
Dementia Screening Toolkit (DST) in Family Health Clinic

Dr. Timothy Chang, MD, PhD, Neurology Department

Dr. Satpal S. Wadhwa, PhD, Neurology Department

Samantha Shah, BS, Neurology Department

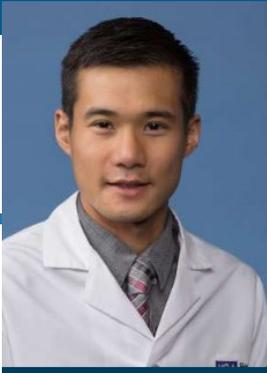
Gabriela Islas Huerta, BS, BA, Neurology Department

Dr. Mirella Díaz-Santos, PhD, Neurology Department

Dr. Michelle Bholat, MD, MPH, Family Medicine

Dr. Blanca Campos, MD, Family Medicine

INTERDISCIPLINARY TEAM



Timothy Chang, MD, PhD, Neurology Department
 Samantha Shah, BS, Neurology Department
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 Gabriela Islas Huerta, BS, BA, Neurology Department
 Mirella Díaz-Santos, PhD, Neurology Department



UFHC: Michelle Bholat, MD., MPH
 Blanca Campos, MD, Marjan Dehghanian, BS



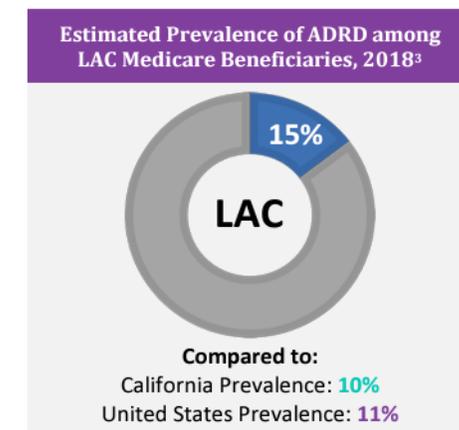
Alzheimer’s in Los Angeles County

- In 2022, Alzheimer’s Disease (AD) affected more than 166,000 adults aged 65 and older in Los Angeles County (Los Angeles County Department of Public Health, 2023).
- By 2040, it is expected for the number of individuals affected by AD to increase by 150% across all races and ethnicities.
 - **By 223% for Latinos/e-Hispanics**
 - **By 153% for Blacks/ African Americans**

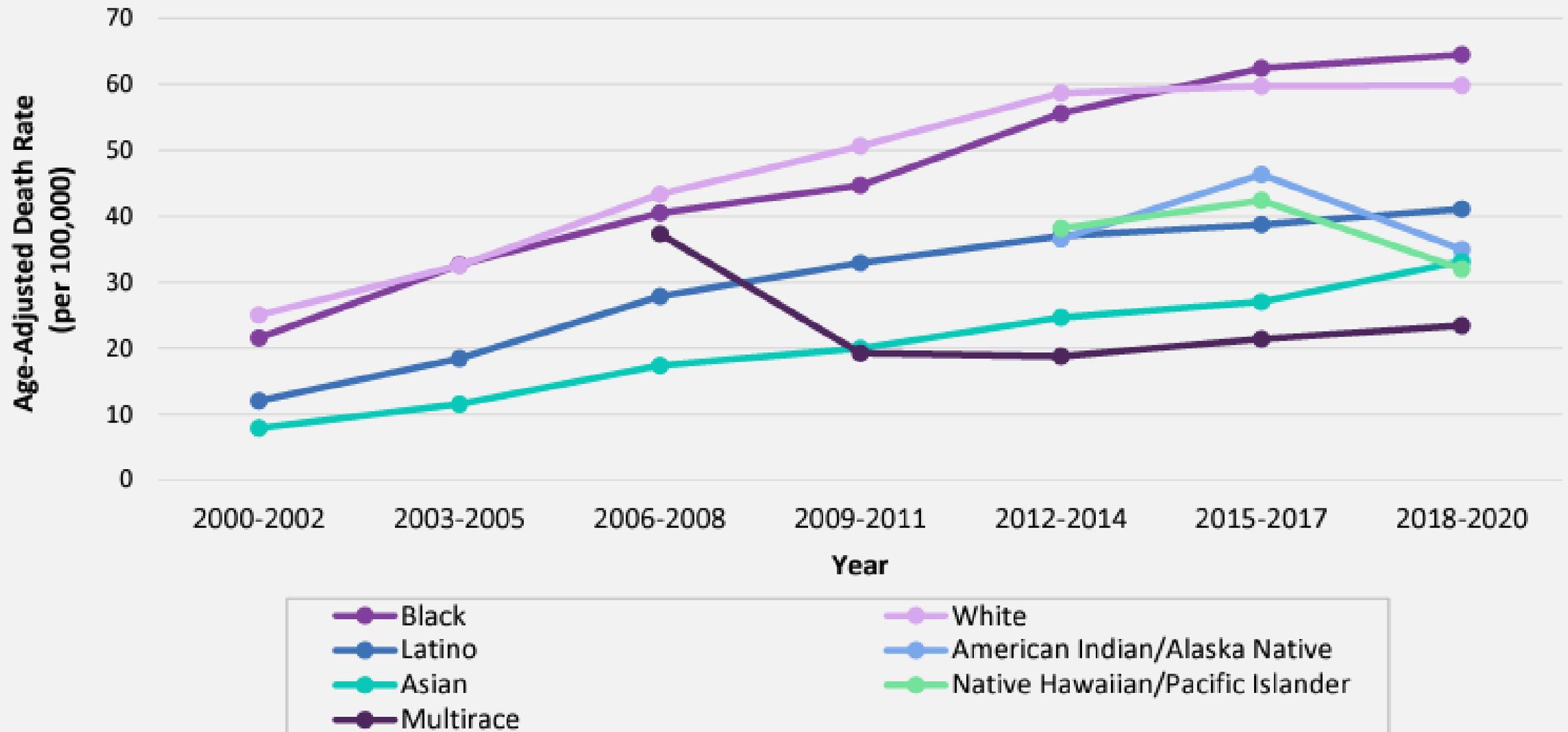
Snapshot of Alzheimer’s Disease and Related Dementias in Los Angeles County

Alzheimer’s disease and related dementias (ADRD) is a growing public health issue in Los Angeles County (LAC). In 2020, ADRD was the 3rd leading cause of death in LAC, accounting for over 6,600 deaths.¹ Alzheimer’s disease (AD) is the most common type of dementia. Currently, more than 166,000 individuals aged 65 and older have AD alone in LAC.² By 2040, this number is expected to increase by 150% and impact more than 405,000 individuals. This snapshot provides LAC-specific data on ADRD, AD, and caregiving.

Estimated Number and Percent Change in People 65+ with AD by Race/Ethnicity in LAC, 2019 and 2040 ²			
Race/Ethnicity	2019	2040	% Change
Non-Latino White/Caucasian	72,055	142,764	98%
Asian American/Pacific Islander	31,245	68,225	118%
Black/African American	13,962	35,341	153%
Other	2,173	6,072	179%
Latino	47,422	152,980	223%



Age-Adjusted Death Rate (per 100,000) for ADRD by Race/Ethnicity in LAC, 2000-2002 to 2018-2020¹



BOLD Center on Early Detection of Dementia: Toolkit for Health Systems

- The BOLD Infrastructure for Alzheimer’s Act was passed into law on December 31, 2018 ([P.L. 115-406](#)) [[PDF – 312 KB](#)] and amends the Public Health Service Act (Section 398A; 42 U.S.C. 280c-3-4).
- The activities outlined in BOLD are designed to create a uniform national public health infrastructure with a focus on issues such as:
 - 1.**Increasing early detection and diagnosis,
 - 2.Risk reduction, prevention of avoidable hospitalizations, and,
 - 3.Supporting dementia caregiving.
 - 4.It’s designed to promote implementation of CDC’s [Healthy Brain Initiative State and Local Public Health Partnerships to Address Dementia: The 2018-2023 Road Map](#) and the [Healthy Brain Initiative Road Map for Indian Country](#).

Los Angeles County Strategic Plan for AD/ADRD, 2023-2028

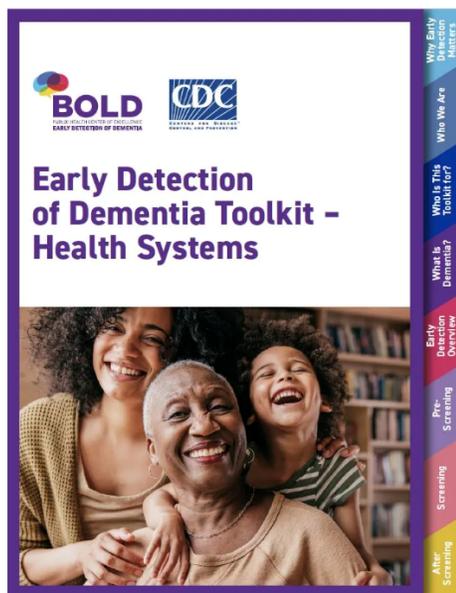
- 5-year regional strategic plan for Los Angeles County.
 - **Focus Area #1:** Hypertension Prevention & Control
 - **Focus Area #2:** Early Detection
 - Detection, Screening, Diagnosis
 - **Focus Area #3:** Advance Care Planning



The Los Angeles County
Strategic Plan for Alzheimer's
Disease and Related Dementias
2023-2028

RESOURCES

BOLD EARLY DETECTION TOOLKIT



[Early Detection of Dementia – Health System Provider Toolkit](#)

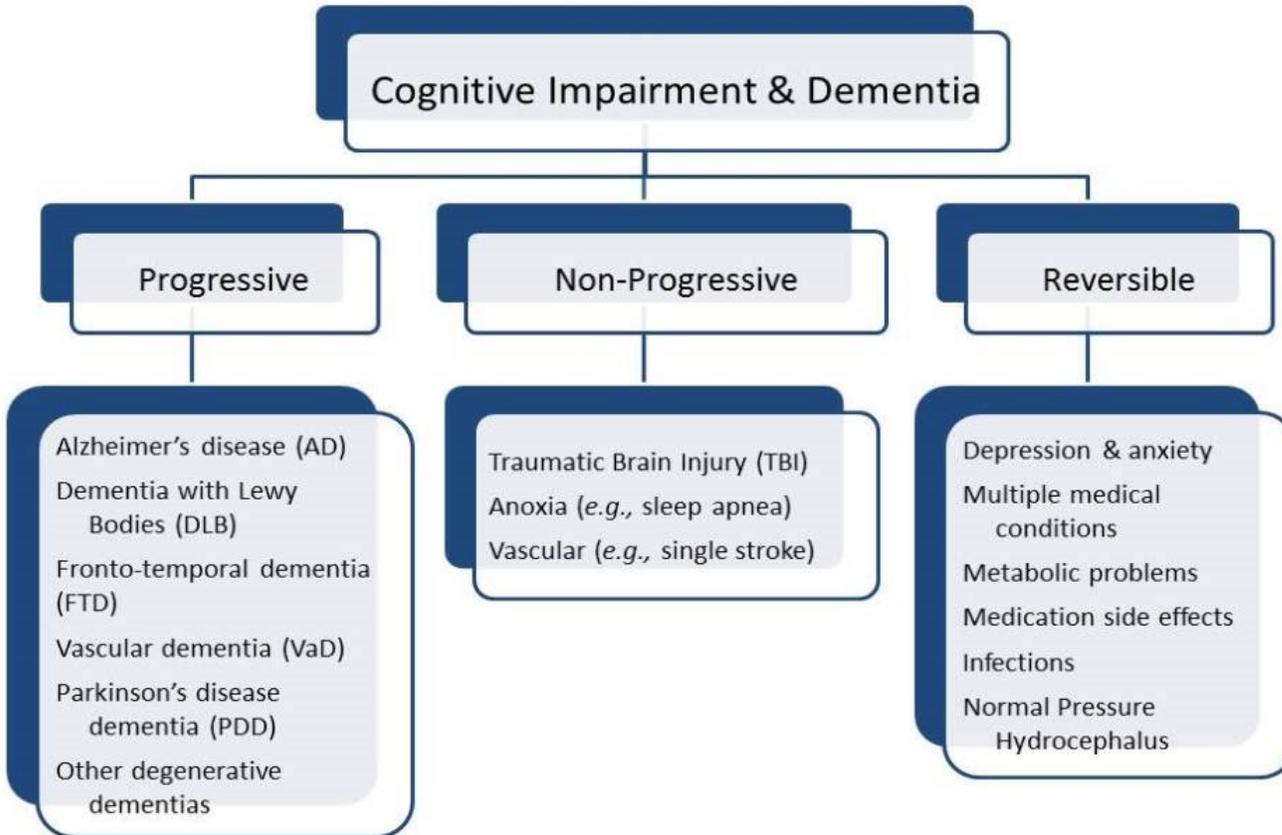
The BOLD Center for Early Detection of Dementia, in collaboration with the CDC, is pleased to share a new toolkit resource for clinicians, administrators, and patients engaged with large health systems who are interested in promoting early detection of dementia, establishing supportive services, and becoming more 'dementia-capable'. It supports a comprehensive approach to dementia detection and includes resources that encompass a broad view of the capacities needed to make your efforts most effective and cultivate a supportive and sustainable care pathway for individuals and their families.

Suggested citation: BOLD Public Health Center of Excellence on Early Detection of Dementia. (2024). Early Detection of Dementia Toolkit for Health Systems.

Additional sector-specific toolkits forthcoming.

