

# Grand Rounds

## D-CARE: Results of a Pragmatic Intervention Trial and Implications for the GUIDE model



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- All participants will be muted upon entry
- Enter **all questions** in the Zoom **Q&A/chat box** and send to Everyone
- Moderator will review questions from chat box and ask them at the end
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# D-CARE: Results of a Pragmatic Intervention Trial and Implications for the GUIDE model

IMPACT GRAND ROUNDS, April 16, 2026



PCORI: PCS-2017C1-6534 Comparative Effectiveness of Health System-based versus Community-based Dementia Care



NIA: 1 R01 AG061078-01 A Pragmatic Trial of the Effectiveness and Cost-effectiveness of Dementia Care

# Comprehensive Dementia Care

- Focuses on patient and caregiver and includes:
  - Continuous monitoring and assessment
  - Ongoing care plans
  - Psychosocial interventions
    - Aimed at persons living with dementia
    - Aimed at caregivers
  - Self-management
  - Medication management
  - Treatment of related conditions
  - Coordination of care

Boustani M, et al. An Alternative Payment Model To Support Widespread Use Of Collaborative Dementia Care Models. Health Aff (Millwood). 2019 Jan;38(1):54-59. PMID: 30615525.

# New Models of Comprehensive Care for Dementia

- **BRI Care Consultation:** by phone at CBOs by SWs, RNs, MFTs
- **MIND at Home:** in person at home by staff, RNs, geri psychiatrists
- **The Care Ecosystem:** by phone by unlicensed staff, APN, SW, Pharmacist
- **Indiana University Healthy Aging Brain Center:** in-person visits in community by staff, RN, SW, Psychologist, MD
- **The UCLA Alzheimer's and Dementia Care Program:** in-person NP or PA co-management with PCP
- **Integrated Memory Care:** in-person primary care of PLWD by NPs
- **Dementia care management integrating palliative care:** calls from a RN or SW, evidence-based protocols for behavioral and palliative care issues

*Lees Haggerty K, et al. Recommendations to Improve Payment Policies for Comprehensive Dementia Care. J Am Geriatr Soc. 2020 Nov;68(11):2478-2485. PMID: 32975812.*

# The D-CARE Study

## Goal of D-CARE Study

To compare the effectiveness and cost-effectiveness of community-based (CBDC) versus health system-based dementia care (HSDC) and to compare both interventions to Usual Care (UC) in:

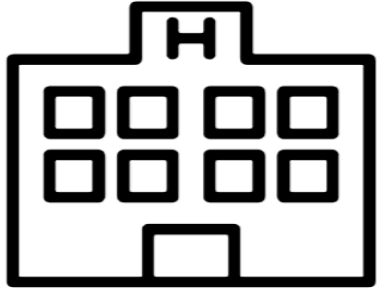
- Pragmatic randomized clinical trial
- 4 clinical trial sites
  - Wake Forest Baptist Health/Atrium
  - Geisinger Health;
  - Baylor Scott & White Health
  - University of Texas Medical Branch

# The D-CARE Study

## Study Design and Sample

- Pragmatic 18-month randomized (patient/caregiver dyad) 3-arm superiority trial
- **Sample size:** 2150 dyads, 1000 in each intervention arm and 150 in the Usual Care group
- **Inclusion criteria:**
  - ✓ community-living (not nursing home or hospice)
  - ✓ diagnosis of dementia
  - ✓ have family or friend caregiver(s) who spoke English or Spanish and had a phone
  - ✓ have a partnering physician
- **Randomization:** 7:7:1 ratio
- **Intervention and follow-up:** 18 months

# Interventions:



## **Health-Systems Based Dementia Care**

(Based on the UCLA ADC)

- Dementia care delivered by a nurse practitioner or physician's assistant  
Dementia Care Specialist based within health system
- Writes orders and accessible 24/7, 365 days/year
- Telemedicine or face-to-face visits



## **Community-Based Dementia Care**

(Based on BRI Care Consultation)

- Dementia care delivered by a social worker or nurse Care Consultant based at a community-based organization
- Provides coaching on doctors' visits & educational resources
- Telephone visits



## **Usual Care**

Provides standardized educational materials and as-needed referral to the Alzheimer's Association Helpline

# Outcomes: Interviews at 3, 6, 12, 18 months & CMS data

<b>Primary</b>	NPI-Q Severity Scale (person living with dementia)		
	Modified Caregiver Strain Index (caregiver)		
<b>Secondary</b>	NPI-Q Distress (caregiver)		
	Caregiver depression (PHQ-8)		
	Caregiver self-efficacy		
<b>Tertiary</b>	Cognition (MOCA)	Inpatient hospital use	Dementia Burden Scale-Caregiver
	Functional status (FAQ)	Inpatient rehabilitation use	Clinical Benefit
	Quality of Life in Alzheimer’s Disease	Post-acute SNF use	Caregiver Rating of Dementia Care Quality
		Hospice use	
	Goal attainment scaling	Long-term nursing home use	Positive Aspects of Caregiving
	Mortality	Cost-effectiveness analysis	Caregiver satisfaction with dementia care
	Days spent at home		

