

A CALL FOR ACTION

Creating an Optimal System of Brain Health Care in the United States

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Preventing and effectively treating Alzheimer's disease and other dementias are among the most important and urgent challenges of the 21st century. The search for a cure or an effective treatment is essential, but it is not the only approach to tackling this epidemic. To make brain span equal to lifespan, we must broaden our efforts to incorporate prevention, behavioral health, and risk-reduction strategies throughout an individual's lifetime by integrating a focus on brain health into the culture and healthcare system.

The good news is that rapidly advancing science points to the ability to reduce dementia risk and enhance cognitive function and health as we age.¹ Researchers increasingly challenge the view that dementia is an inevitable and unavoidable condition of old age, over which we have no control and for which we can do nothing. Rather, they point to steps that individuals, communities, and healthcare providers can take to prevent or reverse mild cognitive impairment and improve cognitive function, performance, and brain health in the population overall, and throughout an individual's lifespan.

Reducing the risk of dementia has the potential to reduce financial pressure on the healthcare system, mitigate the burden on public programs such as Medicare and Medicaid, and moderate the pain and burden on families living with symptoms that often last more than a decade.² A focus on risk reduction also could improve quality of life for individuals of all ages and ensure that older adults thrive and remain independent into their later years.

Getting to this will not be easy. In light of the 10,000 Americans turning 65 every day, there is a lot to do, and time is short.³ Access to prevention, treatment, and care for high-risk communities is essential. We must raise public awareness of the effective steps that can be taken now, reduce the stigma associated with dementia, and tap into the consumer power needed to change the current medical system. We also must shift medical practice norms, address healthcare payment policy, fund behavioral and other research, and leverage technology.

With input from advisers, the Brain Health Partnership, an initiative convened by *UsAgainstAlzheimer's*, recommends immediate action in three areas to accelerate an optimal system of care for brain health.

Building a Better System

As researchers build the evidence base for effective dementia risk reduction, and as biomarkers evolve,^{4,5} the health system must be able to respond to existing and emerging information regarding brain health. The system must develop the ability to rapidly transfer real-time knowledge about improving cognitive function and reducing the risk of dementia; help consumers understand the importance of brain health as part of their overall health; and aid consumers in becoming proactive about optimizing their cognition. This requires acknowledging a new standard of healthcare.

In an optimal brain health system, healthcare providers engage patients throughout their lives to assess, monitor, and improve their brain health and cognitive function and to provide collaborative, integrated care and services for patients who show signs of cognitive decline. In this system, policymakers and payers support incentives to detect and reduce the risk of cognitive decline, detect the earliest signs of cognitive decline, take steps to address and treat the causes of decline, and if appropriate pursue a thoughtful, timely, and compassionate path to diagnosis and care management.

Such a system would improve brain health, increase consumer ability to self-manage co-morbidities, and potentially reduce dementia prevalence or delay progression as the search continues for disease-modifying treatments and a cure for Alzheimer's and related dementias.

What are the barriers to an optimal brain health system?

Misalignment of Financial Incentives

An urgent need exists for alignment of financial incentives for reducing costs of dementia. Much of the financial risk for poor brain health (e.g., increased emergency department (ED) visits/hospitalizations, catastrophic long-term care costs) rests with families, Medicare, and state Medicaid programs. Individuals

can and should take steps on their own to build and protect their brain health, yet healthcare providers and insurers also have a critically important role. Historically, the timing of potential health outcome improvements and long-term care savings resulting from today's health prevention efforts occur so far in the future that returns on prevention investment are difficult to forecast.

Private insurers experience healthcare cost risk on an annual enrollment basis. Therefore, it is more difficult for them to experience returns from dementia prevention initiatives that generate long-term health system savings.

A growing portion of Medicare and Medicaid beneficiaries get coverage through private health plans, in which they enroll annually. Public programs are effectively shifting an increasing portion of **annual** care cost risk and responsibility for preventive coverage to private payers, and public programs are retaining the **lifetime** cost risk for dementia-related care.

Culture and Perceptions

While policymakers have taken modest steps to increase incentives for dementia assessment and care management among the older adult population, a comprehensive national approach or planning process is lacking. Current system characteristics remain that create barriers *even in the face of better financial incentives and among all ages*.

First, many physicians are reluctant to assess, detect, or discuss a disease for which they believe there is no solution. The misperception persists that no treatment, cure, or medical intervention for cognitive decline is available should doctors detect it. Second, patient-provider conversations about brain health are not a routine element of general healthcare throughout the lifespan, even though we now know that brain health frequently deteriorates owing to a lifetime of insults to the brain, including accidents,

violence, or social trauma. Third, while healthcare providers may shift practice patterns in response to individual patient questions and demands, patients do not yet have the knowledge or awareness to ask about brain health. Patients also worry about loss of independence and the stigma of cognitive decline.

