

Building America's Alzheimer's Continuum of Care

PART 1 / POLICY AND IMPLEMENTATION

Early detection • Trained providers

Care navigation • Family support

A Hawai'i demonstration for national learning

Girard “Jerry” Perone

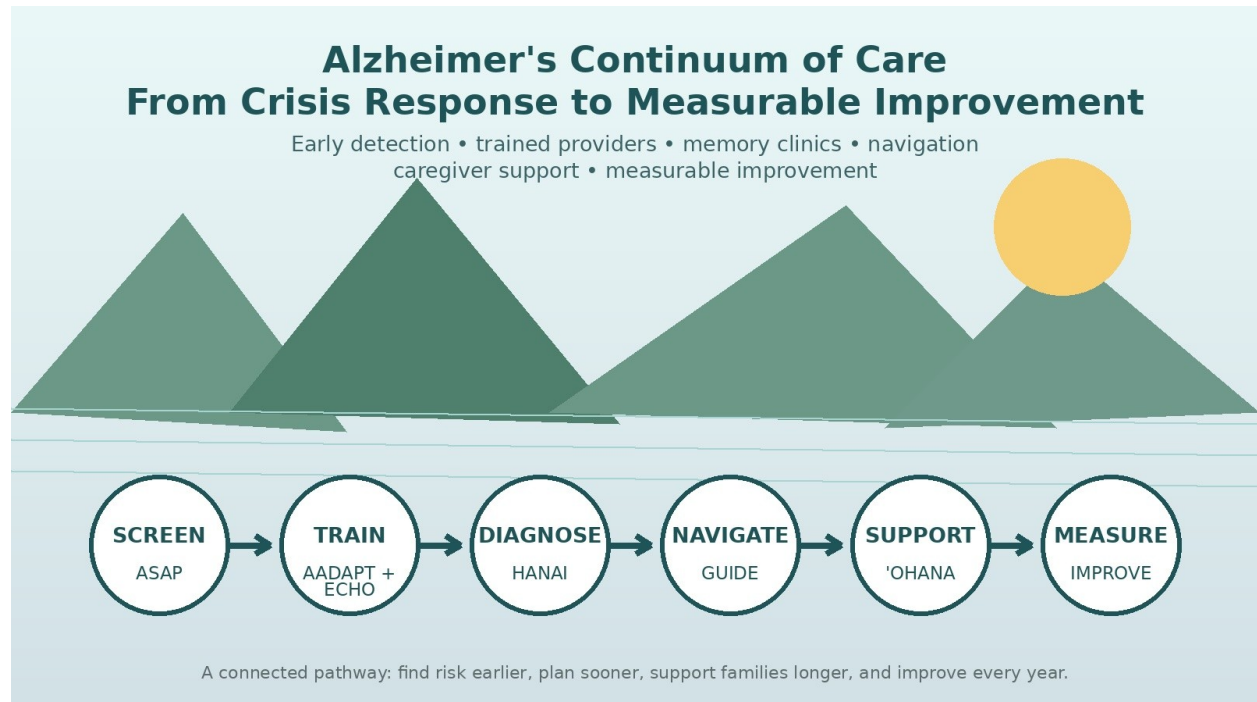
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Policy proposal with research appendices • Not medical advice

BUILDING AMERICA'S ALZHEIMER'S CONTINUUM OF CARE

A Hawai'i Demonstration for Early Detection, Trained Providers, Care Navigation, Islandwide
Memory Services, Technology-Enabled Support, National Rollout, and Hope

Expanded National Pilot & 2050 Scenario Edition



Prepared by Girard "Jerry" Perone

May 30, 2026

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Prepared by Girard "Jerry" Perone
May 30, 2026

About the Author

Girard "Jerry" Perone is an Alzheimer's advocate, public-policy researcher, former IBM Quality Assurance Executive for its Financial Services Sector Strategic Outsourcing overseeing a \$9B portfolio. He is the Founder and President of National Management Center, Inc. His professional background combines senior management, systems engineering, financial analysis, quality assurance, risk management, performance measurement, executive communication, and large-scale program implementation.

Jerry's qualifications are directly relevant to this report. During his IBM career, he held senior leadership roles supporting complex technology and financial-services operations, where he designed and built complex project management plans, analyzed fragmented systems to identify operational gaps and improve operational effectiveness, built accountability structures, and translate complicated problems into practical implementation plans. He holds an Bachelors Degree in electrical engineering and Masters of Business Administration Degree in finance and accounting. He is an expert and practitioner in project and program management and has consulted in over 60 countries.

As an Alzheimer's Association Ambassador in Hawai'i, Jerry has worked on state and federal dementia-policy issues, including early detection, caregiver support, workforce training, care navigation, and the development of a coordinated memory-care continuum. He has written public-policy reports, monthly articles, legislative testimony, and advocacy materials focused on improving outcomes for people living with Alzheimer's disease and related dementias.

This expanded edition reflects Jerry's particular strength: connecting policy, clinical delivery, workforce training, data measurement, financial logic, technology, and implementation discipline into one understandable and actionable framework. It also broadens the original report into a national pilot concept and a 2050 scenario story.

Glossary

This glossary defines terms and phrases that recur in the report or that may need a plain-language description for readers who are not immersed in dementia policy, clinical delivery, health technology, or Hawai'i context. It is not medical advice and should not be used as a substitute for professional clinical guidance.

Term / Phrase	Definition / Description
AADAPT training pathway	The provider-training lane of the continuum: structured dementia education, case-based learning, and practical support so frontline clinicians can act on earlier detection.
Addressable baseline cost	The portion of dementia-related spending that a pilot can plausibly influence, such as avoidable emergency use, hospitalizations, caregiver crisis, and some long-term care transitions.
Alzheimer's disease and related dementias	A collective term for Alzheimer's disease and other dementias, including vascular dementia, Lewy body dementia, frontotemporal dementia, and mixed dementias.
Amyloid	A protein that can accumulate in plaques in the brain and is one of the biological markers used in evaluating Alzheimer's disease.
Anti-amyloid therapy	A treatment approach intended to reduce amyloid plaques in selected people with early Alzheimer's disease; it is not a cure and requires careful eligibility and safety monitoring.
ASAP front door	The early-detection entrance into the continuum, centered on appropriate access to FDA-approved or FDA-cleared blood-based Alzheimer's diagnostic aids when clinically indicated.
Avoidable emergency use	Emergency-room or emergency-department visits that may be reduced through earlier care planning, medication support, caregiver education, safety planning, and timely navigation.
Biomarker	A measurable biological signal, such as amyloid or tau-related pathology, that can support diagnosis, staging, research, or treatment decisions when used in clinical context.
Blood-based diagnostic aid	A blood test used as one component of Alzheimer's evaluation; it supports, but does not replace, clinical judgment, cognitive assessment, and appropriate follow-up.
Break-even equation	A simple financial test: program cost divided by addressable baseline cost equals the reduction percentage needed for the program to pay for itself within that cost base.
Care continuum	A connected pathway from memory concern to screening, diagnosis, navigation, care planning, caregiver support, community services, monitoring, measurement, and continuous improvement.
Care maintainer	A HANAI role that keeps the plan alive over time by checking whether services, safety steps, caregiver supports, and follow-up are still working.

Term / Phrase	Definition / Description
Care manager	A coordinating role that helps connect clinical care, social support, caregiver needs, referrals, and escalation when risk increases.
Care navigation	Hands-on guidance that helps a family understand the diagnosis, complete next steps, connect with services, and know who to contact when problems arise.
Care plan	A written, practical plan that records diagnosis status, medications, safety steps, caregiver needs, referrals, follow-up dates, and escalation instructions.
Care planner	A HANAI role that converts a diagnosis or memory concern into an understandable plan for the person, caregiver, clinician, and navigator.
Caregiver assessment	A structured check of caregiver strain, needs, safety concerns, respite needs, and ability to continue supporting the person with dementia.
Closed-loop referral	A referral that is tracked until completion, so the system knows whether the family actually reached the service rather than merely receiving a phone number.
Community pathway	A route into the continuum that may begin outside a doctor's office, such as through senior centers, public agencies, community organizations, caregiver calls, or outreach events.
Crisis response	A reactive pattern in which families receive help only after an emergency, hospitalization, unsafe event, or caregiver collapse.
Dashboard governance	The discipline of using common definitions, named owners, regular reporting, and transparent review to improve access, outcomes, equity, and cost performance.
Data dictionary	A shared list of data elements, definitions, and formats so clinics, navigators, agencies, and technology systems can measure the same things in the same way.
Dementia care specialist	A trained professional who helps assess needs, coordinate services, support caregivers, and keep families connected to the continuum.
Demonstration state	A state used to prove a model under real-world conditions before adapting it more broadly; the report presents Hawai'i as a strong test case because of its geography and access challenges.
Disease-modifying treatment	A treatment intended to affect the underlying disease process, not only symptoms; current therapies have specific eligibility, monitoring, risk, and access requirements.
Early detection	Identifying memory concerns or disease signals sooner, when planning, treatment evaluation, risk reduction, caregiver support, and safety steps can begin earlier.
Early-stage Alzheimer's disease	The stage at which symptoms are present but the person may still have substantial independence; this is the stage in which current disease-modifying treatments are generally evaluated.

Term / Phrase	Definition / Description
Equity reporting	Performance reporting that looks at access and outcomes by island, county, community, or population group so statewide averages do not hide gaps.
FDA-cleared / FDA-approved	Regulatory terms indicating that the Food and Drug Administration has cleared or approved a product for specific uses; they do not mean the product is appropriate for every person.
FHIR-ready data	Data designed so it can later map to health-information exchange standards and electronic health records, even if the first pilot uses a simpler data system.
Front door	The first reliable entry point into the continuum, whether through primary care, community outreach, a blood test pathway, a navigator, or a memory clinic referral.
HANAI Memory Network	The proposed Hawai'i statewide memory-care platform that connects dementia care specialists, memory clinics, referrals, public education, data, and caregiver support.
Hawai'i model	The integrated continuum proposed in the report: early detection, trained providers, Project ECHO, GUIDE-style navigation, HANAI services, technology support, and measurable governance.
Hānai	A Hawaiian word associated with nurturing, feeding, fostering, or taking into family relationship; the report uses the concept to emphasize a caring, not merely transactional, system.
Hospitalization rate	A measure of inpatient admissions over a defined population and time period; the report uses it as one outcome that could improve through better dementia support.
Hub-and-spoke learning	A training model in which specialist teams support community providers through virtual sessions, case discussion, and shared learning.
Interdisciplinary team	A care team that may include physicians, nurses, social workers, navigators, pharmacists, community partners, and specialists working from one plan.
Islandwide memory services	Memory-care access organized so each island has a practical pathway for evaluation, care planning, referrals, and follow-up.
Key performance indicator	A measurable indicator used to determine whether the continuum is working, such as follow-up time, referral closure, caregiver assessment rate, or avoidable ER use.
Kuleana	A Hawaiian concept of responsibility and stewardship; the report uses it to describe shared responsibility for kupuna, caregivers, and public systems.
Kūpuna	Elders or older adults; in the report, the people the continuum is designed to protect, honor, and support.
Learning system	A care system that uses data, feedback, outcomes, and family experience to improve continuously rather than repeating the same gaps.

Term / Phrase	Definition / Description
Lōkahi	A Hawaiian concept of unity, harmony, and alignment; the report uses it to describe the need to connect separate programs into one continuum.
Mālama	To care for, protect, or tend; in the report, it describes the moral and operational purpose of the continuum.
Mana'olana	Hope; in the report, hope made practical through early action, navigation, caregiver support, measurement, and scientific progress.
Memory clinic	A clinical setting or contracted partner that provides cognitive evaluation, diagnosis support, staging, treatment assessment, and care-planning connection.
National rollout	The process of adapting the Hawai'i pilot into a simpler version that other states can implement using their own geography, workforce, Medicaid structures, and community assets.
No wrong door	An operating rule that a family should be connected to the right next step regardless of whether they enter through a clinic, agency, community group, emergency discharge, or caregiver call.
'Ohana	Family, broadly understood; the report uses it to include relatives, caregivers, trusted supporters, and the circle of people affected by dementia.
Pilot	A disciplined, measurable first implementation used to test workflows, costs, data, outcomes, equity, and scalability before wider adoption.
Primary care pathway	The route into the continuum that begins when a primary care provider recognizes memory concern, orders or interprets appropriate tests, and refers for follow-up.
Project ECHO	A virtual case-based mentoring model that moves specialist knowledge to community providers rather than requiring every patient to travel to specialists.
pTau181	A phosphorylated tau biomarker that can be used in certain blood-based Alzheimer's assessment contexts as one signal of disease-related pathology.
Remote monitoring	Technology-enabled observation of selected safety or health signals, such as falls, medication adherence, sleep disruption, or wandering risk, with consent and dignity safeguards.
Risk reduction	Actions that may lower dementia risk or delay decline at a population level, such as managing cardiovascular risk, hearing loss, diabetes, depression, isolation, sleep, and other modifiable factors.
Staging	Determining the level or phase of cognitive impairment and functional impact so treatment, care planning, safety steps, and support match the person's needs.

Term / Phrase	Definition / Description
Statewide platform	A common operating structure across islands and agencies that provides consistent referral pathways, service expectations, data definitions, and accountability.
Technology layer	Telehealth, remote monitoring, wearables, medication tools, data integration, dashboards, and AI-supported workflows used to extend and improve human care.
Wearables	Devices worn by a person, such as a watch or pendant, that may support fall detection, activity trends, safety alerts, or remote monitoring when used appropriately.
510(k) clearance	An FDA medical-device clearance pathway showing that a new device is substantially equivalent to a legally marketed predicate device for the stated intended use.
At-home maintenance dosing	A treatment-delivery option in which an eligible patient or caregiver administers an approved maintenance injection at home after the required initial treatment phase and clinical training.
Autoinjector	A prefilled injection device designed to deliver a fixed dose under the skin; in the report, this refers to the LEQEMBI IQLIK maintenance option.
Biologics License Application	The FDA application pathway used to approve certain biological products, including monoclonal antibodies and related dosage-form changes.
Breakthrough Device designation	An FDA program intended to speed development, assessment, and review for certain devices that may provide more effective diagnosis or treatment for serious conditions; it is not itself marketing approval.
Emergency Use Authorization	A temporary FDA authorization during certain declared emergencies that can allow use of an unapproved product or unapproved use; it is different from approval or clearance.
FDA regulatory status	The specific FDA action that permits or describes use of a product, such as cleared, approved, De Novo granted, authorized for emergency use, or designated as breakthrough.
Indeterminate biomarker result	A blood-test result that is neither clearly positive nor clearly negative and usually requires additional clinical interpretation or follow-up testing.
Self-pay biomarker cost	The amount a person may pay out of pocket when insurance does not cover a blood-based Alzheimer's biomarker test; current planning estimates in this report use about \$1,000, with a rough \$500-\$1,500 range.

Term / Phrase	Definition / Description
Subcutaneous injection	An injection given under the skin rather than through an intravenous infusion line.
Brain-health recipe	A practical multidomain prevention pattern drawn from U.S. POINTER: regular physical activity, healthier nutrition, cognitive and social engagement, and monitoring of cardiovascular and metabolic health.
Multidomain lifestyle intervention	A structured risk-reduction program that works on several brain-health pathways at the same time, such as exercise, nutrition, cognitive challenge, social connection, and health monitoring.
U.S. POINTER Study	The Alzheimer's Association-led U.S. Study to Protect Brain Health Through Lifestyle Intervention to Reduce Risk, a two-year, five-site randomized clinical trial showing that multidomain lifestyle programs improved cognition in older adults at risk of cognitive decline, with greater benefit in the more structured program.

Acronym Dictionary

This acronym dictionary spells out abbreviations used in the report, source notes, and Hawai'i Memory Network implementation discussion. Some items are formal acronyms; others are shorthand labels that appear in policy, clinical, technology, or source-note context.

Acronym	Full Term	Use in This Report
AADAPT	Accelerating Access to Dementia and Alzheimer's Provider Training Act	Federal workforce-training proposal referenced as a way to expand structured virtual dementia education.
AD	Alzheimer's disease	Used when referring specifically to Alzheimer's disease rather than all dementias.
ADRC	Aging and Disability Resource Center	A community access point for aging, disability, caregiver, and long-term services information.
ADRD	Alzheimer's disease and related dementias	Umbrella term for Alzheimer's disease and other dementia-related conditions.
AIM	Alzheimer's Impact Movement	Advocacy organization cited in the source notes for federal policy information.
APRN	Advanced Practice Registered Nurse	Advanced nursing clinician role referenced in the HANAI staffing concept and memory-clinic model.
ASAP	Alzheimer's Screening and Prevention Act	Federal proposal referenced as the early-detection and blood-test coverage front door.
BOLD	Building Our Largest Dementia Infrastructure for Alzheimer's Act	Public-health infrastructure law used in the report to frame state and local dementia capacity.
CDC	Centers for Disease Control and Prevention	Federal public-health agency cited for BOLD infrastructure and dementia public-health framing.
CMS	Centers for Medicare & Medicaid Services	Federal agency responsible for Medicare, Medicaid, and the GUIDE Model.
DCS	Dementia Care Specialist	Role embedded in the HANAI concept to support families, referrals, care planning, and coordination.
DO	Doctor of Osteopathic Medicine	Physician credential used in the memory-clinic staffing model in the HANAI source concept.
DOH	Department of Health	State health agency role referenced in public-health and implementation context.
ECHO	Extension for Community Healthcare Outcomes	Virtual hub-and-spoke mentoring model used to move dementia knowledge to community providers.
ED	Emergency Department	Hospital emergency department; used in relation to crisis response and avoidable emergency utilization.
EHR	Electronic health record	Clinical information system that can receive or exchange FHIR-ready data in later implementation phases.

Acronym	Full Term	Use in This Report
EOA	Executive Office on Aging	Hawai'i state aging office referenced as a coordinating entity in the HANAI source concept.
ER	Emergency Room	Emergency care setting; the report uses reduced avoidable ER use as a potential outcome measure.
FDA	Food and Drug Administration	Federal agency that clears or approves diagnostic aids, treatments, and other regulated medical products for specific uses.
FHIR	Fast Healthcare Interoperability Resources	Health-data exchange standard used in the report's data-dictionary and scalability logic.
FQHC	Federally Qualified Health Center	Community health-center model that may serve as a front door for dementia care in underserved areas.
GUIDE	Guiding an Improved Dementia Experience Model	CMS model emphasizing dementia care navigation, caregiver support, care planning, and 24/7 access.
HANAI	HANAI Memory Network / hānai concept	Used as the named Hawai'i memory-network platform. The report treats HANAI as a program name rooted in the Hawaiian idea of nurturing care, not as a forced acronym.
HB1853	Hawai'i House Bill 1853	State legislative vehicle referenced in the source notes for the HANAI Memory Network concept.
HL7	Health Level Seven International	Standards organization associated with FHIR and health-information exchange.
JAMA	Journal of the American Medical Association	Medical journal family cited in the source notes for evidence related to dementia-care program findings.
KPI	Key performance indicator	Metric used to measure flow, equity, experience, outcomes, and costs in the continuum.
LTSS	Long-term services and supports	Home, community, and institutional supports that help people with functional limitations and caregiver needs.
MD	Doctor of Medicine	Physician credential used in the memory-clinic staffing model in the HANAI source concept.
NAPA	National Alzheimer's Project Act	Federal law establishing a coordinated national plan to address Alzheimer's disease.
NIA	National Institute on Aging	NIH institute cited for Alzheimer's and related dementias research and clinical-trial information.
NIH	National Institutes of Health	Federal biomedical research agency referenced in relation to future treatment and prevention science.
PCP	Primary care provider / primary care physician	Frontline clinician role that can identify memory concerns, begin evaluation, and refer into the continuum.
PET	Positron emission tomography	Imaging method that can detect amyloid or other pathology but may be less accessible than blood-based aids in some communities.

Acronym	Full Term	Use in This Report
BLA	Biologics License Application	FDA application pathway relevant to biological products and supplemental approvals such as a new dosage form.
CDER	Center for Drug Evaluation and Research	FDA center involved in reviewing many drug and therapeutic biologic applications.
CDRH	Center for Devices and Radiological Health	FDA center responsible for many medical-device and diagnostic-test reviews.
EUA	Emergency Use Authorization	FDA emergency authority; included to distinguish temporary authorization from ordinary approval or clearance.
IV	Intravenous	Medication delivery through a vein, as with the initial Leqembi infusion pathway.
IVD	In vitro diagnostic	A test performed on specimens such as blood or cerebrospinal fluid; Alzheimer's blood biomarker tests are IVDs.
MCI	Mild cognitive impairment	A symptomatic early stage included in the studied population for selected Alzheimer's treatments.
PMA	Premarket Approval	The FDA's most stringent device marketing-application pathway for certain high-risk devices.
SC	Subcutaneous	Under-the-skin route of administration, as with LEQEMBI IQLIK maintenance dosing.
MIND	Mediterranean-DASH Intervention for Neurodegenerative Delay	Nutrition pattern used in the U.S. POINTER brain-health recipe; it emphasizes brain-healthy foods such as leafy greens, berries, nuts, whole grains, olive oil, and fish while limiting sugar and unhealthy fats.
U.S. POINTER	U.S. Study to Protect Brain Health Through Lifestyle Intervention to Reduce Risk	Alzheimer's Association-led, NIA-supported study used in this report to strengthen the prevention and risk-reduction lane of the continuum.

Federal Building Blocks: NAPA, BOLD, CMS GUIDE, and Project ECHO

The continuum in this report rests on several national building blocks. Each was created for a different purpose, but together they explain why Hawai'i can move from fragmented dementia response to a coordinated, measurable system. NAPA created a national strategy table. BOLD built public-health infrastructure. CMS GUIDE pays for navigation and caregiver support. Project ECHO moves knowledge to the providers who need it most.

