

## Process evaluation of a co-designed best practice model of dementia care in Aboriginal and Torres Strait Islander primary care: The Let's CHAT (Community Health Approaches To) Dementia project

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### ABSTRACT

Optimising brain health for older Aboriginal and Torres Strait Islander peoples is important given the high rates of cognitive impairment and dementia (CI/D) in this population. To achieve this, effective models of care for the primary care setting are needed. This paper reports on the process evaluation of a stepped-wedge cluster randomised controlled trial conducted with 12 Aboriginal Community Controlled Health Services (ACCHSs) across four states of Australia. The study implemented a culturally responsive, co-designed best-practice model of CI/D care for Aboriginal and Torres Strait Islander peoples. Utilising the integrated-Promoting Action on Research Implementation in Health Services (i-PARIHS) Framework, the process evaluation aimed to identify the components of a “successful implementation” for this type of intervention. Qualitative and quantitative data collected included interviews, workshop evaluation forms, implementation checklists, and researcher observational notes. Fidelity to the intervention (scored as low, medium or high) was medium overall. Dose delivered across ACCHSs and intervention activities varied markedly. The project's reach was high and ACCHS staff demonstrated high engagement. Major themes derived from the qualitative data were: 1. ‘Aboriginal health and

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diverse environmental ecosystems'; 2. 'Reciprocal relationships built on collaboration and cultural responsiveness'; 3. 'Community knowledges and understandings of memory and thinking problems'. Despite encountering several challenges, the intervention improved management of dementia, and had high uptake and acceptability among ACCHS staff. Identified factors affecting the intervention, notably related to context, will inform future initiatives to improve dementia care in primary care settings.

## 1. Introduction

Aboriginal and Torres Strait Islander peoples are living longer, and many people maintain good health well into older age. However, rates of cognitive impairment and dementia (CI/D) in Aboriginal and Torres Strait Islander communities across remote, regional and urban settings of Australia are three to five times higher than in the general Australian population (Radford et al., 2015; Russell et al., 2021; Smith, 2008). Meanwhile, detection rates in primary care settings are low (Baillie et al., 2016). This has negative consequences for Aboriginal and Torres Strait Islander individuals living with CI/D. Timely detection enables early intervention to establish appropriate post-diagnostic health care and

supports to maintain function and improve the quality of life of people living with CI/D (Rasmussen and Langerman, 2019), their carers and families (Livingston et al., 2024).

Primary care services play a major role in the detection and diagnosis of CI/D (Robinson et al., 2015). Improving dementia diagnosis and care in primary care are priority research areas (Wells and Smith, 2017). Known barriers to detection include stigma about dementia, competing health care priorities, limited knowledge in the general population and among health care providers (Bernstein Sideman et al., 2022). Aboriginal Community-Controlled Health Services (ACCHSs) are an important provider of comprehensive primary care services for Aboriginal and Torres Strait Islander peoples, with around half of the population

**Table 1**

Let's CHAT Dementia (LCD) intervention components.

	LCD intervention activities	Process (no. ACCHSs where implemented)
<b>Educational Sessions</b>	<p>ACCHS staff education on best-practice dementia care</p> <p>All staff workshops:</p> <ol style="list-style-type: none"> <li>1. Detection of CI/D</li> <li>2. Caring for People Living with CI/D</li> <li>3. Health Promotion and Prevention</li> <li>4. The Lived Experience, Building Empathy and Understanding</li> <li>5. Health and Wellbeing of Carers of People with CI/D</li> <li>6. Planning, Decision-making and End-of-life Care</li> </ol> <p>General Practitioner (GP) workshops:</p> <ol style="list-style-type: none"> <li>1. Detection, Diagnosis and Co-morbidity Management of CI/D</li> </ol>	<ul style="list-style-type: none"> <li>• Delivery format and frequency decided with ACCHS leaders.</li> <li>• Designed to build capacity of ACCHS employees.</li> <li>• Based on the Best-practice guide (BPG) for CI/D (10/12 ACCHSs)</li> </ul>
<b>Practice change initiatives</b>	<p>Areas for practice development identified from medical record audit data and fed back as part of continuous quality improvement (CQI).</p> <p>Development of evidence based best -practice guide to CI/D for older Aboriginal &amp; Torres Strait Islander peoples attending primary care.</p> <p>Modification of Older Persons Aboriginal and Torres Strait Islander Health Checks (AHC) (Medicare Benefits Scheme (MBS) item 715) template.</p> <ul style="list-style-type: none"> <li>• Lowered age of eligibility to 50 years</li> <li>• Include a section on cognition</li> </ul> <p>Development of GP management plan (GPMP) recommendations for patients at risk of/living with CI/D and their carers</p> <p>Dementia champion in each ACCHS</p> <p>Co-designed clinical resources developed to support clinical practitioners</p> <p><i>The following are additional (optional) practice change components developed based on feedback from ACCHS leaders and staff.</i></p>	<ul style="list-style-type: none"> <li>• Six-monthly audit capturing detection rates, patient risk factors profiles and model of care data.</li> <li>• Areas for improvement discussed with ACCHS staff. (11/12ACCHSs)</li> <li>• Developed through stakeholder consultation and an eDelphi process.</li> <li>• In-depth clinical and cultural review and feedback process. (11/12 ACCHSs)</li> <li>• Recommendations for changes to the older person's AHC discussed with ACCHS staff and leaders.</li> <li>• Section on cognition added to templates and uploaded to medical record software. (6/12 ACCHSs)</li> <li>• Developed evidenced-based, best-practice GPMP recommendations to include in care plans for people at risk of developing CI/D, living with CI/D, or caring for a person living with dementia. (11/12 ACCHSs)</li> <li>• ACCHS leader selected an appropriate staff member for champion role.</li> <li>• Scope of the role: <ul style="list-style-type: none"> <li>o Project support</li> <li>o Trained in best-practice dementia care</li> <li>o Support long-term sustainable outcomes.</li> </ul> </li> <li>(Recruited: 10/12 ACCHSs; retained for <math>\geq 75</math> % of study: 5/12 ACCHSs).</li> <li>• Co-developed with ACCHS clinical staff and service leaders (varied at each site). (7/11 ACCHSs)</li> </ul>
<b>Additional practice change initiatives</b>	<p>Awareness raising with local Aboriginal and Torres Strait Islander Community</p> <p>Training provided on administering the Kimberley Indigenous Cognitive Assessment (KICA) Tool</p> <p>Establishment of in-house geriatrician services</p>	<ul style="list-style-type: none"> <li>• Outreach activities decided upon collaboratively with ACCHS staff.</li> <li>• Included education workshops with Elders, stalls at community events, social media campaigns and brain health video campaigns. (8/11 ACCHSs)</li> <li>• ACCHS staff requested training in culturally appropriate assessment tools.</li> <li>• Training developed and conducted by experts in administration of the KICA tool. (6/12 ACCHSs)</li> <li>• Identified as a culturally appropriate option for patient care to support diagnosis of CI/D. (4/9 ACCHSs + already in place in 2 ACCHSs)</li> </ul>

accessing these services (Australian Institute of Health and Welfare, 2023). Founded on principles of self-determination (Gomersall et al., 2017), ACCHSs aim to provide a model of comprehensive primary health care in a culturally safe, community-based and holistic setting (Panaretto et al., 2014).

