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DESIGN LAB BRIEFING

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Transforming care for the detection, diagnosis, and treatment of early Alzheimer's disease

The purpose of this Briefing Book is to prepare Design Lab participants to pressure test and refine solutions to improve appropriate, timely, and equitable access to disease-modifying therapies (DMTs) for early Alzheimer's Disease (AD) for patients who need and want them. Until recently, treatments for AD revolved around managing symptoms and providing supportive care in the later stages of dementia. Today, the advent of DMTs which can slow the progression of AD along with the anticipated growth in prevalence as baby boomers age, has illuminated the need for new health system capabilities and capacity to deliver care for early AD. Revamped, systemic approaches are necessary if patients are to gain the full benefit of these medical advances at a scale appropriate for the prevalence of early AD. Specifically, shifting toward a more primary care centered model of AD care has been a central focus of discussions in this project.

The NEWDIGS AD project focuses on envisioning a next generation healthcare system in the year 2030 designed to ensure appropriate, timely, and equitable access for patients with early AD to available therapeutics. It assumes that within the next five years a number of advancements in diagnostics, therapeutics, and management/prevention of side effects will be available, and will enable a shift toward primary care. However, for this Design Lab we are focusing on DMTs currently available in order to leverage a tangible case study to enhance our capacity for collaborative system innovation.

Design Lab goal & objectives

- Scale our capacity for timely delivery of emerging therapies to a larger number of patients who are eligible and want them
- Review and explore important solution components of system change identified in the Elucidation Phase
- Introduce and apply our evolving dynamic simulation model to advance individual solution components into strategically connected Solution Sets
- Learn from a panel of US clinical innovators currently involved in system change on the front line of AD

Pressure testing solutions in the Design Lab breakout groups

Each Design Lab participant will be assigned to a breakout group. Each breakout group will be asked to pressure test potential solutions proposed to date in this project to improve care in one of three phases of the patient clinical journey (hereafter referred to as a 'Solution Area'):

1. Initiate cognitive assessment
2. Detection and diagnosis
3. Determination of eligibility for DMTs and administration of therapy

Briefing contents

Background

Over the next 25 years, more than 13 million adults in the United States, and 140 million worldwide, will be diagnosed with AD and other forms of dementia. This wave of disease will profoundly impact families, the health care system, and the broader economy.

In the U.S. alone, the current cost of treating those with AD is estimated at $384 billion, including costs to Medicare and Medicaid as well as out of pocket spending by patients and their families. Spending on care for those with AD could reach $1 trillion by 2050, according to the Alzheimer's Association.

The Food and Drug Administration has approved two DMTs, Leqembi® (lecanemab-irmb) and Kisunla® (donanemab-azbt), both shown to slow the progression of AD, allowing patients to live independently longer, have a better quality of life, and reduce healthcare and caregiving costs. One economic study found that a one-year delay in progression from mild cognitive impairment to moderate AD could reduce costs in the US by up to $1.3 trillion over the next 10 years. In addition, a robust AD drug development pipeline promises more therapies in coming years. Diagnostic innovations, including digital cognitive assessment tests, and blood tests that can detect biomarkers of the disease at its earliest stages, make early diagnosis much more accessible and may accelerate the patient's path to treatments that slow disease progression.

Despite these scientific advances, persistent challenges in the way the health care system is organized affect every aspect of care for patients with AD. These constraints hinder the system's ability to diagnose AD in early, treatable stages. With these challenges in mind, the NEWDIGS consortium began work on the AD Project.

The project focuses on envisioning AD care in 2030, and—for the purpose of this system design exercise—makes several assumptions about this future state:

- Blood biomarker tests will be FDA-approved for both symptomatic and presymptomatic AD
- Easier to administer therapies (e.g., subcutaneous, oral) will be FDA-approved for both early symptomatic and presymptomatic AD
- Amyloid-Related Imaging Abnormalities (ARIA) side effects will be much better managed either through improved drug delivery techniques (i.e., brain shuttle) or via additional medicines (e.g., corticosteroids administered before anti-amyloid therapy)

In our first Design Lab (April 2025) we elucidated barriers to the detection, diagnosis, and treatment of early AD, exploring an expanded role for primary care clinicians.