Building Block	Who Created / Leads It	Why It Was Created	What It Hopes to Accomplish	How It Works in This Report
NAPA - National Alzheimer's Project Act	Created by Congress and signed into law in 2011; implemented through HHS and the National Plan to Address Alzheimer's Disease.	To force a coordinated national response to Alzheimer's disease and related dementias instead of scattered federal efforts.	Accelerate research, improve care and services, support people living with dementia and caregivers, and coordinate federal action.	NAPA is the strategic roof: it gives the national dementia mission a planning framework and legitimizes a coordinated continuum.
BOLD Act - Building Our Largest Dementia Infrastructure for Alzheimer's Act	Created by Congress and implemented principally through CDC public-health programs and awards.	To build state, local, tribal, and territorial public-health capacity for dementia, not only clinical treatment capacity.	Promote risk reduction, early detection and diagnosis, caregiver support, prevention of avoidable hospitalizations, data capacity, and public-health action.	BOLD is the public-health floor: it supports outreach, risk reduction, community education, data, and caregiver infrastructure around HANAI.
CMS GUIDE - Guiding an Improved Dementia Experience Model	Created and operated by the CMS Innovation Center.	To pay for the care-navigation, care-planning, caregiver-support, and 24/7 access work that families need after diagnosis.	Improve quality of life, reduce caregiver strain, help people remain at home and in the community longer, and reduce avoidable high-cost utilization.	GUIDE is the navigation lane: it turns diagnosis into a care plan, caregiver assessment, support, escalation, and follow-through.

Building Block	Who Created / Leads It	Why It Was Created	What It Hopes to Accomplish	How It Works in This Report
Project ECHO - Extension for Community Healthcare Outcomes	Developed by Dr. Sanjeev Arora at the University of New Mexico; used by health systems, public-health agencies, and the Alzheimer's Association.	To move specialty knowledge to community providers through virtual, case-based learning rather than forcing every patient to travel to specialists.	Increase frontline capacity, reduce geographic barriers, support complex decision-making, and create a learning community.	ECHO is the knowledge bridge across islands: it supports PCPs, memory clinics, DCS staff, and community clinicians as the science changes.

The practical implication is that no single law or model carries the continuum by itself. NAPA sets the national direction, BOLD strengthens the public-health base, GUIDE pays for navigation and caregiver support, Project ECHO sustains the workforce, and HANAI becomes Hawai'i's operating platform that connects these pieces for real families.

PART I. Building the Continuum

This first part is the expanded policy and implementation report. It keeps the original operating concept, but strengthens the central message: Hawai'i can build a future-facing dementia continuum that connects federal legislation, state implementation, scientific discovery, provider training, care navigation, technology, finance, and aloha into one measurable system.

The report is intentionally written as a systems design. The goal is not to describe one more program. The goal is to show how the pieces work together so a family can move from memory concern to evaluation, diagnosis, care planning, caregiver support, technology-enabled monitoring, and continuous improvement without falling into the gaps between organizations.

1. Executive Summary

Alzheimer's disease and related dementias are no longer only medical problems. They are Medicare problems, Medicaid problems, workforce problems, caregiver problems, emergency-room problems, housing problems, long-term-services problems, and family-stability problems. The current system too often waits until families are already in crisis. By then, options are narrower, costs are higher, and the human suffering is greater.

In 2026, the Alzheimer's Association reports that more than 7 million Americans are living with Alzheimer's, more than 12 million family members and friends are providing unpaid care, and national health and long-term-care costs for people living with Alzheimer's and other dementias are projected at \$409 billion, rising to nearly \$1 trillion by 2050 if the trajectory is not changed. Those numbers are not merely statistics. They are the financial shadow of millions of kitchens, bedrooms, clinics, ambulances, and exhausted caregivers.

This report proposes a Hawai'i-centered continuum of care that can become a disciplined model for the nation. The continuum connects five major policy and delivery tools: the ASAP Act, the AADAPT Act, Project ECHO, the CMS GUIDE Model, and Hawai'i's HANAI Memory Network. It adds three accelerators: blood-based diagnostic aids, disease-modifying treatments for selected people with early Alzheimer's disease, and technology-enabled care that can reach families across islands.

The continuum should also include a prevention and risk-reduction lane. The U.S. POINTER Study strengthens this argument because it showed that multidomain lifestyle programs - physical activity, healthier nutrition, cognitive and social engagement, and health monitoring - can improve cognition in older adults at risk of cognitive decline, with greater benefit in the more structured and accountable intervention. For HANAI, that means the future is not only testing and treatment; it is also practical brain-health action delivered through trusted community pathways.

The result is not a single program. It is a system architecture. In Hawaiian terms, it is a kuleana: a shared responsibility to mālama kūpuna, support 'ohana caregivers, and create a path from fear and fragmentation to coordination and mana'olana - hope.

The most important argument is simple: if we can find cognitive decline earlier, train providers earlier, connect families earlier, create the care plan earlier, support caregivers earlier, and measure results earlier, we can buy time - time for people, time for families, time for better treatments, and time for prevention and cure science to reach everyone.

The continuum is the bridge between today's imperfect care system and tomorrow's prevention-and-treatment future.

Component	What It Does	Why It Matters in Hawai'i
ASAP Act	Creates a Medicare coverage pathway for FDA-approved or FDA-cleared blood-based Alzheimer's diagnostic aids when clinically indicated.	Opens the front door earlier, especially where PET scans, specialty visits, or spinal fluid testing are difficult to access.
AADAPT Act	Expands provider access to structured virtual dementia education and case-based training.	Builds the workforce that must act once earlier detection increases demand.
Hawai'i Dementia Training Policy	Moves Hawai'i toward structured dementia training for clinicians and other community-facing groups.	Creates local capacity, reduces missed recognition, and makes "no wrong door" more realistic.
Project ECHO	Uses virtual specialist mentoring and real de-identified cases to support community providers.	Moves knowledge across the ocean instead of forcing every patient to travel.
CMS GUIDE Model	Supports care navigation, caregiver support, care planning, respite where eligible, and 24/7 access.	Turns diagnosis into practical help for families.
HANAI Memory Network	Creates a statewide platform for memory services, dementia care specialists, referrals, data, and public education.	Makes the continuum real for O'ahu, Maui, Kaua'i, Hawai'i Island, Moloka'i, and Lāna'i.
Technology Layer	Uses telehealth, medication tools, remote monitoring, caregiver communication, and FHIR-ready data.	Extends care across a thousand miles of ocean and supports continuous improvement.
U.S. POINTER / Brain-Health Lane	Adds a structured prevention and risk-reduction pathway built around exercise, nutrition, cognitive and social engagement, and health monitoring.	Gives HANAI a hopeful action lane for people at risk, caregivers, and communities even before a person reaches a treatment-eligibility decision.

2. The Crisis and the Opportunity

America is already paying the dementia bill. The question is whether we will continue to pay mostly for crisis, or whether we will invest in earlier detection, trained providers, navigation, caregiver support, risk reduction, and measurable prevention of avoidable emergency events. A crisis-oriented system is expensive because it lets problems accumulate: medication confusion becomes a fall, caregiver exhaustion becomes an emergency placement, wandering becomes a police call, and behavioral symptoms become a hospitalization.

Alzheimer's disease is a progressive brain disease and the most common cause of dementia. Dementia is not one disease; it is a broad term for serious decline in memory, thinking, judgment, behavior, and daily function. Families experience this not as abstract biology but as missed bills, repeated questions, medication uncertainty, driving worries, sleep disruption, wandering risk, isolation, caregiver guilt, and finally exhaustion.

The opportunity is different now because four separate worlds have begun to move at the same time. Science is moving through biomarkers and treatment research. Federal policy is moving through screening, training, public-health, and care-navigation models. Technology is moving through telehealth, wearable devices, medication management, and data integration. State policy is moving toward coordinated networks like HANAI. The missing step is integration.

Public readiness is also changing. In the Alzheimer's Association's 2025 survey of more than 1,700 Americans age 45 and older, 79% said they would want to know if they had Alzheimer's disease before symptoms appeared or before symptoms interfered with daily activities, 91% said they would want a simple test such as a blood biomarker test if available, 92% said they would probably or definitely want medication that could slow disease progression after diagnosis, and 58% said they would accept moderate to very high risk to take such medication in the early stages. The policy implication is clear: people are asking for earlier knowledge, but early knowledge must be paired with a safe, affordable, navigated care system.

The end game should be stated out loud: **A World Without Dementias**. That does not mean pretending a cure exists today. It means designing today's system so early detection, treatment access, prevention science, caregiver support, public-health action, and data learning all point in the same direction.

U.S. POINTER adds a hopeful prevention dimension to that end game. It does not promise that lifestyle programs can prevent every dementia, and it does not replace medical evaluation or treatment. It does show that structured support for healthier behaviors can become part of the same continuum that includes blood biomarkers, trained clinicians, care navigation, and future treatments.

Crisis Pattern	Typical Result Today	Continuum Response
Memory concern is minimized	Family waits until symptoms are obvious and risk is higher.	Screen and evaluate earlier; normalize cognitive conversations.

Crisis Pattern	Typical Result Today	Continuum Response
Provider lacks dementia support	Referral delays or uncertain next steps.	AADAPT + ECHO strengthen primary care and community providers.
Diagnosis occurs without navigation	Family receives a label but no operating plan.	GUIDE + HANAI assign a navigator and written care plan.
Caregiver burden is invisible	Burnout, missed work, health decline, or premature placement.	Assess caregiver strain and connect respite, education, and support.
No closed-loop referral tracking	Services are “recommended” but never completed.	Dashboard referral closure and follow-up.
Technology is added without purpose	More devices, not more care.	Use technology only where it reduces risk, travel, delay, or burden.
Risk reduction is treated as vague advice	Families hear “exercise and eat better” but receive no structured pathway, coaching, or accountability.	Use U.S. POINTER-style brain-health programming to turn prevention science into practical community action.
People want early knowledge but lack a pathway	A person may want to know sooner, but testing, counseling, and next steps are fragmented or unaffordable.	Build early detection into a continuum so knowledge leads to care, treatment discussion, risk reduction, and family planning.

3. Hawai‘i as the Demonstration State

Hawai‘i is not merely a small state with a large aging challenge. Hawai‘i is a natural demonstration state for dementia system design. It has urban Honolulu, rural communities, neighbor islands, cultural diversity, severe geography, workforce constraints, and strong traditions of ‘ohana responsibility and community care. That combination creates a demanding test bed: if a dementia continuum can work here, it can teach the rest of the country how to make care more coherent.

The same features that make dementia care difficult in Hawai‘i also make Hawai‘i the ideal proving ground. O‘ahu may have more specialty capacity. Maui, Kaua‘i, Hawai‘i Island, Moloka‘i, and Lāna‘i face more visible access barriers. For many families, the ocean is not scenic background; it is a clinical barrier, a travel cost, a missed-work burden, and sometimes the reason a referral never happens.

The HANAI Memory Network gives the continuum a state platform. It gives families a front door, providers a referral pathway, public agencies a coordination structure, and policymakers a way to

measure whether people are actually being helped. In the language of this report, HANAI becomes the care planner, the care maintainer, the care manager, the care equalizer, and the provider of hope.

Hawai'i also has moral authority in this subject because the state understands community obligation. The model should not be built as a sterile call center or a disconnected technology stack. It should be built as a clinical-public-health-community system that knows the difference between processing a case and receiving a family.

Hawai'i Challenge	Why It Matters	Design Response
Island geography	Specialty care cannot be concentrated only in one place.	Tele-HANAI hub, county access points, ECHO mentoring, and hybrid clinic capacity.
Neighbor-island access gaps	Diagnosis and treatment pathways can be delayed or unavailable.	County dementia care specialists and contracted memory clinics.
Workforce limitations	Every new screening pathway increases demand on clinicians.	AADAPT, state training, Project ECHO, and role-based protocols.
Cultural diversity	One-size-fits-all messaging may fail families.	Community partners, language access, cultural humility, and 'ohana-centered planning.
High caregiver burden	Family caregiving is the backbone of the system but can collapse.	Caregiver assessment, respite linkage, education, and 24/7 support pathways.
Data fragmentation	No one can manage what no one can see.	Minimum data dictionary, dashboard governance, and FHIR-ready design.

4. The Continuum: One System, Not Separate Programs

The core design principle is lōkahi - unity. ASAP, AADAPT, Project ECHO, GUIDE, HANAI, blood tests, treatments, telehealth, caregiver support, and data standards should not be treated as separate islands. They should become one closed-loop continuum: notice, screen, evaluate, diagnose, train, navigate, support, monitor, measure, improve.

A continuum is different from a directory. A directory tells a caregiver where services might exist. A continuum makes sure a family moves from one step to the next, that someone is accountable for the handoff, and that the system knows whether the handoff actually happened. That is the difference between referral and responsibility.

The continuum should have a “no wrong door” operating rule. A person may enter through a primary care physician, an emergency department discharge, a senior center, an Area Agency on

Aging, a faith community, an Alzheimer's Association program, a caregiver helpline, or a health-plan outreach list. Wherever the concern appears, the system should know how to route it.

Stage	Question Answered	Lead Tool	Data Output
Notice	Who is worried and why?	Family, PCP, community partner, ADRC, health plan	Concern type, urgency, caregiver contact, safety flags
Screen	Who may need further evaluation?	ASAP-aligned clinical pathway, cognitive tools, blood-based aids when indicated	Screen date, test type, result, referral trigger
Train	Can the local front door respond?	AADAPT + Hawai'i training + Project ECHO	Training completion, confidence gain, case participation
Evaluate	What does the result mean clinically?	Primary care, memory clinic, neurology/geriatrics	Diagnostic workup, staging, differential diagnosis, treatment eligibility
Prevent / Reduce Risk	What can the person and community do now?	U.S. POINTER-style brain-health recipe, BOLD public health, primary care risk management	Lifestyle plan, risk-factor goals, group participation, blood pressure/weight/lab follow-up
Navigate	Who helps the family now?	CMS GUIDE + HANAI navigator/DCS	Navigator assignment, caregiver assessment, care plan status
Support	What reduces risk and burden?	HANAI + ADRC + community partners	Respite, coaching, safety plan, legal/financial planning referrals
Monitor	How do we keep the plan alive?	Telehealth, medication tools, remote monitoring, scheduled check-ins	Adherence, alerts, status changes, follow-up completion
Measure	Did outcomes improve?	HANAI dashboard + FHIR-ready data	Wait time, ER use, hospitalization, referral closure, satisfaction, cost

The practical value of this table is that it prevents policy fragmentation. ASAP is not enough if no one interprets the result. AADAPT is not enough if trained providers have nowhere to send families.

GUIDE is not enough if state networks are not aligned. Technology is not enough if it is not tied to a care plan. HANAI is not enough if it is not measured. The power is in the fit between the pieces.

5. The Scientific Moment: Blood Tests, Treatments, and Time

A responsible hope message must be precise. New blood-based tests are not magic, and they do not diagnose Alzheimer's disease by themselves in isolation from clinical judgment. The FDA-cleared Lumipulse blood test is an aid in diagnosing Alzheimer's disease in adults age 55 and older who are exhibiting signs and symptoms of the disease. It can help identify amyloid-related pathology through a blood draw, reducing reliance on more invasive or less accessible approaches such as spinal fluid testing or PET imaging for some patients.

What exactly did FDA review before clearing the first Alzheimer's blood diagnostic aid? For the Lumipulse G pTau217/ β -Amyloid 1-42 Plasma Ratio, FDA evaluated data from a multicenter clinical study using 499 plasma samples from adults with cognitive impairment. The blood-test results were compared with amyloid PET scans or cerebrospinal fluid results. In that study, 91.7% of individuals with a positive Lumipulse result had amyloid plaques by PET or CSF, 97.3% of individuals with a negative result had a negative PET or CSF result, and fewer than 20% received an indeterminate result. FDA cleared the test as a diagnostic aid for adults age 55 and older with signs and symptoms of cognitive decline, not as a stand-alone diagnosis and not as a general screening test for healthy people.

That FDA language is important for HANAI. The policy message should not be "everyone gets a blood test and then knows the answer." The correct message is "a clinically appropriate blood test can open a faster and less invasive diagnostic lane when the rest of the continuum is ready to interpret the result and act on it." False positives can create distress, cost, and inappropriate treatment; false negatives can delay the right diagnosis. Indeterminate results can require additional workup. Therefore, the value of the blood test depends on the care system around it.

The Alzheimer's Association survey reinforces why this careful pathway matters. Most Americans surveyed want earlier knowledge and access to treatment, but they also worry about cost, accuracy, and future care. HANAI should therefore treat testing as a shared-decision process: explain the intended use, explain uncertainty, discuss financial exposure, and make sure the family knows exactly who will help after the result.

FDA Review Element	What FDA Looked At / Said	Implication for HANAI
Intended population	Adults age 55 and older who are exhibiting signs and symptoms of Alzheimer's disease or cognitive decline, depending on the specific cleared test.	Do not frame blood biomarkers as casual testing for everyone; use clinical indication and shared decision-making.
Evidence reviewed	For Lumipulse, a 499-sample multicenter clinical study compared plasma results with amyloid PET or CSF findings.	Build referral pathways that can handle positive, negative, and indeterminate results.

FDA Review Element	What FDA Looked At / Said	Implication for HANAI
Performance signals	Lumipulse positives aligned with amyloid plaque evidence in 91.7% of cases; negatives aligned with negative PET/CSF in 97.3%; fewer than 20% were indeterminate.	Use the test to improve diagnostic efficiency, not to replace clinical judgment.
Limitations and risks	FDA emphasized risks of false positive and false negative results and stated the test is not intended as a screening or stand-alone diagnostic test.	Every test result should trigger trained interpretation, counseling, and a clear next step.

FDA regulatory language can confuse readers, so the report should translate it. “Cleared,” “approved,” “granted,” “authorized,” and “designated” are not interchangeable. The safest policy language is to name the specific FDA status and the specific intended use.

FDA Term	Plain-Language Meaning	Why It Matters Here
FDA approved	FDA has approved a drug, biologic, or certain high-risk device for a specific indication after reviewing evidence under the relevant approval standard.	Leqembi and Kisunla are FDA-approved treatments for selected early Alzheimer’s patients, but approval does not mean every patient is eligible.
FDA cleared	Common device pathway, often 510(k), where FDA finds the device substantially equivalent to a legally marketed predicate for the stated use.	Lumipulse was cleared as a blood-based diagnostic aid, not approved as a stand-alone diagnosis.
De Novo granted	FDA grants a pathway for a novel low- or moderate-risk device with no suitable predicate when controls can provide reasonable assurance of safety and effectiveness.	Important for future diagnostic tools that may not fit older device categories.
Emergency Use Authorization	A temporary emergency authority allowing use of certain products or uses during a declared emergency when statutory criteria are met.	Not the same as ordinary approval or clearance; avoid using EUA language for routine Alzheimer’s care unless it actually applies.
Breakthrough Device designation	A program to speed development and review for promising devices for serious conditions.	Designation can accelerate review but is not itself permission to market the test.

FDA Term	Plain-Language Meaning	Why It Matters Here
Registered or listed	An establishment or product listing status; it does not by itself mean FDA approved, cleared, or authorized the product.	The continuum should prefer tests with clear FDA status or clearly disclosed regulatory limitations.

If a person is not covered by insurance, the blood biomarker test becomes a very human policy issue. Publicly reported cash-pay prices vary widely by test and laboratory. For planning purposes, this report uses an illustrative self-pay range of roughly \$500-\$1,500 for the test itself, with about \$1,000 as a practical midpoint. That estimate excludes the office visit, cognitive evaluation, follow-up imaging or CSF testing if needed, treatment-eligibility workup, MRI monitoring, care navigation, and caregiver support.

Self-Pay Issue	Planning Assumption	Continuum Design Response
Cash price variability	Use \$500-\$1,500 as a rough range; use \$1,000 as a midpoint in planning scenarios.	Require transparent cost discussion before the blood draw.
Hidden follow-up costs	The test may be only the first bill; additional evaluation may be needed.	Pair testing with navigation and financial counseling.
Equity risk	Uninsured or underinsured families may delay testing even when clinically appropriate.	Build a HANAI charity-care, voucher, grant, or negotiated-rate lane for qualifying patients.
Policy lesson	Coverage is not merely a finance detail; it determines whether early detection reaches everyone.	Make ASAP/HANAI implementation include affordability metrics, not only volume metrics.

That distinction matters. Blood-based diagnostic aids are not yet a general-population prediction tool for every healthy adult. They must be used in context: history, cognitive assessment, functional change, medications, depression, sleep, vascular risk, sensory impairment, labs, imaging when appropriate, and clinical judgment. But they are still a breakthrough because they can make diagnostic evaluation more accessible, scalable, and less invasive.

Treatments are also moving. FDA-approved anti-amyloid therapies such as Leqembi and Kisunla are not cures. They are indicated for selected patients with early Alzheimer's disease, such as mild cognitive impairment or mild dementia stages in the studied populations, and they require confirmation of amyloid pathology, careful eligibility review, MRI monitoring, shared decision-making, and risk discussion. Their risks, benefits, costs, and infrastructure demands must be taken seriously.

A new treatment-delivery issue now belongs in the continuum design. FDA approved LEQEMBI IQLIK, a weekly subcutaneous autoinjector for maintenance treatment after a patient has completed at least 18 months of intravenous Leqembi. In plain language, this does not replace the initial infusion phase. It creates a possible later maintenance option for appropriate patients and

caregivers who can be trained, safely store the medicine, recognize problems, and remain connected to the clinical team.

For Hawai'i, this creates two future treatment-delivery lanes. Some patients may continue receiving treatment through a HANAI Memory Clinic or other island clinical partner. Others, after the required initial treatment period and clinical clearance, may be able to shift to home maintenance injections with caregiver training and periodic reassessment. Both lanes still require eligibility review, amyloid confirmation, MRI monitoring for ARIA risk, safety protocols, and rapid escalation if symptoms occur.

Treatment Lane	Where It Happens	Who It May Fit	HANAI Safety Requirement
Clinic / island memory-clinic lane	HANAI Memory Clinic, infusion center, neurology/geriatrics partner, or contracted health-system site.	Patients in the initial infusion phase; patients needing closer monitoring; families who prefer clinical administration.	Confirm eligibility, schedule MRI monitoring, watch for ARIA and infusion reactions, and keep navigation active.
Home maintenance lane	Home injection with LEQEMBI IQLIK after required IV treatment and training, if clinically appropriate.	Selected maintenance patients with reliable storage, caregiver or self-administration capacity, and clear emergency instructions.	Train and periodically reassess patient/caregiver ability, maintain follow-up, track missed doses, and preserve rapid escalation.

The practical meaning is time. Time to plan. Time to treat when appropriate. Time to reduce risk. Time to support caregivers. Time to consider clinical trials. Time for better treatments to arrive. Time is not the cure, but time may be the bridge to the cure.

U.S. POINTER gives the word “time” another meaning: time can be used actively. A person who learns sooner that they are at risk, or a family that enters HANAI before crisis, can begin a brain-health recipe while also completing medical evaluation. The prevention lane is not a consolation prize; it is a way to convert fear into action while science continues to move.