# Other measures

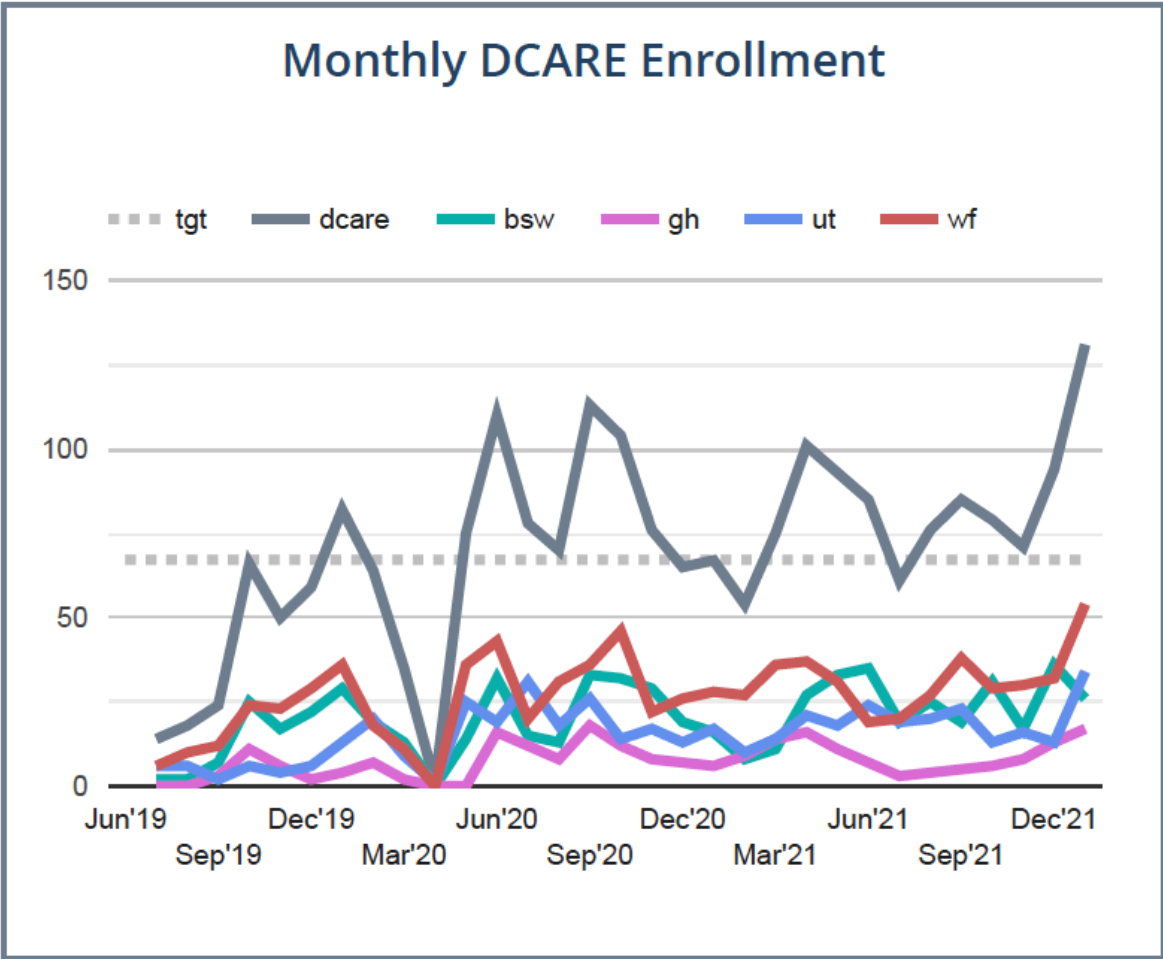
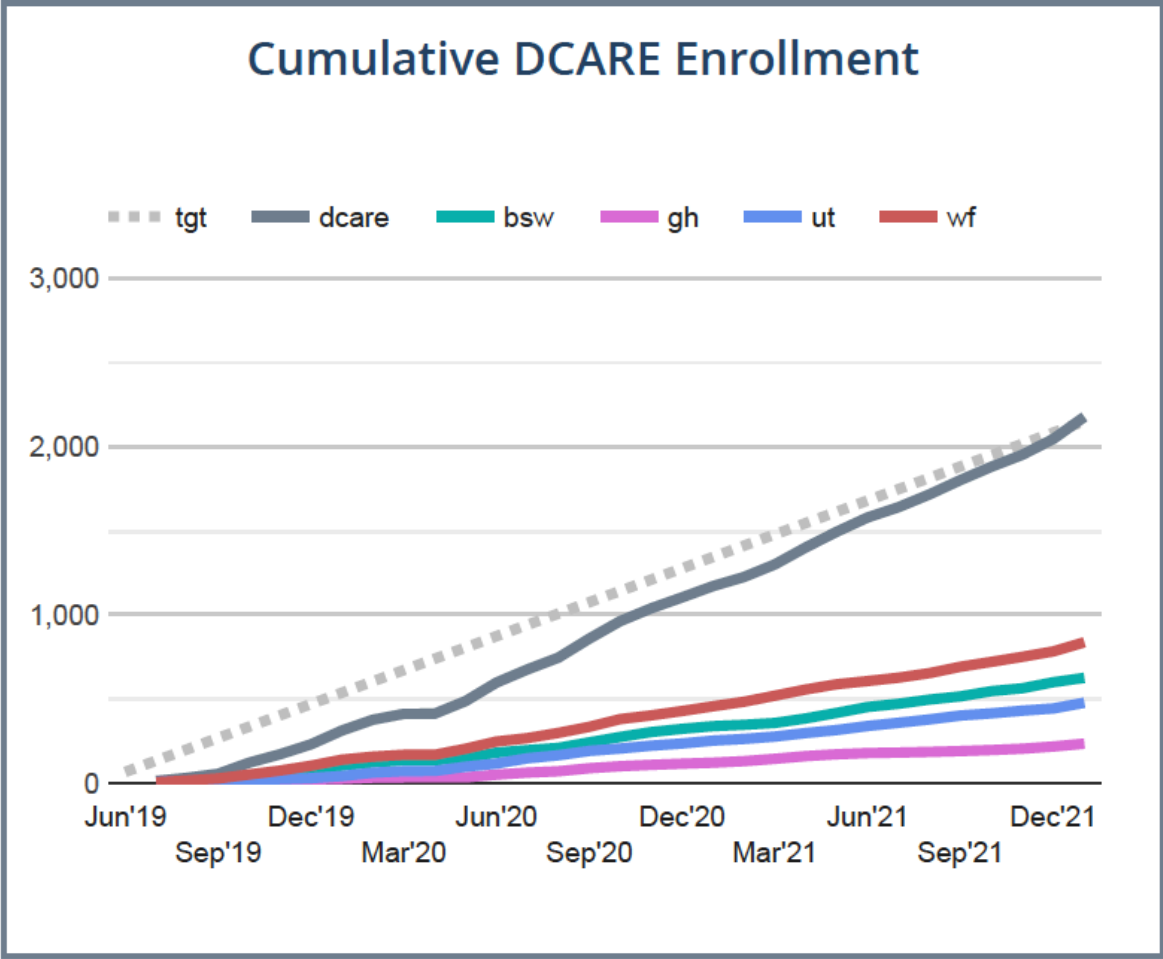
<b>Physician Feedback Questionnaire</b>	Physician satisfaction with dementia care (5 items)-18 months
<b>Fidelity and quality measures</b>	Health Systems Dementia Care (HSDC) Community Based Dementia Care (CBDC)
<b>COVID-19 impact questionnaire</b>	<ul style="list-style-type: none"><li>▪ A 10-item questionnaire assessing the impact on PLWD and caregivers was implemented on January 10, 2021.</li><li>▪ An 11<sup>th</sup> question on COVID vaccine status was implemented on May 7, 2021.</li></ul>
<b>Dementia Quality Indicators</b>	<ul style="list-style-type: none"><li>• 15 Dementia Quality of Care indicators</li><li>• EHR Abstraction (HSDC, UC)</li><li>• CCIS (CBDC)</li></ul>