Another challenge is the prevailing misperception that dementia is an unavoidable affliction of old age, disconnected from people's lifestyles or life experiences and separate from the dysregulation of other body-based biological systems such as cardiovascular, hypertension, metabolic, lymphatic, and more. Physicians often lack training or medical guidelines to support a more effective standard of care. As a result of the inattention to brain health, patients and healthcare providers do not discuss brain health until there is clear evidence of a problem.

Breaking Down the Barriers to Better Care: New Insights Challenge the Traditional Characterization of Dementia

Key insights generated from recent literature on brain health and interviews with a cross section of experts tell a new story—one that must inform the creation of a new ecosystem going forward:

1. **Dementia is interconnected with other diseases.**

There is growing acceptance that dementia is a complex, multi-factorial condition involving multiple disease processes.^{6,7,8} The Honolulu-Asia Aging Study was among the first to show that lifestyle factors could affect function in older age, finding that combating dementia would “require interventions that simultaneously target multiple different disease processes” (e.g., diabetes, hypertension) and that dementia could no longer be understood as a “singular, discrete, present, or absent condition.”⁹ One important example of this interconnectedness is heart disease. The American Heart Association and American Stroke Association (AHA/ASA) have been leaders in establishing the connection between vascular risk factors’ impact on cognitive dysfunction and in promoting brain health awareness and strategies for optimal brain health.¹⁰ Further, this vascular interconnectedness is one of the key reasons why dementia poses such a challenge for communities of color. Latinos and African Americans face greater risk for chronic disease including heart disease and diabetes.¹¹

2. **Modifying certain lifestyle and other health factors can reduce the risk of and/or delay cognitive decline.**

Evidence is clear that lifestyle and health factors affect cognitive function. Results from the comprehensive FINGER study—which took a multidomain approach to dementia prevention including dietary guidance, physical activity, cognitive training, social activities, and monitoring and management of metabolic vascular risk factors—indicate that lifestyle modifications can improve or maintain cognitive

functioning in older adults.¹² The general consensus is that management of population-level risk factors (e.g., diet, exercise, smoking education, social isolation) and individualized health risk factors (e.g., hypertension, sleep, stress, high cholesterol, diabetes, hearing loss, and depression) are important in minimizing risks of cognitive decline. The most recent evidence of this comes from the recent SPRINT MIND study, which found that people with hypertension who received intensive treatment to lower systolic blood pressure were less likely to develop memory problems that often progress to dementia than those who were receiving standard blood pressure treatment.¹³

While public health organizations take a cautious approach to communicating with the public about prevention and risk reduction, the most recent reports from the National Academies of Sciences and the Lancet Commission support educating the public and health providers about the value of cognitive training, hypertension management, diabetes management, physical activity, and other behaviors.¹⁴

3. **Dementia has a lifespan continuum, beginning in early life.**

Leading advisory groups are aligned in the position that promoting brain health earlier in life can strengthen the brain’s resistance to brain conditions later in life. The 2015 Institute of Medicine report on cognitive aging recommends that health and payer systems “develop evidence-based programs and materials on cognitive health across the life span.”¹⁵ In its Presidential Advisory on Brain Health, AHA/ASA states, “Maintenance of brain health requires consideration of the life continuum. . . . To best prevent late-life disease, interventions focused on modifiable risk factors may ideally need to be applied in young adulthood, possibly as far back as childhood.”¹⁶

The Lancet Commission has also adopted a life-course approach to dementia and identifies modifiable risk factors at different stages of life.¹⁷

The bottom line is that the evidence points to an exciting opportunity for individuals to reduce dementia risk by increasing attention to their brain health throughout their lifetime.

Building the optimal system of care for brain health in the United States and elsewhere requires both bottom-up participation from patients and top-down strategies from policymakers, providers, and payers. Changes in culture, consumer awareness, access to care for high-risk communities, technology, provider education and engagement, and reimbursement will be key components of a system that supports a comprehensive approach to brain health across the lifespan.

Prioritizing Immediate Opportunities to Advance an Optimal System of Care

Accelerating a brain-friendly system of care requires an overarching strategy that effectively overcomes barriers and reorients the healthcare system. It must apply pressure, leverage financial incentives, equip providers with solutions and tools, and educate and motivate consumers.

Within the larger strategy, the best action steps are grounded in evidence, have scientific validation, and have potential for rapid adoption and scale. The Brain Health Partnership, with input from its advisers, believes the following action steps have the highest potential based on these criteria.