<https://bolddementiadetection.org/resources/#toolkit>

Dementia vs. Non-Dementia?



<https://mind.uci.edu/dementia/>

System	Specific diagnosis
Neurological	Intracranial space occupying lesion NPH
Nutritional disorders	Vitamin B12 deficiency Folate deficiency
Endocrine disorders	Hypo/hyperthyroidism Hypoparathyroidism
Collagen/vascular disorders	Systemic lupus erythematosus Cerebral vasculitis
Infectious diseases	Neurosyphilis Chronic meningitis AIDS
Drug intoxication and metabolic	Tranquillizers Antihypertensives Anticholinergics
Dementia due to psychiatric disorders	Depression Late-onset schizophrenia
Miscellaneous	Chronic obstructive airways disease Sleep apnea syndrome

NPH: Normal pressure hydrocephalus

Diagnosis of Dementia, AD, MCI

Dementia

- Interfere work or usual activities
- Decline from previous functioning
- ≥ 2 : memory, executive, visuospatial, language, personality/behavior

Probable AD dementia: Meets criteria for dementia

- Symptoms have a gradual onset over months to years
- Amnestic (memory) and Nonamnestic (executive, visuospatial, language)

MCI

- Subject concern for cognition
- ≥ 1 : memory, executive, language, visuospatial, attention
- Preservation of independence in functional abilities



Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup

TABLE 1 Categorization of fluid analyte and imaging biomarkers.

Biomarker category	CSF or plasma analytes	Imaging
Core Biomarkers		
Core 1		
A (A β proteinopathy)	A β 42	Amyloid PET
T ₁ : (phosphorylated and secreted AD tau)	p-tau217, p-tau181, p-tau231	
Core 2		
T ₂ (AD tau proteinopathy)	MTBR-tau243, other phosphorylated tau forms (e.g., p-tau205), non-phosphorylated mid-region tau fragments ^a	Tau PET
Biomarkers of non-specific processes involved in AD pathophysiology		
N (injury, dysfunction, or degeneration of neuropil)	NfL	Anatomic MRI, FDG PET
I (inflammation) Astrocytic activation	GFAP	
Biomarkers of non-AD copathology		
V vascular brain injury		Infarction on MRI or CT, WMH
S α -synuclein	α Syn-SAA ^a	

Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup

TABLE 3 Biological staging.

	Initial-stage biomarkers (A)	Early-stage biomarkers (B)	Intermediate-stage biomarkers (C)	Advanced-stage biomarkers (D)
PET	Amyloid PET A+T ₂ -	Tau PET medial temporal region A+T ₂ MTL+	Tau PET moderate neocortical uptake A+T ₂ MOD+	Tau PET high neocortical uptake A+T ₂ HIGH+
Core 1 fluid	CSF A β 42/40, p-tau181/A β 42, t-tau/A β 42, and accurate ^a Core 1 plasma assays can establish that an individual is in biological stage A or higher, but cannot discriminate between PET stages A–D at present.			

TABLE 5 Conceptual biological staging with fluid biomarkers.

	Initial-stage biomarkers (A)	Early-stage biomarkers (B)	Intermediate-stage biomarkers (C)	Advanced-stage biomarkers (D)
Fluid staging	CSF A β 42/40, p-tau181/A β 42, t-tau/A β 42, and accurate ^b plasma assays	Other p-tau forms (e.g., p-tau205 ^a)	MTBR-tau243 ^a	Non-phosphorylated tau fragments ^a

Revised criteria for diagnosis and staging of Alzheimer's disease: Alzheimer's Association Workgroup

Stage 0 Asymptomatic, deterministic gene^a

No evidence of clinical change. Biomarkers in normal range.

Stage 1 Asymptomatic, biomarker evidence only

Performance within expected range on objective cognitive tests.

No evidence of recent cognitive decline or new symptoms.

Stage 2 Transitional decline: mild detectable change, but minimal impact on daily function

Normal performance within expected range on objective cognitive tests.

Decline from previous level of cognitive or neurobehavioral function that represents a change from individual baseline within the past 1 to 3 years, and has been persistent for at least 6 months.

May be documented by evidence of subtle decline on longitudinal cognitive testing, which may involve memory or other cognitive domains but performance still within normal range.

May be documented through subjective report of cognitive decline.

May be documented with recent-onset change in mood, anxiety, motivation not explained by life events.

Remains fully independent with no or minimal functional impact on activities of daily living (ADLs)

Stage 3 Cognitive impairment with early functional impact

Performance in the impaired/abnormal range on objective cognitive tests.

Evidence of decline from baseline, documented by the individual's report or by an observer's (e.g., study partner) report or by change on longitudinal cognitive testing or neurobehavioral assessments.

Performs daily life activities independently but cognitive difficulty may result in detectable functional impact on complex ADLs (i.e., may take more time or be less efficient but still can complete—either self-reported or corroborated by an observer).

Stage 4 Dementia with mild functional impairment

Progressive cognitive and mild functional impairment on instrumental ADLs, with independence in basic ADLs.

Stage 5 Dementia with moderate functional impairment

Progressive cognitive and moderate functional impairment on basic ADLs requiring assistance.

Stage 6 Dementia with severe functional impairment

Progressive cognitive and functional impairment, and complete dependence for basic ADLs.

^aIndividuals with Down syndrome may not be fully independent even in stage 0 because of underlying intellectual disability. In these individuals, decline in functional independence from baseline may be a more appropriate indicator of stage.

Workup

- Labs: B12, TSH
- Imaging: MRI brain w/o con
- Neuropsychological testing

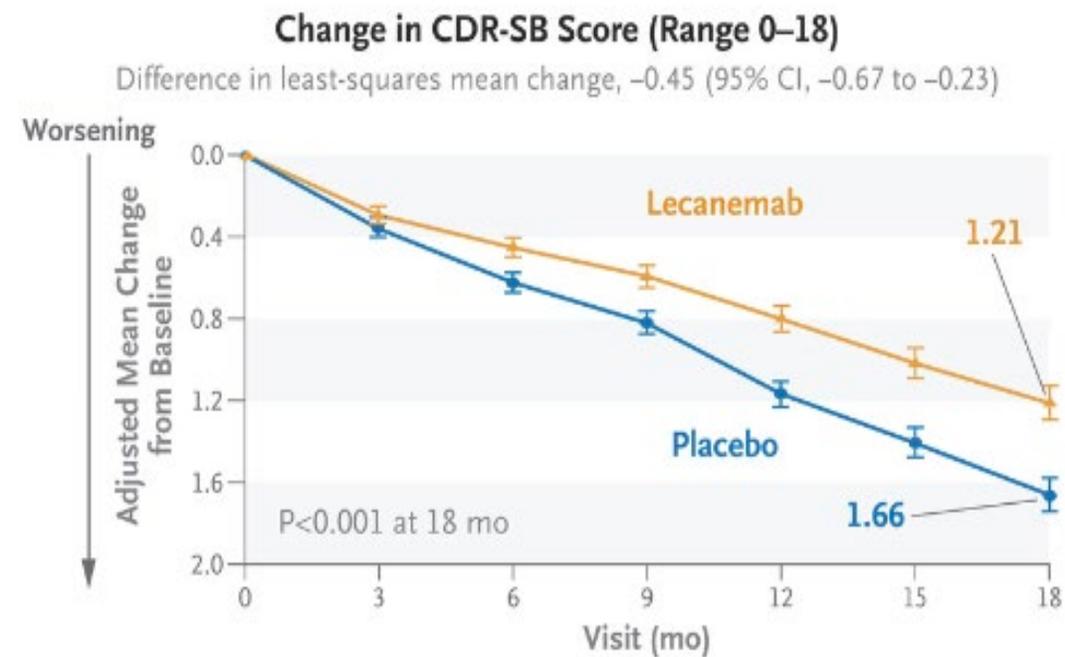
Additional

- Sleep study for OSA
- PET: FDG, amyloid (Amyvid)
- CSF ADmark (A β 42, Total-Tau, p-tau 181, p-Tau/Abeta42)
- Blood Biomarkers
 - C2N: PrecivityAD2 (A β 42/40 and p-tau217/np-tau217 (%p-tau217) ratios)
 - Labcorp: pTau-217, A β 42/40, GFAP
- APOE ϵ 3/4/2 alleles

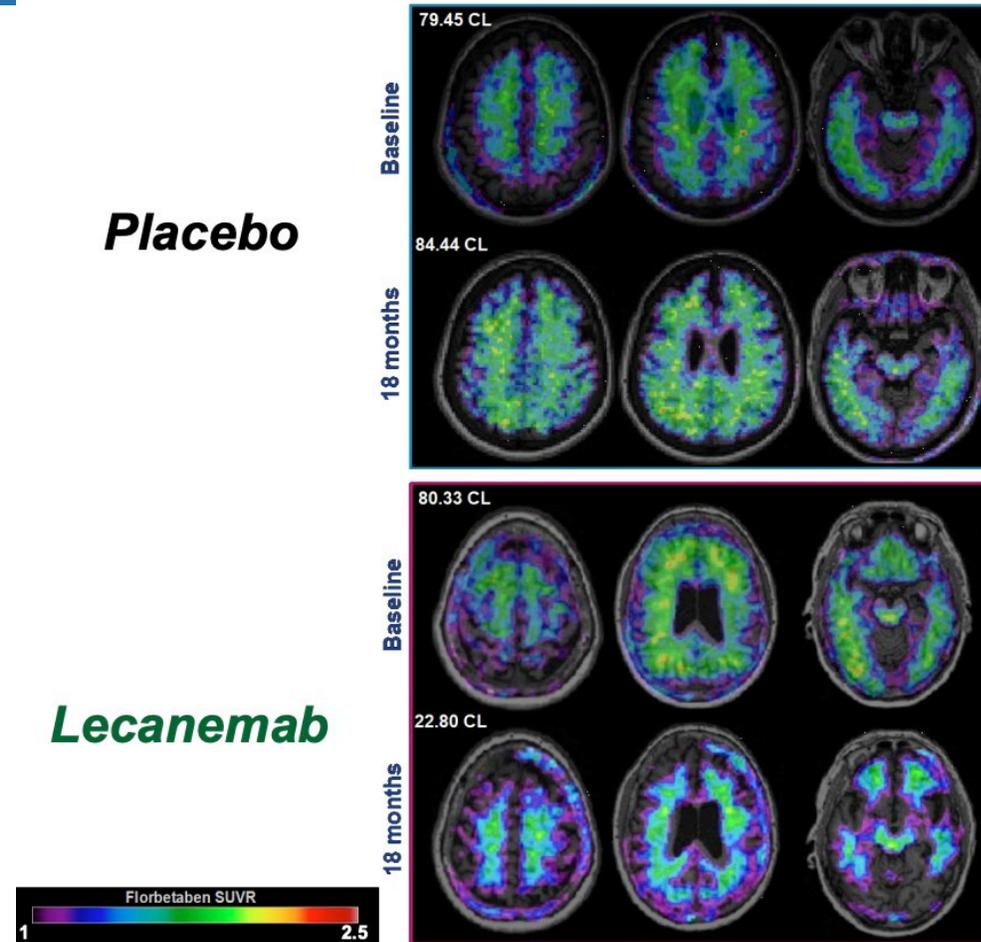


Treatment

- Anticholinesterases inhibitors – donepezil, rivastigmine
 - Increase cholinergic system
- Memantine - NMDA receptor antagonist
 - Moderate to severe AD
- Lecanemab, donanemab
 - Clear amyloid
- Nonpharmacologic
 - Vascular risk factor control, Lifestyle modification

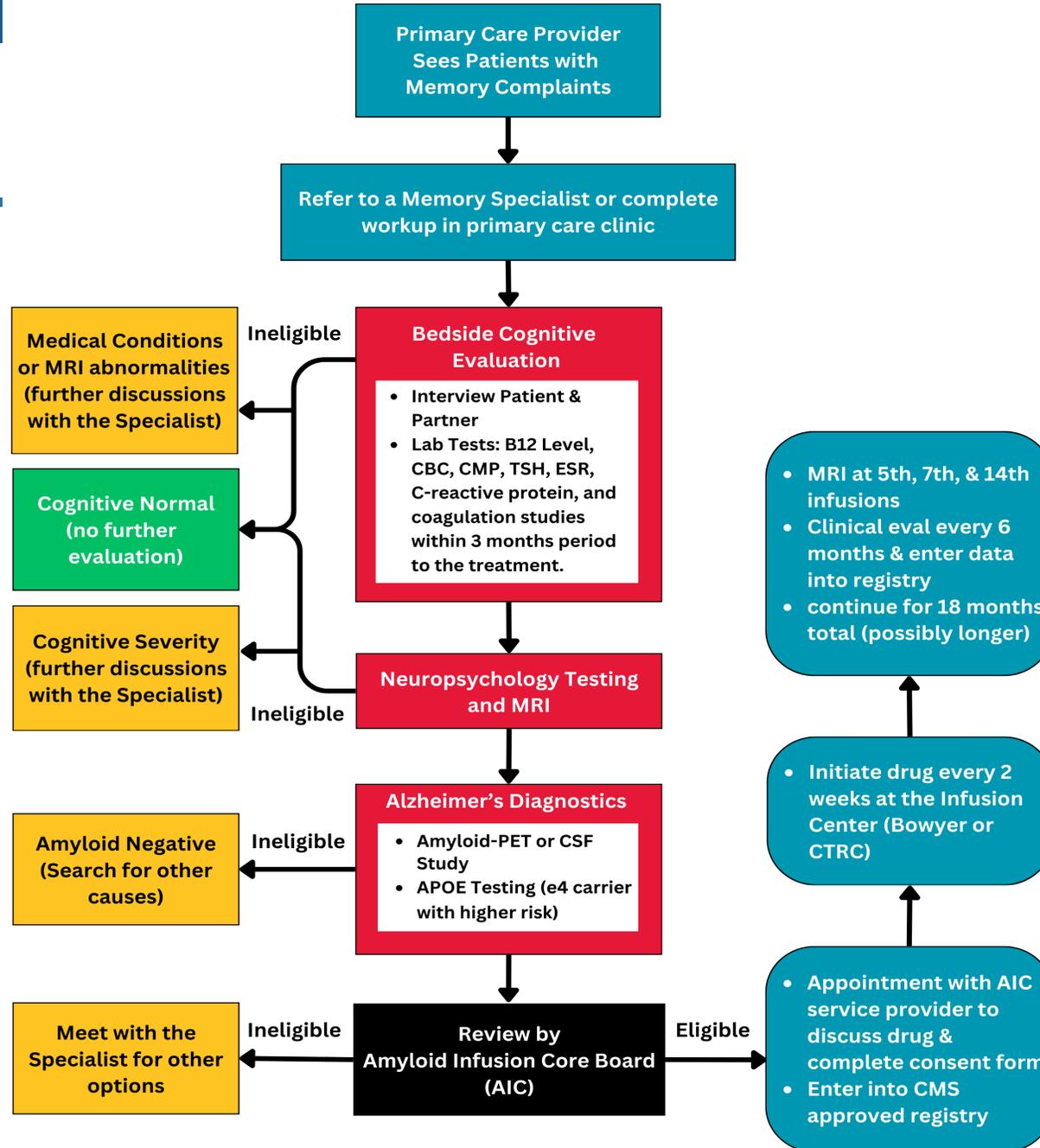


Amyloid Clearance with Lecanemab



Outpatient Evaluation and Management

AMYLOID INFUSION FLOWCHART



Inclusion Criteria

Major inclusion criteria include the following:

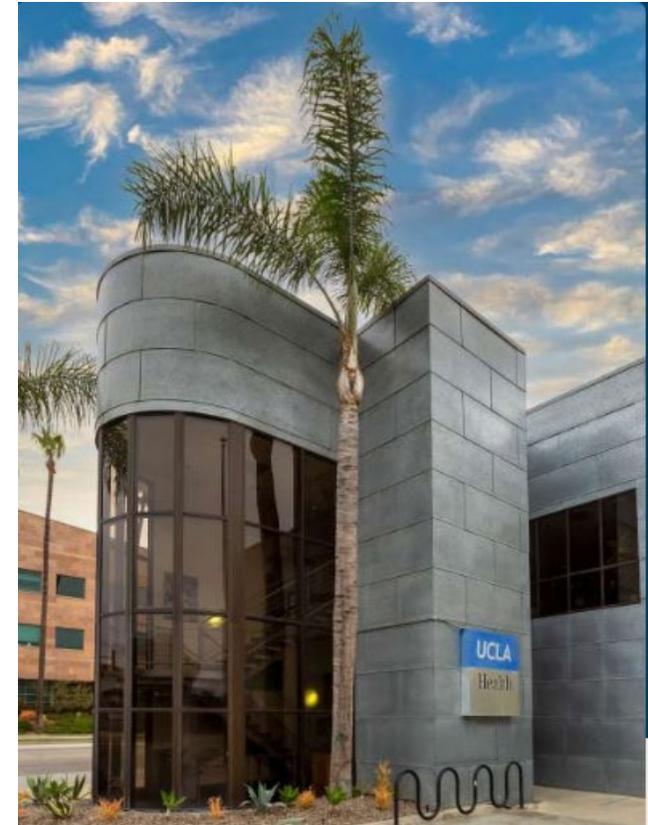
1. **55 to 80 y/o**
2. **Diagnosis: Mild cognitive impairment or mild Alzheimer's disease dementia**
3. **Evidence of pathologically elevated beta-amyloid protein by CSF or amyloid PET scan**
4. **MRI within 1 year without any other structural abnormalities that would increase risk for edema (ARIA-E) or bleeding (ARIA-H),**
5. **Able to read and write and with at least 5 years of formal education and understand the risks and benefits**
6. **Willing and able to comply with the therapy plan**
7. **APOE testing done and counselling provided— documentation should include this**

Dementia Screening Toolkit

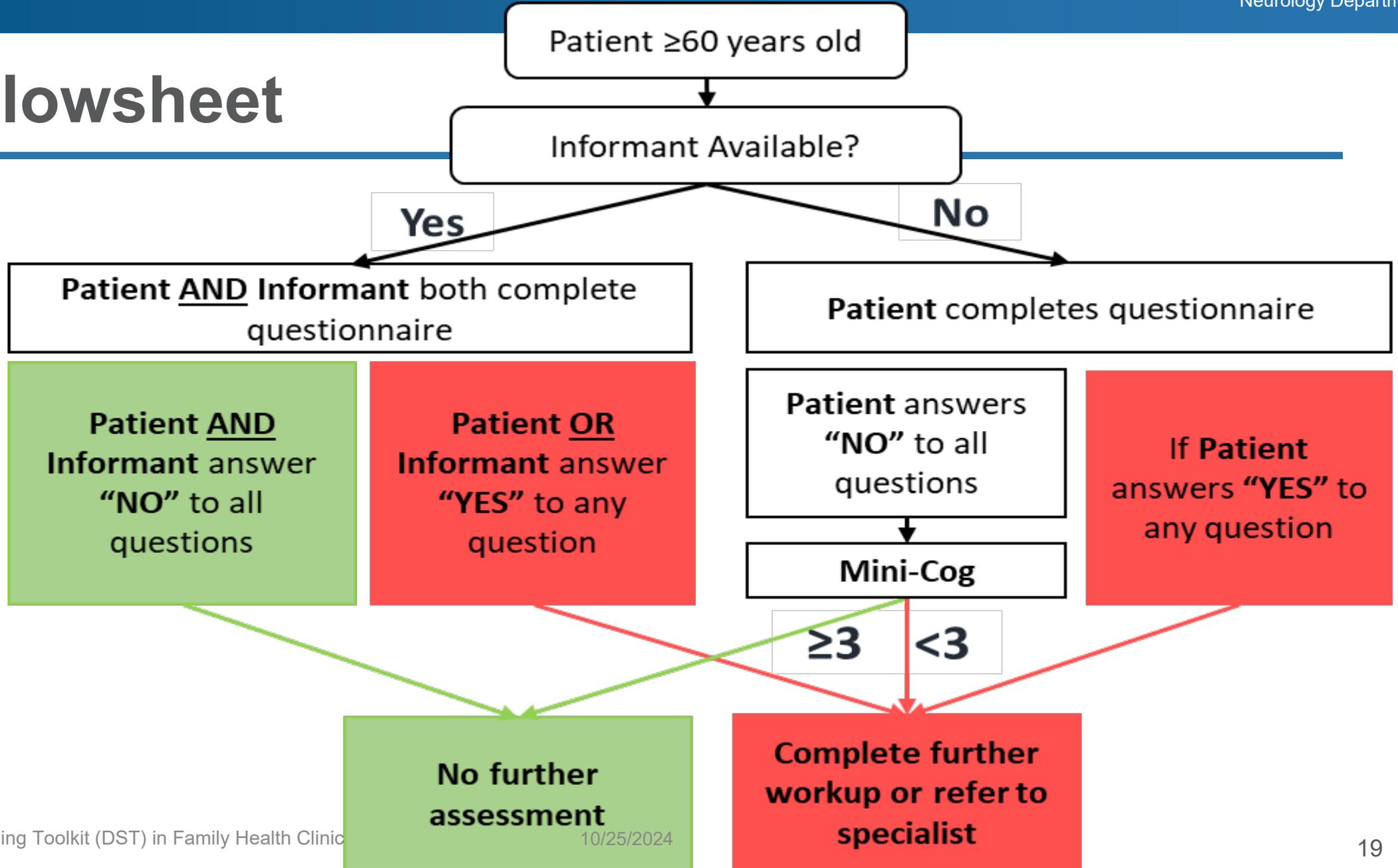
The goal is to implement a brief dementia screening tool integrated into the electronic health record in a family care clinic to improve the appropriate diagnosis of dementia in primary care.

The dementia screening tool (DST) includes a brief questionnaire to be answered prior to visits annually available in both **English** and **Spanish**.

The screening tool may also include a brief neuropsychological test (Mini-Cog) to be completed during the visit.



DST Flowsheet



DST Questionnaire sent before Visit



Patient Dementia Screening

For an upcoming appointment with David J. Wallenstein, MD on 6/28/2022

Please read each question and the examples carefully. After reading the question, mark the answer that fits you best ("Yes" or "No").

Do you think your memory or thinking has changed within the last 5-10 years?

Example Questions:

- Have you had trouble recalling important events, planned activities, or conversations?
- Has it been difficult to remember the things you do day to day?
- Have you noticed that you forget the details of a conversation you just had?
- Have you been told that you often repeat yourself during conversations?
- Have you caught yourself repeating the same stories and/or has someone told you, "Yes, you've told me that before?"

Yes No

Have you noticed changes in your language within the last 5-10 years?

Example Questions:

- Do you find it hard to find words when you speak?
- Do you feel that you have trouble following/understanding/comprehending what you are hearing on the TV, radio, or when you are reading?
- If you speak more than one language, have you noticed that you find it easier to use your native language versus your second [other] language(s)?

Yes No

Have you noticed changes in your mood or personality within the last 5-10 years?

Example Questions:

- During the day do you suddenly feel down or stressed?
- Have you felt stressed/sadder/fatigued more than usual?
- Do you avoid social settings?
- Do you feel you need to have structures and/or routines to function as well as before (for example: use notes, alarms, calendars, diaries)?

Yes No



CUESTIONARIO DE DETECCION DE DEMENCIA

Para una próxima cita con David J. Wallenstein, MD el 9/6/2022

Lea atentamente cada pregunta y los ejemplos. Después de leer la pregunta, marque la respuesta que más le convenga ("Sí" o "No").

¿Cree que su memoria o conocimiento ha cambiado en los últimos 5 a 10 años?

Otras Preguntas:

- ¿Se le ha hecho difícil recordar actividades o eventos importantes [e.g. cumpleaños/ aniversarios]?
- ¿Se le ha hecho difícil recordar las cosas que usted hace día a día?
- ¿Ha notado que se le olvidan detalles de una conversación que acaba de tener?
- ¿Le han dicho que se repite mucho cuando está platicando?
- ¿En algún momento usted ha notado que está repitiendo los mismos detalles al punto que le dicen "Sí, ya me lo dijiste anteriormente."

Sí No

¿Ha notado usted cambios en su manera de hablar en los últimos 5 a 10 años?

Otras Preguntas:

- ¿Ha sentido que le cuesta encontrar palabras cuando habla?
- ¿Siente que le cuesta seguir/ entender/ comprender lo que está escuchando en la television, la radio, o cuando está leyendo?
- ¿Si habla más de un idioma, ha notado que se le hace más fácil usar su idioma natal versus su/s segundo [otros] idioma?

Sí No

¿Ha notado usted cambios en su estado de humor o personalidad en los últimos 5 a 10 años?

Otras Preguntas:

- ¿Durante el día se siente decaído/da o estresado/da de repente?
- ¿Usted ha sentido que se estresa/ se siente más triste/ se fatiga más de lo usual?
- ¿Usted evita ambientes sociales?
- ¿Usted siente que necesita tener una rutina para funcionar igual que antes? (usar notas, alarmas, calendarios, agendas)

Sí No

Mini-Cog in the EHR

Mini Cog Assessment

👤 Responsible 📝 Create Note
☑ Show Row Info
☐ Show Last Filed Value
☐ Show Details
☐ Show All Choices

AMB MINI COG ASSESSMENT

Word Administration

Version 1: Banana, Sunrise, Chair	Version 2 : Leader, Season, Table	Version 3: Village, Kitchen, Baby
Version 4: River, Nation, Finger	Version 5: Captain, Garden, Picture	Version 6: Daughter, Heaven, Mo...

Look directly at person and say, "Please listen carefully. I am going to say three words that I want you to repeat back to me now and try to remember. The words are [select list of words from versions below]. Please say them for me now." If the person is unable to repeat the words after three attempts, move on to Step 2 (clock drawing)

Clock Drawing

2=Normal 0=Abnormal ! 📄

Instruct the patient to draw the face of a clock, either on a blank sheet of paper or on a sheet with the clock circle already drawn on the page. Say: "I want you to draw a clock for me. First, put in all of the numbers where they go." When that is completed, say: "Now, set the hands to 10 past 11."
(The time 11:10 has demonstrated increased sensitivity.)

Scoring:
 Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (e.g., 12, 3, 6 and 9 are in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10). Hand length is not scored.
 Inability or refusal to draw a clock (abnormal) = 0 points

Three word recall:

No Recall=0 1 Word Recall=1 2 Word Recall=2 3 Word Recall=3 📄

Ask the patient to repeat the 3 previously stated words.
1 point for each word spontaneously recalled without cueing.

Mini Cog Score

2

Scoring: (out of total of 5 points)
 Word Recall - 1 point for each word spontaneously recalled without cueing.
 Clock Draw - Normal clock = 2 points. A normal clock has all numbers placed in the correct sequence and approximately correct position (e.g., 12, 3, 6 and 9 are in anchor positions) with no missing or duplicate numbers. Hands are pointing to the 11 and 2 (11:10). Hand length is not scored.
 Inability or refusal to draw a clock (abnormal) = 0 points.