# Analysis

## **Heterogeneity of Treatment Effects (HTE) across sites and in 6 subgroups:**

1. high vs. low patient function by FAQ
2. high vs. low patient function by ADL
3. high vs. low NPI-Q Severity
4. high vs. low MCSI at baseline
5. spouse caregiver vs. other caregiver
6. white non-Latino vs. nonwhite or Latino

# D-CARE Recruitment: June 2019 – January 2022 (30 mo)



# Death and Withdrawal Rates per 100 Person Years of Follow-up (PYF)

(Data as of 10/17/23)

Site	Enrolled	Observed PYF	Died	Death rate per 100 PYF	Withdrew	Withdrawal rate per 100 PYF
<b>BSWH</b>	626	752	141	18.7	79	10.5
<b>GMC</b>	235	301	43	14.3	14	4.6
<b>UTMB</b>	478	585	128	21.9	49	8.4
<b>WFU</b>	837	1046	202	19.3	49	4.7
<b>Total</b>	<b>2176</b>	<b>2684</b>	<b>514</b>	<b>19.1</b>	<b>191</b>	<b>7.1</b>

# Completeness of Follow-Up Interviews

(Follow-Up data as of 10/17/23)

Follow-Up Timepoint	Expected*	Died	Withdrawn**	% Died and Withdrawn	Alive and on study	Completed interview	% completed interview of resolved
<b>3-month</b>	2155	62	57	5.5%	2036	1824	<b>89.6%</b>
<b>6-month</b>	2030	84	34	5.8%	1912	1737	<b>90.8%</b>
<b>12-month</b>	1906	177	50	11.9%	1679	1528	<b>91.0%</b>
<b>18-month</b>	1676	191	14	12.2%	1471	1343	<b>91.3%</b>

\* Expected: alive and on study and reached follow-up interview window

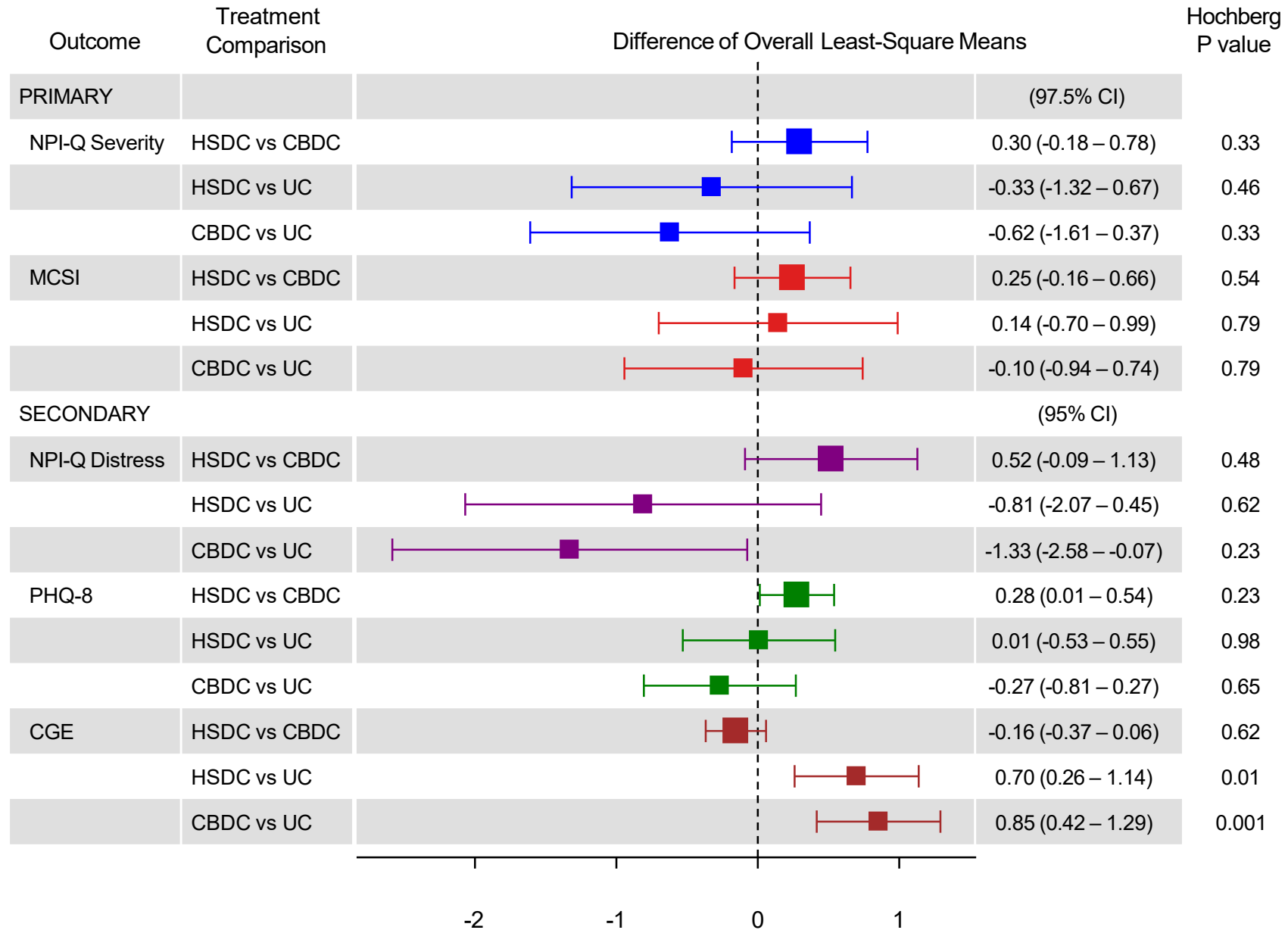
\*\* Died or withdrawn: number of deaths and withdrawals (full study withdrawal and passive participation) within the follow-up window

- Full study withdrawal: withdrawal from study interventions and unwilling to provide study outcomes by questionnaire/interview or allow analysis of medical records and CMS claims data
- Passive participation: withdrawal from study interventions and unwilling to provide study outcomes by questionnaire/interview but willing to allow analysis of medical records and CMS claims data