Goal: Appropriate, timely, and equitable care for early AD, at scale by 2030

At present, the patient's clinical journey to care for early AD follows a complex, multi-step process that is subject to multiple systemic challenges, contributing to under-detection of cognitive issues, and delays in diagnosis and follow-up to appropriate care. This lengthy process is at odds with the reality of the disease: AD is progressive and neurodegenerative. Optimizing time-to-diagnosis is especially significant in DMT treatment, since the DMTs currently available are indicated for the treatment of early AD, defined as stages of mild cognitive impairment or mild dementia that

are due to an underlying pathology of AD. Delays can lead to patients progressing to more severe stages of the disease, eliminating their eligibility for treatments that can delay the disability and additional costs associated with more severe AD.

While emerging innovations in diagnostics such as blood biomarker tests and digital cognitive assessments are creating capabilities that will more readily detect and diagnose early AD, adoption poses a major challenge for the US health care system. In the past, the health care system faced little pressure to prioritize early AD diagnosis. Patients with memory or cognitive issues often avoid seeking help due to stigma or assumptions that it is a normal part of aging, and clinicians may hesitate to diagnose AD given limited treatment options. As a result, early AD remains largely undetected and undiagnosed.

Our healthcare system as a whole is currently not prepared to diagnose and treat early AD at a scale commensurate with its prevalence. The goal of the NEWDIGS AD project is to envision health care system change that enables appropriate, timely and equitable patient access to treatment for early AD at the scale needed.

This, the second in a series of three Design Labs for the project, will focus on the design and pressure testing of solutions (Figure 1)– advancing from solution components to strategically coordinated solution sets to fuel scalable, sustainable system change.

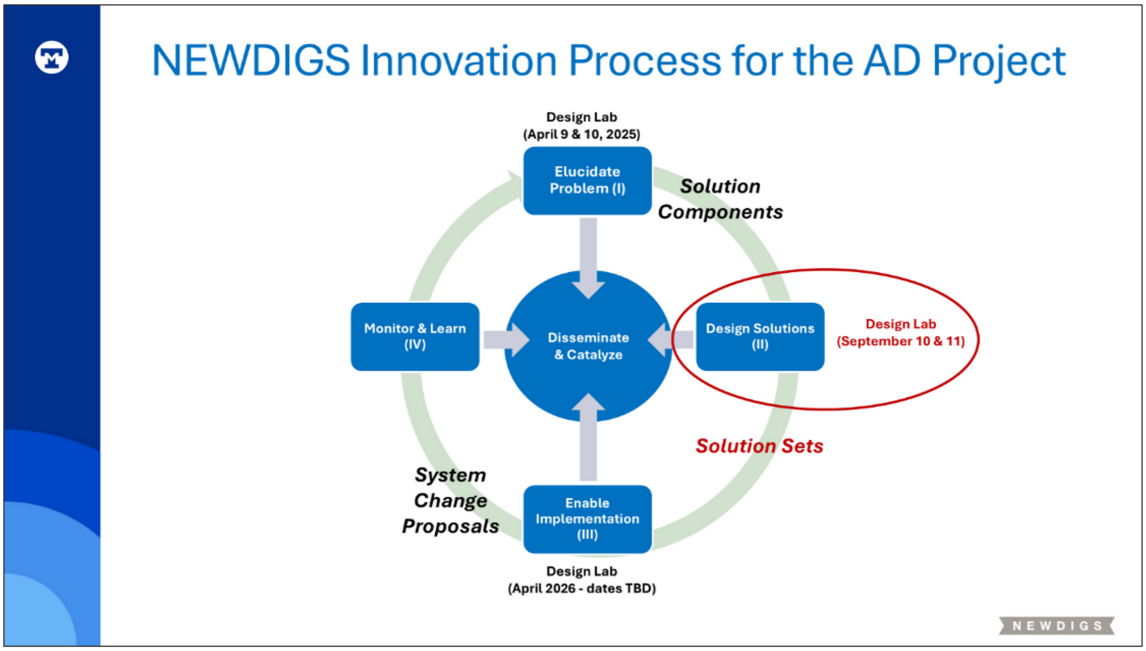

Figure 1: NEWDIGS Innovation Process

Design Lab participants will:

- Revisit solution components of systems change proposed in the Elucidation phase of the project.
- Apply systems thinking to consider the interaction of solution components with the larger healthcare system.
- Apply a new design tool—our evolving dynamic simulation model—to advance individual

solution components into strategically connected solution sets necessary for scalable system change. (Use of this model at this Design Lab will serve as a proof-of-concept of system dynamics modeling as a tool to help us lay groundwork for implementation planning of System Change Proposals.)
- Reflect on practical insights and lessons learned from a panel of US clinical innovators currently involved in system change on the front line of AD to modify solution sets as needed.

The solution sets that will be developed from the September 2025 Design Lab will form the foundation upon which the working group will build to set the stage for our final Design Lab for this project focused on implementation planning (April 2026).

Multi-faceted system changes emerging from challenges

During the elucidation Design Lab in April 2025, with additional follow up work by the AD working group, three "Solution Areas," each with potential targets for system change, were identified (Figure 2).

Solution Area	Potential Targets for System Change
1. Initiate cognitive assessment	(a) Increase cognitive assessments initiated by the patient, family member or care partner
	(b) Increase clinician-initiated cognitive assessments
2. Detection and Diagnosis of Early AD	(a) Increase the clinical utility and clinical significance of findings from patient cognitive assessment
	(b) Streamline the clinical work-up process for differential diagnosis and confirmation of early AD
3. Determination of Eligibility for DMTs and Administration of Therapy	(a) Streamline determinations of clinical eligibility for DMTs for patients diagnosed with early AD
	(b) Streamline administration of DMTs and minimize patient burden for patients accepting therapy

Figure 2: Solution Areas of the envisioned early AD healthcare system

The first area is the **initiation of cognitive assessment**. Cognitive assessment is widely acknowledged as the first step in detecting and diagnosing early AD but is not conducted or documented on a routine basis.

Second, patients flagged for cognitive impairment or apparent dementia based on an initial cognitive assessment must undergo a comprehensive **detection and diagnosis** process. This is necessary to develop a differential diagnosis since dementia may be due to one or more causes, including neurodegenerative disease other than early AD and underlying disease.

Differential diagnosis then leads to the third area, **determining eligibility for DMTs and administering therapy** for patients desiring treatment along with appropriate follow-up and care.

Importantly, these Solution Areas do not operate separately but must be implemented in coordinated ways to generate the most clinically appropriate and efficient care for patients with early AD.

Enhance role of primary care in early AD care

Insights from the elucidation phase of NEWDIGS AD project suggest that a pragmatic path to expanding access to early AD care, including access to DMTs, may lie in enhancing the role of primary care in early detection, diagnosis, and treatment of AD.

Primary care physicians and teams are at the front line of dementia detection and care in the US, including care for AD. Over 80% of initial diagnoses of AD are made in the primary care setting. Additionally, the nationwide shortage of neurologists and other dementia specialists has led to calls to expand the role of primary care practitioners in many aspects of AD care for patients at all stages of the disease. However, US primary care itself is under stress due to a number of factors. Yet, primary care remains the main source of patients' usual care making the prudent expansion of primary care's role a viable option towards ensuring patient access to early AD care and treatment. Moreover, well-defined strategies to increase primary care's engagement with early AD could strengthen a movement underway in several states across the US to increase investment in primary care and re-orient American health care towards disease prevention, coordinated care, and chronic disease management.