Mini-Cog Scoring

- The Mini-Cog[®] is scored in two parts: 1) 3-item recall, and 2) clock drawing. These are added together for a total score.
- 3-Item Recall Score:
 - 1 point for each word recalled without cues, for a 3-item recall score of 1, 2, or 3.
- Clock Drawing Score:
 - 2 points for a normal clock or 0 (zero) points for an abnormal clock drawing.
- Interpreting the Mini-Cog[®] Score:
 - Add the 3-item recall and clock drawing scores together. A total score of 3, 4, or 5 indicates lower likelihood of dementia but does not rule out some degree of cognitive impairment.

Spanish Mini-Cog

Paso N.º 1: Registro de tres palabras

Mire directamente a la persona y dígame, "Escuche con cuidado. Voy a decir tres palabras que quiero que usted repita ahora y trate de recordar. Las palabras son [seleccione una lista de palabras de las versiones que aparecen a continuación]. "Ahora repita las palabras." Si la persona no es capaz de repetir las palabras después de tres intentos, continúe al Paso N.º 2 (Dibujo de reloj).

La siguiente lista de palabras y otras más se han utilizado en varios estudios clínicos. Si planea aplicar la prueba repetidamente, se recomienda el uso de una lista alternativa de palabras.

Versión 1	Versión 2	Versión 3	Versión 4	Versión 5	Versión 6
Plátano	Líder	Pueblo	Río	Capitán	Hija
Amanecer	Temporada	Cocina	Nación	Jardín	Cielo
Silla	Mesa	Bebé	Dedo	Retrato	Montaña

Paso N.º 2: Dibujo de reloj

Diga: "Ahora, quiero que me dibuje un reloj. Primero, coloque los números donde van". Una vez que el cliente haya terminado, diga: "Ahora, ponga las manecillas del reloj en la posición que indiquen las 11:10".

Use la página con el círculo impreso (vea la siguiente página) para este ejercicio. Repita las instrucciones según sea necesario ya que esto no es una prueba de memoria. Continúe al Paso N.º 3 si el cliente no lo ha completado en tres minutos.

Paso N.º 3: Memoria de tres palabras

Pídale a la persona que repita las tres palabras que usted dijo en el Paso N.º 1. Diga: "¿Cuáles fueron las tres palabras que le pedí que recordara?" Registre el número de versión de lista de palabras y las respuestas de la persona a continuación.

Versión de lista de palabras: _____ Respuestas de la persona: _____

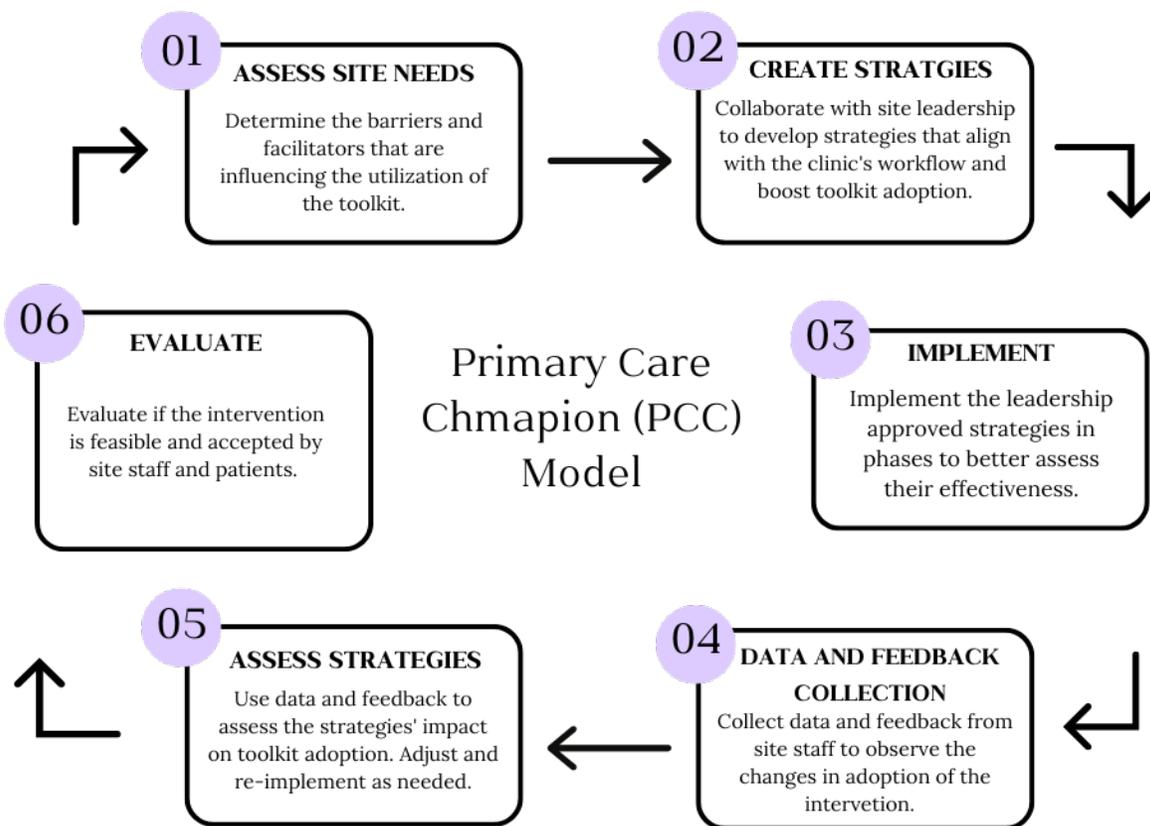
Puntaje

Memoria de palabras : ____ (0-3 puntos)	1 punto por cada palabra que recuerde espontáneamente sin pistas.
Dibujo de reloj: ____ (0-2 puntos)	Reloj normal= 2 puntos. Un reloj normal tiene todos los números colocados en la secuencia y posición aproximadamente correctas (p. ej., 12, 3, 6, 9 están en posiciones de anclaje y 2 (11:10). Longitud de la manecilla no se cuenta en el puntaje. Si la persona no es capaz de dibujar un reloj o se rehúsa (anormal) = 0 puntos.
Puntaje total: ____ (0-5 puntos)	Puntaje total = Puntaje de Memoria de palabras + Puntaje de Dibujo de reloj. Se ha establecido un valor de corte de < 3 en la Mini-Cog™ para la detección de demencia, pero muchas personas con deterioro cognitivo clínicamente significativo tendrán una puntuación más alta. Cuando se desea una mayor sensibilidad, se recomienda usar un valor de corte de < 4, ya que podría indicar la necesidad de evaluaciones adicionales para determinar el estado cognitivo.

DST Implementation

Toolkit Engagement

- To increase engagement and adoption of the DST we employed a Primary Care Champion (PCC) Model



PRE-PCC: SEPTEMBER 14, 2022-MARCH 30, 2023

- DST rolled out without implementation of the PCC model
- Implementation strategies consisted of four (4) educational webinars. These webinars specifically addressed navigating the Electronic Health Record (EHR) to find the DST, guiding staff on how, when, and with whom to complete the DST, and how to make referrals to the appropriate department.

POST-PCC: APRIL 3, 2023-FEBRUARY 29, 2024

- | | |
|--|--|
| <ul style="list-style-type: none"> PCC Model Implemented Building rapport with FHC staff and faculty Identifying barriers and facilitators of the DST workflow in the clinic. Collecting observational feedback from clinic staff and providers Meetings with FHC stakeholders Meetings with project manager | <ul style="list-style-type: none"> Attaching Mini-Cogs to patient packets Creating project workflow sheets Attaching project workflow sheets in resident rooms DST refreshers/trainings for FHC staff Bi-weekly then monthly project reminders Meetings with CareConnect/Epic team |
|--|--|

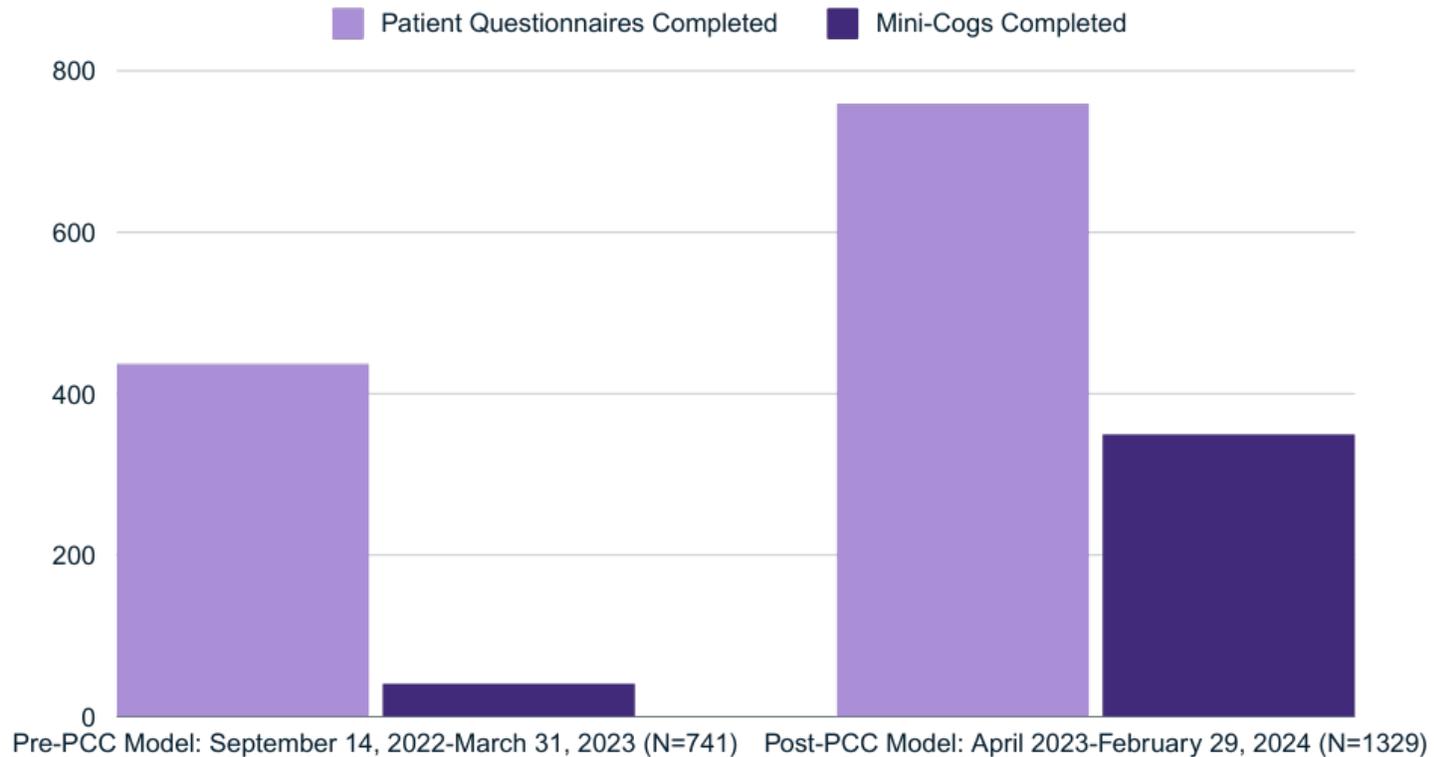
Flowsheet

<p>Dementia Screening Toolkit (DST) Project</p>	<p>Goal: To implement a brief dementia screening tool integrated into the electronic health record in a family care clinic to improve the appropriate diagnosis of dementia in primary care.</p> <p>Inclusion criteria: Patients 60 years and older in for LONG/Annual appointments. The screening tool will be administered once a calendar year. Screener and Mini-Cog will automatically populate in CareConnect if patient is due for the screening tool.</p>					
<p>Primary Care Champion: Gabriela Islas Huerta gislashuerta@mednet.ucla.edu 760-219-0911</p>	<p>1. Every Friday, create a pull list of patients with LONG/Annual appointments (for following week) that are due for the screening tool.</p>	<p>2. Provide the list to admin analyst and front desk.</p>	<p>3. Send bi-weekly reminders to clinic staff and faculty about the project.</p>	<p>4. In clinic M-F 0900 to 1200 to assist clinic staff and faculty with questions.</p>	<p>5. Review data.</p>	<p>6. Gather feedback from clinic staff and faculty.</p>
<p>Admin Analyst: Marjan D Front Desk</p>	<p>1. Admin analyst and front desk will receive patient list from primary care champion.</p>		<p>2. Print Mini-Cog with clock on reverse side.</p>	<p>3. Place printed Mini-Cog in patient packet for back-end to leave for clinician.</p>		
<p>LVN/MA</p>	<p>1. Room patient and Review CareConnect.</p>	<p>2a. If patient is due for screener, "Dementia Screening" will populate in the top bar. 3a. Administer the questionnaire to patient and informant (if available and authorized by patient). 4a. If informant not available or not authorized, proceed to administer questionnaire to patient.</p>	<p>2b. "Questionnaire Completed" appears in left hand tab of CC. Hover over the tab and scroll down to view "Dementia Screening" results. 3b. Only "Questionnaire" populates on the top bar. Click and scroll to the bottom to view dementia screening results. 4b. Patient has completed questionnaire though MyChart before visit.</p>	<p>5. If screener does not appear in either form it means patient has already completed it for the year.</p>	<p>6. To check if and when patient completed the questionnaire: Type "dementia screening" under the "flowsheet" tab. May have to click "facility preference list" if it does not appear on the first try.</p>	<p>7. Leave printed Mini-Cog in the room for clinician's use.</p>
<p>Clinician</p>	<p>1. Add dot phrase ".dementiascreen" to note template used for LONG/AVV visits.</p>	<p>2. Review questionnaire results. If .dementiascreen is already embedded in note template, refresh the dotphrase to view the questionnaire results. If needed, clinicians can also review questionnaire results in "Flowsheet" tab by typing "dementia screening".</p>	<p>3a. Patient AND informant answer "NO" to all questions: No further assessment. 3b. Patient OR informant answer "YES" to any question: Perform additional workup (e.g. Mini-Cog) or refer to specialist. 3c. Patient answers "NO" to all questions: Perform Mini-Cog. 3d. Patient answers "YES" to any question: Perform additional workup (e.g. Mini-Cog) or refer to specialist.</p>	<p>4a. Access Mini-Cog in Dx/Order tab. 4b. Click "show all fields" on Mini-Cog Assessment to view the instructions.</p>	<p>5a. Mini-Cog score: <3 perform additional workup or refer to specialist. 5b. Mini-Cog score: ≥ 3, no further assessment is needed.</p>	<p>6. Can refer to "Neurology, Alzheimer's Disease". Include "from FHC" in comments.</p>