# Results: Baseline Characteristics

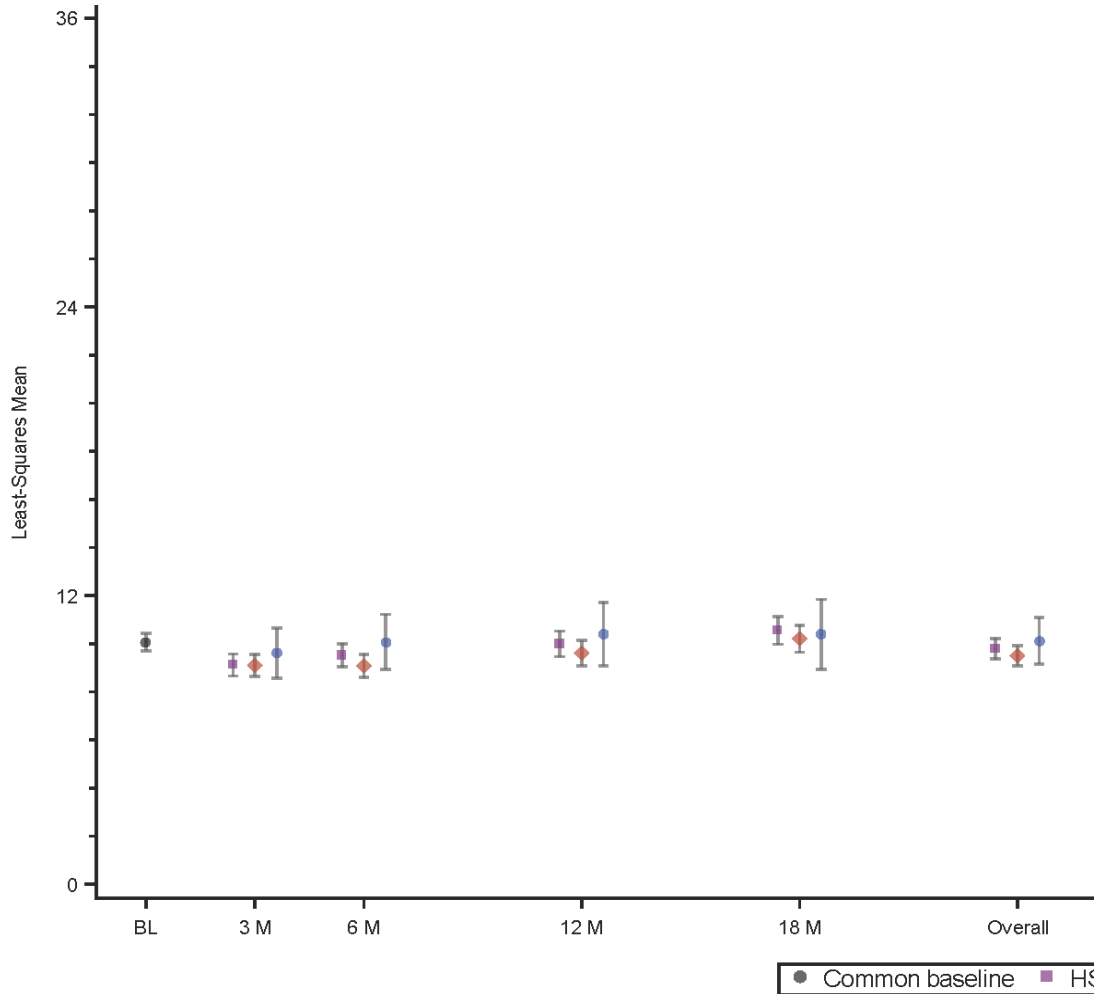
Characteristic	Health System Dementia Care	Community-Based Dementia Care	Usual Care
	(N=1016)	(N=1016)	(N=144)
<b>Age, mean (SD), y</b>	80.6 (8.3)	80.6 (8.7)	81.0 (8.4)
<b>Female</b>	611 (60.1)	583 (57.4)	77 (53.5)
<b>Black and/or Hispanic, No. (%)</b>	213 (21.0)	201 (19.8)	34 (23.6)
<b>Lives at home with caregiver</b>	723 (71.2)	753 (74.1)	105 (72.9)
<b>Lives at Assisted living facility</b>	57 (5.6)	50 (4.9)	9 (6.2)
<b>3-item MoCA, median (q1, q3) (0-12)</b>	3.0 (2.0, 6.0)	3.0 (2.0, 6.0)	4.0 (2.0, 6.0)
<b>Functional Assessment Questionnaire, median (q1, q3) (0-30, worse)</b>	24.0 (17.0, 28.0)	23.0 (17.0, 27.0)	23.0 (15.0, 28.0)
<b>Katz Index , median (q1, q3) (0-6)</b>	5.0 (3.0, 6.0)	5.0 (3.0, 6.0)	5.0 (4.0, 6.0)
<b>NPI-Q Severity, median (0-36, worse)</b>	9.0 (5.0, 15.0)	9.0 (5.0, 14.0) [990]	9.0 (5.0, 14.5)
<b>CG Relationship to person with dementia, No. (%)</b>			
<b>Son, daughter, or son-/daughter-in-law</b>	513 (50.5)	487 (47.9)	65 (45.1)
<b>Spouse/Partner</b>	443 (43.6)	470 (46.3)	70 (48.6)
<b>Modified Caregiver Strain Index, median (q1, q3)</b>	11.0 (6.0, 15.0)	10.0 (6.0, 15.0)	11.0 (6.0, 16.0)
<b>NPI-Q Distress, median (q1, q3)</b>	11.0 (4.0, 19.0)	11.0 (5.0, 19.0)	12.0 (5.0, 18.0)
<b>PHQ-8, median (q1, q3)</b>	3.0 (1.0, 7.0)	4.0 (1.0, 7.0)	4.0 (1.0, 8.0)
<b>Caregiver Self-efficacy, median (q1, q3)</b>	13.0 (11.0, 16.0)	13.0 (11.0, 16.0)	13.0 (11.0 – 16.0)