Action Area 1: Equip Healthcare Providers with Solutions to Support Brain Health Across the Lifespan

Research points to important opportunities for providers to promote brain health throughout the lifespan to reduce risk of dementia. These include encouraging lifestyle changes (e.g., exercise, diet, sleep, stress management, and smoking cessation) and personalized disease management, (e.g., diabetes, hypertension, depression).¹⁸ With knowledge about the effects of a patient's comorbidities and lifestyle, providers can make treatment decisions that better protect brain health (e.g., avoiding certain medications, adjusting critical lifestyle factors, addressing hearing loss, avoiding physical trauma, and social stressors).^{19,20} Opportunities occur throughout the lifespan, even in early childhood, where research shows a link between healthy development and the presence of dementia risk factors later in life.²¹

When providers detect the earliest manifestations of mild cognitive impairment or decline, they can prioritize managing interconnected diseases and direct patients to interventions that slow progression. Depending on underlying disease, physicians can potentially help patients reverse mild cognitive impairment, or prevent or delay progression to dementia.²² Current assessment tools are not used widely or systematically, and current diagnostic tools

are expensive and have limited access. If physicians make a brain health check-up more routine and systematic, healthcare systems can more quickly detect a change in cognitive status and introduce lifestyle and other risk-reduction strategies. This is important because research shows that indications of treatable cognitive decline begin well before the symptoms of full-blown dementia occur. The pathology of dementia may begin as many as 20 years before dementia symptoms surface.

Despite the benefits of risk reduction and early detection, healthcare providers remain reluctant to evaluate brain health and assess cognitive function. This is, in part, because many are unaware of the opportunities to positively affect the course of cognitive decline. They lack both efficient clinical protocols and options for treatment. Unlike other routine checks, such as heart health or early detection tests for cancer (e.g., breast, prostate), providers have yet to adopt regular brain health check-ups and systems for patient education about modifiable risk factors and interventions.

Because many providers lack understanding about interventions to reduce risk or delay symptom onset, they question the value of discussing brain health

with patients. An AARP poll of 500 physicians in 2018 illustrates this lack of understanding: 49 percent of respondents reported that dementia is a hopeless diagnosis.²³ In a recent survey of nurse practitioners by UsAgainstAlzheimer's, only 18 percent of respondents reported talking about memory and brain health with their patients. Half of Americans who have been diagnosed with Alzheimer's are never told by physicians that they have the disease.²⁴ This is particularly a challenge for communities of color as research suggests that Latinos and African Americans with dementia are less likely than non-Hispanic whites to have been diagnosed with the condition by a provider.^{25,26} Providers worry about the challenge of detecting a complex medical problem with serious financial, social, and emotional consequences for their patients that reach beyond what they think can be solved.

Some organizations are working on provider education and training materials, but the adoption of the recommended practice is neither widespread nor incentivized. For example, with funding from the Centers for Disease Control and Prevention, the American College of Preventive Medicine offers an online brain health course module designed to improve healthcare providers' awareness and ability to use blood-pressure control in middle-aged adults to reduce risk of cognitive impairment in later life.²⁷ Pilot programs that enhance training around assessment and diagnosis have been established, including the Clinician Partners Program and the Primary Care Collaborative Memory Clinics.^{28,29}

This work is encouraging, but there is little sign of adoption or incentives for adoption. Improving all physician (e.g., primary care, OBGYN) and nonphysician clinical resources and integration of care is needed to better equip healthcare providers with ways to support patients' brain health before symptoms occur. Among other strategies, we could accelerate and incent current efforts, ensure that education and training occur for the full lifespan, and give providers solutions that increase their confidence in supporting their patients' brain health—even in the face of a dementia diagnosis. Further, we can support the growing number of new consumer touch points for health and channels for care, such as community-based retail clinics.

High Potential Action Steps.

- 1. Make an Annual Brain Health Check-Up Standard Practice.** Every American—not just older Americans—should discuss brain health with their healthcare provider. To assist providers, baseline brain health measures could be created to enable measurement of cognition throughout the lifespan, including in healthy people and individuals without symptoms. Such brain health measurement could also provide opportunities to engage patients in evidence-based, risk-reduction strategies for late-life brain health. Brain centers across the country are in fact leading efforts to develop baseline measures for healthy individuals and create infrastructure to monitor and manage individuals' brain health across their lifespan. Many are in the early stages of implementing annual "healthy brain checks" into programs. An annual brain check could also be included in primary care periodic visits using efficient screening measures, similar to the current practice of using brief depression checklists. The Center for Medicare and Medicaid Services (CMS) should at minimum require the use of validated cognitive impairment detection tools identified by the National Institutes of Health. Other neurology and psychiatric assessments could be standardized to minimize duplicative efforts and harmonize efforts to promote wellness, including in diverse specialty care settings. These checks could be tailored to reflect differential needs and risks of women and minorities.
- 2. Help Providers Promote Healthy Brains for Patients of All Ages.** While efforts are underway to enhance provider guidance on cognitive decline and dementia, the existing resources primarily focus on patients *already* exhibiting symptoms of cognitive decline.³⁰ This is not enough. We need solutions and tools to support provider-