The Let's CHAT (Community Health Approaches To) Dementia in Aboriginal and Torres Strait Islander Communities (LCD) project co-designed and implemented a culturally responsive best-practice model of CI/D care in partnership with 12 ACCHSs across Australia. The study adopted a stepped-wedge cluster randomised trial design (SW-CRT). All participating ACCHSs commenced as control sites for a minimum of six months and then entered the intervention in randomly determined groups of four sites every six months until all ACCHSs were in the intervention. The planned minimum period of intervention exposure was 18 months, and the maximum was 30 months. The project aims were to improve detection and management of CI/D among Aboriginal and Torres Strait Islander peoples attending primary care. The two co-primary study outcome measures were: (a) an increase in documentation of detection of cognitive impairment or dementia in audited medical records; and (b) evidence of uptake of the diagnostic pathway for CI/D (e.g. cognitive assessment; relevant pathology investigations; relevant neuroimaging (computed tomography (CT) or magnetic resonance imaging (MRI)); specialist referral) (study outcomes are reported in Hughson et al., 2025).

The intervention comprised an implementation program with educational sessions for ACCHS staff and practice change initiatives (Table 1). The project aimed to ensure culturally secure research practice and allowed for program flexibility and tailoring to meet individual ACCHS preferences. The project was managed by a university-based team, with oversight from the national Project Management Group (PMG) and the project's Indigenous Reference Group (IRG). The IRG was co-chaired by an Aboriginal project investigator and a Torres Strait Islander project investigator. Community members with interest in advocating for Aboriginal and Torres Strait Islander Elders were recruited from each state. The project benefitted from the oversight, guidance, and active participation of Aboriginal and Torres Strait Islander research staff ( $n = 10$ ), and participating ACCHSs. The program was implemented by (i) Aboriginal and Torres Strait Islander and non-Indigenous LCD research team members, (ii) 'Ageing Well' champions (AWC) who were ACCHS staff recruited at each site to support the project, and (iii) ACCHS health professionals and relevant management personnel. Implementation activities are detailed in Table 1.

Current recommendations for reporting of complex interventions encourage examination of a wider set of questions beyond quantitative trial outcome measures. Understanding how an intervention was implemented, what affected implementation, its relative value in terms of resourcing required, how it is influenced by context (identifying barriers and facilitators), and how evidence generated can support decision making, are important (Skivington et al., 2021). Additionally, and especially within Aboriginal and Torres Strait Islander settings, explicit evaluation should form part of an overall assessment of the value and benefit of the research to the communities involved (Bainbridge et al., 2015).

In deepening our understanding of the implementation and outcomes achieved for the LCD trial (Hughson et al., 2025), we undertook a process evaluation (Bradley et al., 2020), guided by the integrated-Promoting Action on Research Implementation in Health Services (i-PARIHS) Framework. The i-PARIHS Framework is commonly used in healthcare interventions, including interventions for Aboriginal and Torres Strait Islander communities (Laycock et al., 2018; McCalman et al., 2016), as it is designed to accommodate multi-dimensional and complex settings (Harvey and Kitson, 2016).

This paper describes the LCD process evaluation, focusing on fidelity, dose and reach, as well as contextual factors. This evaluation reviewed the overall success of the intervention, using i-PARIHS together with an Indigenous lens.

## 2. Methods

The i-PARIHS Framework adopts the formula:  $SI = Fac(I + R + C)$  whereby the I = **Innovation**, or what is being implemented and the supporting evidence, R = the **Recipients**, or people involved in and affected by the implementation - individually and collectively, and C = the **Context**, which includes the local and organisational context (inner context) as well as the wider health system in which the organisation is based (outer context). Fac = **Facilitation** and is positioned as the core component supporting implementation by being reactive and responsive to the other constructs (Harvey and Kitson, 2016). Facilitators can be internal (e.g. staff within the health service) or external (e.g. research team members), and at different levels of seniority (novice, experienced, expert) (Harvey and Kitson, 2015). Each component needs to be considered and catered to for **successful implementation** (Harvey and Kitson, 2016) and analysed when interpreting outcomes in the context of a process evaluation.

A mixed-methods approach with prospective and retrospective data collection was used. To ensure cultural grounding, Aboriginal researchers were involved in all aspects of the study and evaluation. To ascertain the degree of success of the implemented program the evaluation examined fidelity, dose delivered, reach, and dose received (Albritton et al., 2014). To deepen understanding of contextual factors, facilitators and barriers affecting the uptake of the model of care, a thematic analysis of qualitative data from the study was undertaken, guided by an Indigenous epistemological lens. While acknowledging the diversity of Indigenous worldviews, it is also recognised that there are commonalities in ways of knowing across Indigenous groups (Antoine et al., 2018), and it is these commonalities that inform and shape what we have termed an 'Indigenous lens'. Epistemological features that were particularly pertinent to the data analysis for this process evaluation are well described in this quote from Arabena (2008):

In honouring the integrity of their Universe as a whole interconnected life system, Indigenous peoples have learned over many generations to be in the world in reciprocal relationships with all things in their Universe, through cooperation, complementarities and interdependence. (p.1).

### 2.1. Data collection

Qualitative and quantitative data, collected between October 2018 and July 2023 comprised semi-structured individual and focus-group interviews conducted with ACCHSs staff and LCD staff, workshop evaluation forms, implementation checklists, and researcher observational notes (see Table 2).