# Results: Primary and Secondary Outcomes Over All Timepoints

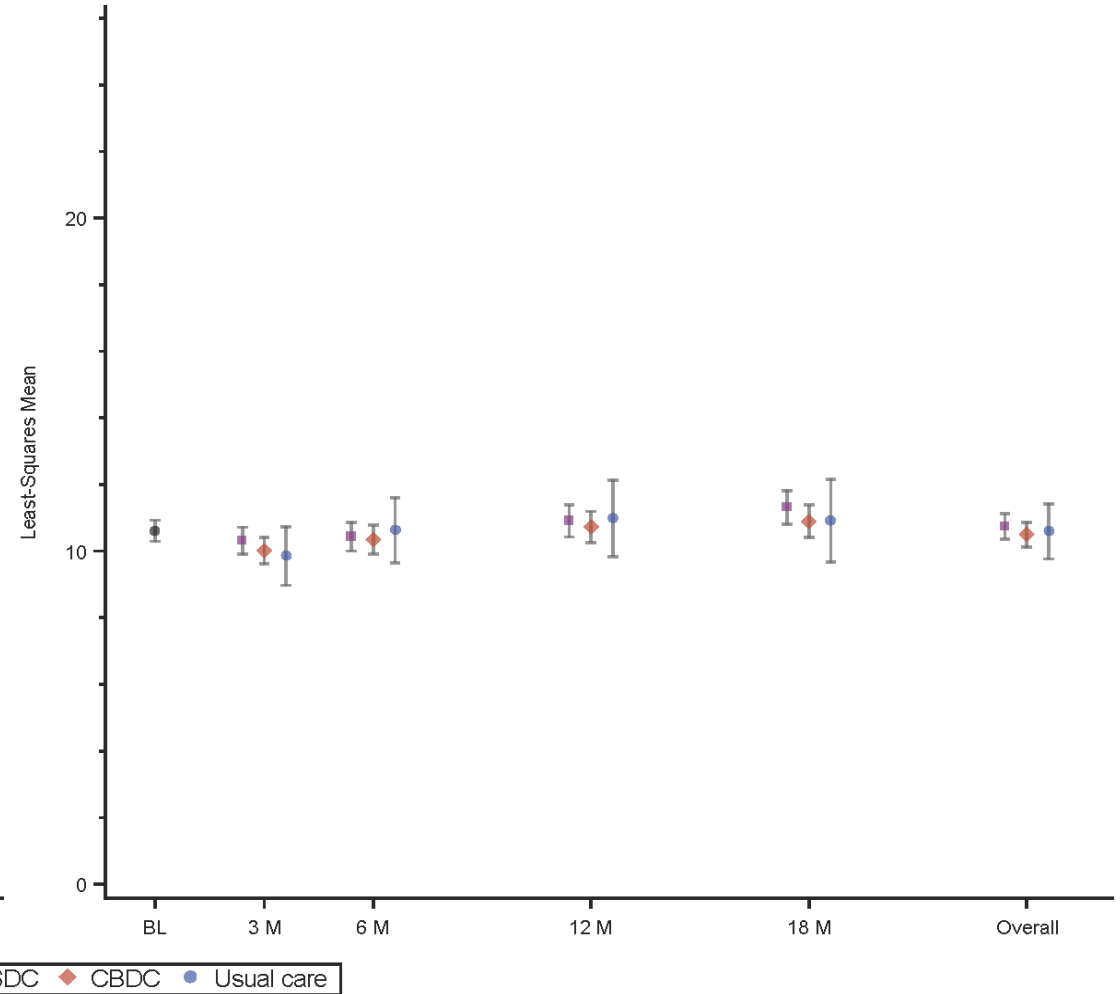


# Results: Primary Outcomes Over Time (97.5% CIs)

**Neuropsychiatric Inventory Questionnaire: Severity**  
(0-36, higher scores indicate more severe symptoms)

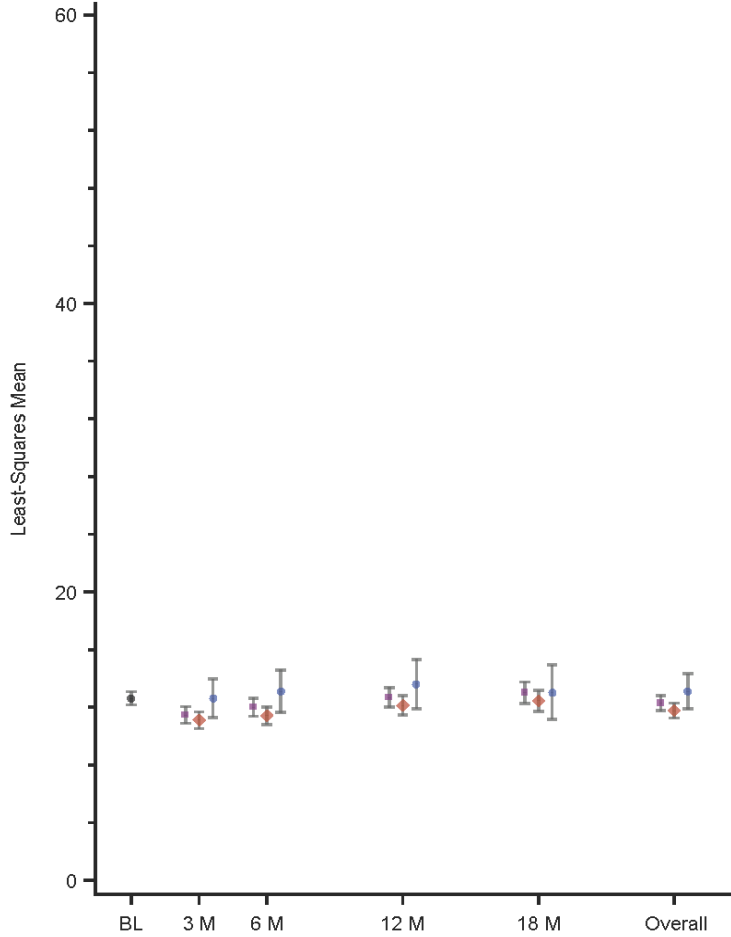


**Modified Caregiver Strain Index**  
(0-26, higher scores indicate greater strain)

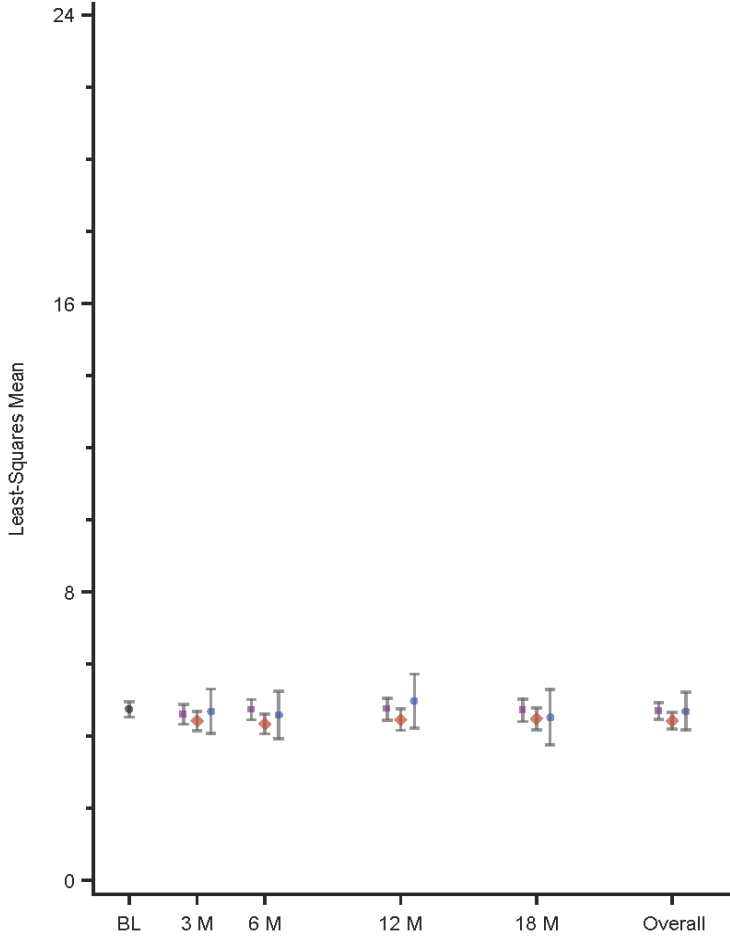


# Results: Secondary Outcomes Over Time (95% CIs)

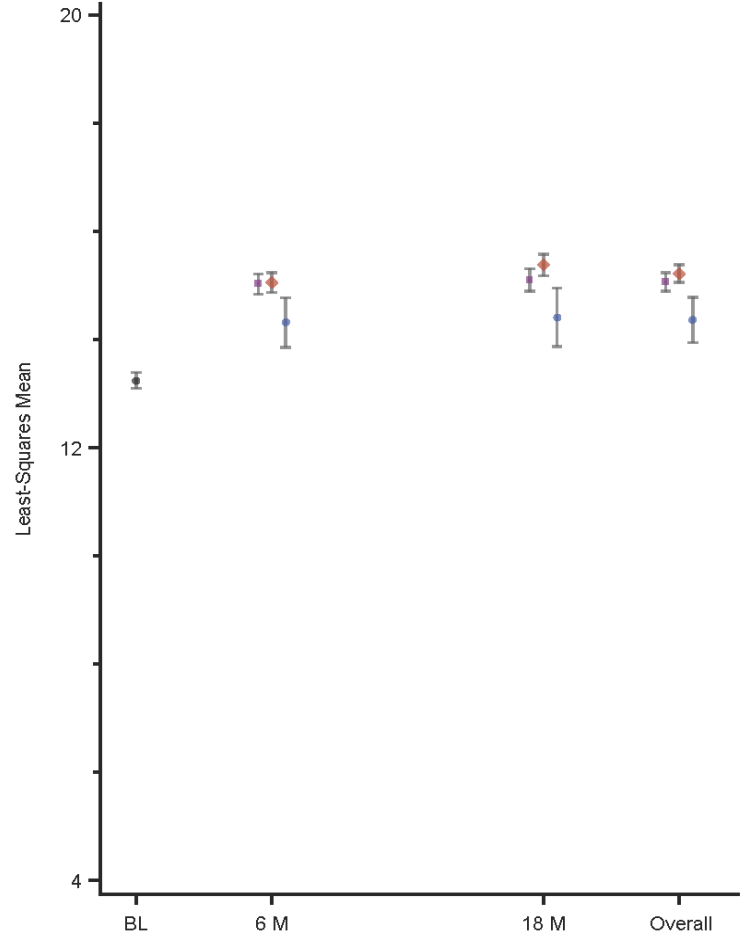
**Neuropsychiatric Inventory Questionnaire: Distress**  
(0-60, higher scores indicate more severe distress)



**Patient Health Questionnaire (8-item)**  
(0-24, higher scores indicate more severe depression)



**Caregiver Self-Efficacy**  
(4-20, higher scores indicate greater self-efficacy)



● Common baseline ■ HSDC ◆ CBDC ● Usual care

# Significant vs. Non-significant Outcomes Scorecard

<b>Primary</b>	NPI-Q Severity Scale (person living with dementia)		
	Modified Caregiver Strain Index (caregiver)		
<b>Secondary</b>	NPI-Q Distress (caregiver)		
	Caregiver depression (PHQ-8)		
	<b>Caregiver self-efficacy</b>		
<b>Tertiary</b>	Cognition (MOCA)	Inpatient hospital use	Dementia Burden Scale-Caregiver
	Functional status (FAQ)	Inpatient rehabilitation use	Clinical Benefit
	Quality of Life in Alzheimer's Disease	Post-acute SNF use	<b>Caregiver Rating of Dementia Care Quality (CBDC only)</b>
		Hospice use	
	Goal attainment scaling	Long-term nursing home use	Positive Aspects of Caregiving
	Mortality	Cost-effectiveness analysis	<b>Caregiver satisfaction with dementia care</b>
	Days spent at home		

# Interpreting D-CARE's Findings

At odds with some observational studies and clinical trials of similar interventions. Potential reasons:

- Highly pragmatic trial using clinical and community staff in real-world settings to deliver the treatments. Did this affect intervention fidelity?
- Usual Care may have provided access to more resources than in other trials
