

Dementia Care Complexity and Health Care Utilization in Home Health: Evidence From a Validated Care Needs Scale

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Background:

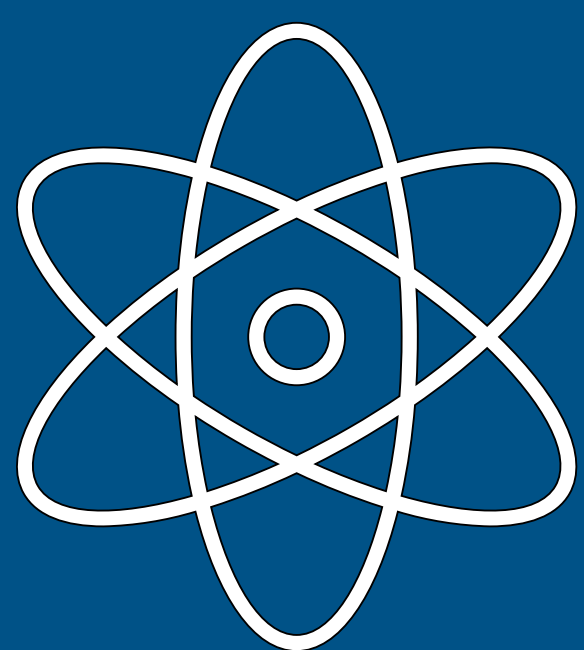
- ADRD is associated with complex care needs and high health care utilization.
- The impact of care complexity on utilization is not well understood.
- Identifying this relationship can improve home health care delivery.

Methods:

- **Data:** 2019 Medicare (MBSF, MedPAR, HH Claims, OASIS)
- **Exposure:** Care Needs (Low, Moderate, High)
- **Covariates:** Age, Sex, Race, Dual Eligibility, Charlson Score, Entitlement
- **Stratification:** ADRD Status (Highly Likely, Possible, Unlikely)
- **Outcomes:** Hospitalizations, ED visits, SNF stays, HH visits, Hospice, Readmissions, HH payments
- **Analysis:** Adjusted multivariable regression with Care Needs × ADRD interaction terms.

Conclusions:

- Higher care needs were consistently associated with greater health care utilization and higher Medicare home health payments across all outcomes.
- Significant ADRD × care needs interactions suggest that care complexity explains variation in service use beyond dementia status alone.
- Multidimensional care assessment may better capture service needs than dementia classification alone.



Multidimensional care needs,
not dementia status alone,
drives healthcare utilization
& home health resource use

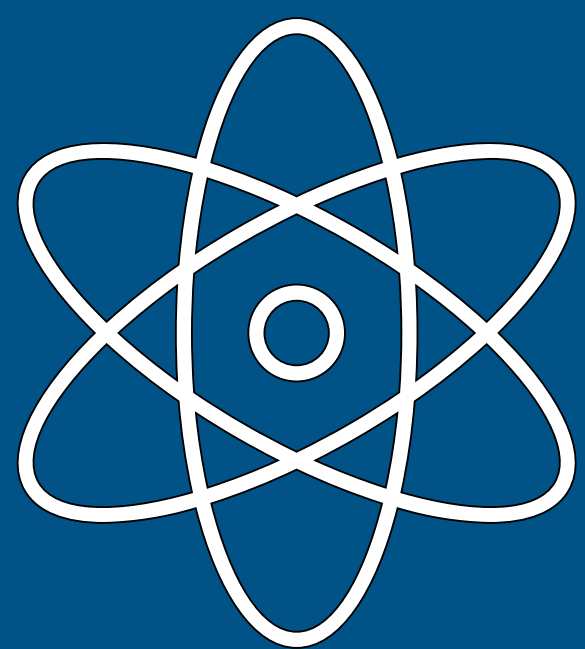


Table 1. Sample Characteristics

Characteristics	Low Care Needs	Moderate Care Needs	High Care Needs
Age, mean (SD)	79.04 (8.41)	80.56 (8.68)	81.94 (8.75)
Female, %	60.67	62.24	23.71
Race			
White, %	83.95	83.34	82.06
Black, %	9.01	9.66	11.04
Other, %	7.04	7.00	6.90
Dual Eligible, %	19.84	24.26	29.29
Charlson Score, Mean (SD)	1.91 (2.01)	2.31 (2.11)	2.76 (2.16)
Key outcomes (unadjusted)			
HH visits, mean (SD)	20.53 (20.44)	28.61 (28.26)	44.61 (48.05)
ED visits, mean (SD)	0.81 (1.13)	1.05 (1.31)	1.32 (1.54)
HH Payments, mean (SD)	4126.73 (2998.76)	5342.15 (4027.56)	7500.91 (5884.99)