Scientific Advance	What It Changes	System Requirement
Blood-based diagnostic aids	May reduce barriers to identifying Alzheimer's pathology in symptomatic people who need evaluation.	Coverage, clinician training, result interpretation, follow-up capacity, and equity safeguards.
Disease-modifying therapies	Create a reason for earlier diagnosis because some options are stage-dependent.	Eligibility protocols, MRI monitoring, infusion/injection capacity, risk counseling, and referral criteria.

Scientific Advance	What It Changes	System Requirement
Biomarker staging	Moves the field toward more precise classification of disease biology.	Careful communication so biomarkers do not become frightening labels without support.
Prevention science	Highlights risk reduction, brain health, and possible future pre-symptomatic interventions.	Public-health campaigns, primary-care workflows, and inclusive research enrollment.
Digital biomarkers	May detect change in speech, gait, sleep, activity, or daily patterns earlier.	Privacy, consent, validation, and integration into clinical care rather than surveillance.
U.S. POINTER-style lifestyle programs	Show that multidomain risk-reduction support can improve cognition in older adults at risk of cognitive decline.	Community delivery, coaching, cultural adaptation, primary-care linkage, and measurement of participation and outcomes.

6. ASAP: Opening the Front Door Earlier

The Alzheimer's Screening and Prevention Act - the ASAP Act - is central because a care continuum cannot work if people enter it too late. The policy idea is to create a Medicare coverage pathway for FDA-approved or FDA-cleared blood-based Alzheimer's tests so eligible beneficiaries can receive earlier, less invasive diagnostic support when the evidence and coverage rules support use.

ASAP should be framed as the front door, not the whole house. A concerning test result must lead to diagnostic evaluation, staging, counseling, care planning, and referral. Without follow-up, screening becomes a dead end. With follow-up, screening becomes the first step in a continuum. The danger is not early detection itself; the danger is early detection without navigation.

For Hawai'i, ASAP has unusual importance because the front door has to work across islands. A blood draw can be easier to distribute than specialty imaging. A primary care office, FQHC, rural clinic, or contracted memory clinic can become an entry point if the providers are trained and the referral system is ready. The policy question is therefore not simply "Can Medicare cover the test?" The policy question is "Can the result activate the continuum?"

ASAP also matters because coverage can determine whether early detection is equitable. A blood test that costs around \$1,000 out of pocket may be manageable for some families and impossible for others. Without coverage, charity care, negotiated pricing, or a HANAI support lane, early detection could become another disparity: people with money get clarity, while people without coverage wait until crisis. The continuum should therefore track not only how many tests are ordered, but how many clinically appropriate patients declined or delayed testing because of cost.

The public-demand survey makes this equity issue sharper. If 80% of surveyed Americans would ask to be tested rather than wait for a doctor to suggest testing, then health systems need a responsible way to respond. The answer is not casual testing without context; it is a covered,

clinically appropriate, navigated testing pathway that leads to interpretation, treatment discussion when appropriate, U.S. POINTER-style risk reduction, caregiver support, and follow-up.

ASAP Workflow Step	Operational Detail	HANAI Link
Eligibility check	Use coverage rules, clinical indication, symptoms, age, and medical context.	Avoid inappropriate testing and prevent false reassurance or unnecessary alarm.
Blood-based test	Order FDA-approved or FDA-cleared test when clinically appropriate.	Make the front door less dependent on PET scan access or lumbar puncture.
Result interpretation	Explain that the test is an aid, not a stand-alone diagnosis.	Use trained clinician or ECHO-supported workflow.
Diagnostic follow-up	Complete cognitive, clinical, functional, and differential workup.	Refer to memory clinic or specialty pathway when needed.
Care-plan activation	Assign navigator/DCS and initiate caregiver assessment.	Convert a result into practical next steps.
Dashboard tracking	Track positive follow-up, time to evaluation, and referral closure.	Prevent screening from becoming a one-time event.

ASAP KPI	Formula	Why It Matters
Eligible Screening Rate	Eligible beneficiaries screened / eligible beneficiaries	Measures reach.
Positive Follow-Up Rate	Positive or concerning screens with diagnostic follow-up / positive or concerning screens	Prevents screening dead ends.
Time to Diagnostic Evaluation	Median days from concerning screen to diagnostic evaluation	Measures access speed.
Early-Stage Diagnosis Share	Early-stage diagnoses / total diagnoses	Shows whether detection is moving earlier.
Referral-to-HANAI Rate	Patients referred to HANAI / patients with qualifying diagnosis	Connects federal screening to state support.

7. AADAPT + Hawai'i Training: Preparing the Workforce

Early detection increases demand. If the workforce is not ready, the bottleneck simply moves from screening to evaluation. The AADAPT Act addresses this gap by expanding structured virtual education for primary care providers and community-based clinicians so they can better detect, diagnose, treat, refer, and support people with dementia.

Hawai'i's own training momentum matters because a state cannot build a dementia continuum if the frontline workforce does not know how to recognize cognitive decline, talk with families, refer appropriately, and support caregivers. Training is not a ceremonial requirement. It is the operating system of the continuum.

The goal is not to turn every primary care physician into a neurologist. The goal is to make every front door better: better recognition, better differential diagnosis, better referral discipline, better medication safety, better caregiver guidance, better cultural humility, and better follow-through.

Training should be role-based. A physician needs diagnostic-pathway knowledge. A nurse may need medication reconciliation and safety-flag protocols. A social worker needs caregiver-burden assessment and service linkage. A community health worker needs red-flag recognition and stigma reduction. A call-center or ADRC staff member needs routing rules and escalation criteria.

Training Function	Federal / State Tool	Hawai'i Implementation Logic
Basic recognition	State dementia training + AADAPT	Help clinicians and community-facing staff identify red flags earlier.
Diagnostic pathway	AADAPT + Project ECHO	Support appropriate use of cognitive tools, blood tests, imaging, medication review, and referrals.
Care planning	GUIDE + HANAI	Convert diagnosis into family instructions and next steps.
Cultural competence	HANAI + community partners	Use aloha, 'ohana, kupuna, and island-specific supports as operating principles.
Crisis prevention	ECHO + GUIDE + DCS protocols	Teach fall risk, wandering risk, delirium risk, medication safety, and caregiver burnout prevention.
Continuing improvement	ECHO + dashboard	Use cases and data to improve training over time.

Provider Group	Minimum Competency	Practical Test of Success
Primary care clinicians	Recognize impairment, start workup, order appropriate tests, refer correctly.	A concerning result leads to a completed diagnostic pathway, not a delayed referral.
Nurses and medical assistants	Medication review, safety flags, functional questions, caregiver identification.	Medication confusion and safety risks are identified before crisis.

Provider Group	Minimum Competency	Practical Test of Success
Social workers / DCS staff	Caregiver assessment, benefits navigation, LTSS linkage, closed-loop referrals.	Caregiver receives a named plan and completed service linkage.
Community partners	Stigma reduction, no-wrong-door routing, family preparation.	Families know what to document before the first appointment.
Specialists	ECHO mentorship, complex case consultation, treatment eligibility support.	Specialty knowledge reaches neighbor-island providers without unnecessary travel.

8. Project ECHO: Moving Knowledge Across the Ocean

Project ECHO is a technology-enabled collaborative learning and mentoring model. It connects specialist teams with community providers through virtual sessions, case-based learning, brief didactics, and shared problem-solving. Its operating idea is powerful: move knowledge, not patients.

For Hawai'i, this is not a convenience; it is a necessity. Families should not have to fly to Honolulu for every question. Neighbor-island providers should not have to practice in isolation. Project ECHO can allow dementia expertise to travel across the ocean in minutes. It can also create professional community, which matters in a field where rural and neighbor-island clinicians can feel alone with complicated cases.

ECHO should be treated as the workforce-maintenance engine for HANAI. The network can launch with initial training, but it will only improve if providers keep bringing cases, asking questions, learning from each other, and building shared clinical judgment. In dementia care, the hard questions are often not only medical. They are behavioral, family, safety, transportation, legal, cultural, and long-term-care questions.

ECHO Component	Plain-Language Meaning	Dementia Application
Hub Team	Specialists and expert faculty	Neurology, geriatrics, psychiatry, pharmacy, social work, care navigation, public health.
Spokes	Community providers	PCPs, FQHCs, rural clinics, neighbor-island clinicians, health-plan teams, DCS staff.
Case-Based Learning	Real de-identified cases	Memory loss, wandering, caregiver crisis, medication risk, treatment eligibility, rapid decline.

ECHO Component	Plain-Language Meaning	Dementia Application
Brief Didactics	Short expert teaching segments	Blood-test interpretation, staging, differential diagnosis, safety planning, caregiver support.
All Teach, All Learn	Peers and experts learn together	Builds confidence, not dependency.
Data Feedback	Use dashboard trends as learning material	If one island has slower follow-up, the ECHO curriculum can respond.

The most powerful ECHO sessions would end with a practical answer: What should the local provider do tomorrow morning? Does the patient need an urgent evaluation, a medication change, a social-work call, a caregiver safety plan, a specialty referral, a respite connection, or a treatment-eligibility discussion? The value of ECHO is measured by the next right action.

9. CMS GUIDE: Navigation, Care Planning, and Caregiver Support

Diagnosis alone is not care. The CMS GUIDE Model matters because it recognizes what families already know: after diagnosis, people need navigation, a care plan, caregiver support, clinical and community service linkage, respite support where eligible, and a way to get urgent guidance when problems arise.

In Hawai'i, GUIDE can align with HANAI so families do not experience a handoff as abandonment. The continuum should create one clear path: evaluation, diagnosis, navigator assignment, caregiver assessment, written care plan, community referrals, follow-up, and escalation when needed. The family should not have to learn a new bureaucracy at every step.

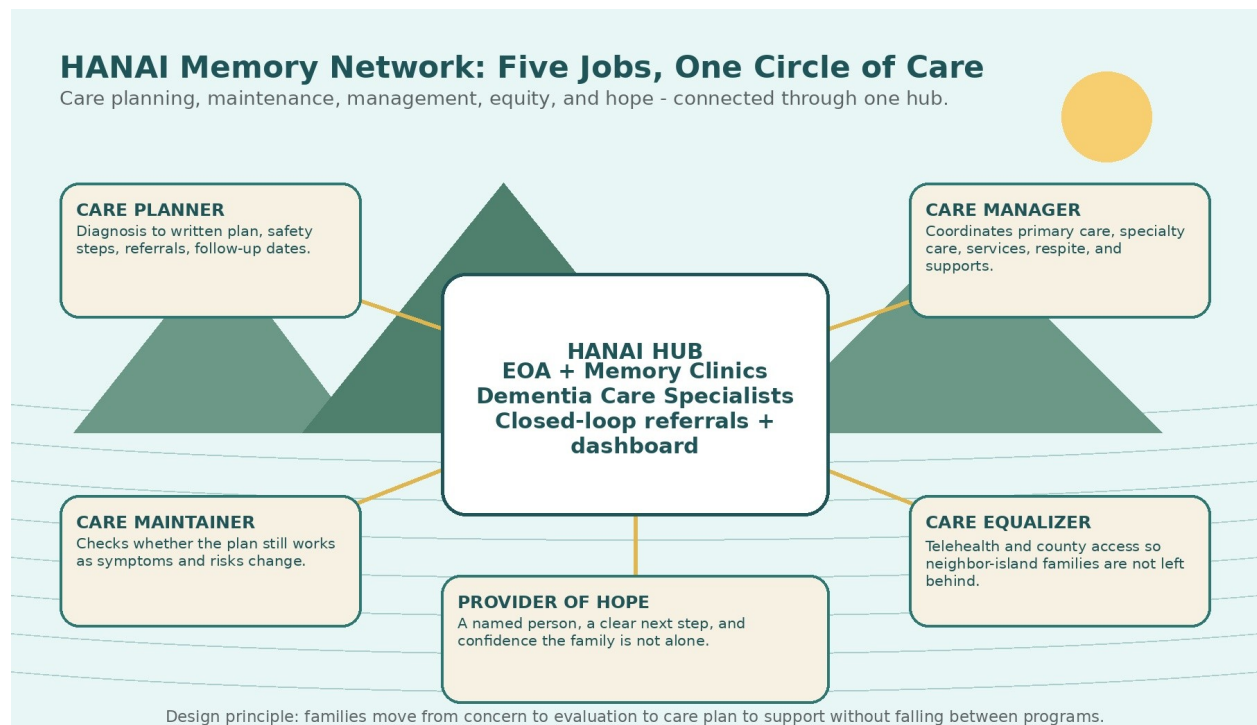
GUIDE also provides a powerful national policy message: Medicare is beginning to pay for the work families have long needed but could not reliably access - care coordination, caregiver education, 24/7 support, and whole-family management. HANAI can become the Hawai'i platform that makes those model elements culturally grounded and geographically practical.

GUIDE Function	HANAI Translation	Recommended KPI
Care Navigation	Navigator or DCS assigned after diagnosis or qualifying concern.	Navigator contact within 30 days.
Care Plan	Documented dementia care plan shared with family and clinical team.	Care plan completion rate.
Caregiver Support	Education, coaching, assessment, respite linkage where eligible.	Caregiver assessment and support rate.

GUIDE Function	HANAI Translation	Recommended KPI
24/7 Access	Urgent guidance or escalation pathway.	After-hours response tracking.
Community Linkage	Clinical and community referrals with closure tracking.	Referral closure rate.
Home-and-community focus	Support safety at home and delay avoidable institutionalization.	Home time, caregiver strain, ED use, and hospitalization trends.

The GUIDE-HANAI alignment should be deliberately operational. A HANAI care plan should be readable by a family. It should also map to clinical and claims data so policymakers can determine whether the model reduces avoidable emergency use and delays high-cost crisis transitions. This is where compassion and finance meet: the same intervention that keeps a caregiver supported may also prevent an expensive and traumatic event.

10. HANAI Memory Network: Planner, Maintainer, Manager, Equalizer, Hope



Corrected graphic: the HANAI Memory Network as planner, maintainer, manager, equalizer, and provider of hope. The labels have been rebuilt so all text remains inside the boxes.

HANAI should be understood as Hawai'i's state implementation platform. Federal screening coverage can identify people. Federal training grants can prepare providers. GUIDE can standardize navigation. Project ECHO can move expertise. But families still need somewhere to go, someone to call, and a system that follows through.

The HANAI Memory Network can be the care planner: turning diagnosis into a written plan. It can be the care maintainer: checking whether the plan is still working as symptoms and risks change. It can be the care manager: coordinating across clinical, community, caregiver, and long-term services. It can be the care equalizer: reaching families across islands rather than privileging only those who live near specialty care. And it can be the provider of hope: showing families that they are not alone.

The name matters. Hānai in Hawaiian carries the idea of nurturing, caring for, feeding, or adopting into a family relationship. As a public system concept, HANAI should mean that the state does not merely process people with dementia; it receives them into a coordinated circle of care.

Operationally, HANAI should be built with three layers. The first layer is a public front door coordinated through the Executive Office on Aging and aligned with ADRC functions. The second is a clinical layer of contracted memory clinics and primary-care partners. The third is a continuity layer of dementia care specialists, navigators, community partners, telehealth, and data. All three layers must work together or families will still feel fragmentation.

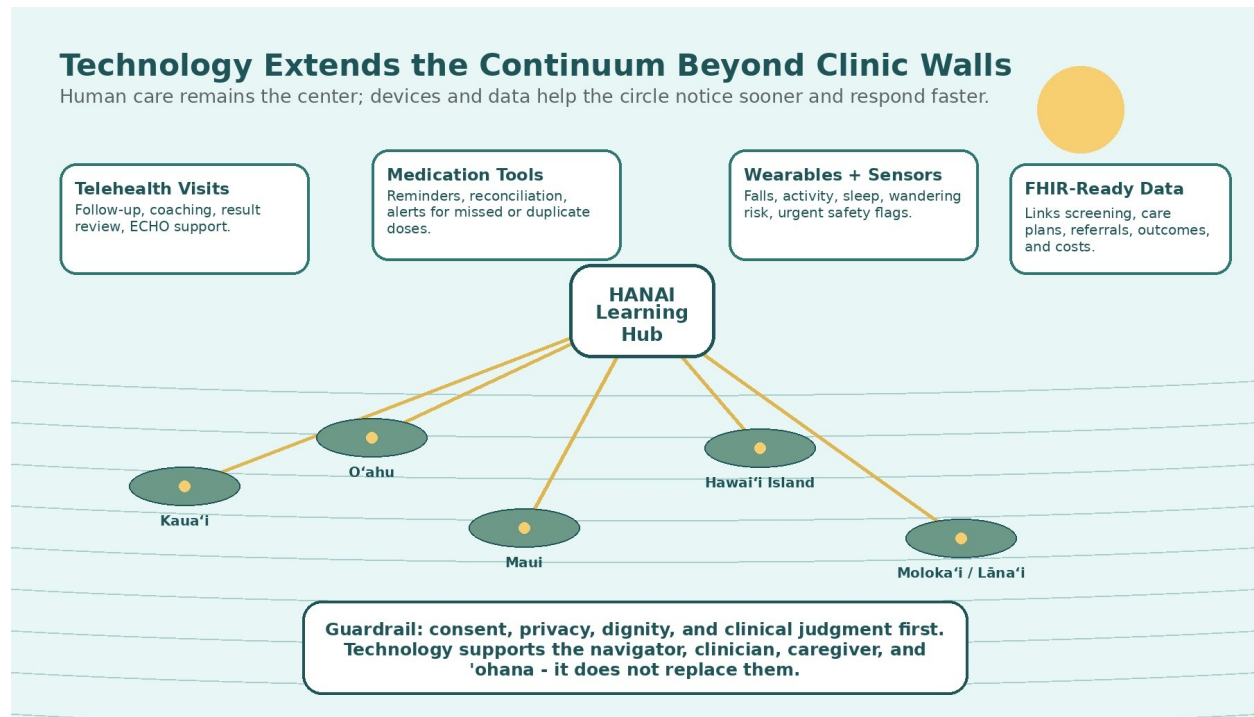
HANAI should also be prepared to manage treatment delivery as the science changes. In the near term, anti-amyloid treatment will still require careful clinical selection, amyloid confirmation, MRI monitoring, and risk discussion. Over time, the model can support two safe pathways: an on-island clinic pathway for initiation, infusion, complex follow-up, and families who need hands-on support; and a home maintenance pathway for selected patients whose treatment has moved to an approved subcutaneous maintenance option and whose caregiver or self-administration capacity has been documented.

HANAI Design Principle	Operational Meaning	Concrete Example
Statewide access	No island should be left without a practical pathway.	County DCS + contracted clinic capacity + telehealth support.
Use existing assets first	Leverage EOA, DOH, health systems, FQHCs, ADRCs, Area Agencies on Aging, and community partners.	Contract capacity instead of building every clinic from zero.
Telehealth by default where appropriate	Reduce travel burden for neighbor-island families.	Remote intake, caregiver coaching, results discussion, medication follow-up.
In-person when necessary	Do not overuse technology for complex diagnoses or unsafe situations.	Rapid decline, focal neurologic signs, severe behavioral symptoms, treatment eligibility workup.
Closed-loop referrals	Track whether referrals were completed, not merely made.	Referral closure rate by island and provider group.
Culturally grounded care	Use 'ohana, kupuna, aloha, and community trust as operating principles, not slogans.	Family-inclusive care planning and community-language outreach.

HANAI Design Principle	Operational Meaning	Concrete Example
Dashboard governance	Use common definitions, monthly reporting, and transparent performance review.	Island-specific wait times and outcome trends.

HANAI Lifecycle Step	Primary Owner	What the Family Experiences
Intake and triage	EOA/ADRC or HANAI front door	Someone listens, records concerns, and explains the next step.
Pre-visit preparation	DCS / navigator	Records, medication lists, caregiver observations, and safety flags are gathered.
Clinical evaluation	Memory clinic / trained provider	The person is evaluated as a whole person, not reduced to a score.
Care plan	Clinical team + DCS	The family receives written instructions and named supports.
Service linkage	DCS / ADRC / community partner	Referrals are followed until completed or replaced with another plan.
Maintenance	HANAI team	Follow-up occurs before crisis, not only after crisis.
Escalation	Navigator + clinical partner	Urgent changes have a pathway other than the emergency room.
Learning loop	HANAI dashboard governance	Data from many families improves the system for the next family.

11. Technology: Extending the Continuum Beyond Clinic Walls



Corrected graphic: technology extends HANA across islands while keeping human care at the center. All labels are contained inside their boxes.

Technology does not replace human care. Used well, it extends human care. Video visits can connect patients with doctors, navigators, family members, and specialists across islands and across the world. Wearable devices can detect falls, activity changes, sleep disruption, wandering risk, or urgent changes. Medication-management tools can reduce missed doses and dangerous duplication. Remote monitoring can notify caregivers or care teams sooner.

The technology strategy should be selective, not gadget-driven. A family should not receive a device because a device exists. The family should receive a tool when the care plan identifies a risk the tool can help manage. If the risk is medication confusion, the solution may be a dispenser and medication reconciliation. If the risk is wandering, the solution may be a location-aware safety plan. If the risk is caregiver isolation, the solution may be tele-coaching and a support group. If the risk is clinical deterioration, the solution may be a scheduled telehealth reassessment.

The next layer is data. When clinical information, caregiver assessments, referrals, wearable signals, telehealth activity, emergency use, and outcomes are combined responsibly, Hawai'i can build a learning system. That learning system can identify what is working, where families are falling through gaps, which islands need additional support, and which interventions reduce crisis events.

FHIR-ready data matters because pilots often fail at scale when their data cannot travel. HANA does not need a perfect statewide data platform on day one. It needs a minimum viable data dictionary that can later map to electronic health records, claims, community-service data, and

public reporting. The early design should be simple enough to launch but disciplined enough to scale.

Technology Function	Use Case	Guardrail
Telehealth	Intake, follow-up, caregiver coaching, result review, remote specialist consultation.	Do not use when in-person exam or urgent evaluation is clinically necessary.
Medication tools	Reminders, dispensing support, adherence alerts, reconciliation prompts.	Avoid replacing caregiver communication with automation.
Wearables and sensors	Falls, activity change, sleep patterns, wandering risk, post-acute monitoring.	Use consent, privacy controls, and clear response rules.
Family communication	Video participation by off-island relatives, shared care-plan updates.	Respect the person's preferences and decision-making rights.
AI-assisted triage	Summarize concerns, flag safety risks, route referrals, support documentation.	Human review required; never allow AI to make unsupported diagnosis or treatment decisions.
FHIR-ready integration	Map observations, care plans, referrals, and outcomes to interoperable data structures.	Start with a minimum data set and expand only when value is proven.