#### 2.1.1. ACCHSs staff interviews and focus groups, workshop evaluation forms and intervention checklists

Individual and focus-group interviews were conducted online or in person by LCD researchers (external facilitators) (RM, JH, KB, BG, SR, BA, KF, DCJ, KS). ACCHS staff were purposively sampled to include representatives at varying levels of seniority at each ACCHS. Focus groups comprised four to six ACCHS staff. The interview guide was adapted from the i-PARIHS facilitation guide and used a semi-structured format to elicit detailed feedback on ACCHS experiences of the intervention (Harvey and Kitson, 2015). Interviews were audio recorded and subsequently transcribed, or interviewers took detailed notes. In six cases, participants who were unable to meet provided written responses. ACCHS interviews were originally planned six-monthly, however, in practice, could only be undertaken opportunistically, and many were conducted late in the study. Two types of workshop evaluation forms were developed with a set of four to six questions, one using a Likert scale and the other consisting of open-ended questions. Forms sought feedback on informativeness, areas for improvement, and suggested future topics. Implementation checklists outlined the number of

**Table 2**  
LCD study data set.

Data Type	Number of items	When data were collected <sup>a</sup>	Mode	Description
<b>Qualitative data</b>				
ACCHSs staff interviews	36	Year 2 (n = 3), Year 3 (n = 13), Post intervention (n = 20)	In person/online, Individual/focus groups of 3–6 people	ACCHSs staff: Aboriginal Health Workers/Practitioners, Clinical Team Leaders, GPs, Practice Managers, Care Coordinators, Nurses and CEOs. Conducted by LCD research staff
LCD researcher interviews/ Focus groups	13 n = 6 focus groups & n = 7 interviews	Focus groups: Year 3 (n = 1) Post intervention (n = 5) Interviews: Post intervention (n = 7)	In person/online, Individual/focus groups of 3–4 people	Project officers, Research Assistants, Project Manager, Chief Investigators, Associate Investigators, Lead Investigator Conducted by an independent interviewer.
Researcher notes	102	Continuous	LCD researchers' written notes	General notes, workshops notes, CQI notes.
Workshop evaluation forms	69	Continuous	Survey (Likert-scale/text box response)	Workshop feedback forms completed by ACCHS staff workshop attendees
<b>Quantitative data</b>				
Implementation checklist	11	Continuous	Tick-box form	Intervention activity checklists completed by LCD research staff, including: 1. Educational Sessions. >/ = 75 % completed 2. AWC >/ = 75 % of the intervention period 3. Presentation of audit data to support CQI 4. Provision of BPG 5. Provision of GP management plan recommendations 6. Co-designed clinical resources, e.g. dementia protocol with local referral pathway and/or brain health pathway flow chart 7. Establishment of in-house geriatrician clinic 8. Community outreach and/or Brain Health Campaigns 9. KICA Tool Training

<sup>a</sup> Data was collected at different phases across the 3-year intervention period and shortly after the intervention was completed (post intervention). For data collected during the intervention, we have specified in which year data collection events took place (ie. year 1, year 2 or year 3).

activities completed at each site and were completed by LCD facilitators (Table 1).

### 2.1.2. LCD staff interviews/focus groups and observational notes

In the intervention's final year, ethics was obtained to supplement the qualitative data. Individual and focus-group interviews were conducted with LCD research staff near/after completion of the project intervention. Up to four LCD staff participated in the focus groups. The semi-structured interview guide was developed from the i-PARIHS facilitation guide and explored LCD staff experiences of the intervention. Anonymised observational notes recorded by LCD facilitators at each research site were also incorporated into the dataset. These documented general observations about program implementation and discussions with ACCHS staff about the intervention, quality improvement initiatives, and contextual/environmental factors impacting the intervention. Notes taken during educational sessions recorded attendance, ACCHS staff reactions, and satisfaction towards the material presented.

## 2.2. Evaluation team

The process evaluation was co-led by the project manager (JH) with guidance from co-investigator (IB) who has extensive experience in evaluations of complex interventions. An external qualitative data specialist (NP) conducted interviews with LCD research personnel and investigators and assisted with data analysis. An in-depth, collaborative team-based approach facilitated active involvement from the Aboriginal and Torres Strait Islander LCD staff in the study's process evaluation (LP, HD, RM, DCJ, KS, JC). This included collecting the quantitative and qualitative data (aside from the LCD research personnel interviews), co-developing the coding matrix, coding data, undertaking the thematic analysis and analysing quantitative data.

## 2.3. Participants and recruitment

Participants included ACCHS staff and LCD research personnel.

Interviewed ACCHS staff (n = 33) had been involved in the LCD project as workshop attendees and/or champions and managers who liaised with LCD facilitators to implement the project, and staff in leadership roles who had oversight of the study in their respective ACCHS. LCD research staff (n = 15) and project investigators (n = 6) who had been involved in implementation activities at partnering ACCHS sites also participated in an interview/focus group. All participants were provided plain language statements, advised that participation was voluntary, and gave written consent to participate prior to interviews/focus groups taking place.

## 2.4. Ethics

This study was approved by the Aboriginal Health and Medical Research Committee of NSW, the University of Melbourne Human Research Ethics Committee (HREC), the Western Australian Aboriginal Health Ethics Committee, the Kimberley Aboriginal Health Planning Forum and James Cook University HREC. This study was registered with the Australia and New Zealand Clinical Trials Registry (ACTRN126 18001485224).

## 2.5. Data analysis

Qualitative and quantitative data were analysed separately, producing two sets of findings, and integrated during interpretation.

### 2.5.1. Quantitative data analysis

Quantitative data were compiled from implementation checklists outlining intervention activities achieved and workshop attendance records. Descriptive summary statistics were calculated. Members of the data analysis team met to discuss and agree on the analysis process and scoring (HD, RM, LP, KS, JH, KB, IB, DLG). Fidelity was measured by comparing the degree to which intervention activities deviated from the original study protocol (Bradley et al., 2020) and was recorded as high (>80 %), medium (60–70 %) or low (0–50 %). Fidelity was examined in

relation to individual ACCHSs, the timeline, order of entry into the intervention (step), state, and setting (metropolitan, rural, regional or remote (Australian Government Department of Health and Aged Care, 2023). Reach was calculated by totalling workshop attendance lists. Dose delivered measured the number and proportion of practice-change initiatives implemented. The quantitative data were tabulated and analysed using descriptive statistics by JH, KB and LP.