patient brain health conversations with healthy individuals *before* symptoms occur. Provider solutions for talking about brain health throughout the lifespan need to be created. We need to connect conversational tools across multiple dimensions of brain health and for all ages. In effect, a one-stop shop for provider-patient conversations about brain health needs to be created and promoted. This could include technology solutions for providers to engage patients of all ages in their brain health, especially women and communities of color who are at increased risk.^{31,32} This work also could disseminate tools and solutions through broad collaborations aimed at addressing health risks and lifestyle factors that cross-cut multiple conditions. To increase dissemination of existing provider resources, at a minimum Congress should fund state and local health departments as outlined in the Building Our Largest Dementia (BOLD) Infrastructure for Alzheimer's Act (P.L. 115-406).

3. Connect Physicians with Regional and Local Resources. For physicians to feel comfortable embracing brain health check-ups and screening to detect early cognitive decline, they need resources and solutions to offer patients. These include evidence-based opportunities to slow disease progression and avoid exacerbations, as well as resources to plan for future care needs. There are several initiatives to develop better local resources for individuals with dementia and their families. These include community-level public health centers of excellence authorized by the BOLD Act and community networks such as the Alzheimer's and Dementia Disparities Engagement Network (ADDEN). Efficacy depends on making physicians aware of the resources, making them easy to access, and integrating their services with medical care in the community.

Action Area 2: Create Consumer Demand for Lifelong Brain Health Care

As the primary stakeholders in the healthcare system, consumers have an important role in demanding change in the care delivery landscape. Ample precedent has been set—in hospice, HIV, and mental health, for example—showing that consumer movements can lead to an overhaul in approach. When consumers claim ownership of a health issue, they become a critical element in changing the healthcare system.

Unfortunately, most people are unaware they can take steps to protect brain health and prevent cognitive decline.³³ A 2018 Healthy Women survey showed that 89 percent of more than 1,500 women surveyed believe that taking care of their brain health is important yet are unsure of the actions to take.³⁴

In response, leading U.S. government advisory groups have recommended public education on brain health. The National Academies of Sciences endorses educating the public about the benefits of “cognitive training, blood pressure management for people with hypertension, and increased physical activity to delay or slow age-related cognitive decline.”³⁵ The Institute of Medicine (IOM) recommends that “individuals of all ages and their families should take actions to maintain and sustain their cognitive health [and] regularly discuss and review health conditions and medications that might influence cognitive health with a healthcare professional.”³⁶

Many public health and advocacy organizations have developed research-based, consumer-focused educational information on brain health, cognitive

decline, and the ability to impact risk factors of dementia.* For example, the Cleveland Clinic has created a consumer resource, 6 Pillars of Brain Health, which recommends controlling medical risks associated with dementia: hypertension, diabetes, obesity, depression, and higher cholesterol.³⁷

Research conducted by UsAgainstAlzheimer’s found that the primary healthcare decision makers—women—see brain health as a top health issue but lack the information to take action. More than half (55 percent) of women see brain health as a top health concern—one of the highest levels for any issue—but just 35 percent are currently taking action. Many do not know how to begin: 45 percent say maintaining a healthy brain sounds important but do not know what that means.

Leveraging and supporting better dissemination of the important educational work done to date will facilitate full realization of the goals of consumer engagement and *activate the power of consumer demand*. We need to persuade consumers to take responsibility for their brain health and proactively seek cognitive assessment and screening when there is a concern. In addition, consumers should demand better preventive, lifetime brain health care from healthcare providers and payers—to insist on brain health check-ups throughout life. To shift the culture of medical practice and elevate brain health within the healthcare system, public education efforts must reach the public and encourage consumers to proactively ask healthcare providers about brain health and to demand preventive care to reduce the risk of cognitive decline.

* See Appendix for list of ongoing public education efforts.