Discussions within the NEWDIGS AD working group and the April 2025 Design Lab suggest that:

- Healthcare system change must enable patient access to early AD care at a scale well beyond what is currently available. This will be facilitated if primary care achieves a greater role in early AD detection and diagnosis. Primary care could evolve to include management of DMTs as primary care providers increase their knowledge of the risks, benefits, and long-term outcomes of treatment, and as additional therapies enter the market.
- Shifting more responsibility to primary care will necessitate solutions that build on primary care-specialist collaboration, particularly for complex patient cases (e.g., achieving timely and efficient patterns of PCP-neurologist consultations).
- Looking ahead, growing patient demand for diagnosis and treatment of early AD may trigger an increase in the number of physicians entering neurology, geriatric psychiatry, and related

specialties, while also shifting existing neurology practices into a greater focus on AD (as compared to other neurological conditions). Even so, primary care practices will continue to play a key role if access to early AD diagnosis and treatment is to reach a scale commensurate with the prevalence of the disease.

Solution Area I: Initiate cognitive assessment

Cognitive assessment is widely acknowledged as the first step in detecting and diagnosing early AD, and likely to remain so for the next decade or more.

As noted, early AD is mostly undiagnosed. While patients aged 65 and older (the population at highest risk for AD) experience nearly twice as many physician visits per year compared to the pre-Medicare (45-64 year old) population, relatively few visits involve cognitive assessment.

The Medicare Annual Wellness Visit (AWV) is a case in point. The AWV is free (zero out of pocket cost) to Medicare Advantage[1] beneficiaries and cognitive assessment is a required element. Uptake is not universal with an estimated 60 percent of beneficiaries receiving an AWV as of 2022. Structured cognitive assessments are only conducted in one-third of AWV visits, instead only including very brief informal assessments prone to subjective evaluation. Little or no published data exists on the use of cognitive assessment repeated annually.

Discussions within the NEWDIGS's project have acknowledged that blood biomarker testing may eventually become a routine laboratory test administered in primary care, for universal screening among older adults, or among those identified at elevated risk for AD. Clinical practice guidelines published by the Alzheimer's Association, issued in July 2025 recommended use of blood biomarker testing in clinical practice for the first time, although only within specialized care. However, the preponderance of opinion within NEWDIGS discussions is that blood biomarker testing is unlikely to displace cognitive assessment as the first step in early AD detection for several years.

Table A enumerates a series of potential strategies and targets for system change for increasing the volume of cognitive assessments among older patients, including:

- Increasing cognitive assessments initiated by a patient, family member or other care partner, and
- Increasing cognitive assessments initiated by clinicians

1 Annual patient physical examinations are not covered in Traditional Medicare..

Increase cognitive assessments initiated by the patient, family member or care partner	
Public Awareness	Promote evidence-based public health messaging on dementia risks, prevention, and reversable causes
Patient Education	Disseminate patient information on dementia risks, prevention and reversable causes (e.g., patient visit summaries, health risk assessments)
Benefit Design	Extend low cost or no cost coverage of cognitive assessment in insurance plans including Traditional Medicare
Medicare Annual Wellness Visit	Promote yearly scheduling of the AWV among Medicare Advantage beneficiaries
Digital Tracking for Early Detection	Validate performance standards of digital health devices and apps for their clinical utility in tracking patient memory, cognition, and functional capacity
Patient Privacy	Enact protections to extend appropriate privacy and anti-discrimination protection to patients with early AD
Increase clinician-initiated cognitive assessments	
Clinician education	Promote education on the usability of cognitive assessment tests in clinical workflows and their clinical utility
	Promote education among non-specialists of dementia risks, prevention and reversable causes
Risk scoring for triage	Validate standard formulas for risk scoring patients to triage for further evaluation, on the basis of subjective cognitive assessments
Standards of care	Harmonize clinical practice guidelines regarding initiation of cognitive assessment (when to assess) and quality of assessment tools utilized in primary care (e.g., use of structured assessment tools)
Quality and performance metrics	Validate and adopt quality and process measures of care for early AD for use in provider payment models, accreditation programs, etc. (e.g., HEDIS, STAR ratings, ACO measures)
Risk stratification for Population Health Management	Validate analytical methods for identification of at-risk patients at a population level to guide proactive outreach to patients for cognitive assessment
Medicare Annual Wellness Visit Incentives	Increase Medicare incentives for prioritization of the Annual Wellness Visit by providers through physician reimbursement and Medicare Advantage contracts