### 2.5.2. Qualitative data analysis

Recorded focus groups/interviews were transcribed by an external transcription agency (Pacific Transcription Pty Ltd) and checked for accuracy. Interviews, researcher notes and workshop evaluation forms were de-identified and loaded into data management program NVivo 14 (Lumivero, 2023). Project manager (JH), research team member and senior LCD facilitator (KB) and external qualitative expert (NP) worked collaboratively to develop a draft codebook. Each familiarised themselves with the qualitative data independently (Braun and Clarke, 2006), then coded a sample of each data type and developed a preliminary codebook. Two documents were double coded by KB and NP then compared to facilitate a standardised coding process and ensure inter-coder reliability (O'Connor and Joffe, 2020). Codes were initially derived deductively, guided by the i-PARIHS codebook (Ritchie et al., 2022). A second, inductive coding of the data was completed for data not captured by the i-PARIHS codebook (e.g. codes describing relationships between recipients and facilitators).

A half-day workshop was held to co-design a coding matrix with the data analysis team, which comprised LCD Aboriginal and Torres Strait Islander research staff (DCJ, RM, KS, LP, HD) and non-Indigenous staff with qualitative data analysis expertise (JH, KB, NP). Next, the qualitative dataset was collaboratively coded by an Aboriginal research staff member and qualitative data analyst in partnership. Collaborative coding was enacted as a strategy to reduce racial and colonial power dynamics while simultaneously leading to the co-production of results and improved analysis (Zreik et al., 2022). Once coding was completed the entire data analysis team (DCJ, JaC, RM, KS, LP, HD, IB, DLG, JH, KB, NP, JuC) met over two days to generate higher-order themes. This process was guided by the Aboriginal research personnel whose Indigenous cultural worldview led to a reframing of the i-PARIHS constructs (described in section 3.4).

### 2.5.3. Measuring success

During analysis, results were also considered with regard to i-PARIHS's four criteria for determining "successful implementation" of an intervention: (i) Achievement of agreed project goals – by examining fidelity, reach and dose delivered; (ii) Uptake and embedding of the innovation in practice—evidenced by co-primary outcome measures and feedback from ACCHS staff; (iii) Individuals, teams and stakeholders are engaged, motivated and 'own' the innovation – reflected in the acceptability of the intervention/'dose received', in the form of ACCHS staff feedback, and; (iv) Variation related to context is minimised across implementation settings (Harvey and Kitson, 2015, p.41).

## 2.6. Data sharing

Data from the LCD study and its process evaluation were collected under strict agreement with participating ACCHSs and are not publicly available. Participation agreements with partnering ACCHSs and data collection instruments can be provided upon request via the corresponding author.

## 3. Results

### 3.1. Planned implementation versus actual implementation

Changes to the format and timing of intervention activities were necessary to accommodate barriers to implementation encountered due

**Table 3**  
Planned versus actual implementation.

Study aspect	Implementation	
	Planned	Actual
<b>Timeline</b>	Continuous and concurrent entry into the intervention (control/implementation) for all services, commencing on 1st September/October 1, 2018 and finishing on 31st August/September 30, 2021 comprising 7 audit periods of six months each.	<ul style="list-style-type: none"> <li>- Late entry of services in one state (commenced February 2019) due to recruitment delays</li> <li>- Disrupted implementation at all services, with a hiatus period of varying duration (4.5–12 months) at each ACCHS corresponding to lockdown periods during the COVID19 pandemic (retrospectively added as an extra 'COVID19' audit).</li> <li>- Addition of an extra audit in one state to accommodate late entry of their Step 3 ACCHS. The ACCHS in question received only 12 months in the intervention phase (instead of 18 months).</li> </ul>
<b>Workshop format</b>	Face-to-face workshop delivery	<ul style="list-style-type: none"> <li>- Workshops were adapted and presented in an online format, as needed, to accommodate access issues.</li> <li>- An 'implementation pack' was created and provided to one service that was unable to complete the training.</li> </ul>
<b>AWC role</b>	Internal ACCHS facilitator, assisting with practice change initiatives	Engagement levels of the AWCs varied across health services, with the staff member often functioning as a support person for the project rather than an internal facilitator.
<b>CQI processes</b>	<ul style="list-style-type: none"> <li>- Identify areas for practice development or learning with each ACCHS partner.</li> <li>- Engage with existing CQI processes in the health service and utilise the "Plan, Do, Study, Act" (PDSA) cycle.</li> </ul>	Despite best efforts to work with existing processes, CQI was ultimately applied more opportunistically than systematically, usually taking place during educational workshops. Access was a factor in this, as was low engagement/availability of AWCs and other staff.

to outer contextual factors – mostly related to the COVID19 pandemic. Modifications made to the study are outlined in Table 3.

### 3.2. Fidelity, dose and reach

Fidelity to the LCD intervention varied across health services, with an overall score of medium. Individually, six sites scored high for fidelity, four medium, and two low. The overall fidelity of the program in relation to the planned timeline was also medium across sites (individually: 1 = high, 6 = medium and 5 = low). Fidelity scores based on step, state and location were mostly medium. The exceptions were ACCHSs entering the intervention at step 3 scored low and metropolitan locations scored high (Table 4). Dose delivered varied considerably for step and setting (Table 4), and individual practice-change initiatives (Table 5). Attendance at LCD workshops totalled 626 instances throughout the study. Reach differed according to step and setting (Table 4).

### 3.3. Thematic analysis

The i-PARIHS framework was modified at the analysis stage to reflect and incorporate an Indigenous epistemological approach. Core tenets of the i-PARIHS framework (facilitation, recipients, innovation and inner

**Table 4**  
Fidelity, dose delivered and reach across study step & setting.

	Step			Setting			
	1	2	3	Remote	Rural	Regional	Metro
<b>Dose Delivered</b>	75 %	77.5 %	50 %	70 %	46.7 %	75 %	83.3 %
<b>Fidelity</b>	Medium (H, M, M, M)	Medium (H, M, M, M)	Low (M, M, L, L)	Medium (H, M, L)	Medium (M, M, L, M)	Medium (M, M)	High (M, H, H)
<b>Reach<sup>a</sup></b>	252	262	112	161	177	76	212

<sup>a</sup> Note attendance could include the same person attending multiple education sessions.

