

Advancing Precision Palliative Care With AI-Powered Tools for Older Adults With Alzheimer's Disease and Related Dementias



AI-enhanced analytical tools and care planning platforms can improve access to patient-centered care for older adults with late-stage dementia.

Palliative care is a specialized interdisciplinary care approach that aims to improve the quality of life of patients living with serious illness by reducing their symptoms and mental stress as they approach the end of life.¹ Palliative care guidelines for Alzheimer's disease and related dementias (AD/ADR) emphasize improving quality of life by focusing on early integration of symptom management, advance care planning, end-of-life care, and caregiver support.² Because older adults with AD/ADR often experience a longer and less predictable decline during the disease course than do people with other illnesses,³ they often receive insufficient support in the final disease stages, leading to undertreatment of pain and other symptoms⁴ and high rates of emergency department (ED) visits and hospitalizations.⁵ With AD/ADR now the fifth-leading cause of death in the United States among older adults,⁶ access to individualized palliative care for those with AD/ADR is especially important.

Determining need for palliative care in older adults with AD/ADR is more challenging than for other serious illnesses because standard end-of-life definitions do not align with the often prolonged and highly variable course of AD/ADR.

Rapid advances in AI are creating new opportunities to improve access to palliative and end-of-life care for older adults with AD/ADR. Researchers supported by a2 Pilot Awards funding are developing AI-enabled tools that promote earlier, more appropriate palliative care by helping clinicians to identify care needs sooner and patients to plan for end-of-life decisions. Together, these innovations reduce barriers to comfort care; support meaningful advance care planning conversations; and expand access to compassionate, dignified end-of-life care.



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a2 PILOT AWARDS PROJECT HIGHLIGHT**Using AI-enabled analytics to increase access to AD/ADR patient-centered palliative care**

Determining need for palliative care in older adults with AD/ADR is more challenging than for other serious illnesses because standard end-of-life definitions do not align with the often prolonged and highly variable course of AD/ADR, leading to delayed end-of-life and hospice care.⁷ Access to palliative care also varies significantly by region and population within the United States.^{8,9} For example, terminally ill Black patients often receive excessive, nonbeneficial medical care, including being more likely than White patients to be admitted to EDs and intensive care units (ICUs), and are less likely than White patients to receive end-of-life and hospice care.¹⁰

Supported by funding awarded to the **Johns Hopkins Bloomberg School of Public Health Center for Population Health Information Technology** as a part of the first a2 Pilot Awards

cohort, Drs. Chintan J. Pandya and Jonathan Weiner aimed to address these challenges by equipping clinicians with AI-augmented predictive models to optimize palliative care delivery. Their pilot project centered on the development and validation of machine learning algorithms to enable clinicians to more efficiently and effectively identify patients with AD/ADR who are most likely to benefit from palliative care and to improve end-of-life care conversations with patients and their caregivers and families.

Drs. Pandya and Weiner trained models on 4 years of electronic health record (EHR) data (2017–2021) from patients in the Johns Hopkins Health System to identify patients with AD/ADR who are most likely to benefit from palliative care. In addition to training and validating these predictive models, they measured the impact of palliative care interventions on healthcare utilization and examined differences in palliative care delivery among Black and other racial and ethnic minority patients with AD/ADR, who are particularly affected by variable access to palliative care. The resulting assessment algorithm can be integrated into EHR systems, providing clinicians with a patient-centered decision support tool to optimize palliative care delivery to patients with AD/ADR.

a2 PILOT AWARDS PROJECT HIGHLIGHT**Strengthening the knowledge base to enable specialist palliative care that increases AD/ADR patients' hospital-free days**

Palliative care involves a team of trained healthcare specialists who aim to improve a patient's quality of life by reducing pain and distress while ensuring that treatment decisions are well informed and guided by the patient's care goals and preferences.¹¹ A common preference expressed by older adults living with AD/ADR and their families is reducing the time spent in an acute-care setting—that is, maximizing “hospital-free days.”¹² Although palliative care is recommended for hospitalized patients with advanced-stage AD/ADR,



many of these patients lack access to adequate support in the later disease stages.¹³ Consequently, they often experience high rates of emergency visits, hospitalizations, and unwanted procedures compared to patients with other serious illnesses, such as cancer.¹⁴

