

RISK REDUCTION SUBCOMMITTEE 2021 PROPOSED RECOMMENDATIONS

BACKGROUND

Charge

The National Alzheimer's Project Act (NAPA) Advisory Council is charged with working to create and advance a National Plan to address Alzheimer's disease and related dementias (ADRD). Since the inception of the National Plan with its aspirational goal to "to prevent and effectively treat Alzheimer's Disease by 2025," research progress has dramatically improved our understanding of ADRD. In recognition of the advances in understanding risk factors for dementia and the lifelong potential for addressing those risk factors, the Advisory Council recommended the creation of a Subcommittee to address reduction of risk factors to mitigate the public health burden of ADRD.

The Subcommittee was charged with exploring ways to fulfill the Council's recommendation to "Develop a national goal to reduce the burden of risk factors to prevent or delay onset of ADRD." Subcommittee members¹ represented varied areas of expertise, including research, public health, innovation, and clinical care. Additionally, Subcommittee members drew on 32 Workgroup members with knowledge across dementia risk factors, from academia, clinical practice, policy, community-based health, and public health. Participants were from diverse racial, ethnic, and geographical backgrounds. A Steering Committee, led by Lisa McGuire with the Centers for Disease Control and Prevention (CDC) and representatives from two patient advocacy groups, Kelly O'Brien with UsAgainstAlzheimer's and Matthew Baumgart with the Alzheimer's Association, guided the work. More than 130 experts and organizations were invited to review this recommendation, and comments were received from 50 multidisciplinary experts on the final recommendation and strategies.

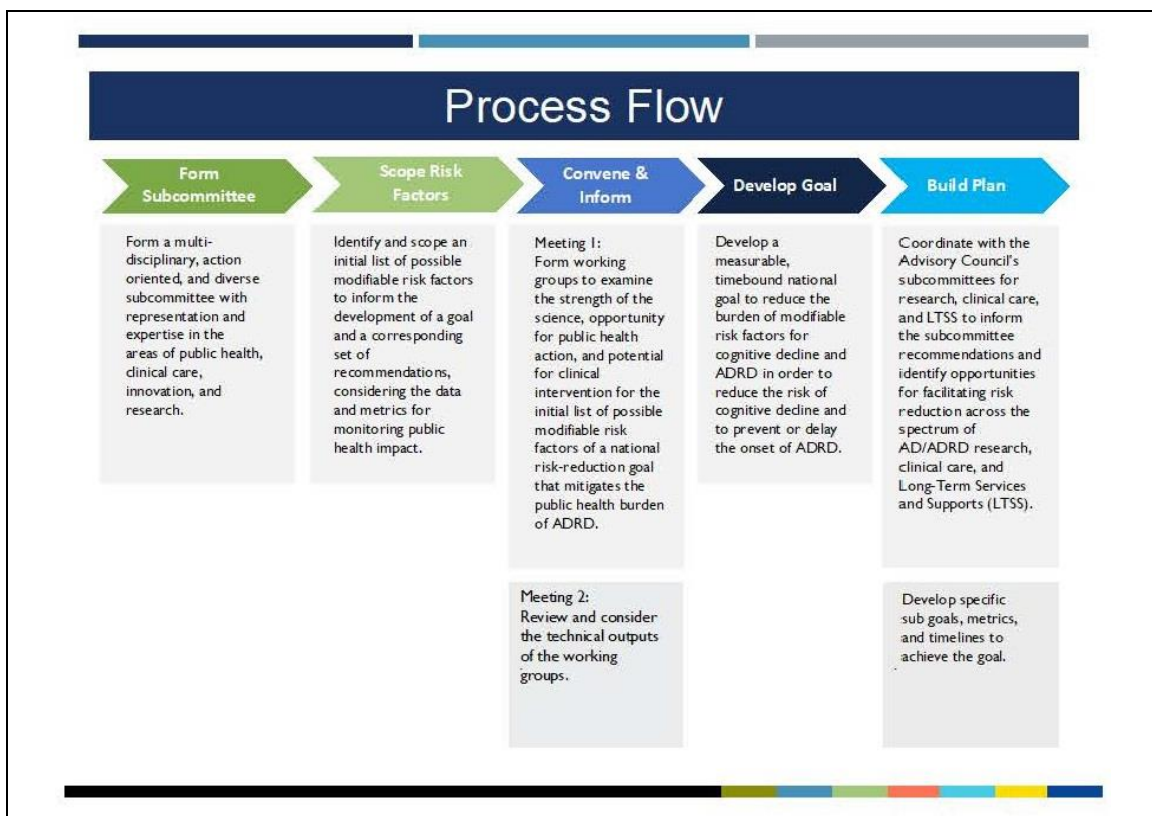
Health Equity and the Social Determinants of Health