Table 2. Adjusted Means by ADRD Status and Care Needs

Outcomes	ADRD Status	Low Care Needs	Moderate Care Needs	High Care Needs	Interaction P-value
Prior Acute Inpatient Stays	ADRD-Unlikely	0.29	0.38	0.47	<.0001
	ADRD-Possible	0.78	0.80	0.86	<.0001
	ADRD-Likely	0.60	0.54	0.50	<.0001
Prior SNF Admissions	ADRD-Unlikely	1.24	1.36	1.54	<.0001
	ADRD-Possible	1.85	1.84	2.03	<.0001
	ADRD-Likely	1.51	1.37	1.40	<.0001
Prior Hospice Utilization	ADRD-Unlikely	0.03	0.06	0.12	<.0001
	ADRD-Possible	0.06	0.09	0.13	<.0001
	ADRD-Likely	0.07	0.09	0.15	<.0001
30 Day Readmission Rate	ADRD-Unlikely	0.21	0.28	0.40	<.0001
	ADRD-Possible	0.46	0.50	0.62	<.0001
	ADRD-Likely	0.30	0.26	0.30	<.0001

Current Year HH Payments

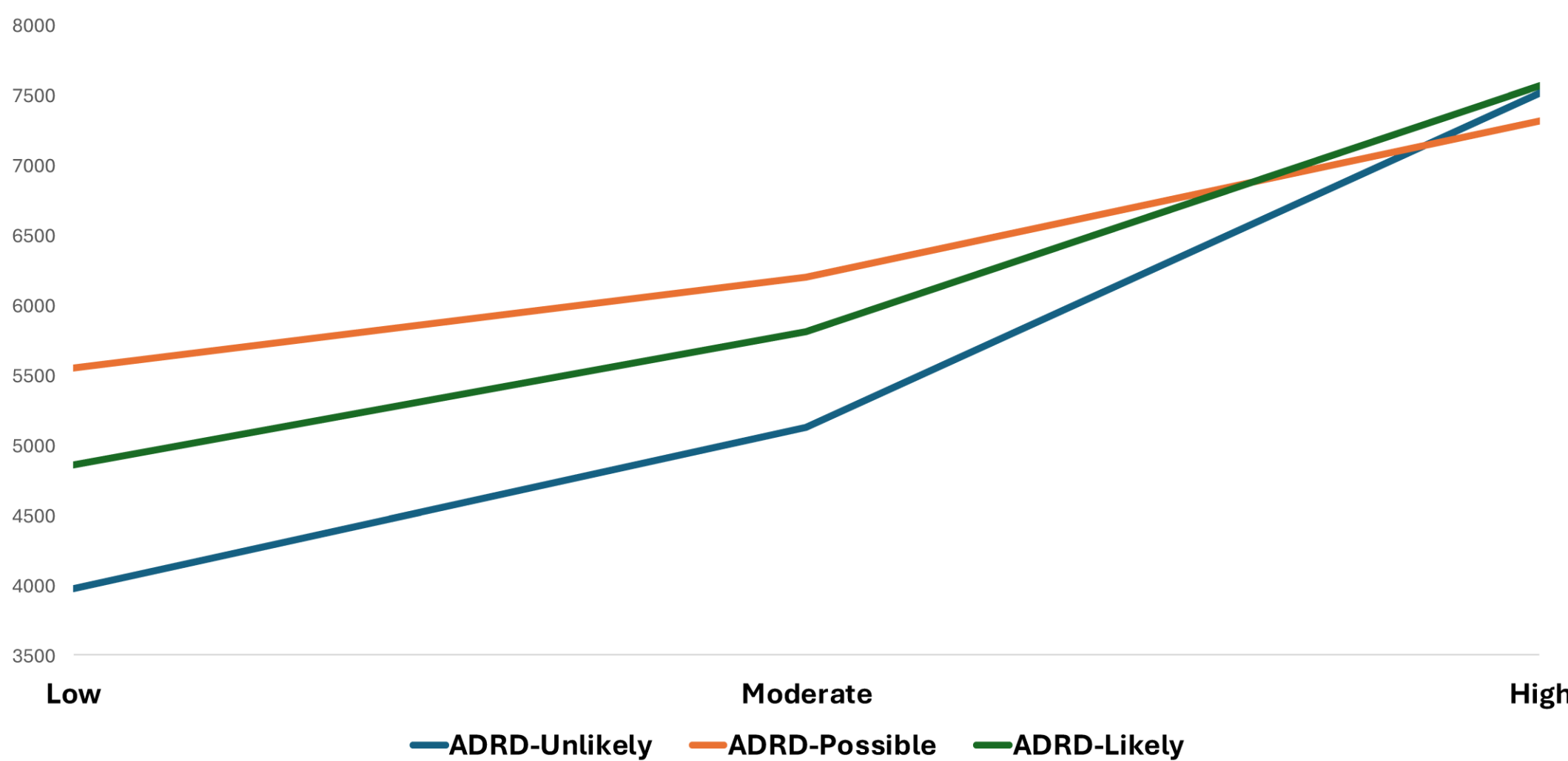
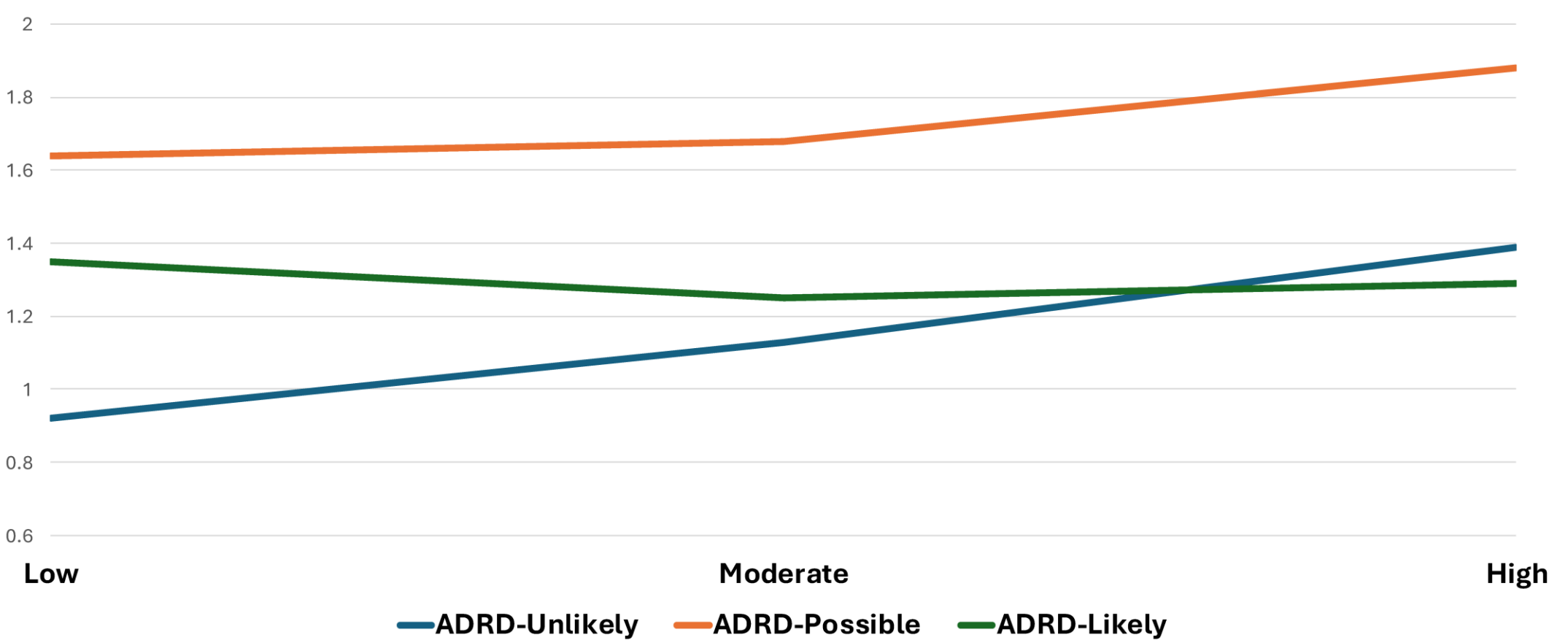


Figure 1. Adjusted mean Medicare HH payments by Care Needs Scale category and ADRD status. Estimates were derived from multivariable gamma regression models with a log link adjusted for covariates. Medicare payments increased substantially with higher care needs across all ADRD groups. A significant Care Needs x ADRD status interaction ($p<0.0001$) indicated that the relationship between care needs and HH payments varied according to ADRD status.

Figure 2. Adjusted mean prior annual emergency department visits by Care Needs Scale category and ADRD status. Higher care needs were associated with progressively greater ED utilization across all groups. A significant Care Needs x ADRD interaction ($p<0.00001$) indicated that the magnitude of the association between care needs and ED utilization differed by ADRD status.