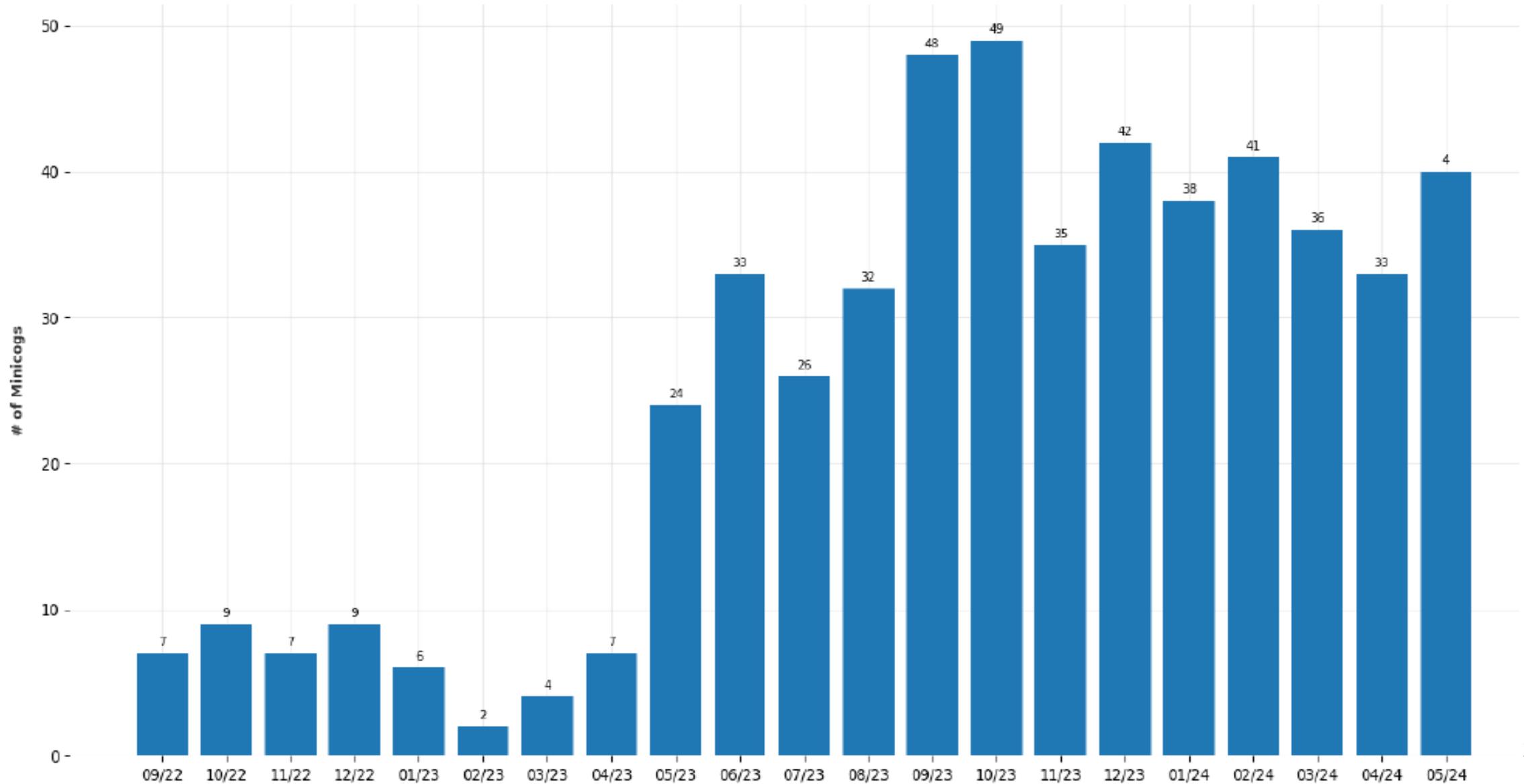
DST Results

Pre-Post PCC Model-Toolkit Engagement

DST OUTCOMES PRE-POST PCC MODEL



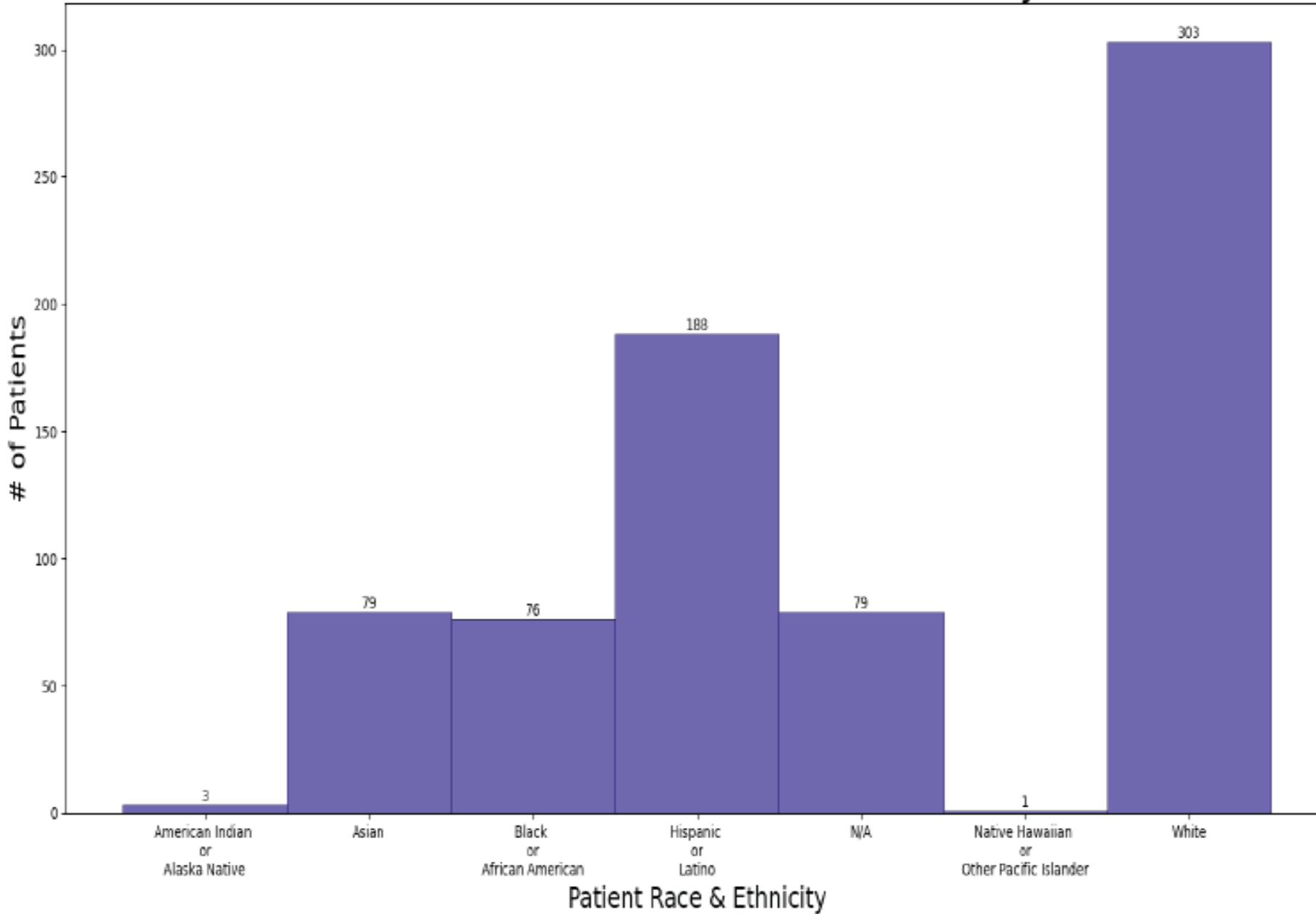
Number of Minicogs Per Month



Results Sept 22 - Jun 23

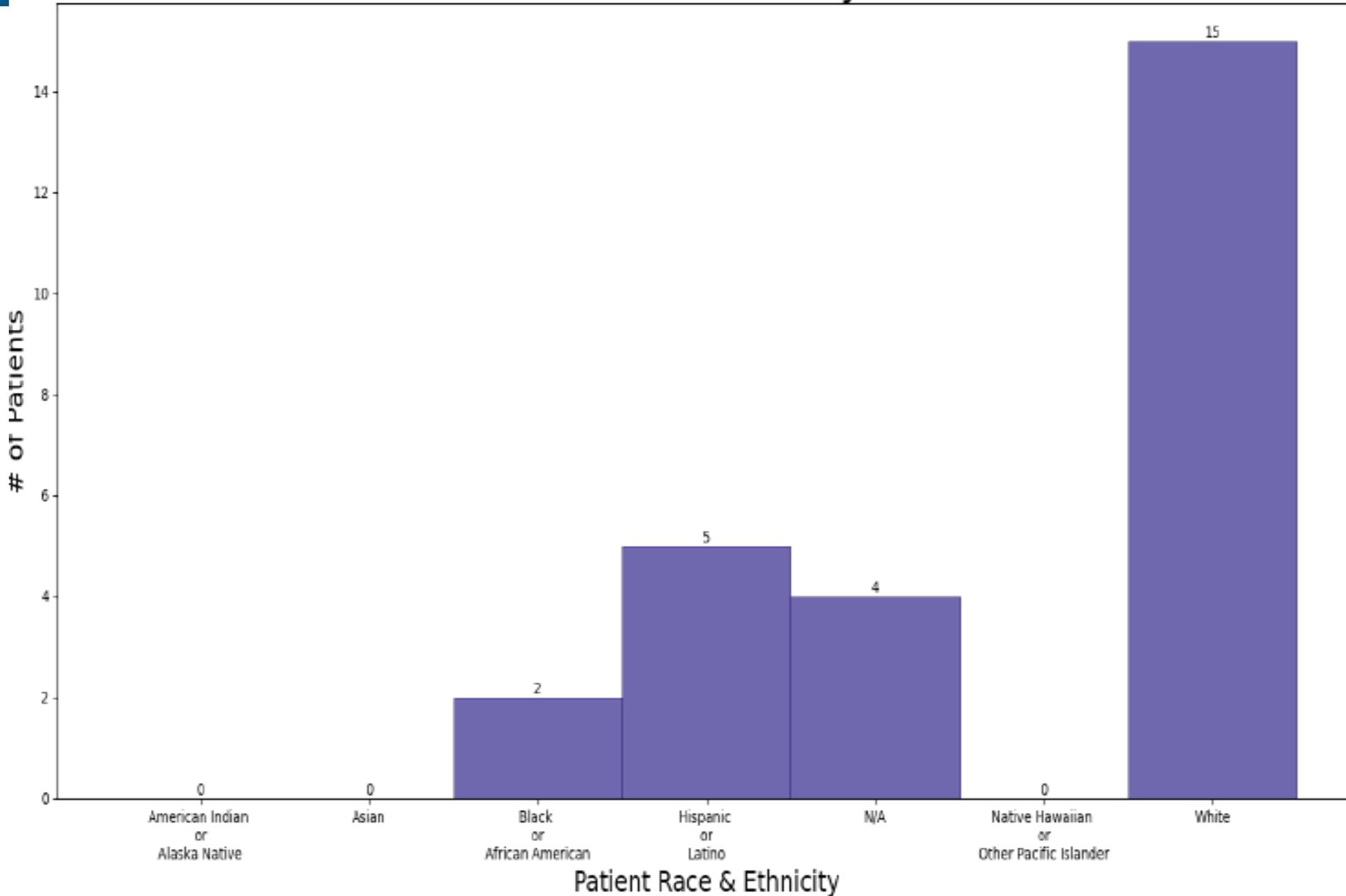
- 1239 Eligible participants
 - 729 Screened (answered at least one of the questions and/or Mini-Cog)
 - 310 Answered one of the questions or Mini-Cog “positively”
- 16 total for New Dementia Diagnosis
- 115 total for number of Mini-Cogs given
- 42 total patients referred to Neurology