A priority for the Subcommittee was to optimize health for the U.S. population while also eliminating disparities. Strategies to improve the nation's health can best occur by focusing on communities at greatest risk and eliminating barriers to quality healthcare services, and cognitive health is no exception. The conditions in places where people are born, live, learn, work, and play are known as social determinants of health (SDOH) and can have a profound effect on a person's health, including their risk for Alzheimer's disease and related dementias. Examples of SDOH include: safe housing and neighborhoods, transportation, racism, discrimination, violence, education, job opportunities, income, access to nutritious foods and physical activity opportunities, polluted air and water, language and literacy skills.

Differences in SDOH contribute to the stark and persistent chronic disease disparities in the United States among racial, ethnic, and socioeconomic groups by systematically limiting opportunities for members of some groups to be healthy. While public health crises and economic uncertainty may focus attention on disparities, health inequities have persisted across generations because policies and practices have systematically limited access to health care and other opportunities.

Method

Steering Committee members solicited volunteer participation in the Subcommittee from eight experts in research, clinical practice, innovation, and public health. Subcommittee members identified 32 additional experts to participate in four Workgroups. Each Workgroup examined a subset of 14 specific risk factors identified from key reference studies² and reviewed the strength of the scientific evidence, their ripeness for public health intervention, and their potential impact (including for high risk populations). The importance of applying a health equity framework was identified, discussed, and incorporated into the Subcommittee’s recommendations.



The Subcommittee and Workgroups reviewed strategies to address these risk factors, as well as equity considerations. The four expert Workgroups each chaired by two Subcommittee members identified possible public health, clinical, and policy steps that could be taken to reduce risk and potentially delay dementia onset. Subsequently, the Subcommittee provided insight on the relative impact and practicality of addressing the

risk factors in public health and clinical practice in order to reduce the prevalence of dementia. Based on this review and input, ten risk factors, listed below, were identified as meeting the criteria for action due to their level of evidence, ripeness for intervention, and potential for high impact.

As a result of this exceptionally robust process and input, it is recommended that the NAPA Advisory Council:

RECOMMENDATION

Add a sixth goal to the National Plan:

- 1. Prevent and Effectively Treat Alzheimer's Disease and Related Dementia by 2025*
- 2. Enhance Care Quality and Efficiency*
- 3. Expand Supports for People with Alzheimer's and Related Dementias and Their Families*
- 4. Enhance Public Awareness and Engagement*
- 5. Improve Data to Track Progress*
- 6. Reduce the Burden of Risk Factors for Alzheimer's Disease and Related Dementias**

To achieve the goal, reduce the prevalence of the following potential risk factors by 15% by 2030:

- Depression
- Diabetes
- Hearing Loss
- Mid-life Hypertension
- Physical Inactivity
- Poor Diet Quality and Obesity
- Poor Sleep Quality and Sleep Disorders
- Tobacco Use
- Traumatic Brain Injury
- Unhealthy Alcohol Use

The risk factors were selected based on strength of scientific evidence, ripeness for public health action, and potential for impact (either on the population as a whole or on specific sub-groups).

An aggressive 15% per decade reduction in the above risk factors could result in as many as 1.2 million fewer people with Alzheimer's dementia in 2050.*

* Assumes causal link and no other changes to current prevalence projections, including new drug treatments.