High Potential Action Steps

1. **Expand Brain Health Education to Increase Patient Demand for Healthy Brain Care.**

Existing brain health campaigns should consider incorporating measurable strategies to *encourage consumers to discuss brain health with their healthcare providers, even when they may be non-symptomatic*. Additionally, given the close connection between dementia and other diseases, coordinating with other disease groups, such as heart disease and diabetes, would be a productive approach to help consumers (and their providers) understand how preventive strategies can address multiple risks at once. The growing \$4.2 trillion wellness economy offers another channel to consumers, reaching people where they live work and travel.³⁸ Information and outreach strategies should be tailored for a racially and ethnically diverse audience.

2. **Leverage Technology Innovation to Enhance and Expand Consumer Engagement.**

Technology is narrowing the gap in patient-provider dialogue, providing accessible data and information that allow for dialogues with doctors about diagnosis and treatment options. For example, the number of consumers tracking their health data with wearable devices has more than doubled since 2013.³⁹ We need to explore ways to leverage this trend to enhance and support data collection and analysis from healthy individuals, which will advance early detection efforts and clinical trial recruitment. With advances in consumer technologies (e.g., wearable devices), we should consider how to ensure that these platforms can share information back with users to promote ongoing engagement around brain health.⁴⁰

3. **Develop Strategic Partnerships to Reach Consumers.**

Many stakeholders can amplify, elevate, and distribute consumer-facing communication on brain health, along with tools to support engagement with physicians and other healthcare providers. These include state Medicaid agencies, health plans, employers, other disease groups, online patient forums, retail healthcare clinics and pharmacies, trusted community-based organizations, the wellness industry, and consumer brands. Non-traditional partnerships for incorporating brain health into other existing consumer wellness campaigns hold great promise for broader reach. Early results from the Brain Health Partnership's Be Brain Powerful™ Campaign show that messages are resonating with consumers, particularly women.

Action Area 3: Align Business Incentives for Payers and Systems to Promote Brain Health

Financial incentives in the healthcare system have been slow to reward preventive care. Further, they do not adequately compensate for the time-intensive, complex task of assessing cognitive function and having difficult conversations with patients.⁴¹ An evidenced-based medical care innovation takes many years to integrate widely into clinical care, and an accelerated approach is needed. Within the last few years, the Centers for Medicare and Medicaid Services (CMS) has included dementia measures in its value-based payment program for providers and a cognitive impairment section in the Annual Medicare Wellness Visit, a yearly benefit to beneficiaries. Beginning January 2020, CMS will include dementia as a separate condition in its Medicare Advantage risk adjustment methodology. These additions represent an important opportunity and financial incentive for payers to improve screening and assessment for cognitive impairment. This new payment adjustment should enhance efforts by Medicare Advantage organizations to improve patient communications, care planning, and coordination for people with dementia.

These policies do not go far enough to address Medicare and Medicaid cost exposure from dementia, however. While they are beginning to encourage better assessment and care for individuals with evidence of cognitive decline, not enough is being done to urge healthcare providers to evaluate and address dementia risk in healthy patients, before symptoms appear.

Federal and state governments face two types of cost exposure related to the population's lifetime dementia risk. The first is greater Medicare per capita spending on healthcare for people with dementia. Analysis of Medicare survey data shows that fee-for-service beneficiaries with cognitive impairment receive inpatient hospital care at a rate (70 hospitalizations per 100 beneficiaries) that is more than three times as high as those without cognitive impairment (22 hospitalizations per 100 beneficiaries).⁴²

The second government risk is greater Medicaid spending on long-term care. In the absence of widespread long-term care insurance coverage, Medicaid pays a significant portion of the nation's long-term care bill, second only to individual out-of-pocket spending. Individuals with dementia often need many years of high-level care and supervision, often resulting in facility-based care such as an assisted living facility at \$48,000 per year, or a nursing home at \$89,000 per year.⁴³

Federal and state governments have a strong interest in reducing population dementia risk through prevention and early detection, and should use their purchasing power with healthcare providers and payers to align business incentives explicitly with this goal, particularly given that these entities are rarely at risk for dementia costs over a lifetime.

High Potential Action Steps

1. **Enlist Cities and States as Partners in Promoting Prevention and Early Detection.**

Cities and states have many incentives and opportunities to influence lifetime brain health in their populations. Enhancing community-based resources, along with investments in education, prevention, and detection initiatives, are all within their purview and have the potential to promote prevention and reduce dementia risk. States are footing the bill for Medicaid spending on long-term care, providing an incentive to reduce costs. This would entail exploring opportunities to advance Medicaid reforms that promote prevention and early detection in managed care and provider activities. Efforts could include finding mayors and governors willing to champion the issue and supporting development of local strategies,

policies, and legislation. Early adopter work could set the stage for dissemination of model legislation, best practices, and learnings among peers.