- CTS may have implemented other quality efforts that led to better care among those in Usual Care
- Choice of primary outcomes may not have captured benefit
- The vast majority of the study was conducted during the COVID pandemic, which may have exerted independent effects and impeded the ability to fully deliver HSDC and CBDC as designed

# D-CARE Next Steps: Current Grant

- Goal Attainment Scaling (in process)
- Medical record abstraction for fidelity of HSDC intervention, dementia-related quality-of-care, and elder mistreatment (completed, analysis in process)
- Utilization through 18 months (delayed pending release of CMS Part C data)
- Net costs (intervention costs minus any the cost offsets from reduced medical care and caregiving)
  - Primary perspective of Medicare, both FFS and MA
  - Secondary societal perspective including costs to Medicaid and consumers in addition to Medicare

# D-CARE: Future Steps

- End-of-life care (1RF1AG089510-01, PI Jennings)
- Caregiver utilization (submitted R01 grant)
- Differences in quality of care across treatment groups and the relationship of quality of care to clinical and utilization outcomes (submitted R01 renewal)
- Effect of COVID-19 on intervention delivery and outcomes (R01 renewal)
- Role of caregiver self-efficacy as a predictor of outcomes (R01 renewal)
- Comparison of use of potentially harmful and appropriate medications across treatment groups (submitted R03)

# D-CARE Conclusions

- D-CARE found no significant differences across groups on persons living with dementia and caregiver clinical outcomes, except for caregiver self-efficacy, satisfaction, and ratings of quality which were significantly higher in both HSDC and CBDC compared to Usual Care.
- Effects on personal goal attainment, quality of dementia care, health care utilization, and net costs remain to be determined
- Many unanswered questions about why the main findings were null
- Future proposed research will build upon the rich data set created by D-CARE
- Set the stage for GUIDE