STRATEGIES

Under this goal for risk reduction, mirroring the National Plan's approach and guided by suggestions from Subcommittee and Workgroup members, the following strategies and preliminary action steps are recommended:

STRATEGY A: Identify priorities and specific milestones that would make progress toward the goal. These should be established, utilizing a health equity framework³ for public health, clinical and community-based interventions, and research. Specifically:

1. The Risk Reduction Subcommittee should be formalized within the Advisory Council. Communities at greatest risk for ADRD should be represented.
2. HHS should convene a bi-annual ADRD summit on risk reduction, with CDC as the lead agency.
 - a. Meetings should establish and update priorities and milestones for addressing dementia risk factors.
 - b. Meetings should engage diverse stakeholders including historically marginalized voices and communities, other federal agencies, state and local public health departments, health providers, educators and payers, community-based organizations, and private sector partners. Specific time-bound actions by public and private entities that advance the milestones should be identified. This includes private and public partners outside the traditional ADRD community who focus on the targeted risk factors including depression, diabetes, hearing loss, mid-life hypertension, physical inactivity, poor diet quality and obesity, poor sleep quality and sleep disorders, tobacco use, traumatic brain injury and unhealthy alcohol use.
 - c. Meetings should address specific barriers/challenges and strategies to effect measurable change for marginalized communities.
3. HHS and all relevant federal agencies should identify, coordinate, and implement strategies within their current authorities and annually report on progress within the national plan. In their reports, relevant agencies should:
 - a. Identify gaps and note where additional legislative authority is needed.
 - b. Monitor progress toward the goal, with reporting and updating annually, considering new science, emerging challenges, and opportunities.
 - c. In their internal budget process, annually estimate the federal funding that is needed to successfully reach the milestones, and the Administration's annual budget request to Congress should publicly identify the amounts proposed for addressing dementia risk reduction across all relevant federal agencies.
 - d. Highlight significant actions and progress at the state, local, and tribal level.

STRATEGY B: Accelerate public health action on addressing the risk factors with the strongest evidence of beneficial impact on dementia prevalence, particularly for communities at greatest risk. Specifically, the Federal Government, in partnership with state, local, and tribal governments, community-based organizations, and relevant private sector entities should:

1. Sustain and strengthen the public health infrastructure--federal, state, local, community, and tribal--for ADRD to support robust efforts to address prevention of dementia risk factors.
2. Address social determinants of health that affect risk and health outcomes.
3. Develop strategies and interventions to target communities with both the highest prevalence of priority risk factors, low longevity rates, and the highest prevalence of ADRD with explicit attention to the social determinants of health and strategies and interventions for historically marginalized communities.
4. Identify opportunities for collaboration with existing public and private initiatives and campaigns designed to reduce the prevalence of diseases, conditions, and other factors that are associated with risk of dementia, such as the Million Hearts initiative and the National Diabetes Prevention Program. Increase access of these programs for marginalized communities that are at high risk for dementia.
5. Align actions with those identified in CDC's *Healthy Brain Initiative State and Local Public Health Partnerships to Address Dementia: The 2018-2023 Road Map* (S&L) and *Road Map for Indian Country* (RMIC). The Road Map series charts a course for state and local public health agencies and their partners to act quickly and strategically to prepare all communities to address ADRD by stimulating changes in policies, systems, and environments. Effectively addressing the rising number of people with Alzheimer's and other dementias will require diligent attention to three fundamental principles in planning and implementing Road Map actions. These principles--eliminate health disparities, collaborate across multiple sectors, and leverage resources for sustained impact--are central to public health and have been noted by many other seminal reports. Relevant actions from the Road Map series and Healthy People 2030 (HP2030) objectives include:
 - a. Educate the public about brain health and cognitive aging, changes that should be discussed with a health professional, and benefits of early detection and diagnosis (S&L E-1, RMIC 1, & HP2030 DIA-3).
 - b. Integrate the best available evidence about brain health and cognitive decline risk factors into existing health communications that promote health and chronic condition management for people across the life span (S&L E-2, RMIC 2, HP2030 DIA-2).
 - c. Promote the use of effective interventions and best practices to protect brain health, address cognitive impairment, and help meet the needs of caregivers for people with dementia (S&L P-1).