Distribution of Patient Race and Ethnicity



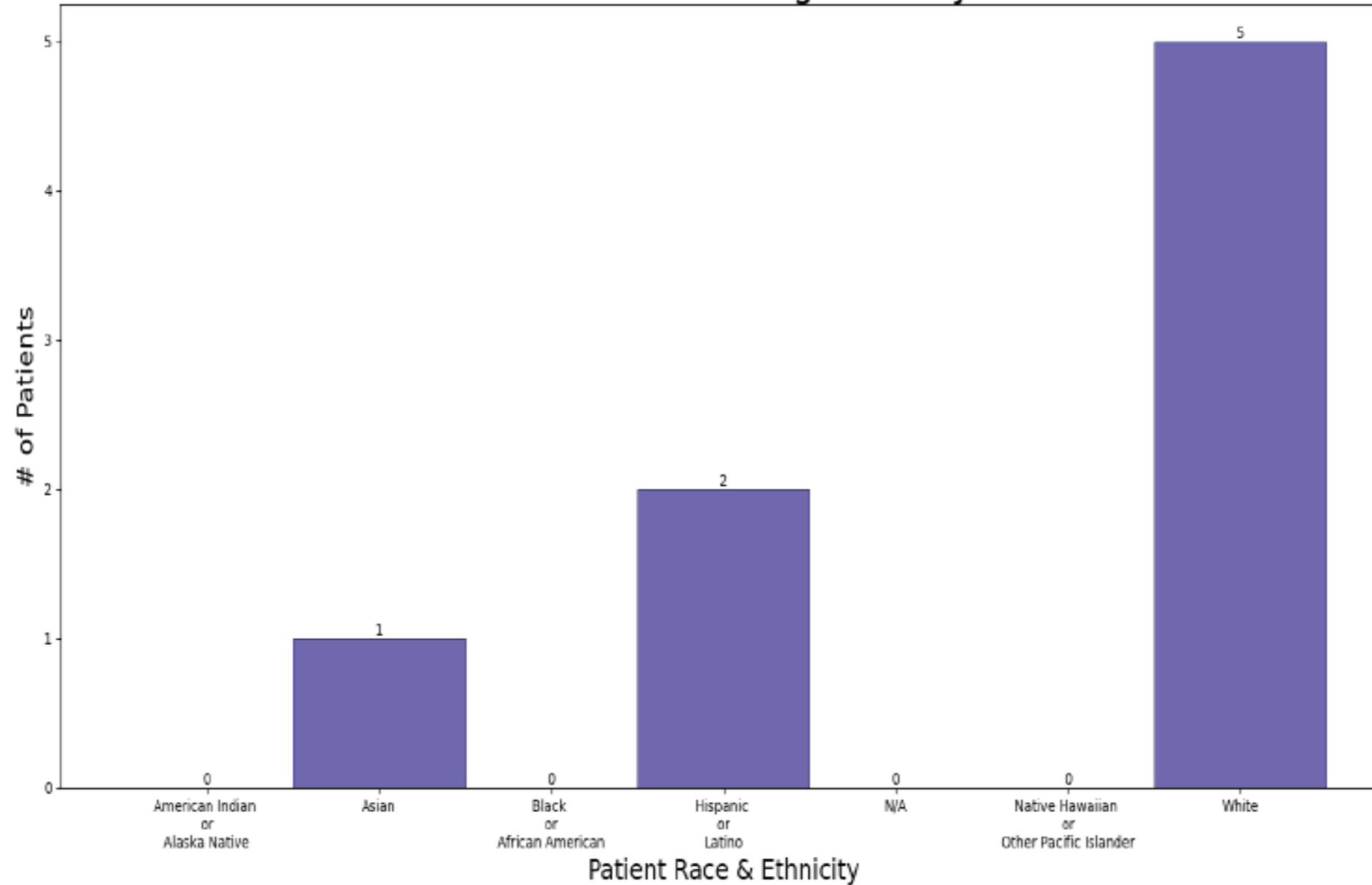
Everyone Screened
Sept 22 - Jun 23

of Neuro Referrals By Race



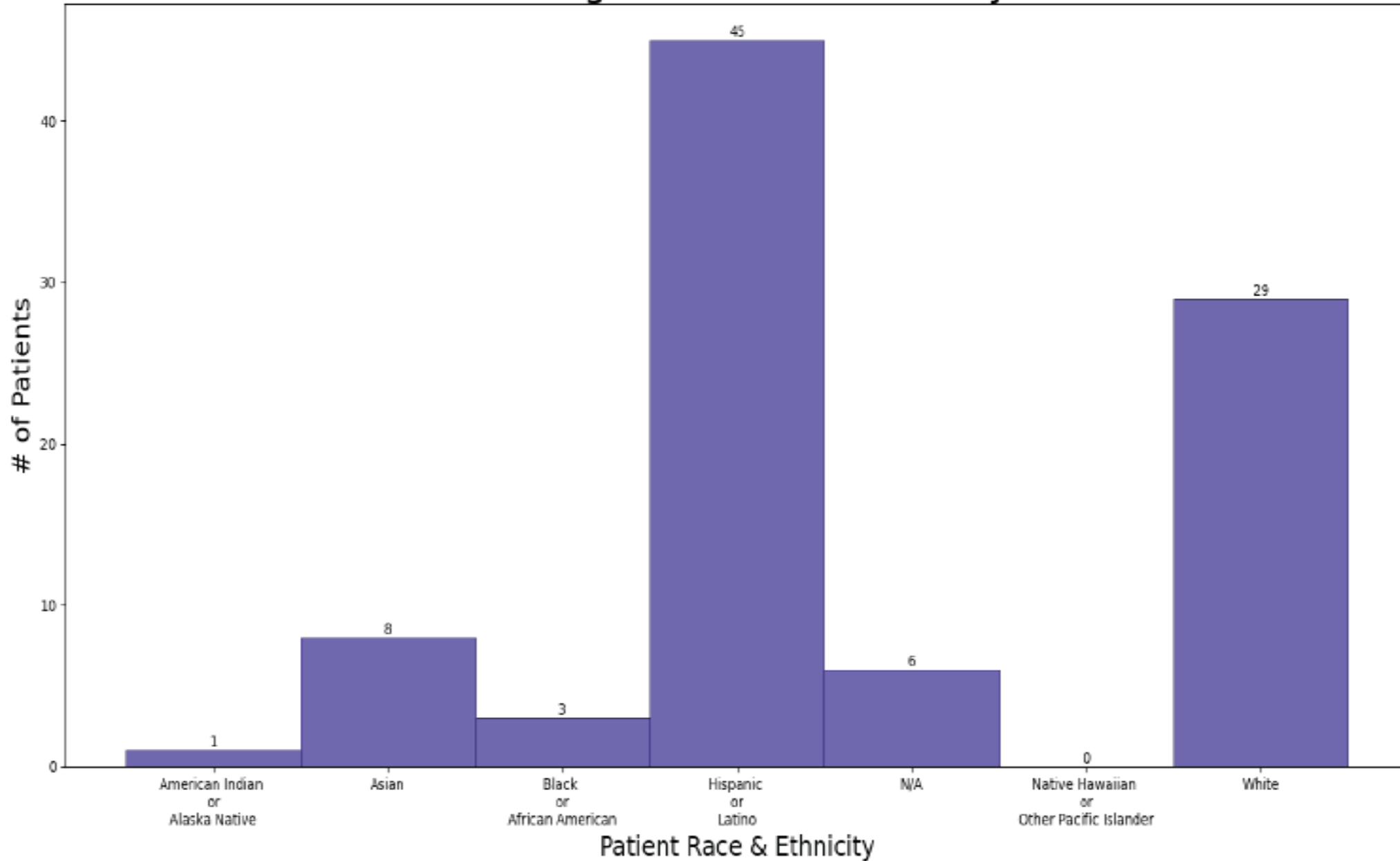
Everyone Screened
Sept 22 - Jun 23

of New Dementia Diagnoses By Race



Everyone Screened
Sept 22 - Jun 23

of Mini Cog Tests Administered By Race



Everyone Screened
Sept 22 - Jun 23

Pre-DST vs. Post DST Results

Pre and Post Study Design

- Pre-Period
 - Feb 2016 – Aug 2022 (plus 6-month f/u)
- Inclusion Criteria:
 - Age \geq 60
 - New/Long Visit
 - Office Visit
 - Unique MRN's
 - No dementia prior earliest visit data
 - Earliest Visit for an MRN
- Post-Period
 - Sep 2022 – June 2023 (plus 6-month f/u)
- Inclusion Criteria:
 - Age \geq 60
 - New/Long Visit
 - Office Visit
 - Unique MRN's
 - No dementia prior the visit date
 - Earliest Visit for an MRN

Outcomes

Evaluate the following outcomes within 6 months from the earliest visit date

• Dementia/Cognitive ICD Codes

- Dementias - F02.80, F02.81, F03.9, F03.90, F03.91
- Alzheimer's disease - G30, G30.0, G30.1, G30.8, G30.9
- Dementia with cerebral degenerations - G31.0, G31.01, G31.09, G31.1, G31.83
- Senile dementia - F03
- Vascular dementia - F01, F01.5, F01.50, F01.51
- Mild cognitive impairment - G31.84
- Corticobasal degeneration - G31.85
- Progressive Supranuclear Palsy - G23.1
- Memory Loss – F41.3

• Referral

- Referral to Neurology
- Referral to Neurology, Alzheimer's Disease
- Referral to Neurology, Behavioral
- Referral to Geriatric Medicine
- Referral to Alzheimer's and Dementia Care Program
- Referral to Neuropsych Testing

• Medication

- donepezil
- galantamine
- rivastigmine
- memantine
- lecanemab

• Imaging

- MRI brain wo contrast
- MRI brain wo + w contrast
- PET CT Brain
- CT Head Without Contrast

• Lab

- Vitamin B12

Category	Pre	Post	Post Screening	Post Screening Positive
N	1776	668	505	233
Age	77.40 (67, 105)	74.86 (66, 97)	74.78 (66, 97)	75.87(67, 97)
Sex				
Male	704 (39.64%)	260 (38.92%)	190 (37.62%)	89 (38.20%)
Female	1072 (60.36%)	408 (61.10%)	315 (62.37%)	144 (61.80%)
Race				
Black or African American	189 (10.64%)	60 (8.98%)	46 (9.10%)	26 (11.16%)
Asian	142 (7.99%)	63 (9.43%)	48 (9.50%)	18 (7.73%)
White and others	1445 (81.36%)	545 (81.58%)	411 (81.38%)	189 (81.1)
Ethnicity				
Hispanic/Latinx	396 (22.97%)	191 (28.59%)	147 (29.10%)	72 (30.90%)
Not Hispanic/Latinx	1380 (77.70%)	477(71.4%)	358 (70.90%)	161 (69.10%)
Outcome				
Dementia Diagnosis	74 (4.17%)	32 (4.80%)	19 (3.76%)	15 (6.43 %)
MCI	11 (0.62%)	7 (1.05%)	6 (1.19%)	5 (2.15%)
Vascular dementia	3 (0.17%)	4 (0.60%)	1 (0.20%)	1 (0.43%)
Dementia (classified elsewhere)	16 (0.90%)	8 (1.20%)	5 (0.99%)	4 (1.72%)
Unspecified dementia, with behavioral disturbance	8 (0.45%)	0 (0%)	0 (0%)	0 (0%)
Unspecified dementia	31 (1.75%)	10 (1.50%)	6 (1.19%)	4 (1.72%)
Dementia (classified elsewhere), with behavioral disturbance	1 (0.06%)	0 (0%)	0 (0%)	0 (0%)
Alzheimer's disease (late)	2 (0.11%)	2 (0.30%)	1 (0.20%)	1 (0.43%)
Alzheimer's disease (early)	0 (0%)	1 (0.15%)	0 (0%)	0 (0%)
Alzheimer's disease (other)	1 (0.06%)	0 (0%)	0 (0%)	0 (0%)
Dementia with Lewy Body	1 (0.06%)	0 (0%)	0 (0%)	0 (0%)
Medications	52 (2.93%)	33 (4.94%)	23 (4.55%)	16 (6.87%)
Referrals	122 (6.87)	61 (9.13%)	46(9.10%)	33 (14.16%)
Lab	696 (39.19%)	386 (57.78%)	297 (58.81%)	151 (64.81%)
Imaging	658 (37.05%)	281 (42.07%)	213 (42.17%)	121 (51.93)

Outcome ~ Post/Pre + Age + Sex + Ethnicity + Race

	Post Everyone vs Pre		Post Screened vs Pre		Post Screened Positive vs Pre	
	Odds Ratio	p-value	Odds Ratio	p-value	Odds Ratio	p-value
Dementia Diagnosis	2.10	0.02	1.31	0.71	2.57	0.04
<u>Secondary outcomes</u>						
Medications	2.48	0.01	2.18	0.07	2.90	0.03
Referral	1.88	4.81E-03	1.76	0.04	2.34	0.01
Lab	2.33	1.35E-14	2.39	1.15E-12	2.63	5.55E-04
Imaging	1.43	3.79E-03	1.27	0.14	1.76	2.52E-03

Sex Stratified Analysis

	Post vs Pre (Males)		Post vs Pre (Females)	
	Odds Ratio	p-value	Odds Ratio	p-value
Dementia Diagnosis	4.5	0.013	1.7	0.25

Current Sub-Study: DST Feasibility & Acceptability

Feasibility and Acceptability Study: Preliminary Results

- **Mixed-Methods**

- Survey
- Optional semi-structural interviews
 - Via zoom, phone call, and in-person

- **3 Groups**

- Group 1: Clinicians
 - Residents, interns, fellows
 - Attendings, faculty providers
 - Medical Assistants (MA) and Licensed Vocational Nurses (LVN)
- Group 2: Front desk staff
- Group 3: Patients
 - Any patient that completed the DST since September 2022