# Guiding an Improved Dementia Experience (GUIDE) Model

On July 31, 2023, the Centers for Medicare & Medicaid Services (CMS) announced a new voluntary nationwide 8-year model – the Guiding an Improved Dementia Experience (GUIDE) Model that aims to:

- improve the quality of life for people living with dementia,
- reduce the burden and strain on unpaid caregivers of people living with dementia, and
- prevent or delay long-term nursing home care



# GUIDE Model: Design

- **Defining a standardized approach to dementia care delivery**
- **Providing an alternative payment methodology** – CMS will provide a monthly per-beneficiary payment to support a team-based collaborative care approach
- **Addressing unpaid caregiver needs** –by caregiver training and support services, including 24/7 access to a support line, as well as connections to community-based providers.
- **Respite services** – Payment for respite services, which are temporary services provided to a beneficiary in their home, at an adult day center, or at a facility that can provide 24-hour care
- **Screening for Health-Related Social Needs** – and help navigate them to CBOs to address

# GUIDE Model: Beneficiary Eligibility

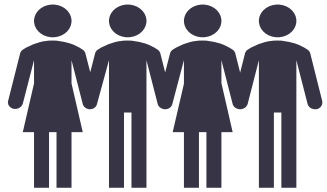


- Diagnosis of dementia
- Medicare is their primary payer
- Enrolled in Medicare Part A and B (not in MA, SNPs or PACE)
- Not enrolled in hospice
- Not residing in long-term nursing home

# GUIDE Model: Payment

- Per-beneficiary-per-month payment
- Amount per beneficiary by tier (5 categories) based on:
  - Whether beneficiaries have a caregiver
  - Severity of dementia (mild, moderate, or severe)
- Payment adjustments based on geography, health equity, and performance
- Respite care payment for moderate or severe patients up to an annual cap of \$2500, adjusted for geographic area and updated yearly

# GUIDE: Where We Are on April 7, 2026



**7.2 million Americans with  
Alzheimer's disease**

**390 GUIDE sites anticipated to care for  
200,000 patients (~40,000 now)**

- 96 Established-track (began providing care July 2024)
- 294 New-track (began providing care July 2025)
- 69 dropouts (as of March 2026)

Questions?





**Questions?**

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[IMPACTCollaboratory@hsl.Harvard.edu](mailto:IMPACTCollaboratory@hsl.Harvard.edu)

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# D-CARE: Publications

- “D-CARE: The Dementia Care Study: **Design** of a Pragmatic Trial of the Effectiveness and Cost Effectiveness of Health System-Based Versus Community-Based Dementia Care Versus Usual Dementia Care.” J Am Geriatr Soc. 2020 Nov;68(11):2492-2499. doi: 10.1111/jgs.16862. Epub 2020 Oct 6. Erratum in: J Am Geriatr Soc. 2022 Jun;70(6):E19. doi: 10.1111/jgs.17200. PMID: 32949145; PMCID: PMC8086629.
- “The dementia care study (D-CARE): **Recruitment** strategies and demographic characteristics of participants in a pragmatic randomized trial of dementia care.” Alzheimers Dement. 2024 Apr;20(4):2575-2588. doi: 10.1002/alz.13698. Epub 2024 Feb 15. PMID: 38358084; PMCID: PMC11032530.
- “Utility of a short, telephone-administered version of the Montreal Cognitive Assessment.” J Am Geriatr Soc. 2021 Oct;69(10):2741-2744. doi: 10.1111/jgs.17318. Epub 2021 Jun 17. PMID: 34106473; PMCID: PMC8516406.
- “Considerations when designing and implementing pragmatic clinical trials that include older Hispanics.” Ethn Dis. 2024 Apr 10;33(2-3):76-83. doi: 10.18865/ed.33.2-3.076. PMID: 38845738; PMCID: PMC11145730.