2. Develop a National Medicare Dementia Prevention and Detection Strategy.

In coordination with the work of the U.S. Department of Health and Human Services (HHS) to create a National Plan to Address Alzheimer's Disease,⁴⁴ CMS should develop a strategy that would specifically encourage providers and payers to proactively address brain health among non-symptomatic, healthy older adults and to strengthen early detection and interventions that delay disease progression. Strategies could include a review payment systems and a solicitation of ideas through the regulatory process. For example, there may be opportunities to improve patient assessment tools in the Skilled Nursing Facility (SNF) payment system that deserve review and comment. Strategies also could include demonstration programs, measure development, risk-adjustment methodology changes, further benefit flexibility, bonus payments for individual enrollee retention, and lifetime risk reduction activities. Strengthening existing programs and policies, such as administration of the cognitive impairment assessment in the Annual Wellness Visit, is another important strategy.

3. Develop the Business Case for Payers and Health Systems.

A compelling business case for risk reduction and early detection under current payment incentives and quality measurement is needed. It should include a focus on developing long term enrollee retention

and the opportunity to link dementia risk to other key population health initiatives such as social isolation and social determinants of health. This case should be developed in collaboration with payers and providers, including especially insurers whose products work with insurers whose products cross-cut employer-sponsored insurance, Medicaid, and Medicare and who may keep insureds for life (e.g., Kaiser).

Advancing These Opportunities in Practice

The Brain Health Partnership will advance these ideas through the following strategies:

1. Deeper dive white papers informed by expert working groups to explore high-potential action solutions and to issue specific recommendations for stakeholder groups.
2. Federal and state policy solutions that implement and incentivize the existing evidence-based practices, including risk reduction strategies, early detection, and compassionate care.
3. Identification and assessment of available technology tools for consumers and providers to create a better brain health baseline, early detection, and patient-physician support resources.
4. Funding support and creative partnerships to advance a large-scale, effective, and culturally tailored consumer education campaign.

We will accelerate progress with a diverse set of partners and unique collaborations. We have started through this Call to Action, by identifying what the system should look like and the key opportunities for action today. The next step is to identify the vehicle for action, and then work with experts and leaders in each area to guide process, planning, and implementation.

Conclusion

The U.S. healthcare system faces significant challenges in delivering preventive care with a complex, multiple-cause disease like Alzheimer's, which currently has no cure. Some challenges may resolve when there is a scientific breakthrough in finding a disease-modifying treatment, when biomarkers are improved and validated, and when artificial intelligence is commonly used to find patterns and detect disease in its earliest stages. As research and solutions advance, policy considerations and coverage determinations will be another step to bring solutions to market and to providers.

This Call to Action emphasizes risk reduction and early detection. But we recognize the importance of creating strong care models and integrated systems of care to which physicians can confidently refer, along with accessibility to communities that need them the most. Legislation such as The CHANGE Act goes a long way toward creating a healthcare delivery system that meets the needs of individuals and families dealing with dementia. We recognize the urgency of creating a long-term care financing system that protects Americans against the enormous financial risk of Alzheimer's and dementia.

In the meantime, we must prepare providers and patients to manage brain health in the context of overall health and wellness. A healthcare system with the infrastructure for assessing and communicating about brain health will be primed to quickly incorporate the emergent science and key solutions.

This paper articulates the Brain Health Partnership's vision for an optimal system of care in which healthcare providers help patients build brain health across the lifespan, detect cognitive decline in its earliest stage, and deliver interventions to drive better outcomes. Creating a healthcare system that promotes and actively manages brain health requires action by all participants in the system: patients, providers, and payers. The Brain Health Partnership prioritizes immediate action areas that establish the foundation for an optimal care system.

Existing Evidence and Ongoing Efforts to Build an Improved System of Care

There are many elements of a system of care that enable it to activate the latest evidence and promote wellness across the lifespan: provider education, clinical guidelines, and quality measures on prevention and provider incentives and reimbursement. Advances in technology, data collection, and data analysis will enable passive data collection, aggregation, and analyses that advance assessment, early detection, and personalized interventions.

A tremendous amount of work is under way to build the evidence base, technology, interventions, and care models for an improved system of care. Table 1 includes a list of evidence, initiatives, and efforts discussed and considered in this project. Table 1 is not an exhaustive list, but it gives an indication of the many ongoing efforts and initiatives in progress.