12. KPI, FHIR, Finance, and Governance Framework

Hope becomes durable when it is measured. The continuum should therefore include a dashboard from the beginning. The dashboard should track flow, equity, experience, outcomes, and costs. It should be statewide and island-specific because statewide averages can hide neighbor-island access problems.

The dashboard should be simple enough that leaders actually use it. It should answer four questions every month: Are families getting in? Are they getting a diagnosis and a plan? Are caregivers receiving support? Are crisis events and costs moving in the right direction? If a metric does not help answer one of those questions, it belongs in a secondary analytic file, not the executive dashboard.

FHIR-ready design should begin with a minimum viable data dictionary. The first version can include patient demographics, island/county, referral source, screening date, diagnostic evaluation date, care-plan completion, caregiver assessment, referral closure, technology supports, emergency visits, hospitalizations, and satisfaction. Over time, this can map to FHIR Observation, CarePlan, ServiceRequest, Condition, Encounter, and related resources.

Domain	KPI	Definition	Pilot Target
Access	Referral-to-first-contact days	Median days from referral to navigator contact.	<= 7 days
Access	Referral-to-evaluation days	Median days from referral to first clinical evaluation.	<= 21-30 days in pilot lane
Clinical	Diagnostic follow-up	Positive/concerning screens with follow-up / positive/concerning screens.	90%
Clinical	Early-stage diagnosis share	Early-stage diagnoses / total diagnoses.	Increase quarterly
Workforce	Training completion	Completed training / enrolled providers.	85%+
Navigation	Navigator contact	Contact within 30 days / assigned patients.	95%
Navigation	Care plan completion	Completed care plans / assigned patients.	90%
Referral	Referral closure	Closed referrals / referrals made.	85%
Caregiver	Caregiver assessment	Caregivers assessed / identified caregivers.	80%
Outcome	Avoidable ER use	ER visits per 1,000 patient-months.	Reduce over baseline
Outcome	Hospitalization rate	Admissions per 1,000 patient-months.	Reduce over baseline
Experience	Family satisfaction	Satisfied families / survey respondents.	90%+

Governance should be explicit. The Executive Office on Aging can coordinate the state platform, but clinical partners, community providers, payers, family representatives, and data stewards must have defined roles. A dashboard without owners becomes decoration. A dashboard with owners becomes management.

Break-even equation: Required reduction percentage = Program Cost / Addressable Baseline Cost.

The financial case should be credible, not exaggerated. ASAP, AADAPT, GUIDE, and HANAI should not be sold as instant cost-saving machines. The defensible claim is that earlier detection, trained providers, navigation, caregiver support, telehealth, and community services can reduce avoidable crisis events and delay some high-cost utilization. The pilot should prove where that claim is true, where it is not yet true, and what needs to change.

13. Hawai'i as America's Pilot: How to Roll the Model Across the Country

Near the end of Part I, the core policy question becomes national: could Hawai'i become a pilot that helps the entire country? The answer is yes, if the pilot is designed not merely as a local service project but as a replication package. Hawai'i should prove the operating model, measure it honestly, simplify it into templates, and then let other states adapt it to their own geography.

Hawai'i is the stress test. It has a large set of islands spread across roughly a thousand miles of ocean. It has inter-island travel barriers, uneven specialty distribution, rural and neighbor-island access issues, and a need to move knowledge and care without moving every patient. If HANAI can work under those conditions, most mainland states can implement a simplified version because they do not have to cross ocean channels to connect clinics, caregivers, and specialists.

The other 49 states still have serious dementia-care challenges: rural distance, workforce shortages, underserved communities, urban fragmentation, payer complexity, tribal sovereignty, language access, and uneven specialty capacity. But most do not have Hawai'i's island separation. A mainland state can often use regional hubs connected by roads, statewide health information exchange, existing academic medical centers, county aging offices, and health-system networks. The model can therefore be simplified: fewer transport barriers, fewer island-specific tele-balancing rules, easier regional scheduling, and more straightforward clinic-to-clinic referral arrangements.

Pilot-to-National Step	What Hawai'i Should Produce	How Other States Use It
1. Demonstrate	Launch HANAI with defined referral pathways, memory clinics, DCS roles, ECHO training, GUIDE alignment, and dashboard reporting.	Adopt the architecture while replacing island terms with county/region terms.
2. Measure	Publish monthly KPI trends: access, follow-up, care plans, caregiver support, ED use, hospitalizations, and family experience.	Use the same dashboard definitions to compare performance across states.
3. Package	Create implementation manuals, training modules, care-plan templates, data dictionary, sample contracts, and governance charters.	Reduce startup time and avoid reinventing the operating model.

Pilot-to-National Step	What Hawai'i Should Produce	How Other States Use It
4. Simplify	Document which Hawai'i-specific features are required only because of island geography.	Mainland states omit or simplify ocean-specific travel and tele-balancing complexity.
5. Adapt	Create archetype playbooks: rural/frontier, urban, tribal, border, Appalachian, and statewide managed-care models.	Each state adapts the same continuum to its population and delivery system.
6. Scale	Coordinate with CMS, CDC BOLD, ACL/aging networks, NIH research partners, and private plans.	Build a national dementia continuum learning collaborative.

A national rollout should not require every state to copy Hawai'i exactly. It should require every state to answer the same operational questions: Where is the front door? Who is trained? Who confirms diagnosis? Who writes the care plan? Who supports the caregiver? Who tracks referral closure? Who monitors crisis use? Who owns the dashboard?

The federal government could accelerate rollout through a Dementia Continuum Replication Package. That package would include a model state statute or executive order, a HANAI-style program charter, GUIDE alignment guidance, AADAPT/ECHO training curriculum, FHIR-ready data dictionary, sample procurement language, caregiver assessment tools, a dashboard specification, and a one-year implementation calendar.

Hawai'i Feature	Why It Is Hard in Hawai'i	How It Gets Easier in Other States
Inter-island distance	Families and clinicians may face flights, ferry gaps, and weather-related disruption.	Most states can use road-based regional hubs and mobile clinics.
Specialty concentration on O'ahu	Neighbor islands can wait or travel.	Mainland states can distribute expertise across academic centers and telehealth hubs.
Small island populations	Some clinics may have uneven utilization after backlog clears.	Larger counties can sustain steadier demand.
Telehealth balancing	Kaua'i, Maui, Hawai'i Island, Moloka'i, and Lāna'i may need shared capacity rules.	Mainland regions can balance across health systems and county lines more easily.
Cultural and language diversity	The model must be culturally grounded and trust-based.	Every state still needs cultural adaptation, but can use the same design principle.

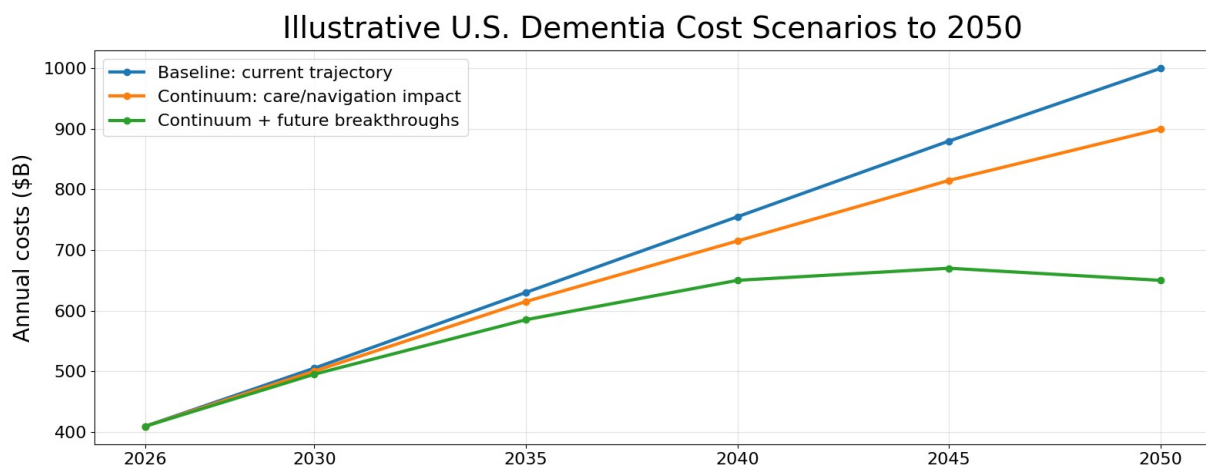
Hawai'i Feature	Why It Is Hard in Hawai'i	How It Gets Easier in Other States
Ocean as a care barrier	The geography forces technology and care navigation to mature quickly.	Other states inherit the refined technology model without the same travel burden.

The best national pilot evidence would combine numbers and stories. Numbers show whether access improved and avoidable utilization declined. Stories show whether families felt less alone. A model that cannot improve both is not enough. A model that improves both is exactly the kind of demonstration America needs.

14. Financial Benefits and 2050 Scenarios

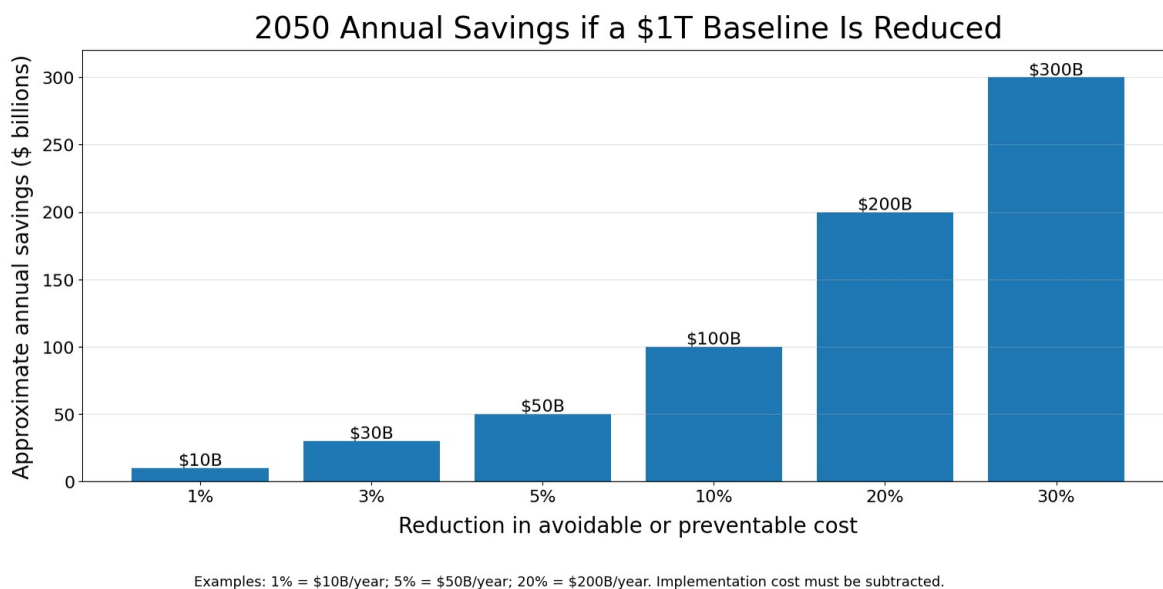
The financial section should be honest, disciplined, and hopeful. The baseline is sobering: national health and long-term-care costs for people living with Alzheimer's and other dementias are projected at \$409 billion in 2026 and nearly \$1 trillion in 2050. The purpose of HANAI and the broader continuum is not simply to save money. The purpose is to improve life. But better life and better finance can align when a system reduces avoidable crisis care, delays unnecessary institutionalization, supports caregivers, and makes treatment and risk reduction available earlier.

The projections below are deliberately illustrative. They are not actuarial predictions and should not be represented as guaranteed savings. They show the scale of opportunity. If national dementia-related spending approaches \$1 trillion by 2050, then even small percentage improvements become very large dollar amounts. A 1% reduction in avoidable or preventable cost is about \$10 billion per year. A 5% reduction is about \$50 billion per year. A 20% reduction, if future breakthroughs and prevention strategies made it possible, would be about \$200 billion per year before implementation costs.



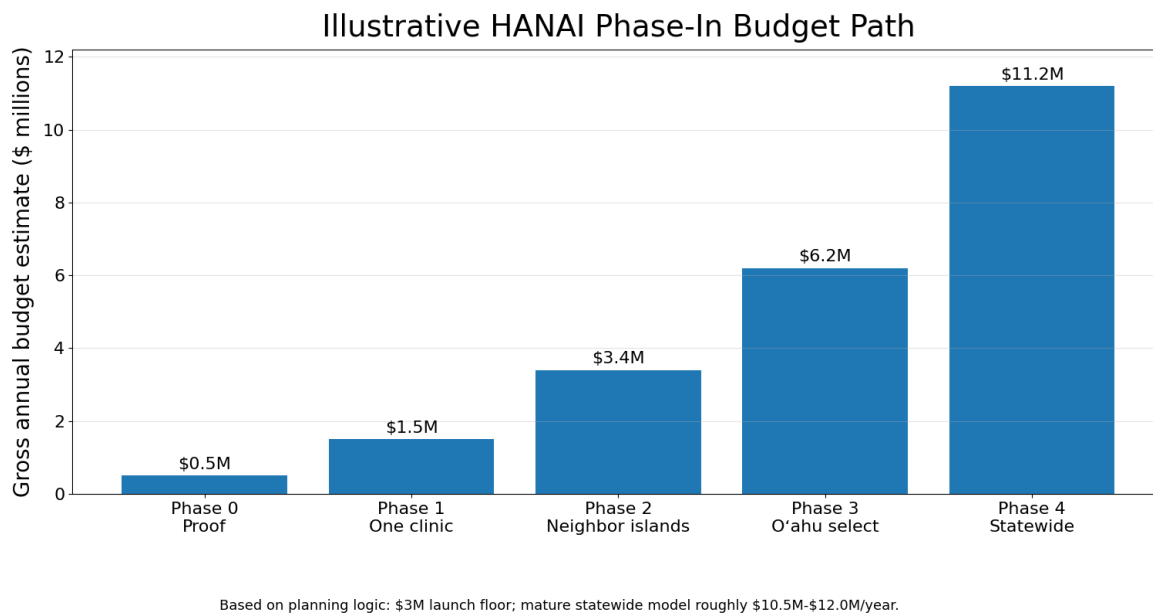
Scenario math, not a prediction. Baseline anchors: \$409B in 2026 and nearly \$1T in 2050.

Illustrative national cost scenarios. Baseline anchors come from the 2026 Alzheimer's Association cost estimates; reduction paths are scenario assumptions, not predictions.



Illustrative 2050 annual savings at different reduction levels against a \$1 trillion baseline. Implementation costs must be subtracted.

For Hawai'i, the most immediate financial case is more modest and more testable. The original HANAI concept used a \$3 million annual launch figure. Prior planning logic treated that as a credible launch floor, not the mature statewide ceiling. A mature statewide utilization-matched network may require a larger gross budget, especially if Hawai'i wants to keep pace with new annual dementia demand rather than only build a symbolic pathway.



Illustrative Hawai'i phase-in budget path. The \$3M level is best understood as a launch floor; a mature statewide model is likely higher.

Savings Lever	How It Saves Money	Human Benefit
Earlier diagnosis	Reduces crisis-driven entry into emergency and hospital systems.	Families can plan before danger escalates.
Care navigation	Reduces duplicate visits, missed referrals, and unmanaged co-morbidities.	Families have a named guide.
Caregiver support	Delays burnout, missed work, and premature placement pressure.	Caregivers are treated as part of the care unit.
Medication review	Reduces adverse drug events, confusion, falls, and avoidable visits.	The person is safer at home.
Telehealth follow-up	Reduces travel, missed appointments, and delayed reassessment.	Neighbor-island families receive care without repeated flights.
Safety monitoring	Prevents some falls, wandering crises, and delayed emergency response.	Technology becomes a safety net, not surveillance.

Savings Lever	How It Saves Money	Human Benefit
Risk reduction and prevention	If onset is delayed across populations, prevalence and cost curves bend.	More years of independent life.
Treatment access	Appropriate early treatment may slow decline in selected patients.	More time for planning, presence, and family connection.

The 2050 vision if the continuum is implemented is not merely a lower cost curve. It is a different care experience. A person with early memory concerns is evaluated before crisis. A primary care clinician is trained and supported. A blood-based diagnostic aid is available when appropriate. A care navigator is assigned. The caregiver is assessed. The plan is written. The home is made safer. Follow-up occurs. Technology supports the family. The dashboard identifies gaps. Researchers have better pathways to reach diverse communities. The state learns every month.

The financial prize is therefore twofold: reduce avoidable utilization and create a platform ready for future breakthroughs. A state with no continuum may not be able to deliver new science equitably. A state with HANAI can move faster when the next diagnostic tool, treatment, prevention protocol, or technology becomes available.

15. Future Breakthroughs: Medicine, Technology, Prevention, and the 2050 Horizon

This section intentionally makes “wild guesses,” but it labels them as scenario thinking, not promises. The science will not move in a straight line. Some current ideas will fail. Some will work only for subgroups. Some will be too expensive at first. Some will require safety monitoring that strains the system. But the direction of travel is visible enough to plan for.

The most promising future is not one breakthrough. It is combination progress: better biomarkers, earlier identification, safer treatments, more precise staging, public-health risk reduction, digital monitoring, caregiver technology, and better care navigation. Dementia is complex, so the 2050 solution is likely to be complex too.

U.S. POINTER is one of the strongest reasons to design the 2050 horizon as a combination future. The trial’s structured program did not depend on one pill or one device. It combined behavior, coaching, accountability, and health monitoring. That fits the HANAI philosophy: the next generation of Alzheimer’s care will likely combine drug treatment for eligible patients, prevention and risk reduction for broader populations, technology support at home, and navigation that keeps the whole plan coherent.

Promising Direction Today	Wild-Guess 2050 Possibility	What HANAI Must Be Ready To Do
Blood biomarker panels	Routine brain-health evaluation for symptomatic patients and targeted high-risk groups, with confirmatory pathways.	Manage consent, interpretation, referral, and equity.

Promising Direction Today	Wild-Guess 2050 Possibility	What HANAI Must Be Ready To Do
Amyloid-targeting therapies	Safer, more convenient dosing, better patient selection, and possibly earlier-stage intervention.	Identify eligible patients and coordinate monitoring.
Tau-directed therapies	Treatments that target tau pathology may complement amyloid approaches.	Support specialist pathways and combination protocols.
Neuroinflammation and immune targets	Anti-inflammatory or immune-modulating strategies may slow progression in selected subtypes.	Track co-morbidities, medication safety, and trial access.
Metabolic and vascular approaches	Brain-health protocols may integrate diabetes, blood pressure, cholesterol, sleep, hearing, vision, exercise, and nutrition.	Make prevention and risk reduction routine in primary care.
Digital biomarkers	Speech, gait, sleep, typing, activity, and medication patterns may flag change earlier.	Use privacy-first monitoring tied to care plans.
AI-supported navigation	Care plans may update dynamically as symptoms, caregiver strain, and risks change.	Keep human navigators accountable for decisions.
Home safety technology	Falls, wandering, cooking risk, and medication confusion may be managed earlier at home.	Deploy targeted device kits for high-risk families.
Clinical trial matching	Families may be matched to trials based on biomarker, stage, genetics, and location.	Make research access equitable for neighbor-island and diverse communities.
Multidomain lifestyle intervention / U.S. POINTER	Brain-health programs may become a routine “prescription” through primary care, senior centers, health plans, and aging networks.	Offer culturally adapted exercise, nutrition, cognitive/social engagement, and health-monitoring pathways alongside diagnostic and treatment lanes.

One optimistic 2050 scenario looks like this: by age 55 or 60, many adults have a brain-health conversation as routine as a cholesterol conversation. People with symptoms receive fast blood-

based biomarker testing, careful clinical evaluation, and a clear explanation. People at high risk are offered risk-reduction support and trial opportunities. Early-stage patients who qualify can choose safer disease-modifying therapy with better monitoring. Families receive navigation before crisis. Home technology reduces preventable harm. Public-health campaigns reduce modifiable risk factors across the life course.

In that same optimistic scenario, U.S. POINTER-style programs are no longer research projects alone. They are ordinary community infrastructure: walking groups prescribed by clinics, MIND-style cooking classes adapted to local foods, cognitive and social challenge groups at senior centers, blood-pressure and diabetes monitoring tied to brain-health coaching, and culturally trusted outreach that helps families act before crisis.

A more ambitious scenario is that effective prevention or disease-delaying strategies postpone onset by several years for large groups of people. Even a delay of a few years could change families, Medicaid budgets, workforce participation, and long-term-care demand. A truly transformative scenario would combine delayed onset with slower progression after diagnosis, so fewer people reach late-stage disability by 2050.

The caution is just as important as the hope. Breakthroughs do not distribute themselves. Without trained providers, coverage pathways, care navigation, culturally trusted outreach, data systems, and follow-up, breakthroughs can widen disparities. The continuum is the equity infrastructure for future science.

***The 2050 question is not only “Will science advance?”
It is “Will the care system be ready when it does?”***

16. Congressional Action Requested

1. Support ASAP so Medicare can cover appropriate FDA-approved or FDA-cleared blood-based Alzheimer’s diagnostic aids when clinically indicated and evidence-based coverage criteria are met.
2. Support AADAPT so primary care and community providers can receive structured, virtual, dementia-focused education and case-based mentoring.
3. Align Hawai’i’s HANAI Memory Network with GUIDE-style navigation, caregiver support, Project ECHO training, and FHIR-ready data standards.
4. Fund and implement a measurable statewide HANAI pilot with named owners, monthly KPIs, island-specific equity reporting, public accountability, and a national replication package.
5. Treat the \$3 million HANAI concept as a launch floor, then scale based on measured wait times, care-plan completion, caregiver support, referral closure, and utilization trends.
6. Build a 2050 readiness strategy that assumes faster diagnostics, safer treatments, prevention science, and home-based technology will require a coordinated care platform.
7. Build a U.S. POINTER-style prevention and brain-health lane into HANAI so risk reduction becomes measurable community infrastructure rather than generic advice.
8. Frame the work as a hopeful but disciplined path toward the end game: a world without dementias.