- **Recruitment Numbers**

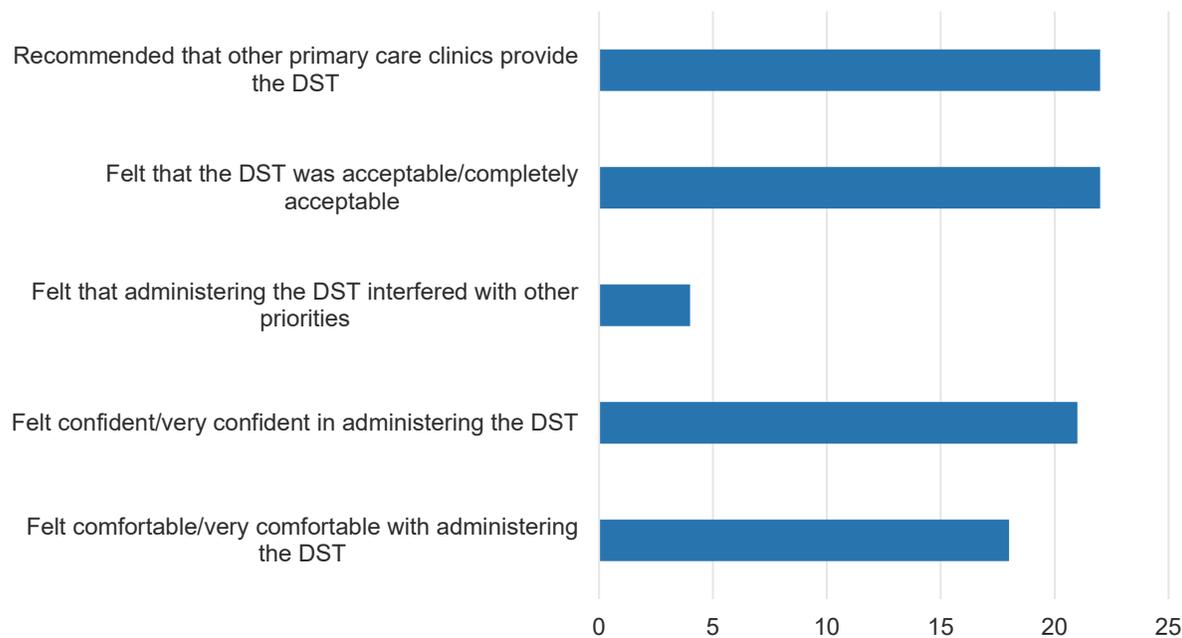
- Survey total: 75
 - Group 1: 30
 - Group 2: 10
 - Patients: 35 (Eng/Span)
- Interview total: 30
 - Group 1: 12
 - Group 2: 6
 - Group 3: 12 (English/Spanish)

- **Compensation**

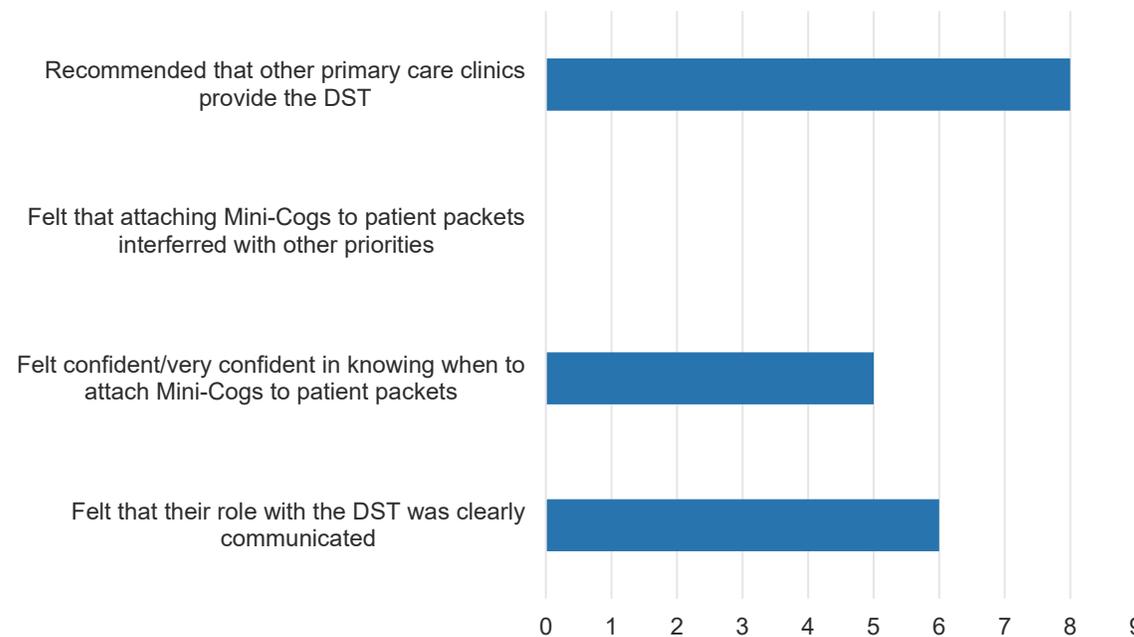
- \$10 e-gift card
- \$25 e-gift card

Feasibility and Acceptability Study: Preliminary Results

Group 1: Clinicians (N=22)

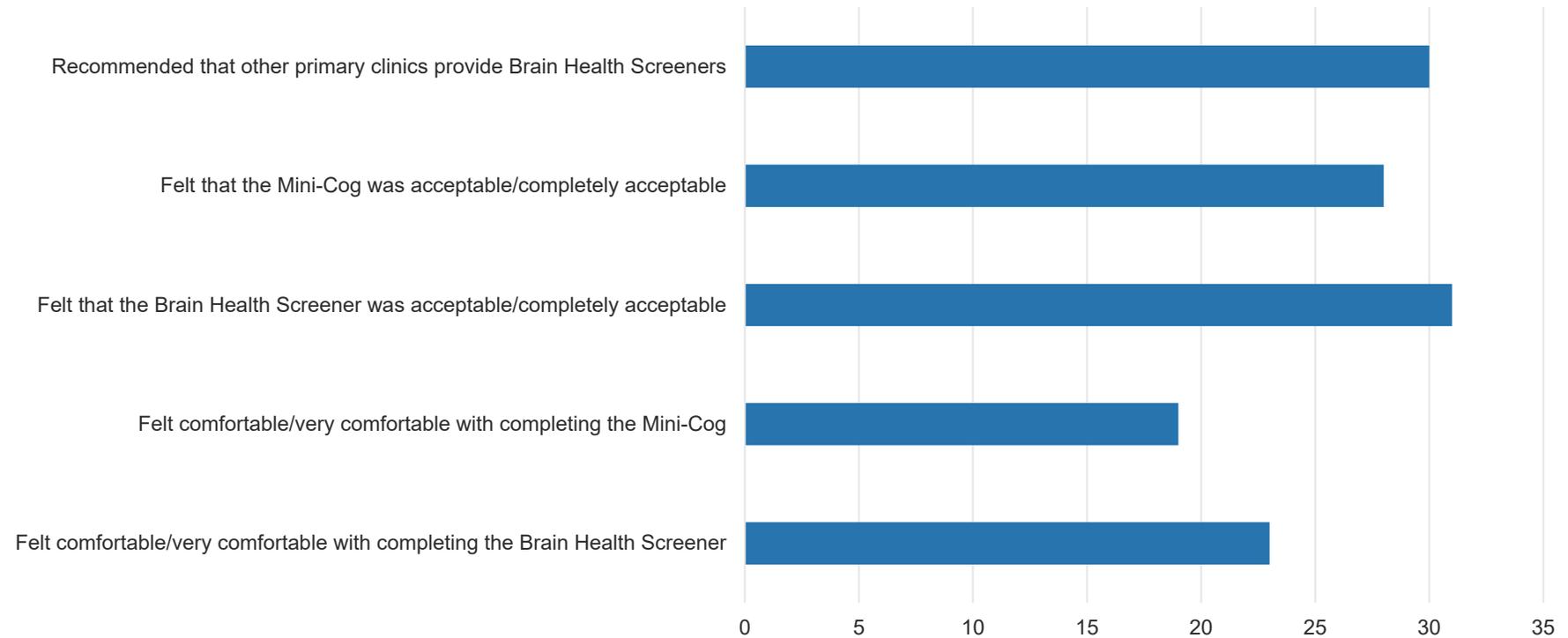


Group 2: Front Desk Staff (N=8)



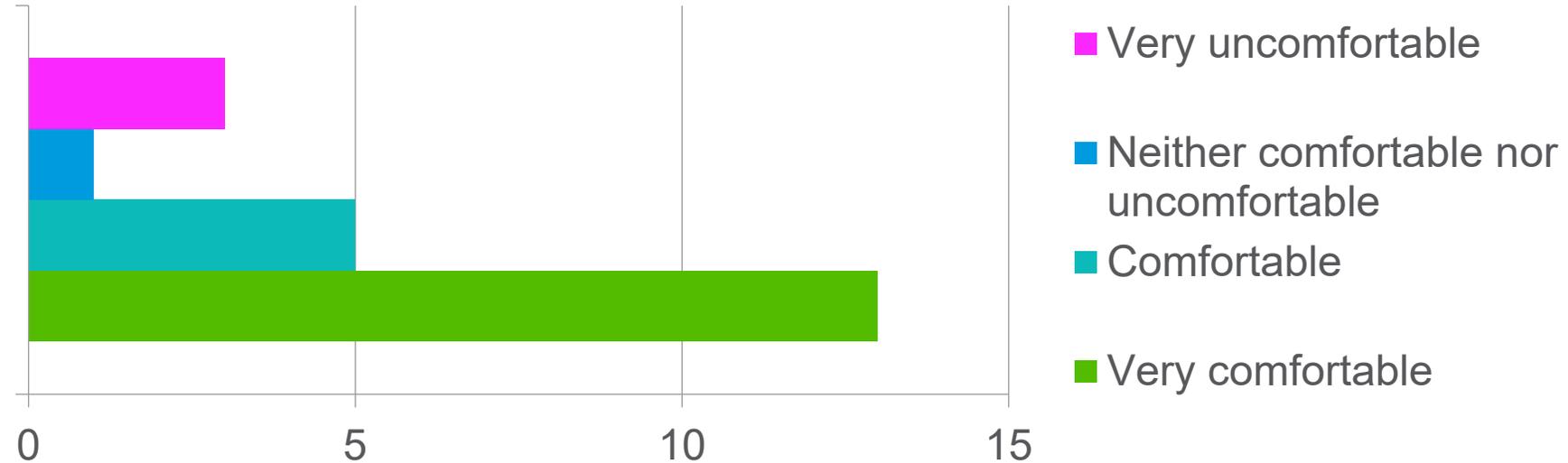
Feasibility and Acceptability Study: Preliminary Results

Group 3: Patients (N=31)



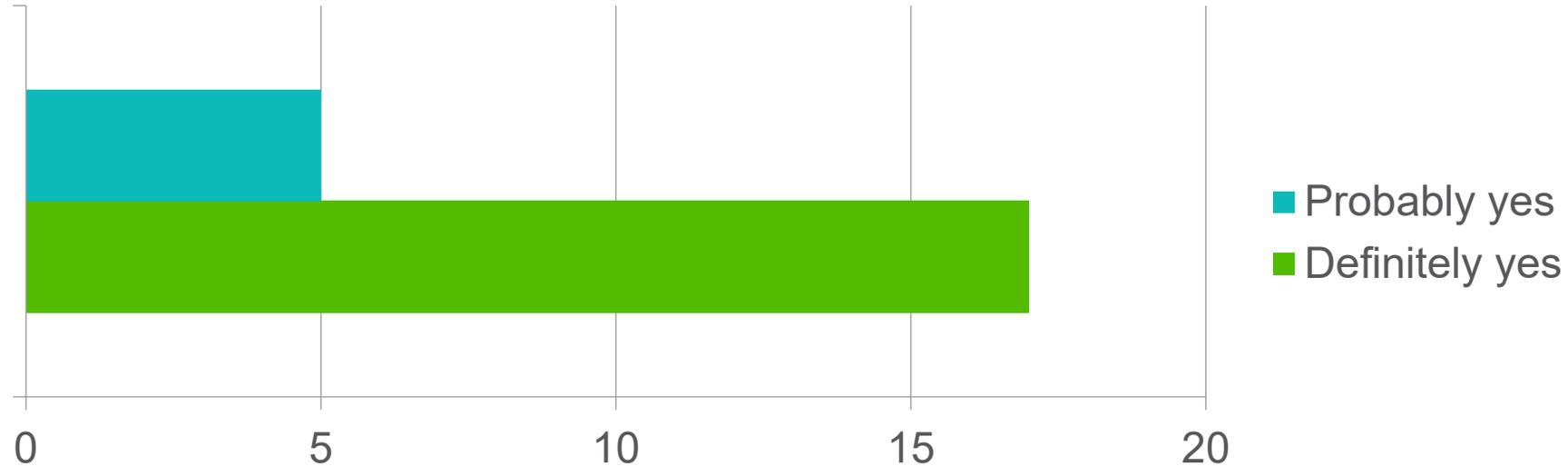
Group 1: Clinicians (N=22)

How comfortable did you feel administering the dementia screening toolkit (DST)?