Table A: Solution Area I: Increase cognitive assessments
Potential strategies & targets for system change

Solution Area II: Detection & diagnosis of early AD

Good clinical practice mandates further evaluation when a patient is flagged for apparent dementia based on an initial cognitive assessment. AD cannot be definitively diagnosed without a comprehensive evaluation, (a clinical work-up) and differential diagnosis. This is necessary as apparent dementia may be due to one or more causes, including neurodegenerative diseases other than Alzheimer's.

NEWDIGS collaborators define the second phase of the patient clinical journey as both detection and diagnosis, including detection that might occur in the primary care setting. Linking detection to diagnosis highlights the important two-way connection between these steps, as follows:

- The accuracy of the cognitive assessment (sensitivity, specificity, predictive value) in detecting dementia is a key determinant of how many patients are flagged for further follow-up.
- The accuracy of detection in the initial cognitive assessment can have a direct impact on the timing and comprehensiveness of the clinical work-up (i.e., patients who present with a more definitive case of dementia may receive more expedited follow-up evaluation).
- The accuracy of initial detection has an impact on the probability of misdiagnosis. Odds of misdiagnosis of AD are known to increase as patients age, and substantial racial and ethnic disparities in diagnosis are apparent as well.

It should be noted that, when patients are flagged for apparent dementia, immediate follow-up may focus on preventable or reversible causes of the findings. As noted earlier, this may trigger action on numerous medical conditions typically managed in primary care, such as action to correct medication problems, treat hypertension and diabetes, or other problems. When successful these actions may reduce the rate of referrals for further cognitive evaluation or for clinical workups for AD diagnosis that may be unnecessary.

The clinical work-up for diagnosis of AD is itself a complex, multi-step process. Essential steps include:

- Physical examination
- Review of the patient's medical history and family medical history
- Medication review
- In-depth assessment of memory, cognition, and physical function
- Brain imaging

Two important areas for improvement in the detection and diagnosis of early AD have been highlighted in NEWDIGS discussions, including:

- Increasing the clinical utility and clinical significance of the findings from cognitive assessments among patients flagged for further evaluation (clinical work-up), and
- Streamlining this process to improve its accuracy and timeliness (time-to-diagnosis). For patients who prove clinically eligible for DMTs for early AD, minimal time-to-diagnosis facilitates more rapid time-to-therapy.

Streamlining the clinical work-up process is a major goal of health care systems that are actively experimenting with innovations to improve early AD care. This will be the subject of the "Innovators Panel" on Day Two of the September Design Lab, (Thursday, September 11th).

Key discussion topics on the panel will include the best practices and lessons learned from clinical and research teams actively engaged in pilot projects, clinical research, or quality improvement initiatives aimed at improving detection and care of AD in the primary care setting.

Several potential solutions to address both of these challenges have been elucidated in prior NEWDIGS discussions and can be found in Table B, including solutions likely to be discussed during the Innovators' Panel.