Final message: Hawai’i can help America move from dementia crisis response to dementia system design. That is the continuum. That is the kuleana. That is the hope.

REPORT 1

Global Alzheimer's and Dementia Prevalence by Age and Country

Revised country and age report with full data tables, dual-axis age graph, all-country prevalence charts, and life-expectancy overlays

Prepared by Jerry Perone
June 1, 2026

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Primary sources include WHO, NIA/NIH, GeneReviews/NCBI Bookshelf, Alzheimer's Association, FDA safety communications, Lancet Commission 2024, and peer-reviewed genetics literature.

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Executive summary

Alzheimer's disease and dementia are often reported together internationally under the category "Alzheimer's disease and other dementias." This report therefore treats dementia as the total disease category and estimates the Alzheimer's component using the World Health Organization's statement that Alzheimer's disease may account for roughly 60%-70% of dementia cases. The midpoint estimate used in the graphs and tables is 65%; the report flags this as an estimate, not a country-specific diagnosis count.

The age-specific global graph shows the familiar exponential age gradient: dementia prevalence rises from 0.02% among people ages 40-44 to 32.2% among people ages >=95. The country data table includes 201 countries and territories for which a 2021 dementia prevalence rate was available in the World Population Review/IHME-derived table.

Key interpretation: Alzheimer's is nested inside dementia

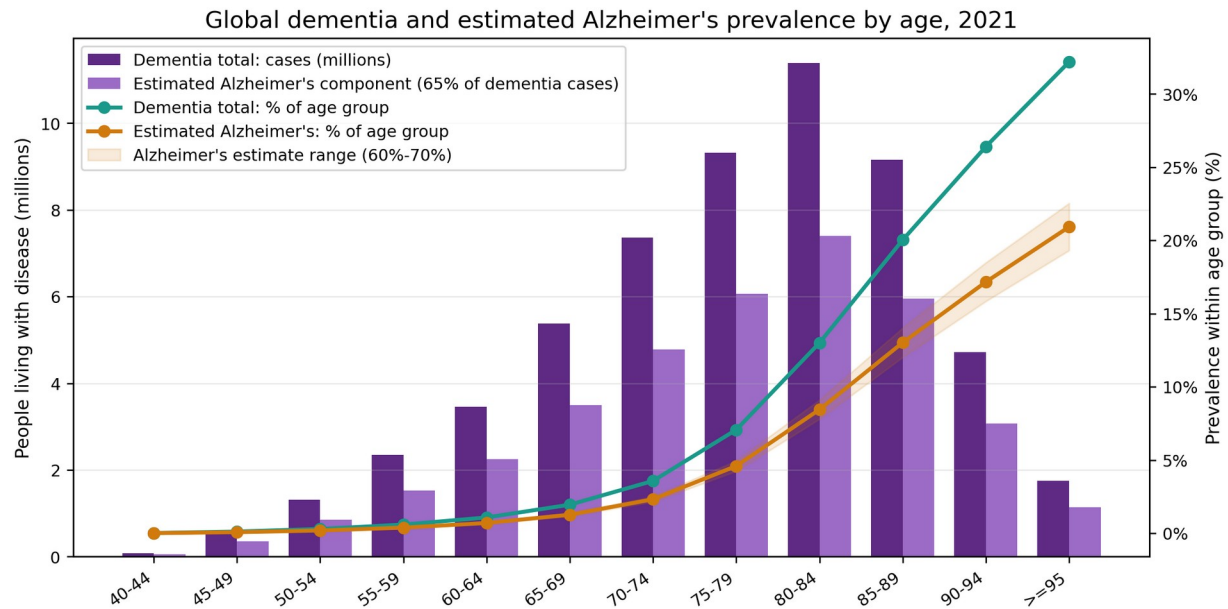
Dementia is an umbrella syndrome. Alzheimer's disease is the most common cause, but dementia totals also include vascular dementia, Lewy body dementia, frontotemporal dementia, Parkinson's disease dementia, mixed dementia, and other causes. That is why country-level Alzheimer's percentages in this report are estimates derived from dementia totals.

Data definitions used in this report

Measure	Definition / caution
Dementia total	Reported as "Alzheimer's disease and other dementias" in global data sources; expressed as cases, rate per 100,000, or percentage of population.
Estimated Alzheimer's component	Estimated at 65% of dementia totals, with a 60%-70% interpretation range based on WHO attribution language.
Age-specific prevalence %	Rate per 100,000 divided by 1,000; this gives the percentage of people in the age group living with dementia or estimated Alzheimer's disease.
Country prevalence %	Crude country prevalence, not age-standardized; this is useful for service planning but should not be interpreted as a pure biological risk comparison.
Life expectancy overlay	A cross-sectional overlay that compares 2021 prevalence with 2026 UN-estimate life expectancy; it is descriptive and not causal.

Global age pattern

Age is the dominant driver of dementia prevalence. The absolute number of people affected peaks in the 80-84 age group in these global estimates, while the percentage of each age group affected continues rising into the oldest ages. The right-hand y-axis in Figure 1 shows the percentage of people in each age band living with dementia and the estimated Alzheimer's component.



Source: GBD 2021 age-specific estimates for Alzheimer's disease and other dementias; Alzheimer's component estimated from WHO 60%-70% attribution range.

Figure 1. Global dementia and estimated Alzheimer's prevalence by age, 2021. Left axis shows cases in millions; right axis shows percentage of the population in each age group.

Age-specific data table

Age group	Dementia cases (M)	Estimated Alzheimer's cases (M)	Dementia prevalence	Estimated Alzheimer's prevalence
40-44	0.086	0.056	0.02%	0.01%
45-49	0.549	0.357	0.12%	0.08%
50-54	1.316	0.855	0.30%	0.19%
55-59	2.345	1.524	0.59%	0.39%
60-64	3.461	2.250	1.08%	0.70%
65-69	5.384	3.500	1.95%	1.27%
70-74	7.364	4.787	3.58%	2.33%
75-79	9.325	6.061	7.07%	4.60%
80-84	11.388	7.402	13.00%	8.45%
85-89	9.159	5.953	20.03%	13.02%
90-94	4.724	3.071	26.41%	17.17%
>=95	1.755	1.141	32.19%	20.93%

All-country prevalence graphs

The following panels include every country or territory in the available country dataset. They use the same y-axis measure across panels: prevalence as a percentage of the total population. The x-axis is country or territory ranking, because public all-country, age-by-country source tables were not available in the source material used here.

Layout note: Why the country graph is split into panels

The dataset contains 201 locations. A single all-country figure would be unreadable, so the report uses ranked panels with the same percentage scale across panels. Together, the panels cover every location in the data table.

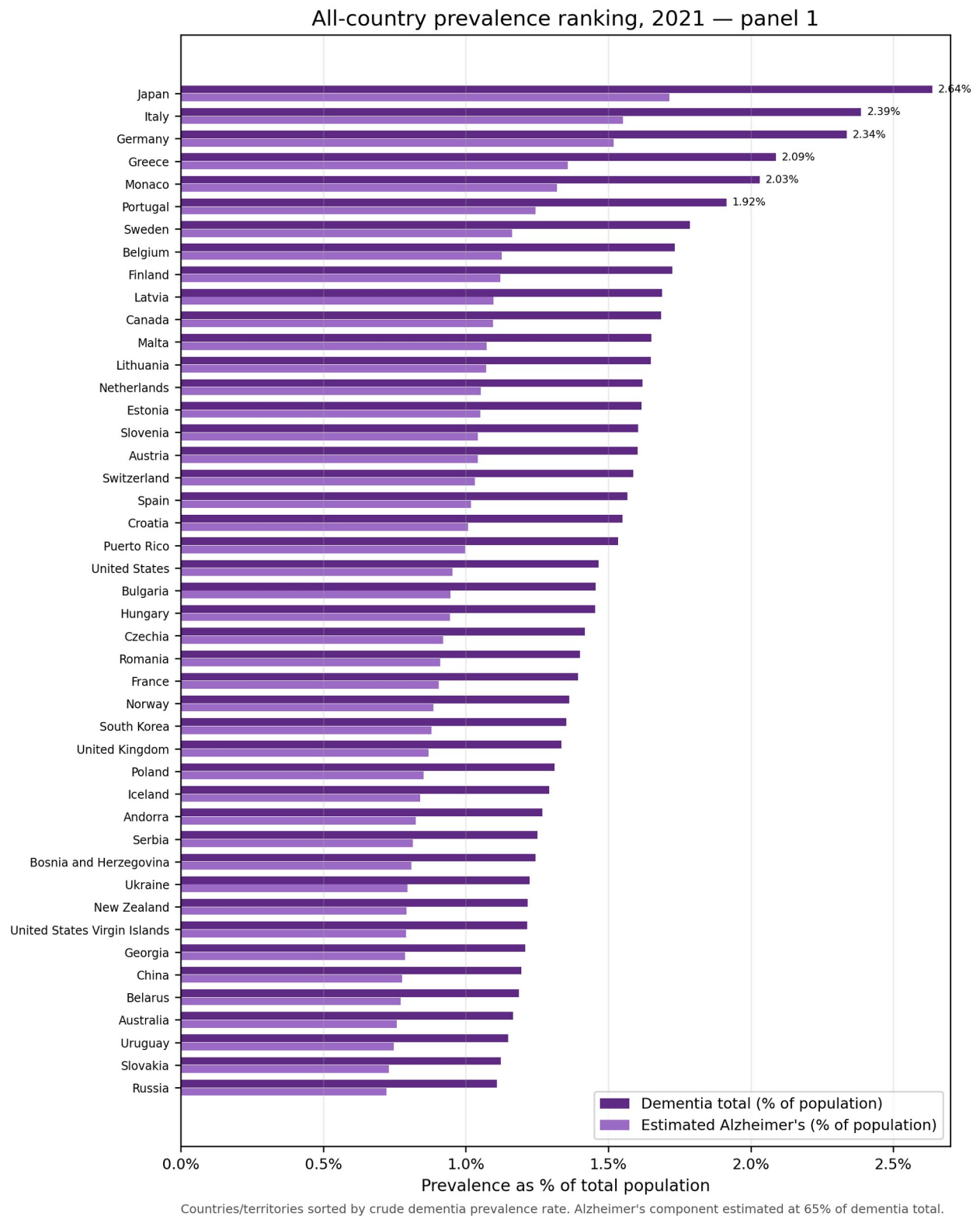


Figure 2. All-country dementia and estimated Alzheimer's prevalence ranking, panel 1.

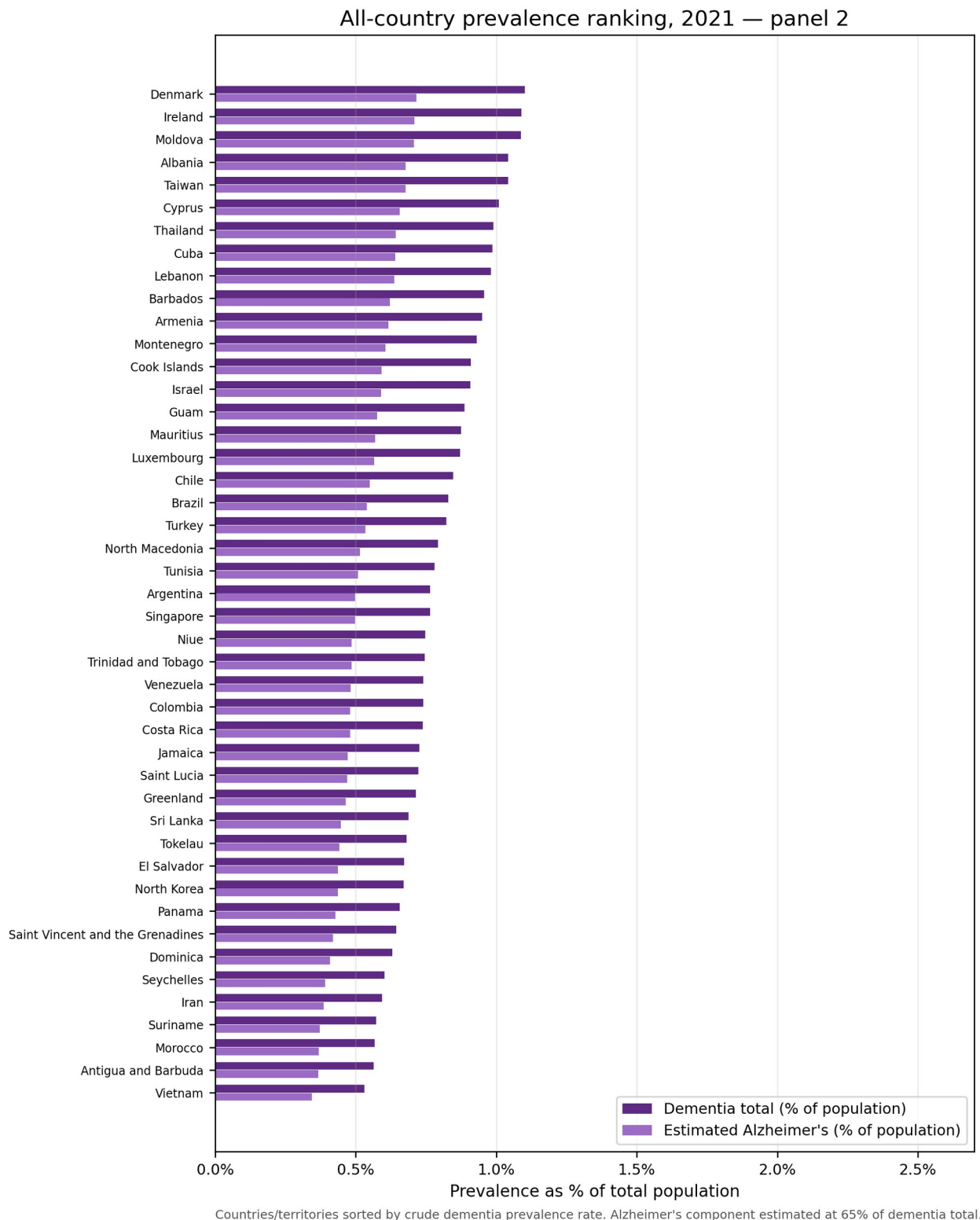


Figure 3. All-country dementia and estimated Alzheimer's prevalence ranking, panel 2.

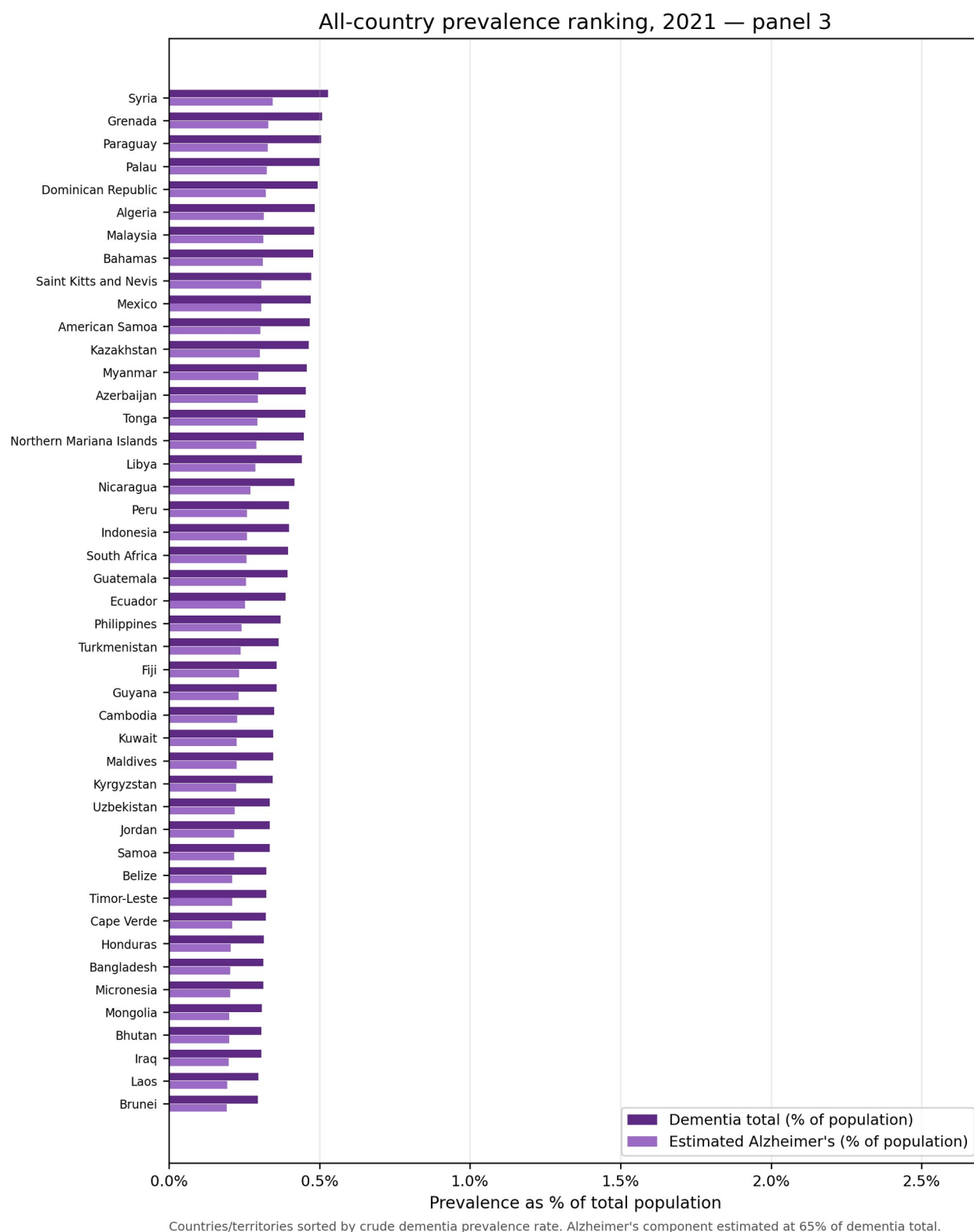


Figure 4. All-country dementia and estimated Alzheimer's prevalence ranking, panel 3.

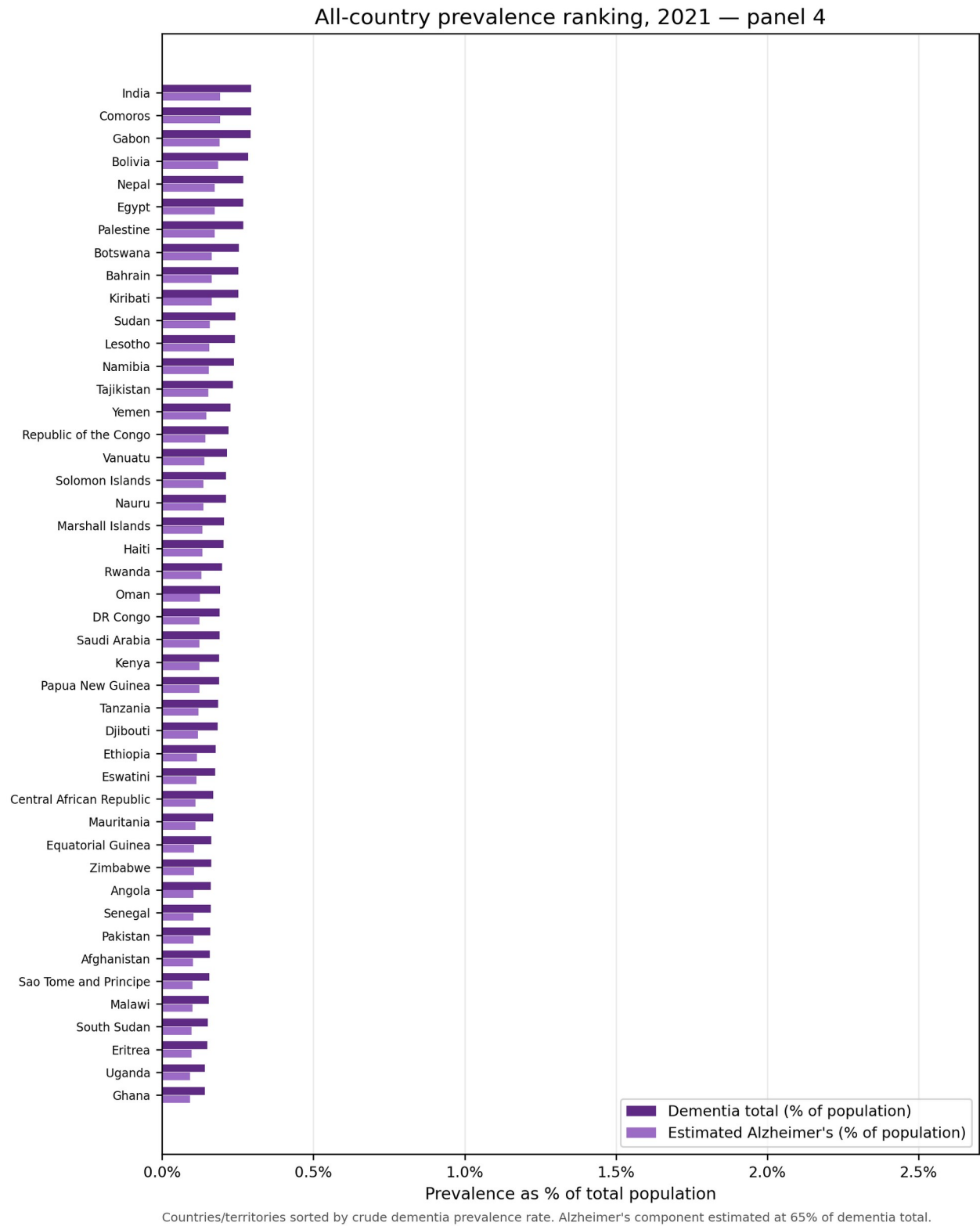


Figure 5. All-country dementia and estimated Alzheimer's prevalence ranking, panel 4.