TABLE 1. Evidence, Initiatives, and Ongoing Efforts Considered in Prioritizing Brain Health Partnership Focus Areas

Brain Health and Dementia Risk Reduction

Hodes, Oakley, O’Keefe, et al’s Alzheimer’s “Prevention” vs. “Risk Reduction”: Transcending Semantics for Clinical Practice

AARP’s Global Council on Brain Health⁴⁵

Agency for Healthcare Research and Quality’ 2010 and 2017 Systematic Reviews and Recommendations on Cognitive Decline⁴⁶

Alzheimer’s Foundation of America National Memory Screening Sites⁴⁷

American Heart Association and American Stroke Association Presidential Advisory: Defining Optimal Brain Health in Adults⁴⁸

Isaacson, Ganzer, Hristov, et al’s The clinical practice of risk reduction for Alzheimer’s disease: A precision medicine approach

Dana Foundation’s educational materials and efforts to engage kids in brain awareness⁴⁹

Gelber, Launer, and White’s The Honolulu-Asia Aging Study: Epidemiologic and Neuropathologic Research on Cognitive Impairment⁵⁰

Gorelick et al.’s Vascular Cognitive Impairment and Dementia⁵¹

Institute of Medicine’s Cognitive Aging: Progress in Understanding and Opportunities for Action 2015 report⁵²

Khan, Zawahiri, Campbell et al’s Delirium in Hospitalized Patients: Implications of Current Evidence on Clinical Practice and Future Avenues for Research—A Systematic Evidence Review

Livingston et al.’s: Dementia Prevention, Intervention, and Care (Lancet) ⁵³

Ngandu et al.’s (FINGER): A Randomized Controlled Trial⁵⁴

National Institute on Alcohol Abuse and Alcoholism study on sleep deprivation and Alzheimer's protein⁵⁵

Reitz's Toward Precision Medicine in Alzheimer's Disease⁵⁶

Richardson, Fox, Maidment, et al.'s Anticholinergic drugs and risk of dementia: case-control study, BMJ

Sabia et al.'s Alcohol Consumption and Risk of Dementia: 23 Year Follow-Up of Whitehall II Cohort Study⁵⁷

Schelke et al.'s Mechanisms of Risk Reduction in Clinical Practice of Alzheimer's Disease Prevention⁵⁸

Williamson et al.'s SPRINT MIND⁵⁹

University of Texas at Dallas Center for Brain Health's Virtual Reality Social Cognition Training and Strategic Memory Advanced Reasoning Training⁶⁰

Whitmer et al.'s Central Obesity and Increased Risk of Dementia More Than Three Decades Later⁶¹

Zissimopoulos, Crimmins, and St.Clair's The Value of Delaying Alzheimer's Disease Onset⁶²

Assessment and Screening

Bradford et al.'s Missed and Delayed Diagnosis of Dementia in Primary Care: Prevalence and Contributing Factors⁶³

Borson et al.'s Improving Dementia Care: The Role of Screening and Detection of Cognitive Impairment⁶⁴

ClearEdge Brain Health Toolkit⁶⁵

United States Preventive Services Task Force Recommendation on Routine Cognitive Screening⁶⁶

Data Collection and Technology-Enabled Assessment

Altoida Nuero Motor Index Test⁶⁷

Au, Piers, and Devine's How Technology Is Reshaping Cognitive Assessment: Lessons from The Framingham Heart Study⁶⁸

Banner Health Alzheimer's Institute's Prevention Registry⁶⁹

Centers for Disease Control and Prevention's Behavioral Risk Factor Surveillance System⁷⁰

Critical Path for Alzheimer's Disease's work to create integrated databases for observation and clinical trials data⁷¹

Foschini et al.'s Real-World Use of Wearable Devices in a Large Multiple Sclerosis Cohort⁷²

Gerontological Society of America's KAER 4-Step Process to Detecting Cognitive Impairment and Earlier Diagnosis of Dementia

Gold et al.'s Digital Technologies as Biomarkers, Clinical Outcomes Assessment, and Recruitment Tools in Alzheimer's Disease Clinical Trials⁷³

Interaxon Inc.'s Muse® 2⁷⁴

Kaye et al.'s Intelligent Systems for Assessing Aging Changes: Home-Based, Unobtrusive, and Continuous Assessment of Aging⁷⁵

Lyons et al.'s Pervasive Computing Technologies to Continuously Assess Alzheimer's Disease Progression and Intervention Efficacy⁷⁶

Rudick et al.'s Multiple Sclerosis Performance Test (MSPT): An iPad-Based Disability Assessment Tool⁷⁷