**Table 5**  
Practice change initiatives: dose delivered and fidelity score.

Practice change initiative	Percentage of dose delivered across health services <sup>a</sup>	Fidelity of practice change initiative <sup>a</sup>
<b>Planned practice change initiatives</b>		
Educational Sessions. $\geq 75$ % completed	83.3 %	High
Aging Well Champion. $\geq 75$ % of the intervention period	41.8 %	Low
Modification of Older Persons Aboriginal Health Check (715)	50 %	Low
Presentation of audit data to support CQI process	91.7 % <sup>a</sup>	High
Provision of BPG	91.7 % <sup>a</sup>	High
Provision of GP management plans recommendations	91.7 % <sup>a</sup>	High
Co-designed clinical resources. Dementia protocol with local referral pathway and/or brain health pathway flow chart	58.3 %	Medium
<b>Optional practice change initiatives</b>		
Establishment of inhouse geriatrician clinic (optional)	41.8 %	Low
Awareness raising (optional)	66.6 %	Medium
KICA Training (optional)	41.8 %	Low

<sup>a</sup> (high =  $>80$  % medium = 60–70 % and low =  $<50$  %).

and outer context) were reframed to focus on relationships, interdependencies and interconnectedness, and a holistic worldview rather than discrete constructs.

Three major themes and two sub-themes were identified: (i) ‘Aboriginal and Torres Strait Islander health and diverse environmental eco-systems’ with subtheme ‘Complexities and competing challenges in Aboriginal and Torres Strait Islander communities’; (ii) ‘Reciprocal relationships built on collaboration and cultural responsiveness’ and (iii) ‘Community knowledges and understanding of memory and thinking problems’ with sub-theme ‘Uptake of model of care’. The representation of the project outcomes (Fig. 1) incorporates the i-PARIHS constructs and the LCD logo (Supplementary Fig. 1), designed before the intervention started, but seemingly predestined to relay the story of the study.

The following sections present a selection of salient codes and accompanying quotes within the three major themes, providing a global view of implementation for the study overall. Table 6 includes three implementation case studies representing varying degrees of success for the i-PARIHS criteria (excluding minimisation of variation, which can only be examined overall). Fig. 1 displays all themes and codes, with a sample quote for each.

### 3.3.1. Theme 1: Aboriginal and Torres Strait Islander health and diverse environmental ecosystems

In Fig. 1, this theme is depicted by the hundreds of tiny dots in the four quadrants of the design; the multiplicity of peoples and contexts affecting the study. Inner and outer contextual factors influencing implementation of the LCD program were dependent on varied and diverse environments and systems within the Aboriginal and Torres Strait Islander health landscape. Outer factors, such as geography and health service size directly impacted aged-care resourcing, staff retention and ease of accessibility, meaning that implementation was shaped differently in each location.

*“In the remote you only got one clinic service, so everybody relies on that ... if someone gets diagnosed with dementia, no, there’s no support there at all.”* (ACCHS staff)

Inner contextual factors like strong team cohesion and good staff

retention facilitated uptake of the LCD program:

*“We’re pretty lucky with all the doctors ... that we get ... the clients seem to find them approachable and ... they’ve always got that willingness to refer out and help and do what they can to improve our people’s quality of life ... yeah, that’s probably our biggest strength ... our teamwork and the team’s willingness to, I guess, go the lengths for the people.”* (ACCHS staff)

The COVID19 pandemic and associated developments such as vaccination drives, were unexpected wider contextual dimensions presenting major barriers to implementation:

*“We were not able to access the site for around two years ... Even after the last lockdown ... it took a long time to be able access the services again because of their COVID protocol. COVID has made the implementation activities very difficult to achieve. However, we still managed to achieve most.”* (Researcher notes)

**3.3.1.1. Subtheme: complexities and competing challenges in Aboriginal and Torres Strait Islander communities.** The Aboriginal and Torres Strait Islander health context is a complex sociocultural and socioeconomic environment that proved, at times, to present barriers to successful implementation. Examples of internal factors were: competing role priorities of ACCHS staff; and complex workplace cultures that included high staff turnover, staff shortages, and work stress. High demands placed on ACCHS staff – working in fast paced, high-pressure, limited-resource environments with a predominantly vulnerable patient cohort – meant often needing to prioritise immediate and pressing concerns:

*“It was tricky to get in contact, even going out to [ACCHS] regularly, as they were often not in their offices, or in meetings, or in a rush somewhere else, which is understandable given their high responsibilities.”* (Researcher notes)

The demands on ACCHS staff were further exacerbated by the COVID19 pandemic:

*“When we tried to re-engage, all the management had changed., We had to start from scratch .... I met the receptionist at the time, [she] was like, ‘We have no practice manager, we have no team leaders, and we have no*