Increase the clinical utility and clinical significance of findings from patient cognitive assessment	
Structured cognitive assessment tests	Develop and disseminate best practices on the use and interpretation of validated, structured cognitive assessments tests
Patient communication/ shared decision making	Adopt protocols of clinician-patient communication and shared decision-making regarding interpretation of cognitive assessment results and decisions on follow-up care and care planning
Digital tracking & diagnostics	Validate standards of accuracy and clinical utility for digital diagnostics used outside the clinic (e.g., wearables, memory/cognition apps, tablet-based tests), and for sharing patient-generated data with clinicians
Streamline the clinical work-up process for differential diagnosis and confirmation of early AD	
Team care models	Train primary care staff in administration of structured cognitive assessment tests
Best practice translation	Disseminate lessons learned from ongoing demonstrations of improved dementia and Alzheimer's care (e.g., Davos Collaborative sites, GUIDE Model sites) to improve care coordination and workflow design.
	• Care coordination: utilization of patient care navigators, within care teams, between care teams (primary care teams-specialist teams)
	• Workflow design: integration of structured cognitive assessment testing within primary care workflows, such as administration in 'rooming' encounters.
Practice innovation	Develop and adopt a new, primary care-led follow-up evaluation step for patients 'flagged' by initial cognitive assessment; enhance clinical information available to primary care practitioners before a decision to treat-or-refer (to specialists)

Clinician education	Promote physician education on existing payment codes and covered benefits for conduct of cognitive assessment and dementia care planning
Blood biomarker appropriate use	Expedite demonstration of appropriate uses of blood biomarker testing and expedite harmonized standards of use
	• Within specialty practice—as tools for triaging patients for more intensive testing (e.g., brain imaging) vs. use as stand-alone confirmatory tests
	• Within primary care- as tools for triaging patients for referral to specialty medicine
	• For future practice—as test option within primary care, used at clinician's discretion
Standards of care	Harmonize standards of data elements required for referrals by primary care to specialists, (i.e., minimize duplicative care needed to fill gaps in patient data); evaluate for sufficient payment support.
Telehealth/Virtual Care Standards	Validate evidence-based standards of performance for hybrid (site-based and virtual) models of team care (virtual specialist consultations, care coordination, remote patient assessment, remote patient monitoring, etc.)
Medicare coverage for telehealth	Enact permanent extension of Medicare telehealth coverage to support hybrid (site-based and virtual) care for early AD
Extend Medicare GUIDE model	Expand the scope of the Medicare GUIDE model (or a successor model) to include explicitly the assessment and care of patients with early AD
Geriatric practice support & supply	Increase sources of support for geriatric primary care and recruitment of geriatric primary care practitioners as a sub-specialty positioned to expedite diagnosis and determination of eligibility for DMT treatment.

Table B: Solution Area II: Improve the detection and diagnosis of early AD
Potential strategies & targets for system change

Solution Area III: Determination of eligibility for DMTs and administration of therapy

Patients who receive a confirmed diagnosis of early AD are not automatically eligible for DMTs. Further assessment is necessary to identify conditions that might rule the patient ineligible for treatment. They include:

- Heightened risk of brain hemorrhage and ARIA associated with a duplicate copy of allele 4 of the APOE gene. Genetic testing is required to determine treatment eligibility.
- Safety risks (risks of adverse events) posed by a patient's history of hemorrhaging or with treatment for cardiovascular diseases (such as treatment with anti-coagulant drugs).

Patients deemed clinically eligible for DMTs must still decide whether to accept therapy or not, a decision based on:

- Understanding the risks and benefits of treatment
- Insurance coverage and costs borne by the patient (out of pocket costs)
- The burden of treatment and treatment monitoring
  - Currently, treatment requires monthly infusions of 30-60 minutes, with additional post-infusion observation.

Today, Medicare coverage is subject to patient enrollment in the Coverage with Evidence Development (CED) program. The requirements imposed by the CED program represent rules on data collection and reporting that apply to all clinicians treating patients with currently approved DMTs. Clinicians prescribing DMTs are required to submit data at six-month intervals to a central CED registry or to a CMS-approved clinical trial, generally requiring patients to undergo intervals of MRI imaging and neuropsychological testing. These requirements add to the workload for primary care providers as does ensuring that patients undergo additional testing at the required intervals. Patients must also agree to participate in the registry or clinical trial, which can provide challenges for patients, especially since these studies are often conducted in large medical centers, which might require travel. This additional burden on patients and their care partners can add time, cost, and other barriers, leading to potential inequities in treatment access.