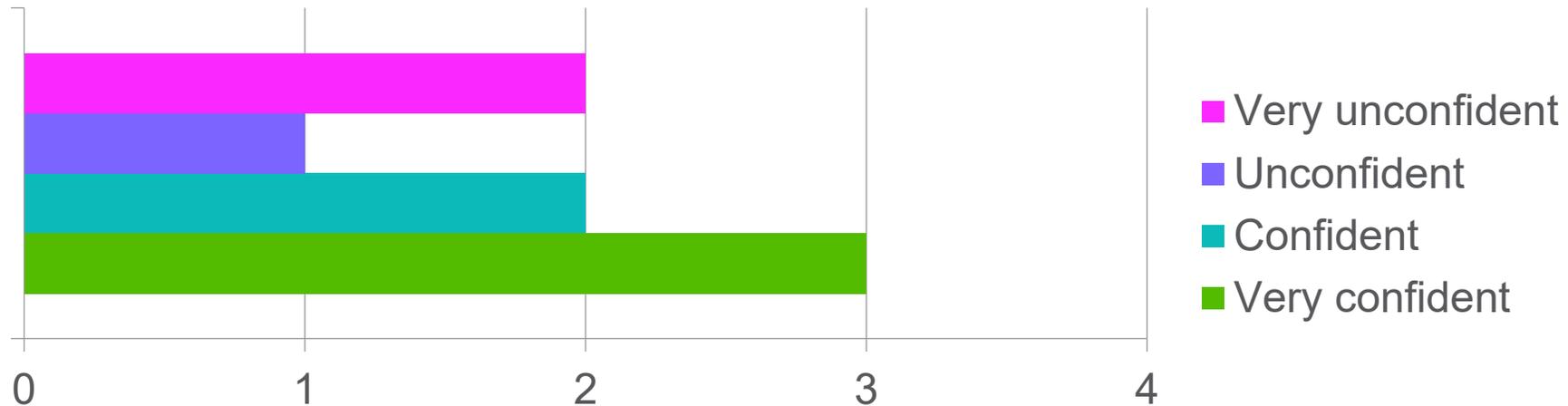
Group 1: Clinicians (N=22)

Would you recommend that other primary care clinics provide a dementia screening toolkit (DST)?



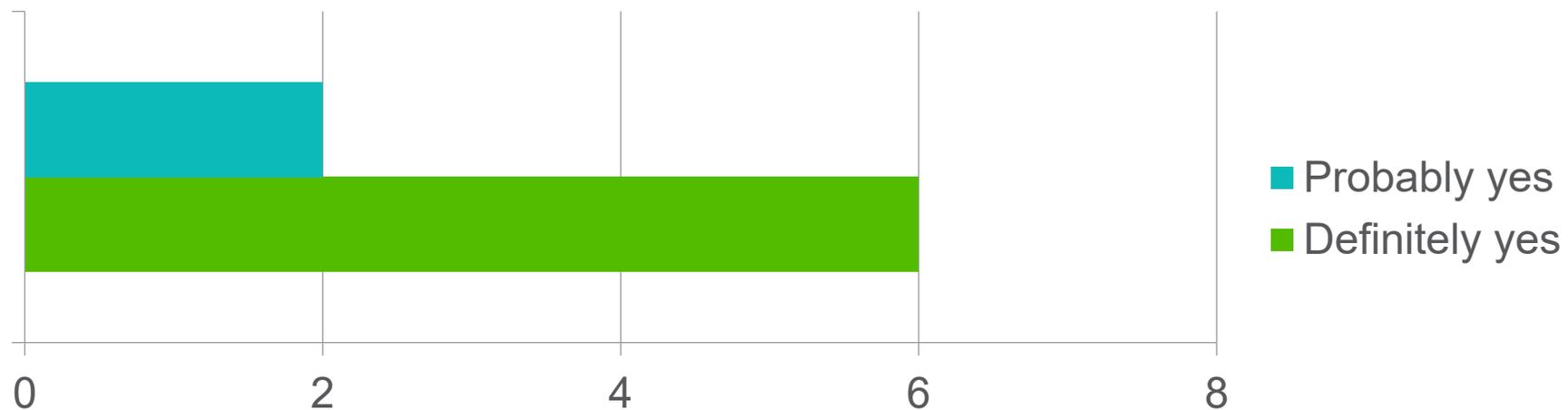
Group 2: Front Desk Staff (N=8)

How confident did you feel in knowing which qualifying patient packets needed Mini-Cogs attached?



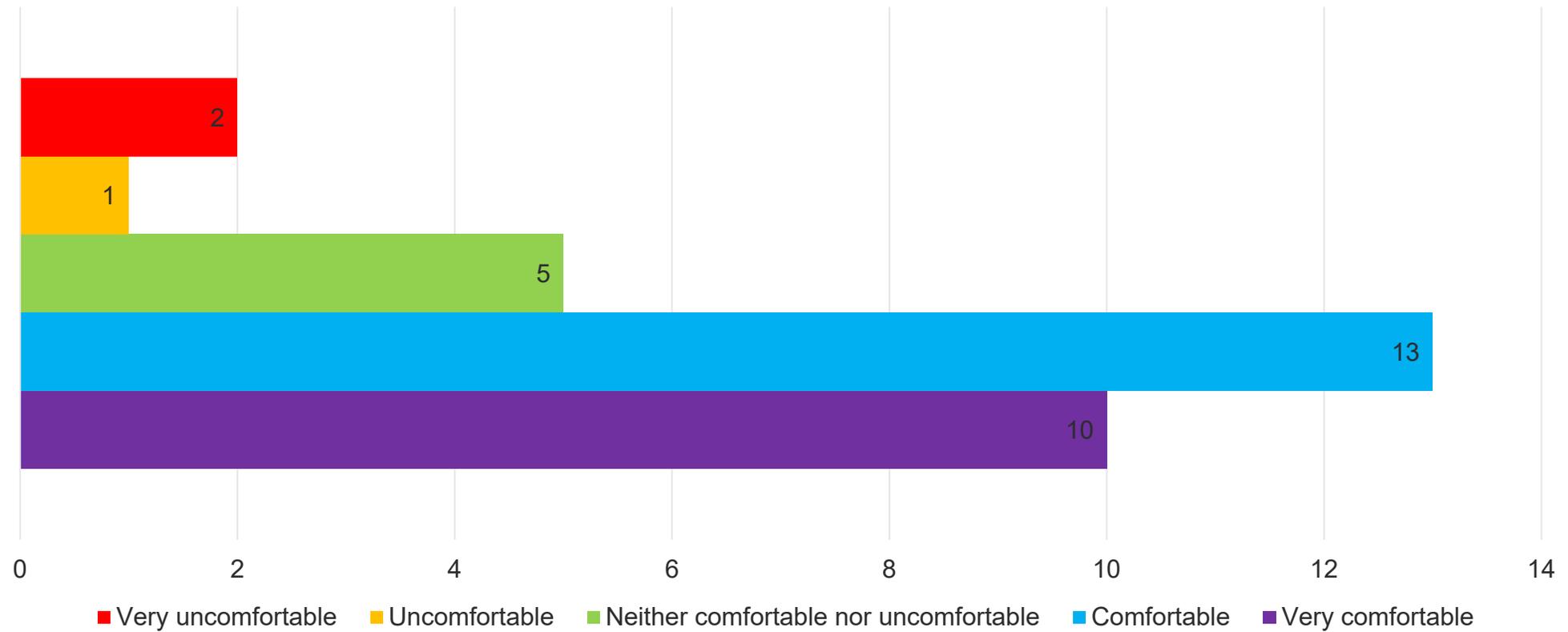
Group 2: Front Desk Staff (N=8)

Would you recommend that other primary care clinics implement a dementia screening toolkit (DST)?



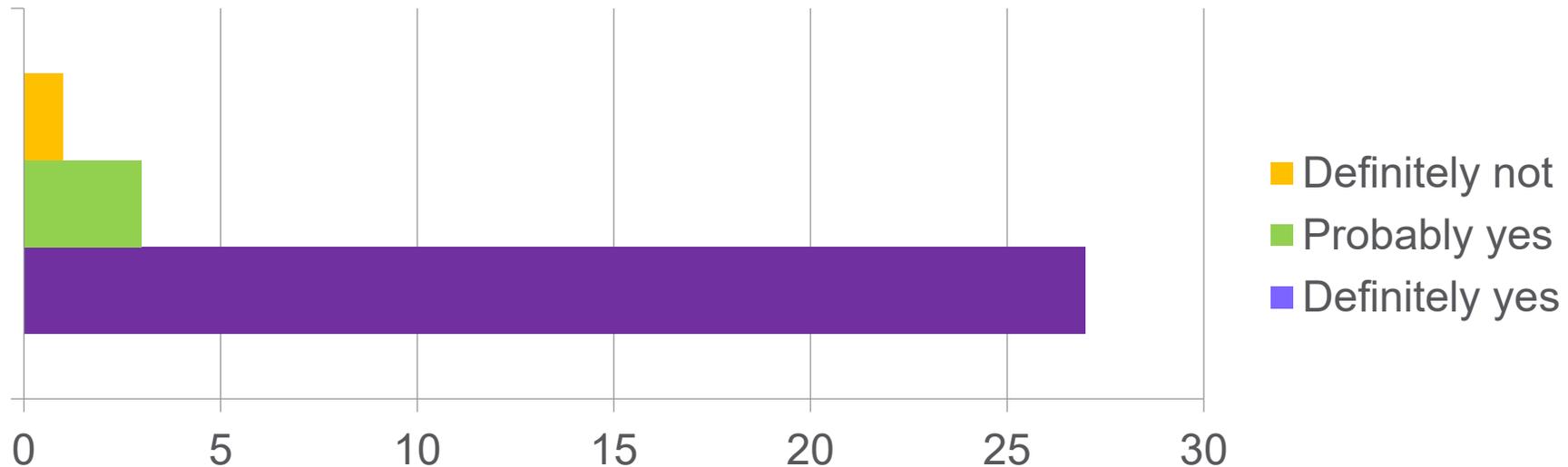
Group 3: Patients (N=31)

How comfortable did you feel completing the Brain Health Screener?



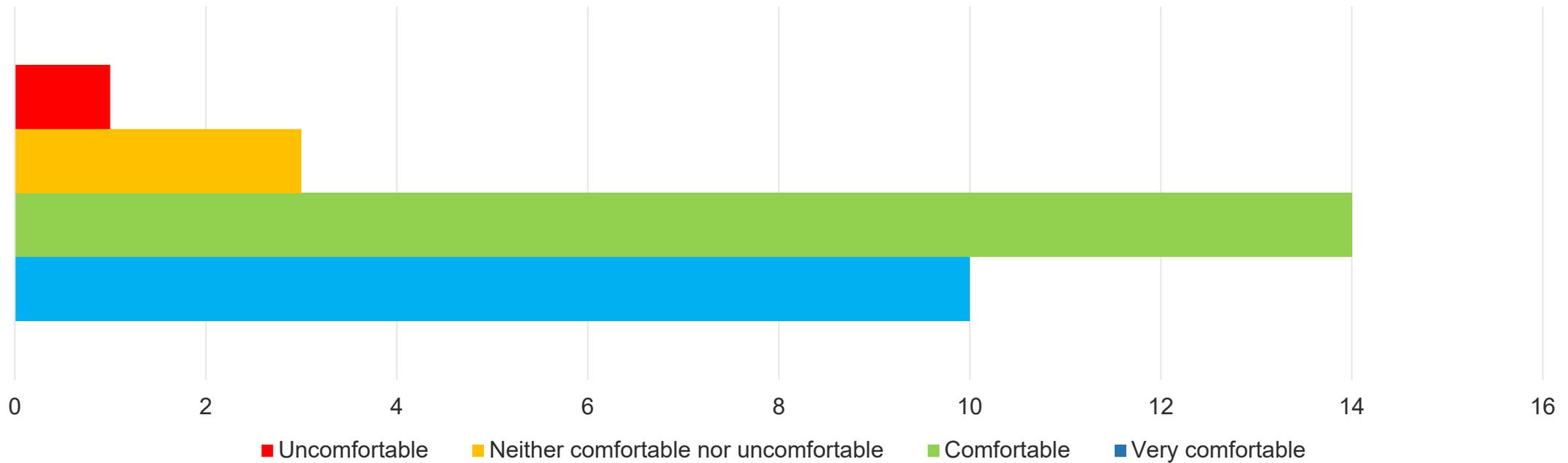
Group 3: Patients (N=31)

Would you recommend that other primary care clinics provide a Brain Health Screener?



Group 3: Patients (N=31)

How comfortable did you feel completing the Mini-Cog assessment?



Conclusion

- Alzheimer's disease and dementia are growing in prevalence, but continue to be underdiagnosed. Early detection strategies are necessary and the treatment landscape is changing
- Dementia Screening Toolkit implementation was a collaborative effort
- Large percentage of patients were screened
- Pre-post analysis showed DST increased new dementia diagnosis, workup and treatment
- DST was feasibility and had high acceptability among staff, providers and patients

Future Work

- Longer timeframes measured and other analyses
- Why did patients refuse the DST?
- Spanish Mini-Cog
- Expansion to other language
- Expansion to other family medicine clinics
 - Potential pilot with Health Risk Assessment questionnaire



Thank you

UCLA DST Team

Samantha Shah, BS
Dr. Satpal S. Wadhwa, PhD
Gabriela Islas Huerta, BS, BA
Dr. Blanca Campos, MD
Dr. Gerardo Moreno, MD, MS
Dr. Keith Vossel, MD, MSc
Dr. Michelle Bholat, MD, MPH
Dr. Mirella Diaz-Santos, PhD
Dr. Timothy Chang, MD, PhD

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