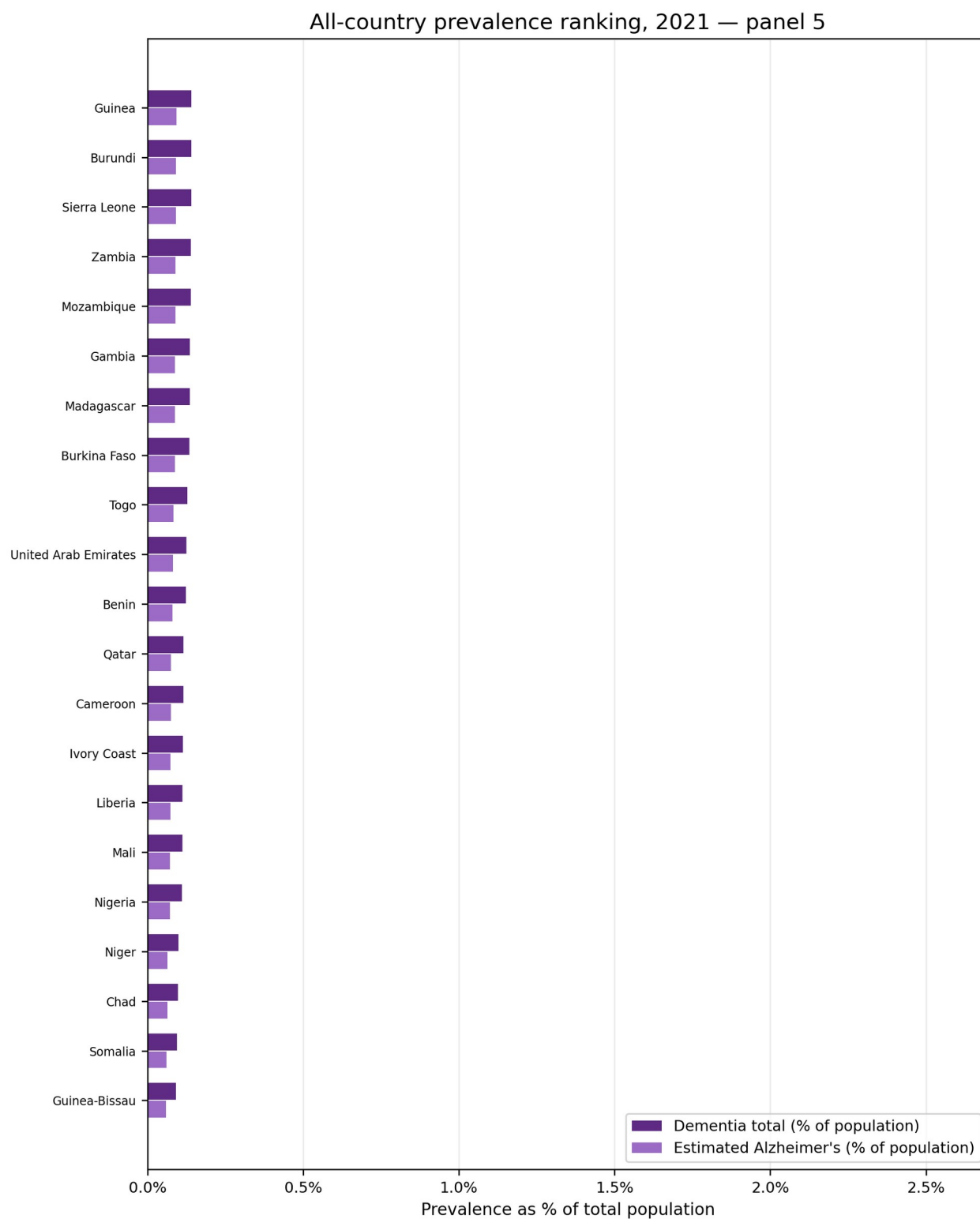


Figure 6. All-country dementia and estimated Alzheimer's prevalence ranking, panel 5.

Largest absolute country burdens

Absolute burden is different from prevalence percentage. Large-population countries can have enormous numbers of affected people even when their crude prevalence percentage is not the highest.

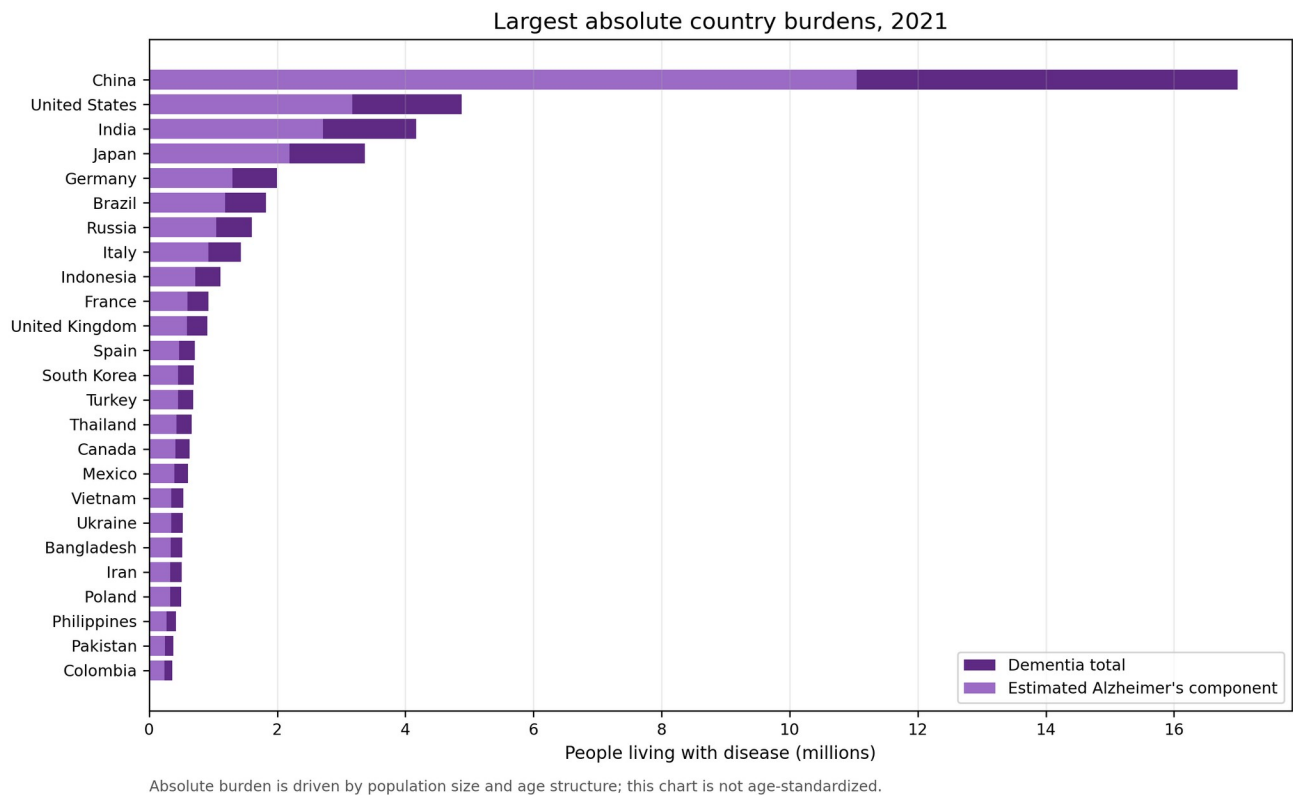


Figure 7. Countries with the largest absolute dementia case burdens, 2021, with estimated Alzheimer's component.

Life expectancy overlay

Life expectancy data were available for 201 of the 201 locations in the dementia dataset after name matching. The overlay shows a strong visual association between longer life expectancy and higher crude dementia prevalence, mainly because dementia risk rises steeply with age and because countries with longer life expectancy usually have larger older populations.

Interpretation caution: Do not read the life-expectancy chart as causation

Higher life expectancy does not biologically cause Alzheimer's disease by itself. It increases the share of people who live into older ages, when neurodegenerative diseases become more common. Diagnosis capacity and population structure also influence the observed relationship.

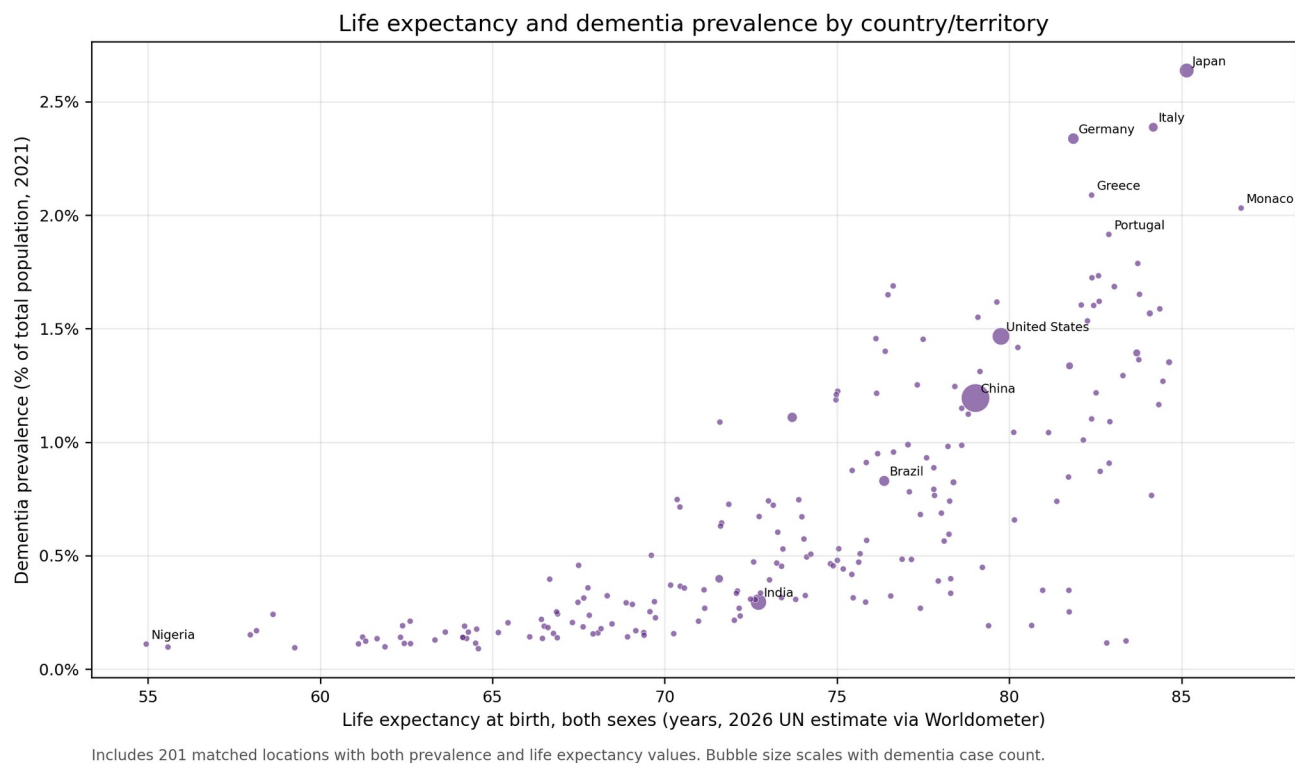


Figure 8. Life expectancy and dementia prevalence by country/territory.

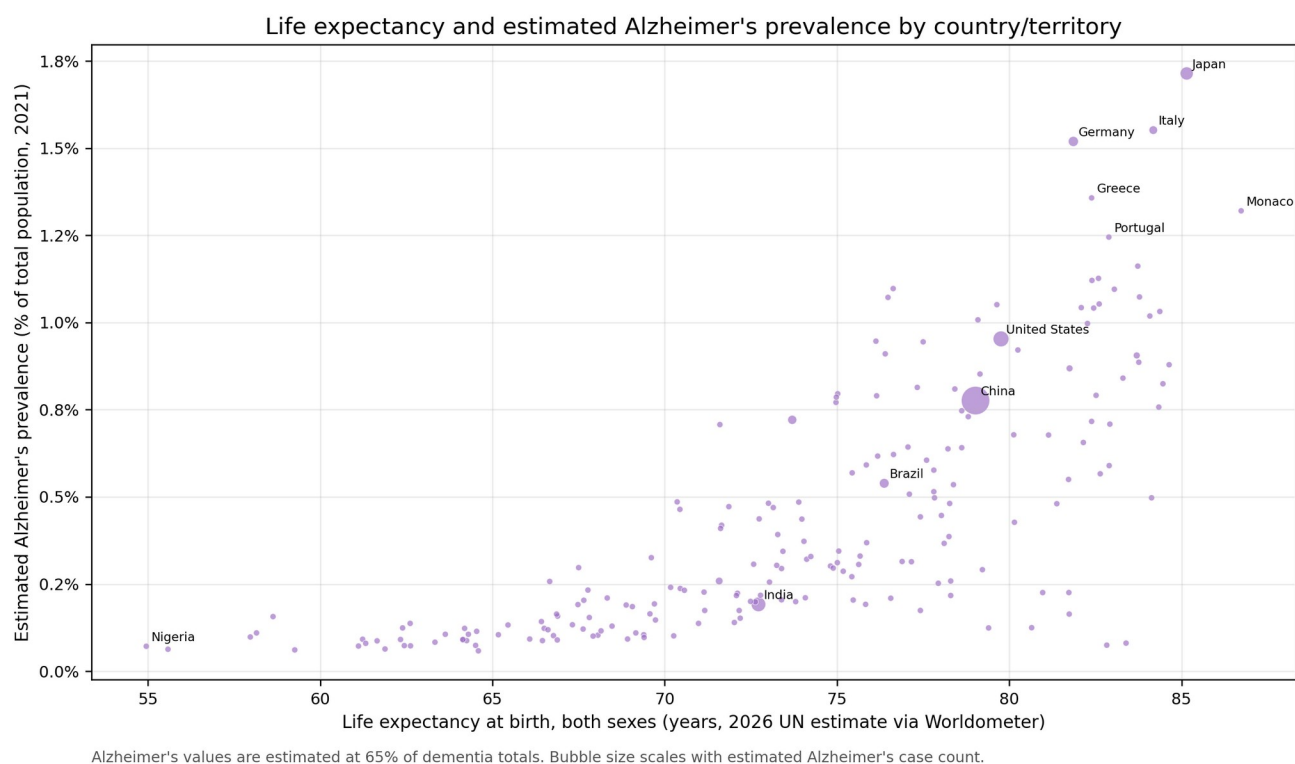


Figure 9. Life expectancy and estimated Alzheimer's prevalence by country/territory.

Country-level findings

The highest crude prevalence percentages appear mostly in older-population countries and territories, while many lower-prevalence locations are younger demographically. This is a crude burden metric and should be read as a service-planning indicator, not as a definitive risk ranking.

Highest crude prevalence percentages in the dataset

Country/territory	Dementia prevalence	Estimated Alzheimer's prevalence
Japan	2.64%	1.71%
Italy	2.39%	1.55%
Germany	2.34%	1.52%
Greece	2.09%	1.36%
Monaco	2.03%	1.32%
Portugal	1.92%	1.24%
Sweden	1.79%	1.16%
Belgium	1.73%	1.13%
Finland	1.72%	1.12%
Latvia	1.69%	1.10%

Lowest crude prevalence percentages in the dataset

Country/territory	Dementia prevalence	Estimated Alzheimer's prevalence
Guinea-Bissau	0.09%	0.06%
Somalia	0.09%	0.06%
Chad	0.10%	0.06%
Niger	0.10%	0.06%
Nigeria	0.11%	0.07%
Mali	0.11%	0.07%
Liberia	0.11%	0.07%
Ivory Coast	0.11%	0.07%
Cameroon	0.11%	0.07%
Qatar	0.12%	0.07%

Policy implications

Diagnosis capacity is not optional

Lower measured prevalence can hide underdiagnosis. Countries and regions with limited diagnostic access need memory-clinic capacity, primary-care pathways, biomarker referral protocols, and caregiver navigation.

Age structure drives future demand

Countries that are still relatively young may face rapid future growth as their population ages. Planning should use age-specific prevalence, not only today's crude country percentage.

Country rankings need context

Crude percentage, age-standardized rate, and absolute case count answer different questions. Service budgets need absolute burden; epidemiologic risk comparisons need age-standardized estimates; age-specific tables guide clinical planning.

Local access can mirror global inequity

The Hawai'i Memory Network context underscores how aging populations and limited diagnosis/treatment access can create service gaps even within a single U.S. state.

Appendix A. Full country and territory data table

This appendix includes every location in the available country dataset. Alzheimer's case and percentage values are estimates calculated from dementia totals at 65%.

Rank	Country/territory	Dementia cases	Dementia %	Est. Alzheimer's cases	Est. Alzheimer's %	Life exp.
1	Japan	3,367,358	2.64%	2,188,783	1.71%	85.15
2	Italy	1,427,946	2.39%	928,165	1.55%	84.18
3	Germany	1,995,249	2.34%	1,296,912	1.52%	81.86
4	Greece	212,407	2.09%	138,065	1.36%	82.39
5	Monaco	769	2.03%	500	1.32%	86.73
6	Portugal	203,138	1.92%	132,040	1.24%	82.89
7	Sweden	185,343	1.79%	120,473	1.16%	83.73
8	Belgium	198,767	1.73%	129,199	1.13%	82.59
9	Finland	95,436	1.72%	62,033	1.12%	82.40
10	Latvia	31,569	1.69%	20,520	1.10%	76.63
11	Canada	631,350	1.69%	410,378	1.10%	83.05
12	Malta	7,302	1.65%	4,746	1.07%	83.78
13	Lithuania	44,998	1.65%	29,249	1.07%	76.48
14	Netherlands	278,819	1.62%	181,232	1.05%	82.61
15	Estonia	21,192	1.62%	13,775	1.05%	79.64
16	Slovenia	33,191	1.60%	21,574	1.04%	82.09
17	Austria	143,898	1.60%	93,534	1.04%	82.45
18	Switzerland	141,610	1.59%	92,046	1.03%	84.37
19	Spain	713,870	1.57%	464,016	1.02%	84.08
20	Croatia	65,215	1.55%	42,390	1.01%	79.09
21	Puerto Rico	50,547	1.53%	32,856	1.00%	82.27
22	United States	4,876,579	1.47%	3,169,776	0.95%	79.76
23	Bulgaria	98,848	1.46%	64,251	0.95%	76.13
24	Hungary	139,417	1.45%	90,621	0.94%	77.50
25	Czechia	150,649	1.42%	97,922	0.92%	80.25
26	Romania	265,107	1.40%	172,320	0.91%	76.40
27	France	924,607	1.39%	600,995	0.91%	83.70
28	Norway	73,853	1.36%	48,004	0.89%	83.76
29	South Korea	697,045	1.35%	453,079	0.88%	84.64
30	United Kingdom	906,467	1.34%	589,204	0.87%	81.75
31	Poland	501,492	1.31%	325,970	0.85%	79.15
32	Iceland	4,530	1.29%	2,944	0.84%	83.30
33	Andorra	1,086	1.27%	706	0.82%	84.46
34	Serbia	111,694	1.25%	72,601	0.81%	77.33
35	Bosnia and Herzegovina	41,105	1.25%	26,718	0.81%	78.42
36	Ukraine	527,238	1.22%	342,705	0.80%	75.02
37	New Zealand	62,913	1.22%	40,893	0.79%	82.52
38	United States Virgin Islands	1,044	1.22%	679	0.79%	76.15
39	Georgia	43,615	1.21%	28,350	0.79%	74.98
40	China	16,990,827	1.19%	11,044,038	0.78%	79.02
41	Belarus	110,571	1.19%	71,871	0.77%	74.97
42	Australia	300,594	1.17%	195,386	0.76%	84.34
43	Uruguay	39,146	1.15%	25,445	0.75%	78.62
44	Slovakia	60,990	1.12%	39,644	0.73%	78.81
45	Russia	1,605,863	1.11%	1,043,811	0.72%	73.70
46	Denmark	64,492	1.10%	41,920	0.72%	82.39
47	Ireland	53,859	1.09%	35,008	0.71%	82.92

Rank	Country/territory	Dementia cases	Dementia %	Est. Alzheimer's cases	Est. Alzheimer's %	Life exp.
48	Moldova	39,086	1.09%	25,406	0.71%	71.60
49	Albania	27,826	1.04%	18,087	0.68%	80.13
50	Taiwan	246,278	1.04%	160,081	0.68%	81.14
51	Cyprus	13,694	1.01%	8,901	0.66%	82.15
52	Thailand	659,437	0.99%	428,634	0.64%	77.06
53	Cuba	111,075	0.99%	72,199	0.64%	78.62
54	Lebanon	54,346	0.98%	35,325	0.64%	78.22
55	Barbados	2,857	0.96%	1,857	0.62%	76.64
56	Armenia	28,418	0.95%	18,472	0.62%	76.18
57	Montenegro	5,755	0.93%	3,741	0.61%	77.60
58	Cook Islands	162	0.91%	105	0.59%	75.85
59	Israel	87,012	0.91%	56,558	0.59%	82.90
60	Guam	1,411	0.89%	917	0.58%	77.81
61	Mauritius	11,136	0.88%	7,238	0.57%	75.44
62	Luxembourg	5,610	0.87%	3,646	0.57%	82.64
63	Chile	159,047	0.85%	103,381	0.55%	81.72
64	Brazil	1,825,795	0.83%	1,186,767	0.54%	76.37
65	Turkey	688,425	0.82%	447,476	0.53%	78.38
66	North Macedonia	17,227	0.79%	11,198	0.51%	77.81
67	Tunisia	92,441	0.78%	60,087	0.51%	77.10
68	Argentina	347,970	0.77%	226,180	0.50%	77.83
69	Singapore	43,791	0.77%	28,464	0.50%	84.13
70	Niue	12	0.75%	8	0.49%	70.36
71	Trinidad and Tobago	10,399	0.75%	6,759	0.48%	73.89
72	Venezuela	197,422	0.74%	128,324	0.48%	73.01
73	Colombia	362,961	0.74%	235,925	0.48%	78.27
74	Costa Rica	35,074	0.74%	22,798	0.48%	81.38
75	Jamaica	20,332	0.73%	13,216	0.47%	71.86
76	Saint Lucia	1,281	0.72%	833	0.47%	73.15
77	Greenland	400	0.71%	260	0.46%	70.44
78	Sri Lanka	152,889	0.69%	99,378	0.45%	78.03
79	Tokelau	9	0.68%	6	0.44%	77.42
80	El Salvador	43,346	0.67%	28,175	0.44%	72.74
81	North Korea	177,068	0.67%	115,094	0.44%	73.98
82	Panama	28,209	0.66%	18,336	0.43%	80.15
83	Saint Vincent and the Grenadines	735	0.64%	478	0.42%	71.65
84	Dominica	422	0.63%	274	0.41%	71.62
85	Seychelles	636	0.60%	413	0.39%	73.28
86	Iran	506,627	0.59%	329,308	0.39%	78.25
87	Suriname	3,317	0.57%	2,156	0.37%	74.04
88	Morocco	210,667	0.57%	136,934	0.37%	75.86
89	Antigua and Barbuda	504	0.56%	328	0.37%	78.11
90	Vietnam	531,198	0.53%	345,279	0.34%	75.05
91	Syria	74,181	0.53%	48,218	0.34%	73.43
92	Grenada	521	0.51%	339	0.33%	75.67
93	Paraguay	36,299	0.51%	23,594	0.33%	74.24
94	Palau	91	0.50%	59	0.33%	69.61
95	Dominican Republic	54,453	0.49%	35,394	0.32%	74.12
96	Algeria	213,904	0.48%	139,038	0.31%	76.89
97	Malaysia	153,807	0.48%	99,975	0.31%	77.16
98	Bahamas	1,860	0.48%	1,209	0.31%	75.01
99	Saint Kitts and Nevis	277	0.47%	180	0.31%	72.58
100	Mexico	608,490	0.47%	395,518	0.31%	75.63
101	American Samoa	232	0.47%	151	0.30%	73.25
102	Kazakhstan	87,908	0.46%	57,140	0.30%	74.81
103	Myanmar	257,641	0.46%	167,467	0.30%	67.50
104	Azerbaijan	47,757	0.46%	31,042	0.30%	74.89
105	Tonga	482	0.45%	313	0.29%	73.39
106	Northern Mariana Islands	217	0.45%	141	0.29%	79.22
107	Libya	30,321	0.44%	19,709	0.29%	75.18
108	Nicaragua	27,802	0.42%	18,071	0.27%	75.43
109	Indonesia	1,109,364	0.40%	721,087	0.26%	71.58
110	Peru	144,347	0.40%	93,826	0.26%	78.30
111	South Africa	224,953	0.40%	146,219	0.26%	66.66
112	Guatemala	61,937	0.39%	40,259	0.26%	73.04
113	Ecuador	70,163	0.39%	45,606	0.25%	77.94
114	Philippines	419,363	0.37%	272,586	0.24%	70.17
115	Turkmenistan	18,834	0.36%	12,242	0.24%	70.45