These CED requirements on DMTs could be terminated upon CMS review of evidence generated on each DMT, a process expected to occur over a period of ten years or more. Health insurers who cover DMTs for their non-Medicare subscribers have indicated to NEWDIGS that they are requiring physicians to follow Medicare's CED requirements.

We acknowledge that outcomes tracking and reporting are likely to play an especially vital role in any system-wide scale-up of early AD care. Evidence on the safety and effectiveness of DMTs could prove to be a key factor influencing the receptivity of patients and clinicians to still-novel DMT treatment. Receptivity to treatment will, in turn, influence demand for detection and diagnosis of early AD, as was recently suggested in a survey of patient attitudes towards detection reported within the Alzheimer's Association's 2025 Facts and Figures Report.

Evidence also undergirds decisions made by payers for benefit design, including coverage decisions on drugs, devices, and services, accreditation, and credentialing of providers, and for determination of provider payment incentives. Examples include data reporting on health care quality and process metrics (e.g., HEDIS, Medicare MIPS) and benchmarks for maintenance of provider accreditation.

Table C highlights two key barriers to early AD care from prior NEWDIGS discussions:

1. Streamlining **determination of treatment eligibility**
2. Optimizing **administration of therapy**

Streamline determinations of clinical eligibility for DMTs for patients diagnosed with Early AD	
Practice innovation	Integrate determination of eligibility for DMTs into the differential diagnosis process for patients who receive a confirmed diagnosis of early AD (e.g., ARIA, drug interactions, etc)
Patient communication/ shared decision making	Develop consensus guidelines for patient-clinician shared decision making on initiation of DMTs
Care pathway development	Develop consensus-based care pathways of clinical care for early AD, providing benchmarks for timely and equitable patient access as performed by primary care and specialists
Practice credentialing	Develop certification or accreditation standards for provider performance on early AD care pathways, including administration of DMTs, for recognition in provider payment models
Optimize administration of DMTs and minimize patient burden for patients accepting therapy	
Care pathway adaptation	Adapt care pathways to new formulations of DMTs when approved (e.g., subcutaneous, oral)
Standards for monitoring and reporting	Harmonize standards and requirements for patient monitoring (disease progression & safety) and provider reporting (e.g., Medicare Coverage with Evidence Development)

Table C: Solution Area III: Improve the determination of eligibility for DMTs and administration of therapy
Potential strategies & targets for system change

Conclusion

Over the next 25 years, more than 13 million adults in the United States, and 140 million worldwide, will be diagnosed with dementia due to AD and other forms of dementia. This wave of disease will profoundly impact families, the health care system, and the broader economy.

The NEWDIGS process has established a cross-functional team, integrating a broad array of stakeholders, to envision early Alzheimer's care by the year 2030 that will be capable of improving patient quality of life, slowing the progression of AD, and reducing the burden on families, care partners, and the healthcare system.

For the September Design Lab, this Briefing Book lays out three key, interlocking Solution Areas identified as crucial elements of an efficient, effective, and equitable early AD healthcare system. Bringing this vision to life will require systemic change.

The goal of this Design Lab is to deliver solution sets for system change, pressure tested by stakeholders. These interim outputs will be the focus of the AD working group as they lay the groundwork for our final Design Lab (April 2026) focused on implementation planning. The final outputs—System Change Proposals—will be central to our Roadmap 2030 to be completed for broad dissemination in early summer 2026.

Our work in the AD Project provides a powerful example of adjacent activities underway in NEWDIGS focused on optimizing biomedical health efficiency (BHE) in order to capture the full potential value of innovation. This concept requires new ways of thinking and an understanding of how systems interact to either enable or constrain the impact of these advances. System design is a major factor in BHE in such areas as infrastructure and workforce gaps, misaligned incentives, policy constraints, social influences on health, and the lack of systematic data collection and data sharing to generate real world evidence. More details on BHE can be found in this recently published article, coauthored by several NEWDIGS consortium members.