- d. Educate public health and healthcare professionals on sources of reliable information and misinformation about brain health and ways to use the information to inform those they serve (S&L W-1).
- e. Use data gleaned through available surveillance strategies and other sources to inform the public health program and policy response to cognitive health, impairment, and caregiving (S&L M-3, RMIC 5).

STRATEGY C: Identify and accelerate efforts to reduce risk and intervene early in clinical care.

1. Centers for Medicare & Medicaid Services (CMS), the Health Resources and Services Administration (HRSA), the Veterans Administration (VA), Indian Health Service (IHS), state Medicaid programs, and other public and private payers should identify a comprehensive set of actions to assess and reduce dementia risk, delay the onset of dementia, and improve early intervention, ensuring equitable reach and impact of interventions for historically marginalized populations. This should include:
 - a. Identifying opportunities to reduce the risk of mild cognitive impairment and dementia by addressing known risk factors and support early intervention for Alzheimer’s disease and related dementias, including but not limited to beneficiary education; requiring use of specific evidence-based cognitive screening tools in the Medicare Annual Wellness Visit; offering reimbursement incentives; providing payments for prevention and care delivery models that incorporate brain health being affected by other conditions and organ systems; and implementing quality measures.
 - b. Identifying existing benefits related to factors that can potentially help reduce dementia risk, as well as coverage gaps and inequities that, if addressed, could potentially reduce known risk factors associated with ADRD. Examples include: nutrition support; physical activity prescriptions; diabetes management and treatment; audiology assessments and screenings, hearing rehabilitation, appropriate hearing technology; and screening and treatment for depression and unhealthy alcohol use.
2. The U.S. Department of Health and Human Services (HHS) should identify and accelerate strategies to improve access to primary care, team-based care, home and community-based care, and preventive care, including better utilization of existing benefits such as the Annual Wellness Visit.
3. Center for Medicare and Medicaid Innovation (CMMI) should pilot ADRD risk reduction interventions. For example, CMMI could pilot a “Dementia Prevention Program” modeled on the National Diabetes Prevention Program, with special attention on optimal implementation including payment, training, delivery, and uptake.

4. HRSA should develop and broadly implement training curriculum for the primary and community care workforce to improve mild cognitive impairment and dementia risk reduction and early detection.
5. Congress should address coverage gaps in Medicare, Medicaid and the VA that would improve interventions for identified ADRD risk factors: for example, expansion of Medicare coverage to include hearing aids and related hearing care rehabilitation services; and improvements in Medicare's coverage of substance use disorder and mental health services to align with evidence-based practices, current service-delivery models, and standards that apply to other major health care financing programs.

STRATEGY D: Initiate and fund research to strengthen the strategies for addressing the potential risk factors for dementia, including translation and implementation scalability.

1. HHS, including the National Institutes of Health (NIH), CDC, AHRQ, and other agencies should:
 - a. Adopt an equity and inclusion framework when developing and supporting research on factors for dementia risk reduction to address biases in eligibility criteria, proportional representation, oversampling, data stratification, systemic racism, historical context, and structural factors that disproportionately impact the health of marginalized and minoritized populations.
 - b. Support specific research to identify linkages to the causal pathway for dementia, including:
 - i. Risk factors that have promising research to date and/or currently lack strong evidence-based public health, community health and/or clinical interventions (e.g., loneliness, cognitive training, and hyperlipidemia).
 - ii. Pinpointing the specificity of successful interventions (such as the duration, frequency, and intensity of physical activity).
 - iii. The interconnectedness of risk factors and multivariate interventions to address risk factors.
 - iv. Social determinants of health that may elevate the risk of developing dementia.
 - v. Demonstrated impacts of risk reduction across the life course and the value of implementing risk reduction interventions before the pre-clinical stage of Alzheimer's disease.
 - vi. Mitigating effects of lifelong disability on risk factors.
 - c. Support specific research within health care, including:
 - i. Evaluating efforts to implement the uptake of evidence on risk factor reduction in clinical practice.
 - ii. Developing, implementing, and evaluating models of care to increase the uptake of evidence on risk reduction in primary and ambulatory care.