Prior Year ED Visits



Prior Year HH Visits

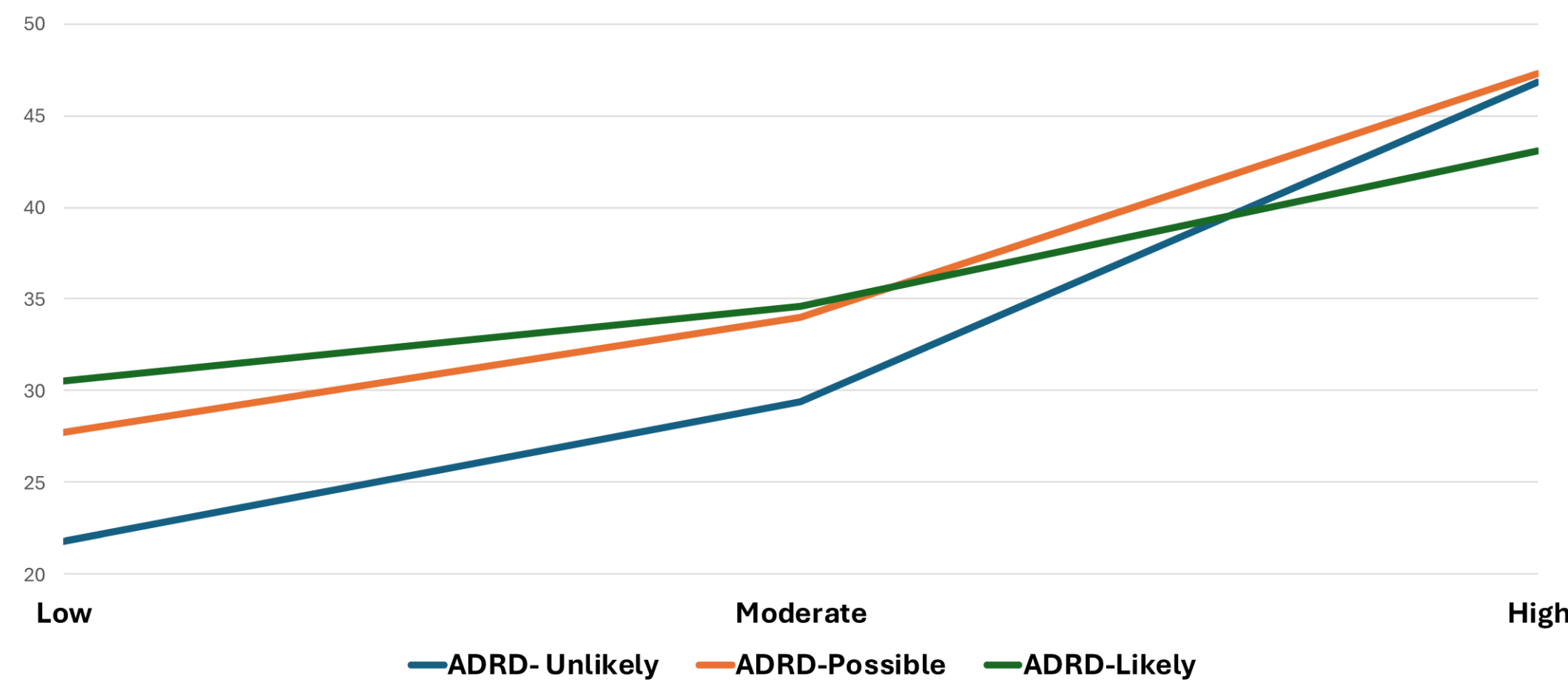


Figure 3. Prior Year HH Visits: Adjusted mean HH visits increased substantially across Care Need Scale categories. Differences by ADRD status were most pronounced among beneficiaries with low and moderate care needs and diminished among those with maximal care needs (Care Needs x ADRD interaction, $p<0.0001$).

Key References:

- Knox S, Horn J, Bynum J, Simpson K. Development of a Multidimensional Home Health Care Needs Scale: Implications for Dementia Care. Alzheimer's Dement. 2026;e70091. <https://doi.org/10.1002/bsa3.70091>
- Knox S, Downer B, Haas A, Middleton A, OttenbacherKJ. Function and caregiver support associated with readmissions during home health for individuals with dementia. Arch Phys Med Rehabil. 2020;101:1009-1016.
- Burgdorf JG, Ornstein KA, Liu B, et al. Variation in Home Healthcare use by Dementia Status among a national cohort of older adults. J Gerontol A Biol Sci Med Sci. 2024;79(3):1-8. doi:10.1093/gerona/glad270