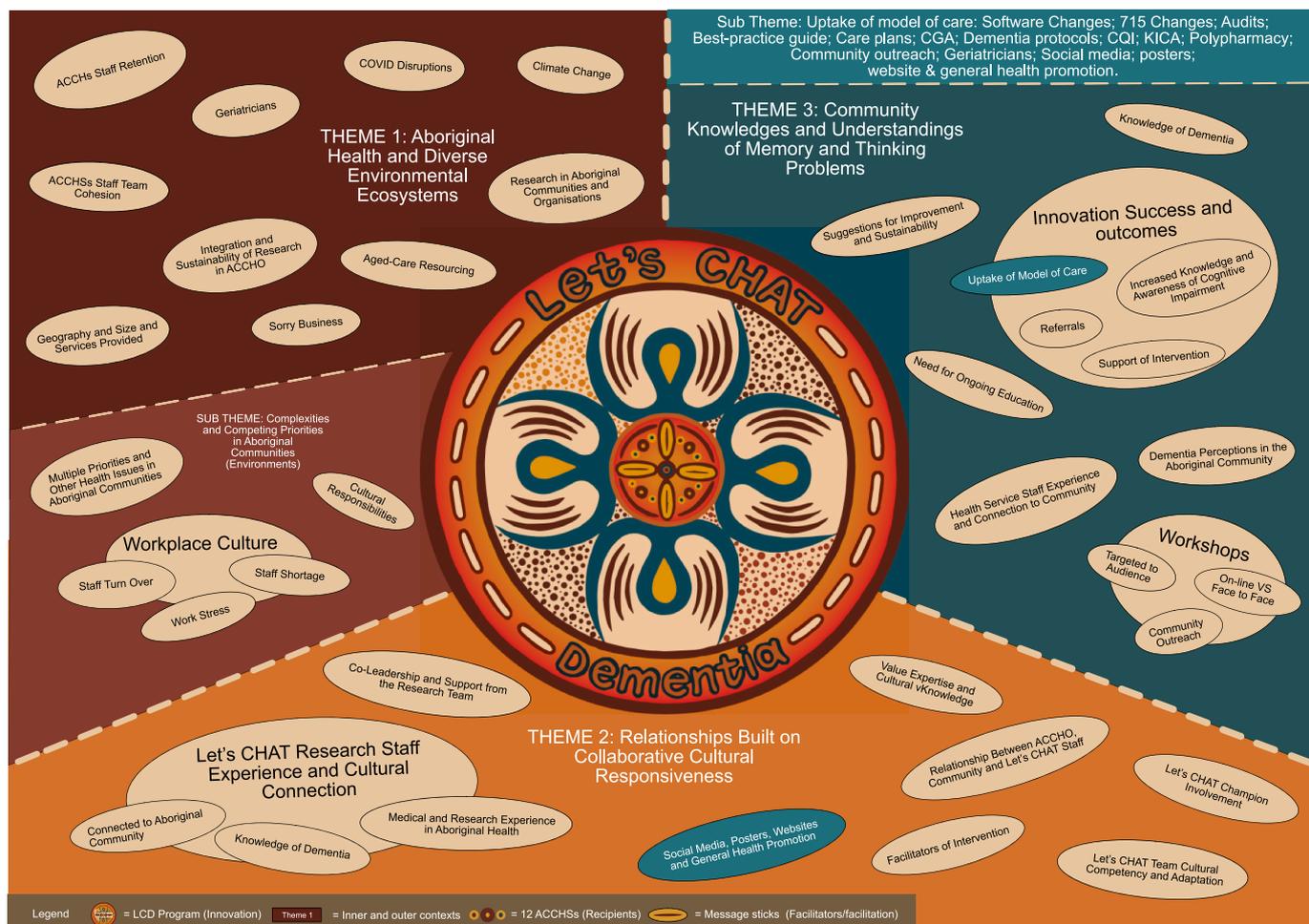


Fig. 1. Themes, codes and sample quotes from the thematic analysis of the Let's CHAT Dementia process evaluation.

GPs. There isn't anybody that I can put you in touch with to be able to even start the project (again).'" (LCD staff)

3.3.2. Theme 2: reciprocal relationships built on collaboration and cultural responsiveness

This theme is depicted within the central circle of the logo (Fig. 1). The 12 small circles are the ACCHS partners (recipients), and the four message sticks represent the facilitation aspect of the study; passing on the information and awareness about dementia care. In the age-old practice of communicating via message sticks, the messenger carrying the message stick was a fundamental part of the process, reproducing an oral message while pointing to the relevant marks on the stick (Australian Message Stick Project, 2024). This highlights the crucial role of the LCD facilitators. The circle surrounding the ACCHSs and facilitators denotes the relationship. Project relationships were built on reciprocity and collaboration, and a valuing of the LCD innovation and expertise of the LCD facilitators by ACCHS staff. These proved to be essential ingredients for successful implementation. For intervention outcomes to be truly successful efforts needed to be reciprocated by ACCHS staff and were evidenced by engagement with, valuing and taking ownership of the intervention. Research team characteristics such as a connection to the Aboriginal and Torres Strait Islander community and having strong knowledge of CI/D and/or a history of medical and/or research experience in Aboriginal and Torres Strait Islander health were highly valued by ACCHS staff:

"Being more aware (of) dementia within our community with our aging population was something that we needed to be more mindful of. ... I think

the education is fantastic. Having Aboriginal people deliver the content too, I think that's important." (ACCHS staff)

To support effective implementation, novice LCD facilitators received comprehensive and ongoing training from senior research team members (expert facilitators). This included in-person (2018, 2019 and 2021) and ongoing personalised training (online) in: data collection procedures; the implementation program – including train-the-trainer sessions – and the LCD facilitation role. In addition to formal training, staff received ongoing group and individualised support, with the establishment of a monthly researcher meeting in 2019 for staff that operated as a place to share knowledge and implementation strategies, provide updates on progress and receive support from project management and peers. Support was cited by LCD staff as a strong feature of the project:

"The research team were supportive. Each time I emailed them, I would get a reply back ... [Project manager] would actually call as well ... of course, learning something new, I had a lot of questions. I needed training from [main trainer], the research team. Definitely, they were always there for me. I knew that if I got stuck in something, I knew that I had people to ask." (LCD staff)

Finally, health services where the AWC role (internal facilitator) was successfully established were more likely to have high uptake of the model of care:

"Having the [AWC] working alongside the geriatrician ... has really helped raise awareness, build trust and created reassurance that getting a diagnosis is not a bad thing. It opens up support services and allows people

**Table 6**  
Three case studies measuring successful implementation.

i-PARIHS measure of Successful implementation	Mostly successful	Somewhat successful	Mostly unsuccessful
<b>Achievement of agreed project goals</b>	<ul style="list-style-type: none"> <li>• High fidelity</li> <li>• 100 % of intervention implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Medium fidelity</li> <li>• 90 % of intervention implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Low fidelity</li> <li>• 50 % of intervention implemented</li> </ul>
<b>Uptake and embedding of the innovation in practice</b>	<p>“[CI/D is] more on the forefront of people’s minds when seeing elderly people, or aged 45+, or people with risk factors. GPs are far more aware of options for referral and feeling confident in the need to refer, rather than thinking it’s wasting a specialist’s time.” (ACCHS Staff)</p>	<p>“To support our current clients with dementia, and their families, [we are] certainly keeping an eye out for clients ... we certainly want to bring [case conferencing] more in, ...so we can address all of the issues and get that really good multidisciplinary approach early on.” (ACCHS Staff)</p>	<p>“We ... got derailed majorly ... because it was so difficult in the area. Everybody was panicking about ... COVID reaching the Aboriginal communities initially, so ... we cut off entirely for the first little while. Then [the state] was so strict with allowing travel so we tried to keep going with a lot of online stuff.” (LCD Staff)</p>
<b>Individuals, teams and stakeholders who are engaged, motivated and ‘own’ the innovation</b>	<p>“Running that [Elder] program, I thought it’s a good opportunity for me to be the [AWC] so that way, when I go and ... do home visits, I can actually explain to them what dementia is and if I could do a KICA on them.” (LCD &amp; ACCHS Staff)</p>	<p>“[The AWC] really appreciated the research and I would say kind of bent over backwards to help us out.... Because they are a team leader as well ... I feel like the manager and team leader are the heart of the organisation. So if they’re on side, then everybody’s on side. So yeah, they really just made the project happen. I think without them we would’ve been struggling.” (LCD Staff)</p>	<p>“[At remote 2] the new manager lasted like four months ... They were quite helpful with [setting] up workshops ... receptive to the project and everything, but then I just was speaking to someone one day, I can’t remember who, and they said, ‘Oh, he’s left!’” (LCD Staff)</p>

to live well in the place they want to. [A] sense of confidence and calmness about the condition can be seen within the staff and patients, [they] seem to be ... talking about it a lot more than before the project.” (ACCHS Staff)