As a part of the fourth a2 Pilot Awards cohort, Drs. Emily Moin, Scott Halpern, and Katherine Courtright of the **University of Pennsylvania Palliative and Advanced Illness Research Center** are working to improve palliative care access for older adults living with AD/ADRD. The team is conducting the first U.S.-based study to examine the impact of AD/ADRD status on the number of hospital-free days.

The study aims to assess the accuracy of palliative care documentation within health data and to develop and test an approach to more accurately measure hospital-free days among older adults with AD/ADRD and other serious illnesses by augmenting EHR data with Medicare/Medicaid claims data. Here, the study will provide a scalable and reliable approach to identify patients' need for specialist palliative care consultations and to

assess the benefits of palliative care interventions. The study also aims to develop an AI model that can guide allocation of specialized palliative care to increase the number of hospital-free days.

a2 PILOT AWARDS PROJECT HIGHLIGHT

Ensuring patients' end-of-life care preferences are documented—and honored

People in the later stages of AD/ADRD often experience reduced ability to make and communicate decisions and therefore require a surrogate decision-maker, typically a spouse or family member, to make important care decisions on their behalf. Discussing and documenting patients' preferences through advance care planning in earlier disease stages can help ensure that surrogates make decisions that best reflect those preferences. Unfortunately, although most patients would like to develop an end-of-life care plan, many face barriers to doing so, such as emotional discomfort, time constraints, and challenging documentation.¹⁵ Therefore, when faced with making difficult end-of-life care decisions, surrogates often feel unprepared and uncertain about patient preferences.¹⁶

With funding received as a part of the first a2 Pilot Awards cohort, **Koda Health** aims to help surrogate decision-makers understand patients' goals, values, and preferences for future care. Dr. Desh Mohan, Katelin Cherry, and Dr. Kathryn Bowles collaborated to develop a machine learning-based platform that



Desh Mohan demonstrates the Koda Health platform during a reception for a2 Pilot Awards–funded investigators hosted by the AgeTech Collaborative™ from AARP on March 18, 2026.

increases engagement in advance care planning, improves patient-surrogate alignment, and, ultimately, promotes more person-centered end-of-life care. The platform guides patients through values exploration, medical care preferences, and the development of a legal advance care directive. By using machine learning to personalize the process for individual patients and surrogate decision-makers, Koda aims to provide accessible advance care planning that reduces stress, lowers total costs of care, and ensures that medical decisions more accurately reflect patients' wishes.

Since completing its a2 Pilot Awards project, Koda has achieved significant growth with both users and investors. The platform now supports more than 1 million patients across the United States, and in late 2025 Koda announced it had oversubscribed a \$7 million Series A funding round, which will further scaling nationwide.¹⁷

Leveraging AI to improve quality of life at the end of life

These a2 Pilot Awards projects illustrate how leveraging AI can improve access to high-quality care for older adults with late-stage AD/ADRD. By building innovative, interactive platforms for advance care planning and for identifying individuals who would benefit from palliative care, these researchers are using emergent technology to address some of the most costly, important, and both clinically and emotionally challenging aspects of care.

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The a2 Pilot Awards competition funds technology demonstration projects that use AI-based or emerging technology approaches to improve care, quality of life, and health outcomes for older adults, including those with dementia, and their caregivers. Combining nondilutive funding for early-stage technology development with guidance and resources provided by world-class academic research centers, the a2 Pilot Awards offer technologists from varied sectors and disciplines a unique environment to accelerate innovation that is grounded in scientific rigor. Visit a2collective.ai/awardees for more information about the a2 Collective's funded pilots.

This publication series aims to highlight both scientific and programmatic areas of need being addressed by members of the a2 Collective. These reports can be accessed at a2collective.ai/resources.

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