Rank	Country/territory	Dementia cases	Dementia %	Est. Alzheimer's cases	Est. Alzheimer's %	Life exp.
116	Fiji	3,311	0.36%	2,152	0.23%	67.77
117	Guyana	2,731	0.36%	1,775	0.23%	70.57
118	Cambodia	59,413	0.35%	38,618	0.23%	71.14
119	Kuwait	16,141	0.35%	10,492	0.23%	80.97
120	Maldives	1,794	0.35%	1,166	0.23%	81.73
121	Kyrgyzstan	23,637	0.34%	15,364	0.22%	72.11
122	Uzbekistan	114,617	0.34%	74,501	0.22%	72.78
123	Jordan	41,147	0.33%	26,746	0.22%	78.30
124	Samoa	713	0.33%	463	0.22%	72.08
125	Belize	1,392	0.32%	905	0.21%	74.08
126	Timor-Leste	4,508	0.32%	2,930	0.21%	68.33
127	Cape Verde	1,800	0.32%	1,170	0.21%	76.56
128	Honduras	31,859	0.32%	20,708	0.20%	73.39
129	Bangladesh	516,766	0.31%	335,898	0.20%	75.47
130	Micronesia	321	0.31%	209	0.20%	67.65
131	Mongolia	10,277	0.31%	6,680	0.20%	72.49
132	Bhutan	2,325	0.31%	1,511	0.20%	73.80
133	Iraq	126,349	0.31%	82,127	0.20%	72.63
134	Laos	21,888	0.30%	14,227	0.19%	69.70
135	India	4,169,684	0.29%	2,710,295	0.19%	72.72
136	Brunei	1,331	0.29%	865	0.19%	75.83
137	Comoros	2,186	0.29%	1,421	0.19%	67.48
138	Gabon	5,306	0.29%	3,449	0.19%	68.88
139	Bolivia	33,655	0.28%	21,876	0.19%	69.06
140	Egypt	283,118	0.27%	184,027	0.17%	72.16
141	Nepal	83,342	0.27%	54,172	0.17%	71.16
142	Palestine	13,746	0.27%	8,935	0.17%	77.42
143	Botswana	6,048	0.25%	3,931	0.16%	69.57
144	Bahrain	3,852	0.25%	2,504	0.16%	81.74

Rank	Country/territory	Dementia cases	Dementia %	Est. Alzheimer's cases	Est. Alzheimer's %	Life exp.
145	Kiribati	305	0.25%	198	0.16%	66.86
146	Sudan	105,440	0.24%	68,536	0.16%	66.89
147	Lesotho	4,510	0.24%	2,932	0.16%	58.63
148	Namibia	5,765	0.24%	3,747	0.15%	67.81
149	Tajikistan	23,729	0.23%	15,424	0.15%	72.19
150	Yemen	75,922	0.23%	49,349	0.15%	69.73
151	Republic of the Congo	11,813	0.22%	7,678	0.14%	66.42
152	Vanuatu	672	0.21%	437	0.14%	72.02
153	Solomon Islands	1,440	0.21%	936	0.14%	70.98
154	Nauru	23	0.21%	15	0.14%	62.61
155	Marshall Islands	116	0.20%	75	0.13%	67.32
156	Haiti	26,288	0.20%	17,087	0.13%	65.45
157	Rwanda	26,432	0.20%	17,181	0.13%	68.47
158	Oman	9,014	0.19%	5,859	0.12%	80.65
159	DR Congo	172,192	0.19%	111,925	0.12%	62.39
160	Saudi Arabia	71,832	0.19%	46,691	0.12%	79.40
161	Kenya	94,643	0.19%	61,518	0.12%	64.19
162	Papua New Guinea	19,750	0.19%	12,838	0.12%	66.50
163	Tanzania	108,489	0.19%	70,518	0.12%	67.63
164	Djibouti	2,299	0.18%	1,494	0.12%	66.61
165	Ethiopia	194,301	0.18%	126,296	0.12%	68.15
166	Eswatini	2,036	0.18%	1,323	0.11%	64.54
167	Central African Republic	9,274	0.17%	6,028	0.11%	58.15
168	Mauritania	7,418	0.17%	4,822	0.11%	69.16
169	Zimbabwe	25,486	0.16%	16,566	0.11%	63.63
170	Equatorial Guinea	2,471	0.16%	1,606	0.11%	64.30
171	Angola	52,578	0.16%	34,176	0.10%	65.17
172	Senegal	25,541	0.16%	16,602	0.10%	69.39
173	Pakistan	375,360	0.16%	243,984	0.10%	68.06
174	Afghanistan	49,010	0.16%	31,856	0.10%	66.77
175	Sao Tome and Principe	339	0.16%	220	0.10%	70.26
176	Malawi	30,185	0.15%	19,620	0.10%	67.92
177	South Sudan	14,636	0.15%	9,513	0.10%	57.97
178	Eritrea	9,856	0.15%	6,406	0.10%	69.40
179	Uganda	61,428	0.14%	39,928	0.09%	68.92

Rank	Country/territory	Dementia cases	Dementia %	Est. Alzheimer's cases	Est. Alzheimer's %	Life exp.
180	Ghana	48,623	0.14%	31,605	0.09%	66.08
181	Guinea	18,993	0.14%	12,345	0.09%	61.23
182	Burundi	18,569	0.14%	12,070	0.09%	64.14
183	Sierra Leone	12,378	0.14%	8,046	0.09%	62.33
184	Mozambique	43,032	0.14%	27,971	0.09%	64.14
185	Zambia	26,841	0.14%	17,447	0.09%	66.88
186	Madagascar	38,471	0.14%	25,006	0.09%	64.25
187	Gambia	3,222	0.14%	2,094	0.09%	66.45
188	Burkina Faso	30,517	0.13%	19,836	0.09%	61.65
189	Togo	10,754	0.13%	6,990	0.08%	63.33
190	United Arab Emirates	11,960	0.12%	7,774	0.08%	83.39
191	Benin	16,564	0.12%	10,767	0.08%	61.32
192	Qatar	3,426	0.12%	2,227	0.07%	82.83
193	Cameroon	36,246	0.11%	23,560	0.07%	64.51
194	Ivory Coast	31,518	0.11%	20,487	0.07%	62.44
195	Liberia	6,138	0.11%	3,990	0.07%	62.62
196	Mali	26,749	0.11%	17,387	0.07%	61.11
197	Nigeria	253,561	0.11%	164,815	0.07%	54.95
198	Niger	24,495	0.10%	15,922	0.06%	61.88
199	Chad	17,241	0.10%	11,207	0.06%	55.58
200	Somalia	20,264	0.09%	13,172	0.06%	59.26
201	Guinea-Bissau	1,866	0.09%	1,213	0.06%	64.59

Appendix B. Normalized country and territory data table (per 100,000 people)

This appendix uses the same country and territory list as Appendix A, but expresses burden on a normalized population base. The most useful comparison base for cross-country reading is cases per 100,000 total population. Because Appendix A reports crude prevalence percentages, the normalized rate is calculated as: prevalence percent x 1,000 = cases per 100,000 people. These are crude rates, not age-standardized rates; they are best used for service-planning comparison, not for biological-risk ranking.

Rank	Country/territory	Dementia rate per 100,000	Est. Alzheimer's rate per 100,000	Life exp.
1	Japan	2,640	1,710	85.15
2	Italy	2,390	1,550	84.18
3	Germany	2,340	1,520	81.86
4	Greece	2,090	1,360	82.39
5	Monaco	2,030	1,320	86.73
6	Portugal	1,920	1,240	82.89
7	Sweden	1,790	1,160	83.73
8	Belgium	1,730	1,130	82.59
9	Finland	1,720	1,120	82.40
10	Latvia	1,690	1,100	76.63
11	Canada	1,690	1,100	83.05
12	Malta	1,650	1,070	83.78
13	Lithuania	1,650	1,070	76.48
14	Netherlands	1,620	1,050	82.61
15	Estonia	1,620	1,050	79.64
16	Slovenia	1,600	1,040	82.09
17	Austria	1,600	1,040	82.45
18	Switzerland	1,590	1,030	84.37
19	Spain	1,570	1,020	84.08
20	Croatia	1,550	1,010	79.09
21	Puerto Rico	1,530	1,000	82.27
22	United States	1,470	950	79.76
23	Bulgaria	1,460	950	76.13
24	Hungary	1,450	940	77.50
25	Czechia	1,420	920	80.25
26	Romania	1,400	910	76.40
27	France	1,390	910	83.70
28	Norway	1,360	890	83.76
29	South Korea	1,350	880	84.64
30	United Kingdom	1,340	870	81.75
31	Poland	1,310	850	79.15
32	Iceland	1,290	840	83.30
33	Andorra	1,270	820	84.46
34	Serbia	1,250	810	77.33
35	Bosnia and Herzegovina	1,250	810	78.42
36	Ukraine	1,220	800	75.02
37	New Zealand	1,220	790	82.52
38	United States Virgin Islands	1,220	790	76.15
39	Georgia	1,210	790	74.98
40	China	1,190	780	79.02
41	Belarus	1,190	770	74.97

Rank	Country/territory	Dementia rate per 100,000	Est. Alzheimer's rate per 100,000	Life exp.
42	Australia	1,170	760	84.34
43	Uruguay	1,150	750	78.62
44	Slovakia	1,120	730	78.81
45	Russia	1,110	720	73.70
46	Denmark	1,100	720	82.39
47	Ireland	1,090	710	82.92
48	Moldova	1,090	710	71.60
49	Albania	1,040	680	80.13
50	Taiwan	1,040	680	81.14
51	Cyprus	1,010	660	82.15
52	Thailand	990	640	77.06
53	Cuba	990	640	78.62
54	Lebanon	980	640	78.22
55	Barbados	960	620	76.64
56	Armenia	950	620	76.18
57	Montenegro	930	610	77.60
58	Cook Islands	910	590	75.85
59	Israel	910	590	82.90
60	Guam	890	580	77.81
61	Mauritius	880	570	75.44
62	Luxembourg	870	570	82.64
63	Chile	850	550	81.72
64	Brazil	830	540	76.37
65	Turkey	820	530	78.38
66	North Macedonia	790	510	77.81
67	Tunisia	780	510	77.10
68	Argentina	770	500	77.83
69	Singapore	770	500	84.13
70	Niue	750	490	70.36
71	Trinidad and Tobago	750	480	73.89
72	Venezuela	740	480	73.01
73	Colombia	740	480	78.27
74	Costa Rica	740	480	81.38
75	Jamaica	730	470	71.86
76	Saint Lucia	720	470	73.15
77	Greenland	710	460	70.44
78	Sri Lanka	690	450	78.03
79	Tokelau	680	440	77.42
80	El Salvador	670	440	72.74
81	North Korea	670	440	73.98
82	Panama	660	430	80.15
83	Saint Vincent and the Grenadines	640	420	71.65
84	Dominica	630	410	71.62
85	Seychelles	600	390	73.28
86	Iran	590	390	78.25
87	Suriname	570	370	74.04
88	Morocco	570	370	75.86
89	Antigua and Barbuda	560	370	78.11
90	Vietnam	530	340	75.05
91	Syria	530	340	73.43
92	Grenada	510	330	75.67
93	Paraguay	510	330	74.24
94	Palau	500	330	69.61
95	Dominican Republic	490	320	74.12
96	Algeria	480	310	76.89
97	Malaysia	480	310	77.16

Rank	Country/territory	Dementia rate per 100,000	Est. Alzheimer's rate per 100,000	Life exp.
98	Bahamas	480	310	75.01
99	Saint Kitts and Nevis	470	310	72.58
100	Mexico	470	310	75.63
101	American Samoa	470	300	73.25
102	Kazakhstan	460	300	74.81
103	Myanmar	460	300	67.50
104	Azerbaijan	460	300	74.89
105	Tonga	450	290	73.39
106	Northern Mariana Islands	450	290	79.22
107	Libya	440	290	75.18
108	Nicaragua	420	270	75.43
109	Indonesia	400	260	71.58
110	Peru	400	260	78.30
111	South Africa	400	260	66.66
112	Guatemala	390	260	73.04
113	Ecuador	390	250	77.94
114	Philippines	370	240	70.17
115	Turkmenistan	360	240	70.45
116	Fiji	360	230	67.77
117	Guyana	360	230	70.57
118	Cambodia	350	230	71.14
119	Kuwait	350	230	80.97
120	Maldives	350	230	81.73
121	Kyrgyzstan	340	220	72.11
122	Uzbekistan	340	220	72.78
123	Jordan	330	220	78.30
124	Samoa	330	220	72.08
125	Belize	320	210	74.08
126	Timor-Leste	320	210	68.33
127	Cape Verde	320	210	76.56
128	Honduras	320	200	73.39
129	Bangladesh	310	200	75.47
130	Micronesia	310	200	67.65
131	Mongolia	310	200	72.49
132	Bhutan	310	200	73.80
133	Iraq	310	200	72.63
134	Laos	300	190	69.70
135	India	290	190	72.72
136	Brunei	290	190	75.83
137	Comoros	290	190	67.48
138	Gabon	290	190	68.88
139	Bolivia	280	190	69.06
140	Egypt	270	170	72.16
141	Nepal	270	170	71.16
142	Palestine	270	170	77.42
143	Botswana	250	160	69.57
144	Bahrain	250	160	81.74
145	Kiribati	250	160	66.86
146	Sudan	240	160	66.89
147	Lesotho	240	160	58.63
148	Namibia	240	150	67.81
149	Tajikistan	230	150	72.19
150	Yemen	230	150	69.73
151	Republic of the Congo	220	140	66.42
152	Vanuatu	210	140	72.02

Rank	Country/territory	Dementia rate per 100,000	Est. Alzheimer's rate per 100,000	Life exp.
153	Solomon Islands	210	140	70.98
154	Nauru	210	140	62.61
155	Marshall Islands	200	130	67.32
156	Haiti	200	130	65.45
157	Rwanda	200	130	68.47
158	Oman	190	120	80.65
159	DR Congo	190	120	62.39
160	Saudi Arabia	190	120	79.40
161	Kenya	190	120	64.19
162	Papua New Guinea	190	120	66.50
163	Tanzania	190	120	67.63
164	Djibouti	180	120	66.61
165	Ethiopia	180	120	68.15
166	Eswatini	180	110	64.54
167	Central African Republic	170	110	58.15
168	Mauritania	170	110	69.16
169	Zimbabwe	160	110	63.63
170	Equatorial Guinea	160	110	64.30
171	Angola	160	100	65.17
172	Senegal	160	100	69.39
173	Pakistan	160	100	68.06
174	Afghanistan	160	100	66.77
175	Sao Tome and Principe	160	100	70.26
176	Malawi	150	100	67.92
177	South Sudan	150	100	57.97
178	Eritrea	150	100	69.40
179	Uganda	140	90	68.92
180	Ghana	140	90	66.08
181	Guinea	140	90	61.23
182	Burundi	140	90	64.14
183	Sierra Leone	140	90	62.33
184	Mozambique	140	90	64.14
185	Zambia	140	90	66.88
186	Madagascar	140	90	64.25
187	Gambia	140	90	66.45
188	Burkina Faso	130	90	61.65
189	Togo	130	80	63.33
190	United Arab Emirates	120	80	83.39
191	Benin	120	80	61.32
192	Qatar	120	70	82.83
193	Cameroon	110	70	64.51
194	Ivory Coast	110	70	62.44
195	Liberia	110	70	62.62
196	Mali	110	70	61.11
197	Nigeria	110	70	54.95
198	Niger	100	60	61.88
199	Chad	100	60	55.58
200	Somalia	90	60	59.26
201	Guinea-Bissau	90	60	64.59

Interpretation note: A rate of 1,000 per 100,000 equals 1.00% of the total population. The estimated Alzheimer's rate remains an estimate derived from the dementia total at the report's 65% midpoint assumption.

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REPORT 2

Genetics of Dementia and Alzheimer's Disease

Comprehensive report on deterministic genes, risk genes, testing, clinical implications, and population statistics

Prepared by Jerry Perone
June 1, 2026

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Primary sources include WHO, NIA/NIH, GeneReviews/NCBI Bookshelf, Alzheimer's Association, FDA safety communications, Lancet Commission 2024, and peer-reviewed genetics literature.

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Important medical-use notice: This report is informational only and is not medical advice, genetic counseling, legal advice, or a substitute for evaluation by qualified clinicians.

Executive summary

Dementia genetics is not one story. Some dementias are directly caused by single-gene variants, while the most common late-life dementias usually arise from a mixture of age, polygenic risk, vascular/metabolic risk, environment, life-course exposures, and chance. Alzheimer’s disease has a small rare deterministic genetic category and a much larger common late-onset category in which APOE e4 is the strongest known risk gene but not a diagnosis.

For clinical use, genetics matters in three main ways: identifying rare autosomal-dominant families, interpreting risk in late-onset disease, and guiding treatment-risk discussions for amyloid-targeting therapies where APOE e4 status can inform amyloid-related imaging abnormality risk.

Key interpretation: The central message

Most Alzheimer’s disease is not caused by a single inherited mutation. A strong family history, young age at onset, frontotemporal dementia features, ALS overlap, prion-like rapid progression, or unusual vascular/leukoencephalopathy features changes the testing strategy and makes genetic counseling much more important.

The genetics spectrum: deterministic genes vs risk genes

A deterministic gene variant is sufficient to cause disease in most carriers. A risk gene changes the probability of disease but does not guarantee disease and does not rule disease out when absent. This distinction is essential in Alzheimer’s disease: APP, PSEN1, and PSEN2 can cause rare autosomal-dominant early-onset familial Alzheimer’s disease, while APOE e4 is a risk allele for late-onset Alzheimer’s disease.