- iii. Developing, implementing, and evaluating models to align public health and health care interventions to reduce population risk.
2. CDC should periodically update the list of key risk factors that are the focus of efforts to achieve this goal, based on the strength of scientific evidence, ripeness for public health action, and potential for impact and taking into account the needs of and potential benefits to at-risk communities.

ENDNOTES

1. Risk Reduction Subcommittee Steering Committee:
Lisa McGuire, *Centers for Disease Control and Prevention*
Kelly O'Brien, *UsAgainstAlzheimer's*
Matthew Baumgart, *Alzheimer's Association*

Subcommittee Members:

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2. The Lancet Commission 2017 reports that acting now on dementia prevention, intervention, and care will vastly improve living and dying for individuals with dementia and their families, and in doing so, will transform the future for society.

[[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)31363-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)31363-6/fulltext)]

The Lancet Commission 2020 reports that overall, a growing body of evidence supports the nine potentially modifiable risk factors for dementia identified by the 2017 Lancet Commission: less education, hypertension, hearing impairment, smoking, obesity, depression, physical inactivity, diabetes, and low social contact. We now add three more risk factors for dementia. These factors are excessive alcohol consumption, traumatic brain injury, and air pollution. We have incorporated these into an updated 12 risk factor life-course model of dementia prevention.

[[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(20\)30367-6/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(20)30367-6/fulltext)]

The World Health Organization Risk Reduction of Cognitive Decline and Dementia: WHO Guidelines 2019 provide evidence-based recommendations on lifestyle behaviors and interventions to delay or prevent cognitive decline and dementia.

[<https://www.who.int/publications/i/item/risk-reduction-of-cognitive-decline-and-dementia>]

[<https://apps.who.int/iris/bitstream/handle/10665/312180/9789241550543-eng.pdf?ua=1>]

The World Health Organization Evidence Profiles examine specific interventions for specific factors, including: physical activity, tobacco cessation, nutrition, alcohol use disorder, cognition, social activity, weight management, hypertension, diabetes, dyslipidemia, depression, and hearing loss.

[<https://www.ncbi.nlm.nih.gov/books/NBK542781/>]

The World Alzheimer Report 2014, 'Dementia and risk reduction: An analysis of protective and modifiable factors', critically examines the evidence for the existence of modifiable risk factors for dementia. It focuses on sets of potential modifiable risk factors in four key domains: developmental, psychological and psychosocial, lifestyle, and cardiovascular conditions. The report makes recommendations to drive public health campaigns and disease prevention strategies. [<https://www.alzint.org/resource/world-alzheimer-report-2014/>]

AHA 2017 "Defining Brain Health" Statement provides an initial definition of optimal brain health in adults and guidance on how to maintain brain health. AHA identified 7 metrics to define optimal brain health in adults that originated from AHA's Life's Simple 7: nonsmoking, physical activity at goal levels, healthy diet consistent with current guidelines,

body mass index <25 kg/m², untreated blood pressure <120/<80 mm Hg, untreated total cholesterol <200 mg/dL, and fasting blood glucose <100 mg/dL. In addition, in relation to maintenance of cognitive health, we recommend following previously published guidance that incorporates control of cardiovascular risks and suggest social engagement and other related strategies. [<https://www.alzint.org/resource/world-alzheimer-report-2014/>]

AHRQ's 2019 National Healthcare Quality and Disparities Report indicates gains in quality of care varied among six priority areas: patient safety, person-centered care, care coordination, effective treatment, healthy living, and care affordability. The report provides a comprehensive annual overview of healthcare quality in the general U.S. population. [<https://www.ahrq.gov/research/findings/nhqdr/nhqdr19/index.html>]