**3.3.3. Theme 3: community knowledges and understanding of memory and thinking problems and sub-theme: uptake of the model of care**

Theme three is represented by the four people in the LCD logo (Fig. 1) “listening to the CHAT” – or community knowledges and understanding of memory and thinking problems. Uptake and positive outcomes were dependent on ACCHS staff engagement with, and receptivity towards, the implementation program. Factors influencing uptake were: prior perceptions of dementia in the community; ACCHS staffs’ prior experiences, both personal and professional, with CI/D, and; ACCHS staffs’ connection to the local Aboriginal and Torres Strait Islander community. Uptake of the model of care was evidenced through self-reported increases in ACCHS staff knowledge and awareness of CI/D.

“Yes, ...increase in awareness about how to assess CI/D, increased awareness of signs of dementia and increased screening, asking more questions about CI/D in the [Annual Health Check] and when concerns are raised, [they] are met with assessments.” (ACCHS staff)

More widespread positive impacts from the program were also reported:

“While ... it’s not written there in black and white, people are getting educated by the fact that, if I educate one black fella, I educate ten others” (ACCHS staff)

ACCHS staff outlined recommendations to improve the implementation program and care for patients with CI/D. These included regular training and refreshers on best-practice dementia care, access to culturally safe aged care services and supports, embedding sustainability into the model of care, focusing on carer health, community outreach, and designating an aged care support person in ACCHSs:

“The team was awesome. The idea and the concept is great. But ... how are these things sustained? ... you’ve done your research, ...but now what? How do these people get that continued service?” (ACCHS Staff)

**3.3.4. Three case studies**

Table 6, maps i-PARIHS components for successful implementation onto three participating ACCHSs representing varying degrees of success.

**4. Discussion**

The process evaluation of the Let’s CHAT Dementia study using the i-PARIHS Framework found that, even with considerable challenges and exceptional circumstances relating to the inner and outer context, notably COVID19, the trial was well implemented overall. The integrity of the stepped-wedge study design, however, was not maintained, with the study timeline punctuated by hiatus periods that reflected periods of inaccessibility and varied in length from site to site. LCD facilitators’ inability to visit ACCHSs for extended periods and the effects of the pandemic on ACCHS staff capacity to engage with the implementation directly impacted project fidelity with aspects of the research design needing to be adapted or abandoned. Furthermore, impacts on adequate delivery of routine primary care during the pandemic, with vulnerable people more heavily affected (Hamilton et al., 2023; Lim et al., 2021), likely influenced study outcomes.

Despite disruptions, most of the intervention was implemented across most study locations. The relatively high uptake, and high acceptability of the innovation for ACCHS staff, and self-reported increase in ACCHS staff knowledge and awareness of CI/D, supported strong uptake of the diagnostic pathway for dementia. In particular, the workshops outlining best-practice dementia care were well implemented (dose delivered 83.3 %) and well received by ACCHS staff. The implementation of individual practice-change initiatives, however, varied markedly (dose delivered 91.7 %–41.8 %) with higher scores likely coinciding with ease of implementation (Lau et al., 2016). For example, provision of audit data to support CQI processes in the health service, the BPG and GP management plan recommendations all scored high for dose delivered (dose delivered 91.7 %). However, their ease of implementation relative to other initiatives may explain the higher scores. Nonetheless, qualitative data suggests the ACCHS staff valued the CQI data, GP management plan recommendations, and BPG. Alternatively, adaptations to Older Persons Health Checks (Royal Australian College of General Practitioners, 2024) were challenging to implement (dose delivered 50 %).

Research demonstrates that internal Aboriginal and/or Torres Strait Islander project champions can effectively support culturally safe facilitation of complex interventions (Gardner et al., 2010; Shaw et al., 2012). For the LCD project, recruiting and retaining AWCs proved

difficult (dose delivered 41.8 %). However, sites where AWC roles were stable and successful demonstrated the highest program uptake (Gardner et al., 2010), reinforcing i-PARIHS' positioning of facilitation as key (Harvey and Kitson, 2015). Similarly, establishing in-house geriatrician clinics (dose delivered 41.8 %), was challenging, yet once established, were highly valued by ACCHS staff, resulting in clear referral pathways with culturally appropriate specialist care (Dawson et al., 2021; Gruen et al., 2002). Limitations to adequate health-care resourcing in remote locations (Australian Institute of Health and Welfare, 2024) proved to be a barrier to program implementation. This reinforces the need to prioritise resourcing of and access to comprehensive health care for rural and remote Australians (Street et al., 2019).

The LCD project reflected a real-world primary care setting. Including metropolitan, rural, regional and remote sites enabled understanding of the different facilitators and barriers in diverse settings. Adaptability, flexibility and cultural responsiveness (Beks et al., 2022) proved essential components for successful implementation, underpinned by a co-design approach (Butler et al., 2022), supporting authentic partnerships to be built between LCD facilitators and ACCHS staff. Additionally, ensuring that an Aboriginal and/or Torres Strait Islander LCD facilitator supported implementation at each participating ACCHS led to a more effective and successful translation of the program into practice (Gardner et al., 2010).

This process evaluation demonstrates how a best-practice model of CI/D care for Aboriginal and Torres Strait Islander people attending primary care can be implemented while upholding cultural security and privileging Aboriginal and Torres Strait Islander voices and leadership (Butler et al., 2022). The evaluation identified the following components as supporting successful implementation of complex interventions in Aboriginal and Torres Strait Islander health care contexts: internal facilitators (champions), who are respected and influential community members (Gardner et al., 2010), and culturally and clinically competent external facilitators with experience working in Aboriginal and Torres Strait Islander health (Shaw et al., 2012); a focus on building strong, reciprocated relationships between the research team and key ACCHS staff (Maar et al., 2019); ACCHS staff retention (Veginadu et al., 2024) and good team cohesion; ACCHS staff valuing and co-leading the intervention (Gardner et al., 2010); accessibility to the ACCHS; ACCHS access to aged care resources (Street et al., 2019); adaptability of the intervention to differing contexts (Beks et al., 2022); and centring culturally safe research practices (Barnett and Kendall, 2011; Butler et al., 2022).