Category	Meaning	Examples	Clinical use
Deterministic / causal	Usually high-penetrance variant that directly causes a syndrome	APP, PSEN1, PSEN2; MAPT, GRN, C9orf72; HTT; NOTCH3; PRNP	Genetic counseling; family cascade testing; predictive testing only with counseling
Polygenic / multifactorial	Many variants plus age, vascular/metabolic exposures, education, hearing, environment, and social determinants	Genome-wide association loci and polygenic risk scores	Population risk stratification remains limited clinically; prevention and diagnosis still rely on clinical evaluation
Risk-modifying	Allele increases or decreases probability but is not itself a diagnosis	APOE e4, APOE e2, TREM2, SORL1, ABCA7, GBA1, LRRK2	Risk discussion, research, sometimes treatment-safety planning

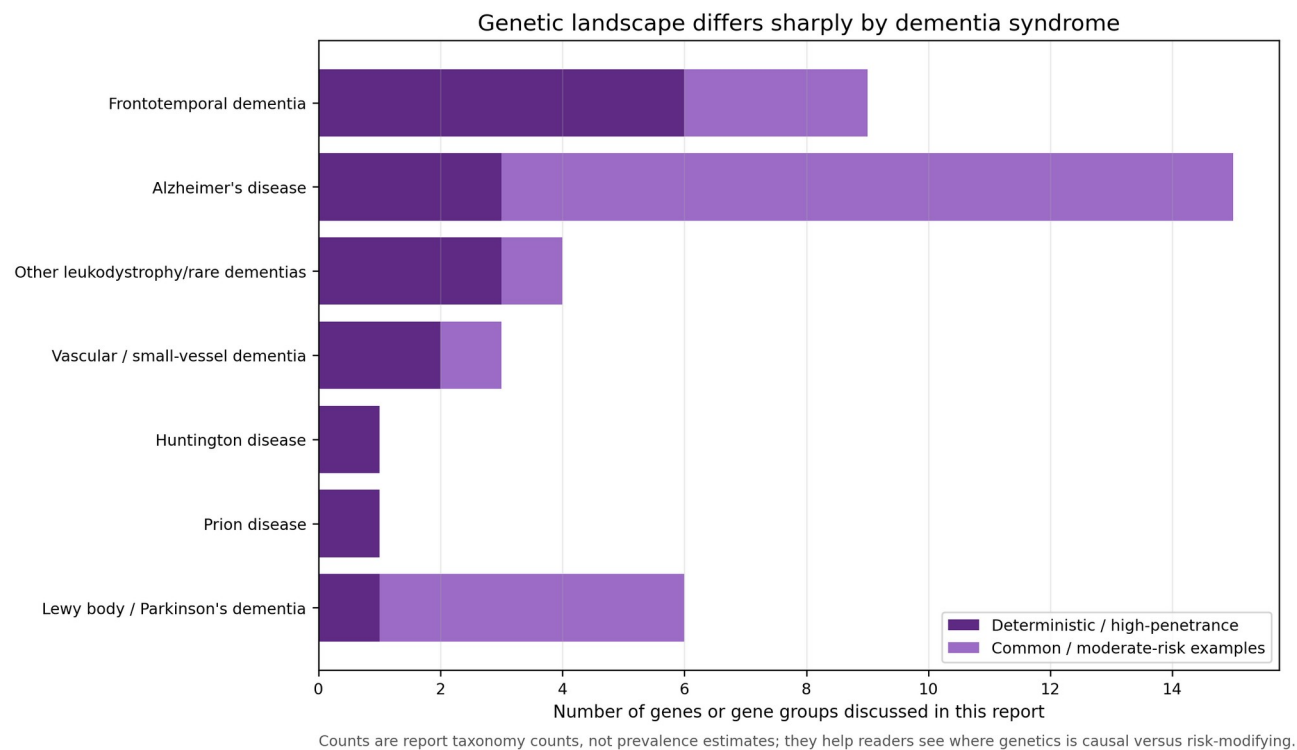
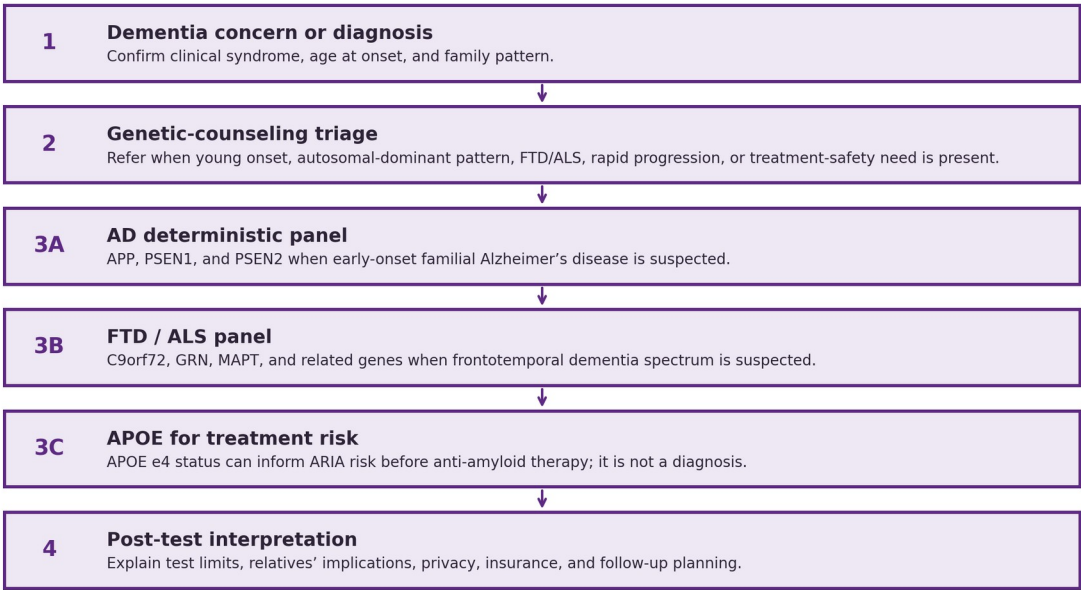


Figure 1. The genetic landscape differs by dementia syndrome. Counts are report taxonomy counts, not population prevalence estimates.

Responsible genetics workflow for Alzheimer’s disease and other dementias



This workflow is a clinical decision-support overview, not a substitute for genetic counseling or medical evaluation.

Figure 2. Responsible genetics workflow for Alzheimer’s disease and other dementias.

Alzheimer’s disease genetics

Rare autosomal-dominant early-onset Alzheimer’s disease

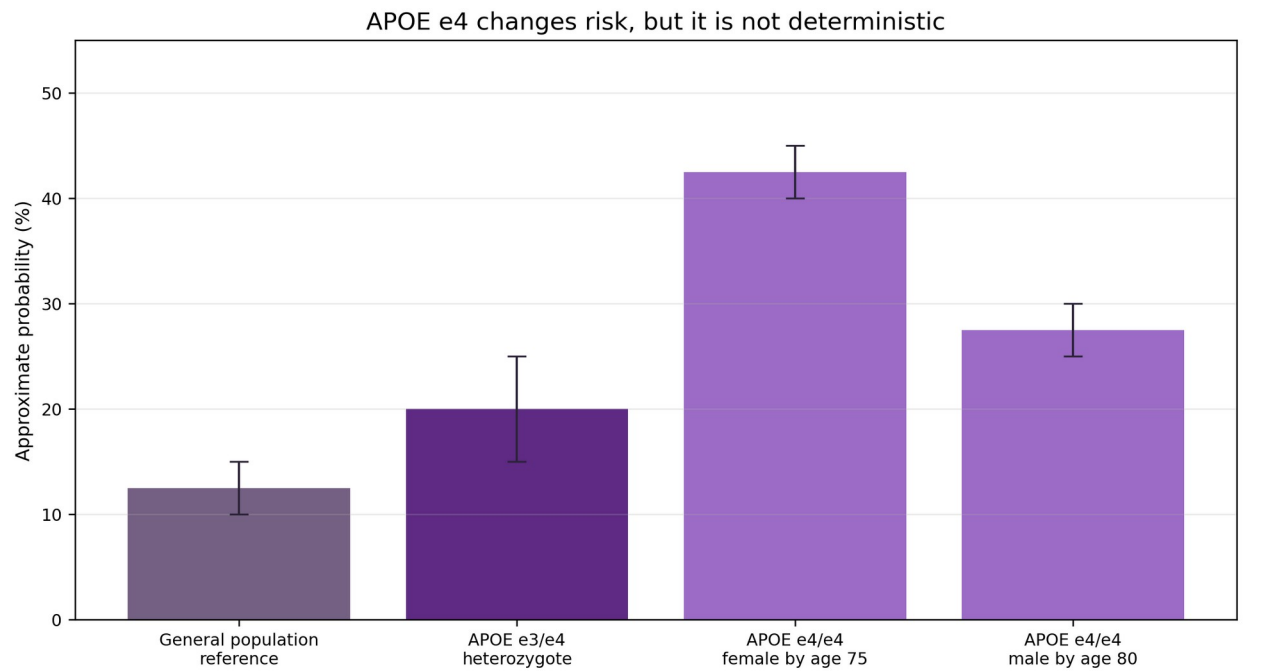
Rare pathogenic variants in APP, PSEN1, and PSEN2 can cause autosomal-dominant early-onset familial Alzheimer’s disease. In a family with a known pathogenic variant, each child of an affected carrier has a 50% chance of inheriting the variant. These forms account for a small minority of all Alzheimer’s disease, but their implications are large because relatives can be at predictable inherited risk.

Ethics alert: Testing minors

Predictive testing for adult-onset Alzheimer’s mutations in asymptomatic minors is generally considered inappropriate unless there is a direct childhood medical benefit. Adult predictive testing should occur only with formal genetic counseling and careful discussion of psychological, family, privacy, employment, and insurance implications.

APOE and late-onset Alzheimer’s disease

APOE has three common allelic forms: e2, e3, and e4. APOE e4 increases risk and tends to lower age at onset in some populations; APOE e2 is relatively protective in many studies. APOE e4 is not deterministic: many e4 carriers never develop Alzheimer’s disease, and many people with Alzheimer’s disease do not carry e4.



Source: GeneReviews summary of APOE e4/e4 and e3/e4 risk ranges. Values shown as midpoints of cited ranges.

Figure 3. APOE e4 changes Alzheimer’s risk but is not deterministic. Midpoints are shown from cited risk ranges.

Gene/allele	What it means	Clinical note
APOE e2	Often associated with lower Alzheimer’s risk versus e3, but not absolute protection.	Usually not tested alone clinically.

Gene/allele	What it means	Clinical note
APOE e3	Most common reference allele in many populations.	Baseline comparison category.
APOE e4	Strongest common risk allele for late-onset Alzheimer's; effect size varies by ancestry and context.	Can inform risk counseling and anti-amyloid therapy safety discussions.
TREM2	Rare coding variants can materially increase Alzheimer's risk; linked to microglial function.	Mostly specialty genetics/research context.
SORL1, ABCA7, CLU, CR1, PICALM, BIN1, CD33, MS4A and others	Common or rare variants participate in amyloid, lipid, immune, endocytosis, and synaptic pathways.	Usually not individually actionable in routine care.

Genetics of major non-Alzheimer dementias

Dementia syndrome	Major genes / gene groups	Clinical clue
Adult-onset leukodystrophy / rare dementias	CSF1R, AARS2, NOTCH2NLC, mitochondrial genes and others	Consider with movement disorder, psychiatric change, white matter disease, or atypical inheritance pattern.
Dementia with Lewy bodies / Parkinson's disease dementia	APOE, GBA1, SNCA, LRRK2, MAPT and others	Mostly risk-modifying; SNCA multiplications are rare high-penetrance causes of synucleinopathy.
Down syndrome-associated Alzheimer's disease	Trisomy 21, including extra APP dosage	Very high lifetime Alzheimer pathology risk; dementia surveillance is clinically important in adulthood.
Frontotemporal dementia / FTD-ALS	C9orf72, GRN, MAPT; rarer TBK1, VCP, CHMP2B, TARDBP, FUS, SQSTM1, OPTN, TIA1	Genetics is more common than in typical late-onset Alzheimer's; family history and ALS overlap are high-yield clues.
Huntington disease dementia	HTT CAG expansion	Fully genetic neurodegenerative disorder with movement, psychiatric, and cognitive manifestations.
Prion disease dementia	PRNP	Rapidly progressive dementia; genetic prion diseases are rare but important for family risk and infection-control interpretation.
Vascular dementia / small-vessel cognitive impairment	NOTCH3, HTRA1, COL4A1/COL4A2, TREX1 and others	Consider when there are migraine, strokes, white-matter disease, or family history suggestive of monogenic small-vessel disease.

Clinical callout: FTD deserves special attention

Frontotemporal dementia has a higher monogenic yield than typical late-onset Alzheimer's disease. Behavioral variant FTD, primary progressive aphasia, motor neuron disease overlap, and multiple affected relatives should trigger consideration of a genetics referral.

Genetics and anti-amyloid treatment safety

APOE genotyping has become clinically relevant in Alzheimer's treatment planning because APOE e4 homozygotes have a higher incidence of amyloid-related imaging abnormalities during treatment with amyloid-targeting monoclonal antibodies. The genetic result does not determine whether someone has Alzheimer's disease; it informs treatment-risk discussion and monitoring.

Safety callout: Treatment-risk genetics is different from disease prediction

APOE testing for anti-amyloid therapy is used to inform ARIA risk. It should not be treated as a standalone diagnostic test, and it should be discussed with patients before testing because it can reveal inherited risk information relevant to relatives.

Statistics that help interpret dementia genetics

Statistic	Value / interpretation	Main source
APOE e4 among diagnosed Alzheimer's	Researchers estimate that 40%-65% of people diagnosed with Alzheimer's carry APOE e4.	Alzheimer's Association
APOE e4 carriage	An estimated 20%-30% of individuals in the United States carry one or two copies of APOE e4; about 2% carry two copies.	Alzheimer's Association
FTD familial genetics	About 30% of FTD can be familial; a subset shows autosomal-dominant inheritance involving C9orf72, GRN, MAPT, and rarer genes.	GeneReviews / peer-reviewed FTD genetics review
Global dementia burden	About 57 million people had dementia globally in 2021; Alzheimer's disease may account for 60%-70% of cases.	WHO
Modifiable risk factors	The 2024 Lancet Commission estimated that 14 modifiable factors account for about 45% of dementia cases at population level.	Lancet Commission 2024
Rare deterministic Alzheimer's genes	APP, PSEN1, and PSEN2 cause rare familial early-onset Alzheimer's and are estimated to account for 1% or less of Alzheimer's cases.	Alzheimer's Association / GeneReviews

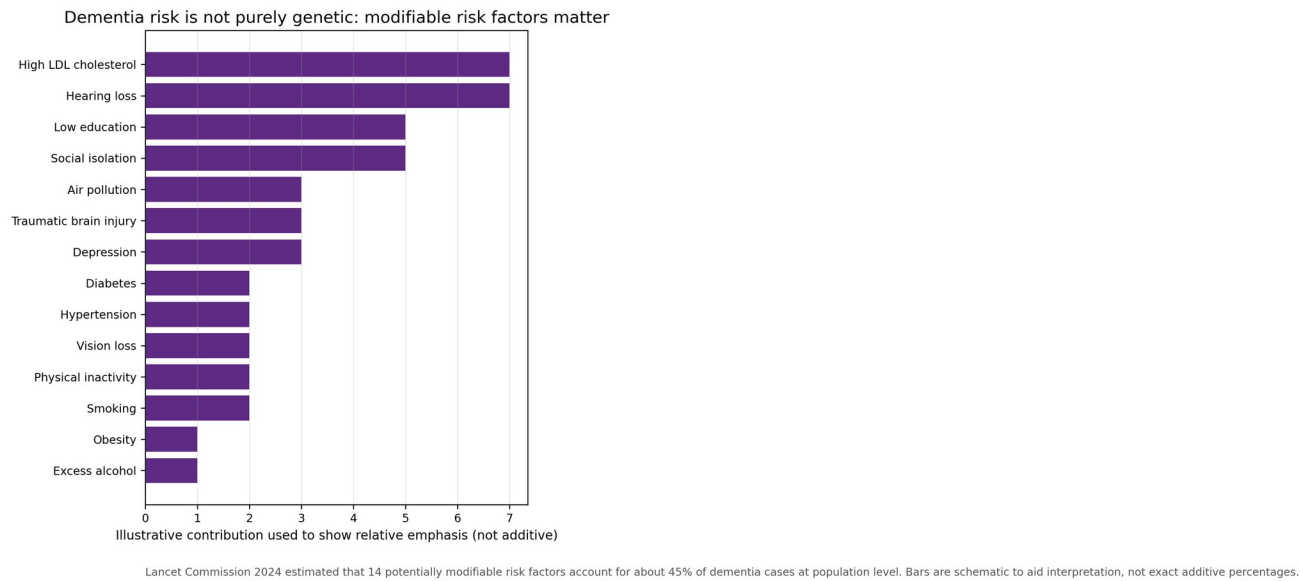


Figure 4. Dementia risk is not purely genetic: 14 modifiable risk factors matter at population level.

When to consider referral for genetic counseling

- Dementia onset before age 60-65, especially when progressive and unexplained.
- Multiple affected relatives across generations, suggesting autosomal-dominant inheritance.
- Frontotemporal dementia, primary progressive aphasia, or dementia with ALS/motor neuron disease.
- Rapidly progressive dementia with prion-disease concern or strong family history.
- Early recurrent strokes, migraines, psychiatric/cognitive decline, or extensive white-matter disease suggesting monogenic vascular dementia.
- Known pathogenic variant in a relative, or a family participating in a dominantly inherited dementia research network.
- APOE testing being considered for anti-amyloid treatment risk planning.

Practical cautions for readers

A negative test does not erase risk

Many genes remain undiscovered, not all tests detect every variant type, and most late-life dementia is multifactorial.

A risk allele is not a diagnosis

APOE e4, GBA1, TREM2, and other risk alleles modify probability; they do not prove disease will occur.

Ancestry matters

Risk estimates can differ across ancestry groups because allele frequencies, linkage patterns, environment, and social determinants differ.

Family implications are unavoidable

A genetic result in one person can change risk information for siblings, children, parents, and extended relatives.

Privacy and insurance concerns should be discussed early

Genetic information can affect emotional well-being, family dynamics, and financial planning. Counseling should occur before predictive testing whenever possible.

Appendix A. Dementia genetics quick-reference table

Gene / locus	Main syndrome	Genetic role	Clinical note
ABCA7	Alzheimer's disease	Risk	Lipid metabolism; risk can differ by population.
APOE	Alzheimer's disease / Lewy body dementia	Common risk allele	e4 increases risk and ARIA risk; e2 often protective.
APP	Alzheimer's disease	Deterministic / high-penetrance	Autosomal dominant early-onset AD; APP duplication also relevant.
BIN1	Alzheimer's disease	Risk	Endocytosis/synaptic pathways.
C9orf72	FTD / ALS	Deterministic / high-penetrance	Hexanucleotide repeat expansion; FTD-ALS spectrum.
CD33/MS4A	Alzheimer's disease	Risk	Immune/microglial pathways.
CLU	Alzheimer's disease	Risk	Lipid/chaperone pathways.
COL4A1/COL4A2	Small-vessel disease	Deterministic/risk	Hemorrhage, porencephaly, ocular/renal features possible.
CR1	Alzheimer's disease	Risk	Complement/immune pathway.
CSF1R	Adult-onset leukoencephalopathy	Deterministic	White-matter disease, psychiatric/cognitive/motor features.
GBA1	Lewy body/Parkinson's disease dementia	Risk	Synucleinopathy risk; not deterministic for most carriers.
GRN	FTD	Deterministic / high-penetrance	Progranulin haploinsufficiency; variable phenotype.
HTRA1	CARASIL / small-vessel disease	Deterministic/recessive or dominant forms	White-matter disease and strokes.
HTT	Huntington disease	Deterministic repeat expansion	Movement, psychiatric, and dementia syndrome.
LRRK2	Parkinson's spectrum	Risk/deterministic for PD	May be associated with cognitive outcomes in PD spectrum.
MAPT	FTD	Deterministic / high-penetrance	Tauopathy; often behavioral/executive phenotype.
NOTCH3	CADASIL / vascular cognitive impairment	Deterministic	Migraine, strokes, mood/cognitive decline, white-matter disease.

Gene / locus	Main syndrome	Genetic role	Clinical note
PICALM	Alzheimer's disease	Risk	Endocytosis pathway.
PRNP	Prion diseases	Deterministic/risk	Genetic Creutzfeldt-Jakob disease, Gerstmann-Sträussler-Scheinker, fatal familial insomnia.
PSEN1	Alzheimer's disease	Deterministic / high-penetrance	Most common deterministic early-onset AD gene.
PSEN2	Alzheimer's disease	Deterministic / high-penetrance	Variable age at onset and penetrance compared with PSEN1.
SNCA	Parkinson's disease dementia / DLB	Rare deterministic or risk	Point variants/duplications/triplications can cause synucleinopathy.
SORL1	Alzheimer's disease	Risk; rare variants can be high impact	Endosomal trafficking and amyloid processing.
TBK1	FTD / ALS	High/moderate penetrance	FTD-ALS spectrum, variable penetrance.
TREM2	Alzheimer's disease	Moderate/rare risk	Microglial immune pathway.
VCP, CHMP2B, TARDBP, FUS, SQSTM1, OPTN, TIA1	FTD / ALS	Rare causal/risk genes	Often panel-tested in specialist settings.

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Source Notes

These source notes support major factual statements used in the policy report and narrative. They are included for credibility and follow-up review. Scenario calculations in Sections 14 and 15 are illustrative and should not be represented as actuarial predictions or medical promises.

- User-provided HANAI Memory Network infographic, “Hawai‘i Memory Network,” used for the original HANAI program concept: one dementia care specialist in each county, one contracted memory clinic in each neighbor-island county, minimum clinic staffing, EOA coordination, and the \$3,000,000 annual budget concept.
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survey finding that 79% of Americans surveyed would want to know if they had Alzheimer's disease before symptoms or before symptoms interfered with activities; 91% would want a simple test such as a blood biomarker test; 92% would probably or definitely want medication to slow progression after diagnosis; and 58% would accept moderate to very high risk to take medication in the early stages. <https://www.alz.org/news/2025/facts-figures-report-alzheimers-treatment>

Baker LD et al., "Structured vs Self-Guided Multidomain Lifestyle Interventions for Global Cognitive Function: The U.S. POINTER Randomized Clinical Trial," JAMA, July 28, 2025. Used for the 2,111-participant, five-site, two-year randomized clinical trial design and the conclusion that the structured higher-intensity intervention had a statistically significant greater benefit on global cognition than the self-guided intervention. <https://jamanetwork.com/journals/jama/fullarticle/2837046>

Alzheimer's Association / AAIC 2025 press release, "U.S. POINTER Study Shows Structured Lifestyle Program Targeting Multiple Risk Factors Improves Cognition in Older Adults at Risk of Cognitive Decline," July 28, 2025. Used for trial framing, high adherence and safety, consistent cognitive benefits across major subgroups, and the implementation message that lifestyle programs must be tailored to local environments. <https://aaic.alz.org/releases-2025/us-pointer-study-results-announced.asp>

Alzheimer's Association, "U.S. POINTER | Study Results." Used for the finding that two multidomain lifestyle interventions improved cognition in older adults at risk of cognitive decline, with greater benefit in the more structured intervention, and for the brain-health recipe of physical exercise, cognitive/social engagement, nutrition, and health monitoring. <https://www.alz.org/us-pointer/study-results>

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Contact & Additional Information

For additional information, use the pathway below. This page is designed as the practical last page of the report: who to contact, where to look first, and which resource fits which need.

Hawai'i Memory Network / Alzheimer's Association Hawai'i public-policy contact: Coby Chock, Hawaii Director of Public Policy & Advocacy | 808.451.3410 | ckchock@alz.org

What you want to do	Where to go first	Website / contact
Learn about Alzheimer's disease, dementia warning signs, care options, and family education	Alzheimer's Association	alz.org
Follow federal Alzheimer's advocacy and policy opportunities including ASAP and AADAPT	Alzheimer's Impact Movement	alzimpact.org
Understand the CMS GUIDE dementia-care navigation model	Centers for Medicare & Medicaid Services	CMS GUIDE Model page
Review public-health infrastructure for dementia risk reduction, early detection, and caregiver support	CDC BOLD Infrastructure for Alzheimer's Act	CDC BOLD Infrastructure page
Track Hawai'i HANAI legislation and statutory language	LegiScan HB1853 / Hawai'i legislative history	LegiScan HB1853 page
Review Hawai'i's Alzheimer's Disease and Related Dementias state-plan context	Hawai'i State Strategic Plan on ADRD	Hawai'i ADRD State Plan PDF
Check FDA information on Alzheimer's diagnostic aids and approved treatments	U.S. Food and Drug Administration	FDA website
Understand the interoperability language behind FHIR-ready care plans and observations	HL7 FHIR	HL7 FHIR website
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Good health, good thinking.