CDC 6|18 Initiative: In the 6|18 Initiative, CDC and partners are targeting six common and costly health conditions with 18 proven interventions. These include controlling high blood pressure, reducing tobacco use, and preventing type 2 Diabetes. [<https://www.cdc.gov/sixeighteen/index.html>]

The HI-5 Interventions are a component of the CDC 6|18 initiative looking to create health impact in 5 years. Interventions that are changing context include tobacco control interventions, pricing strategies for alcohol products, and multi-component worksite obesity prevention. There are also interventions addressing social determinants of health. [<https://www.cdc.gov/policy/hst/hi5/interventions/index.html>] [<https://www.cdc.gov/policy/hst/hi5/tobacointerventions/index.html>] [<https://www.cdc.gov/policy/hst/hi5/alcoholpricing/index.html>] [<https://www.cdc.gov/policy/hst/hi5/worksites/index.html>]

The Community Preventive Services Task Force (CPSTF) was established to identify population health interventions that are scientifically proven to save lives, increase lifespans, and improve quality of life. CPSTF findings help inform decision makers in federal, state, and local health departments, other government agencies, communities, healthcare providers, employers, schools, and research organizations. Learn more about Who We Are, What We Do. Recommendations apply to a variety of NAPA related interests. [<https://www.thecommunityguide.org/task-force/community-preventive-services-task-force-members>] [<https://www.thecommunityguide.org/content/who-we-are-what-we-do>]

Health Impact Pyramid (Frieden 2010) is a 5-tier pyramid that provides a framework to improve health. At the base of this pyramid are efforts to address socioeconomic determinants of health. In ascending order are interventions that change the context, clinical interventions, ongoing direct clinical care, and health education and counseling. Implementing interventions at each of the levels can achieve the maximum possible sustained public health benefit. [<https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2009.185652>]

JAMA Race Norming discusses “a major weakness in the field of neuropsychology: the use of race-adjusted norms as a crude proxy for lifelong social experience.” “The plaintiffs allege that the NFL has ‘repeatedly insisted that applicants’ scores must be race normed by using separate Black and White reference populations--a position that greatly reduces Black players’ chances of success.’¹ In this Viewpoint, we explain the practice and perils of using race-adjusted norms and propose a new approach that could replace the current standard.” [<https://jamanetwork.com/journals/jamaneurology/article-abstract/2774316>] [¹ <https://jamanetwork.com/journals/jamaneurology/article-abstract/2774316#nvp200020r1>]

Million Hearts 2022 is a national initiative to prevent 1 million heart attacks and strokes within 5 years. It focuses on implementing a small set of evidence-based priorities and targets that can improve cardiovascular health for all. These include tobacco cessation and hypertension control. [<https://millionhearts.hhs.gov/index.html>]

National Academies Report 2017 suggests that there is a window of opportunity to prevent or delay the onset of dementia. “The evidence base on how to prevent or delay these conditions has been limited at best, despite the many claims of success made in popular media and advertising. Today, however, a growing body of prevention research is emerging.” [<https://www.nap.edu/catalog/24782/preventing-cognitive-decline-and-dementia-a-way-forward#:~:text=In%20a%202017%20report,%20a%20committee%20of%20the,as%20recommended%20ways%20to%20conduct%20future%20prevention%20research.>]

NEJM Structural Racism describes a “growing recognition that racism has a structural basis and is embedded in long-standing social policy. This framing is captured by the term ‘structural racism.’” There is a direct legacy of it in health and well-being. [<https://www.nejm.org/doi/full/10.1056/NEJMms2025396>]

3. Peterson A, Charles V, Yeung D, Coyle K. The Health Equity Framework: A Science- and Justice-Based Model for Public Health Researchers and Practitioners. *Health Promot Pract.* 2020 Aug 19:1524839920950730. doi: 10.1177/1524839920950730. Epub ahead of print. PMID: 32814445.