In addition to deepening our understanding of trial implementation in primary care for Aboriginal and Torres Strait Islander peoples, this process evaluation also presents an assessment of what it takes to deliver best-practice dementia care in Aboriginal and Torres Strait Islander primary care. The findings support the following recommended strategies to improve brain health outcomes of older patients attending ACCHS: (i) An ongoing 'dementia champion' staff role in the health service (Gardner et al., 2010; Shaw et al., 2012), and; (ii) Regular training for health service staff in best-practice dementia care to mitigate the effects of high staff turnover and competing care priorities (Veginadu et al., 2024). This could be supported by the establishment of a community of practice for best-practice dementia care of Aboriginal and Torres Strait Islander peoples (Giebel et al., 2023); and (iii) access to culturally safe aged care (Dawson et al., 2021).

The i-PARIHS Framework provided useful and detailed structure for exploring the components of the intervention and their features. Yet, at the analysis stage, taking an Indigenous viewpoint highlighted the difficulty of examining the framework's constructs (innovation, recipient, context and facilitation) discretely, instead bringing into focus the fundamentally relational and interdependent nature of this kind of complex intervention (Laycock et al., 2018). Process evaluations require cultural awareness and sensitivity, especially if conducted in Aboriginal and Torres Strait Islander contexts (Bess, 2004). The cultural reframing of the i-PARIHS Framework contributed to culturally safe research

practice, valuing and centralising Indigenous epistemology (Haynes et al., 2019; Jull et al., 2017). The approach, based on "both-way learning" (Haynes et al., 2019, p. 38), functioned to support decolonisation of the research process, and can provide a template for other process evaluations of complex interventions in Aboriginal and Torres Strait Islander health care.

#### 4.1. Strengths and limitations

Cultural security was prioritised by the research team and upheld by privileging the perspectives of Aboriginal and Torres Strait Islander researchers in the design, data collection and analysis of the results. The process evaluation followed an in-depth, collaborative, team-based approach which ensured active involvement from a diverse group of Aboriginal and Torres Strait Islander research staff. A welcome result of the approach was the considerable capacity-building achievements of the Aboriginal research staff in research methodologies.

Limitations included the shortfall in prospective data collected, accompanied by a data bias - with substantially more qualitative data collected at certain sites. To mitigate this, ethics approval was sought to collect data from each site's LCD research staff. Due to resourcing constraints, independent evaluation of the study was not feasible and internal members of the LCD research team contributed to the evaluation. However, a strength of involving the senior LCD external facilitators in the process evaluation was their intimate knowledge of the study and cultural knowledges, which supported and expedited ongoing tailoring of the intervention. A detailed examination of how facilitator characteristics impacted on innovation outcomes was outside the scope of this evaluation (Harvey et al., 2002), however would be a useful area to explore further. Finally, this study did not explore the mainstream primary care context. It will be important for future research to include a focus on older Aboriginal patients attending non-Indigenous primary care.

## 5. Conclusion

The LCD project developed a culturally appropriate best-practice model of care for Aboriginal and Torres Strait Islander peoples at risk of or living with CI/D attending primary care. The evaluation has provided detailed contextual information about the implementation of the intervention to enable an understanding of how the project successfully achieved the goals of: a) embedding best-practice CI/D care in the co-researching ACCHS partner sites, leading to: b) an improvement in dementia care outcomes for ACCHS clients. We have explored how intrinsic and extrinsic factors impacted on program implementation and, very likely, the outcomes. Notably, a co-design and culturally responsive approach, implemented by Aboriginal and non-Indigenous culturally sensitive facilitators, enhanced efficacy of the program.

#### CRedit authorship contribution statement

**Kate Bradley:** Data curation, Formal analysis, Investigation, Supervision, Writing – original draft, reviewing and editing; **Jo-anne Hughson:** Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Supervision, Visualisation, Writing – Original Draft, Reviewing and Editing; **Irene Blackberry:** Conceptualisation, Methodology, Formal analysis, Writing – Review and editing; **Lauren Poulos:** Investigation, Data curation, Methodology, Formal Analysis, Writing – Original Draft; **Kylie Sullivan:** Investigation, Methodology, Formal Analysis, Writing – Review and editing; **Naomi Paine:** Investigation, Data curation, Formal Analysis, Writing – Review and editing; **Roslyn Malay:** Investigation, Data curation, Methodology, Formal Analysis, Writing – Review and editing; **Diane Cadet-James:** Investigation, Data curation, Methodology, Formal Analysis, Writing – Review and editing; **Harold Douglas:** Investigation, Data curation, Methodology, Formal Analysis, Writing – Review and editing; **Bridget**

**Allen:** Investigation, Writing – Review and editing; **Bonnie Giles:** Investigation, Writing – Review and editing; **Kate Fulford:** Investigation, Writing – Review and editing; **Sadia Rind:** Investigation, Writing – Review and editing; **Wendy Allan:** Investigation, Writing – Review and editing; **Janaya Charles:** Data curation, Methodology, Formal Analysis, Writing – Review and editing; **Juliette Ciaccia:** Data curation, Formal Analysis, Writing – Review and editing; **Kylie Radford:** Funding acquisition, Writing – Review and editing; **Robyn Smith:** Conceptualisation, Methodology, Writing – Review and editing; **Dina LoGiudice:** Conceptualisation, Formal analysis, Funding acquisition, Writing – Review and editing.

### Positionality statement

The co-first authors (KB and JH) are female, White, non-Indigenous research fellows who worked collaboratively with Aboriginal and Torres Strait Islander researchers throughout all phases of this research, to prioritise an Aboriginal cultural approach and viewpoint at every step. Seven authors identify as Aboriginal, and the remaining 12 authors identify as non-Indigenous. Aboriginal authors also identify as Biripi, Arrernte, Andajin Kija, Gugu Badhun, Gunnai, Badimaya Yamatji, Mutthi and Yorta Yorta. All non-Indigenous authors are committed to decolonising research methodologies, provision of culturally secure care, and addressing racism, disparities in health care, and health inequity. The research team is nationally dispersed across metropolitan, rural, regional and remote environments and represents diverse professional backgrounds including: medicine (general practice and geriatrics), Aboriginal health practitioners, dementia research, aged care research, public health, nursing, occupational therapy, neuropsychology, pharmacy, social work, health services research, Indigenous studies, and Indigenous health research.

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### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssmh.2025.100426>.

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