University of California San Francisco's Brain Health Registry⁷⁸

Public Education

AARP's Staying Sharp Program⁷⁹

Alzheimer's Association's 10 Ways to Love Your Brain⁸⁰

Alzheimer's Drug Discovery Foundation (ADDF) Cognitive Vitality⁸¹

American Heart Association's Life Simple 7⁸²

Centers for Disease Control and Prevention's Healthy Brain Initiative⁸³

Cleveland Clinic's 6 Pillars of Brain Health⁸⁴

Dana Foundation's Successful Aging and Your Brain⁸⁵

Frankish and Horton's 9 Potentially Modifiable Risk Factors (Lancet)⁸⁶

National Institute of Aging's Brain Health Campaign⁸⁷

National Institute of Neurological Disorders and Stroke's Mind Your Risks⁸⁸

South Carolina Department of Health and Environmental Control's Take Brain Health to Heart⁸⁹

UsAgainstAlzheimer's Be Brain Powerful™⁹⁰

WomenAgainstAlzheimer's Campaign for Women's Brain Health⁹¹

Healthcare Provider Education and Support

Alzheimer's Association's Cognitive Impairment Care Planning Toolkit⁹²

Alzheimer's Disease International and Global Coalition on Aging's Dementia Innovation Readiness Index 2017⁹³

American College of Preventive Medicine's Provider Resources for Advancing Brain Health⁹⁴

Borson and Chodash's Developing Dementia Capable Health Care Systems: A 12-Step Program⁹⁵

Centers for Disease Control and Prevention's Healthy Brain Initiative⁹⁶

Galvin, Meuser, and Morris's Clinician Partners Program⁹⁷

Health Resources and Services Administration's training curriculum on dementia⁹⁸

National Alzheimer's and Dementia Resource Center's Reports and Toolkits and Webinars and Training⁹⁹

National Institute of Aging's Dementia Resources for Professionals¹⁰⁰

Lee et al.'s Primary Care Collaborative Memory Clinics¹⁰¹

Liv et al.'s Assessing the Preparedness of the U.S. Health Care System Infrastructure for an Alzheimer's Treatment (RAND)¹⁰²

University of New Mexico's Project Echo and Alzheimer's Association pilot programs modeled after Project Echo¹⁰³

Care Interventions and Models

La Mantin et al.'s Aging Brain Care Medical Home¹⁰⁴

Butler et al.'s Does Cognitive Decline Training Prevent Cognitive Decline? A Systemic Review¹⁰⁵

Callahan et al.'s Redesigning Systems of Care for Older Adults with Alzheimer's Disease¹⁰⁶

Possin et al.'s Care Ecosystem¹⁰⁷

Centers for Medicare and Medicaid Services' National Partnership to Improve Dementia Care in Nursing Homes¹⁰⁸

French et al.'s Healthy Aging Brain Center¹⁰⁹

IMPACT (Improving Mood—Promoting Access to Collaborative Treatment) Model¹¹⁰

Clevenger et al.'s Integrated Memory Care Clinic¹¹¹

Reuben et al.'s University of California at Los Angeles Alzheimer's and Dementia Care (ADC) Program¹¹²

Quality Measure Development

Alzheimer's Association Clinical Guidelines: Detection of Cognitive Impairment in Primary Care; Recommendations for Defining Preclinical Alzheimer's Disease; Appropriate Use Criteria for Amyloid PET Imaging¹¹³

American Academy of Neurology and American Psychiatric Association's Dementia Management Quality Measurement Set¹¹⁴

PCPI Dementia Measures¹¹⁵

National Quality Forum's 2015-2016 Neurology Project¹¹⁶

National Institute for Health Care and Excellence (NICE) Dementia Guidelines¹¹⁷

RAND Health Care's Assessing Care of Vulnerable Elders (ACOVE) Quality Measures¹¹⁸

Incentives and Reimbursement

Boustani et al.'s Alternative Payment Model to Support Widespread Use of Collaborative Dementia Care Models¹¹⁹

Centers for Medicare and Medicaid Services' Annual Wellness Visit¹²⁰

Centers for Medicare and Medicaid Services' Merit Based Incentive Program (MIPS) inclusion of dementia measures¹²¹

Centers for Medicare and Medicaid Services eCQM Dementia: Cognitive Assessment eligible for quality programs: MIPS, Medicaid EHR Incentive Program, Comprehensive Primary Care Plus

Centers for Medicare and Medicaid Services' CPT Code 99483 which reimburses physicians, physician assistants, nurse practitioners, clinical nurse specialists, and certified nurse midwives for care planning services to individuals with cognitive impairment¹²²

Centers for Medicare and Medicaid Services' CPT 99490 which reimburses care management of a patient with dementia and at least one other chronic condition, after a chronic care plan has been developed and documented¹²³

Mauri, Harbin, and Unützer, Payment Reform and Opportunities for Behavioral Health: Alternative Payment Model Examples¹²⁴

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