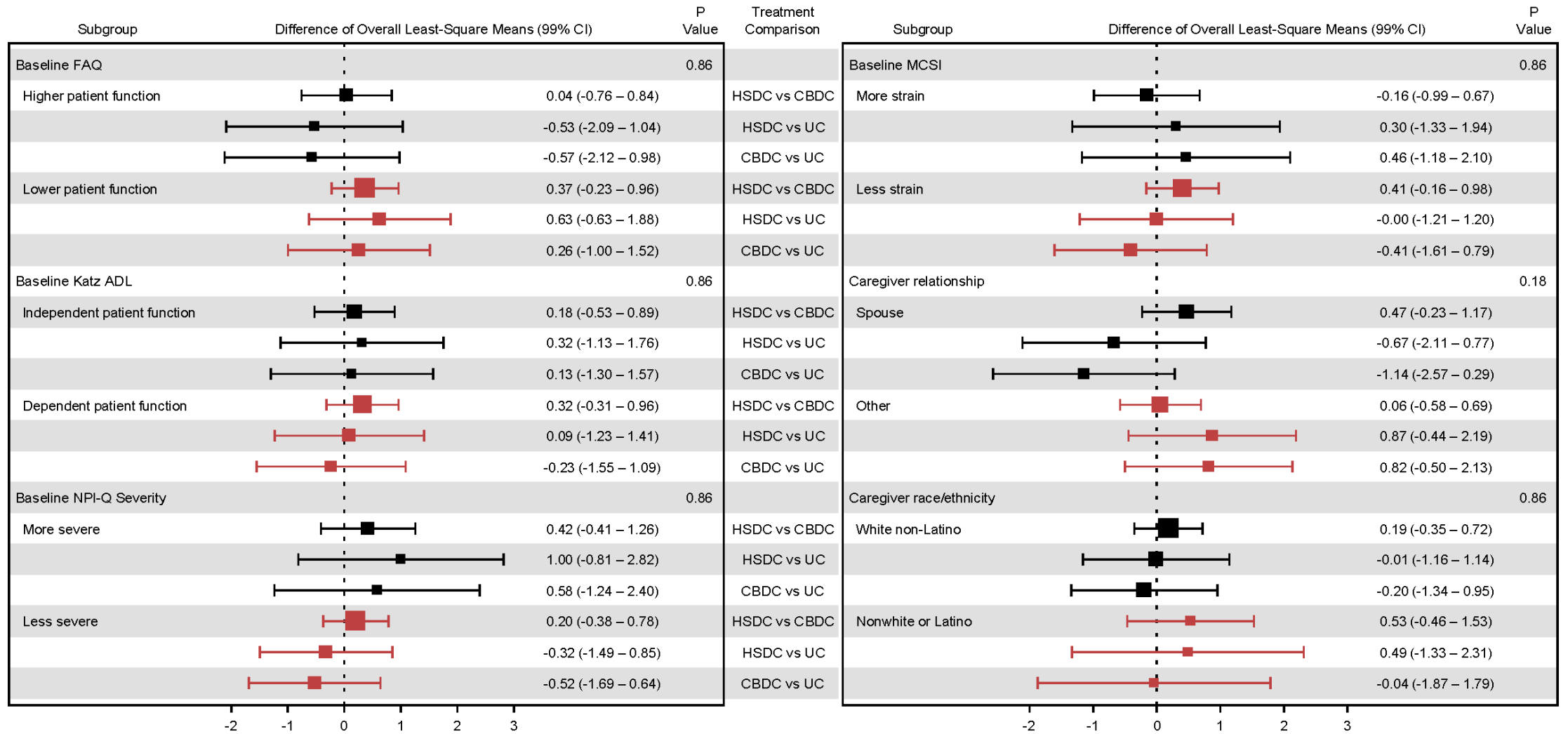
# D-CARE: Publications

- Dissemination of a successful dementia care program: Lessons from early adopters” J Am Geriatr Soc. 2022 Sep;70(9):2677-2685. doi: 10.1111/jgs.17887. Epub 2022 May 25. PMID: 35553424; PMCID: PMC9489618. 6
- **“Health System, Community-Based, or Usual Dementia Care for Persons With Dementia and Caregivers”** JAMA. 2025 Mar 18;333(11):950-961. doi: 10.1001/jama.2024.25056. Erratum in: JAMA. 2025 May 6;333(17):1549. doi: 10.1001/jama.2025.4753. PMID: 39878968; PMCID: PMC11780506.
- **“Patient and Caregiver Outcomes of Health System, Community-Based, and Usual Dementia Care”** JAMA Intern Med. 2025 Oct 1;185(10):1227-1236. doi: 10.1001/jamainternmed.2025.4247. PMID: 40892399; PMCID: PMC12406143.
- Self-Efficacy Change Among Diverse Family Caregivers in Dementia Care *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, 2026 Jan 12;81(2):gbaf233. doi: 10.1093/geronb/gbaf233. PMID: 41243731.

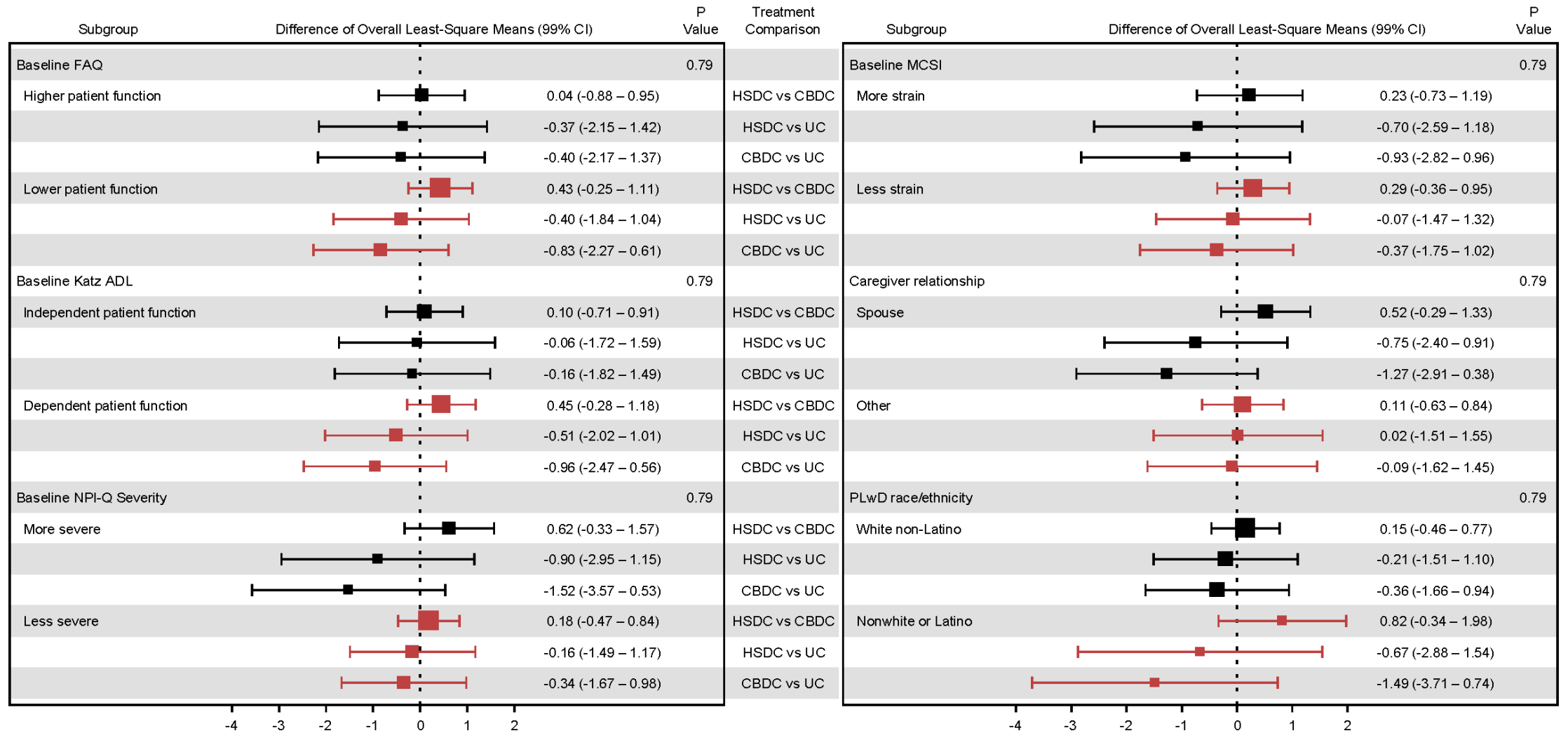
# D-CARE: Publications in the Pipeline

- The Effects of Caregiver Strain on the Impact of COVID19 among Caregivers (In process)
- Associations of baseline stress with dyad type and race/ethnicity in caregivers of (In process)
- Impact of PLWD living arrangement on caregiver psychosocial characteristics (Submitted)
- Shared Stories: The D-CARE Experience (In process)
- Factors affecting Caregiver Self-efficacy (Submitted)
- Many more in earlier stages

# Results: Subgroup Analyses for MCSI



# Results: Subgroup Analyses for NPI-Q Severity



# Results: Primary and Secondary Outcomes Over Time

