1b	2.1b	2.1b	2.1b

- ▶ 77% of difference attributable to differences in insurer and procedure

Delays Over Time



Denials Over Time



Discussion

- ▶ ADRD patients are more likely to encounter administrative hassles
- ▶ Possible reasons include more complex/ambiguous diagnoses, differential care history, or (less likely) inability to navigate administrative processes
- ▶ Implications:
 - ▶ Claim denials may impose psychic or financial costs on patients
 - ▶ Claim denials may restrict access to care (Dunn et al., 2023)

Next Steps

- ▶ Assess hassle exposure **per period** (likely larger difference given utilization)
- ▶ Assess difference attributable to providers
- ▶ Look at hassles around diagnosis event
- ▶ Incorporate Traditional Medicare data

Future Plans

- ▶ ADRD patients or their providers may change care decisions in response to claim denials
- ▶ There is significant heterogeneity in provider-specific denial rates Value-Added
- ▶ Merging in provider/practice data will allow me to assess how patients of high vs low denial providers receive care following ADRD diagnosis

Conclusion

- ▶ ADRD patients experience more administrative hassles.
- ▶ These differences are not fully explained by insurers or procedures.
- ▶ This raises concerns regarding access and health equity.

Denial-Size Relationship

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