NATIONAL ACADEMY OF NEUROPSYCHOLOGY

7555 East Hampden Avenue, Suite 525
Denver, Colorado 80231
PH: 303-691-3694 ● FX: 303-691-5983

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Helen Lamont, Ph.D.
HHS Office of the Assistant Secretary for Planning and Evaluation (ASPE)
Room 424E, Humphrey Building
200 Independence Avenue, SW
Washington DC, 20201

Re: Draft HHS National Plan to Address Alzheimer's Disease.
Comments from the Professional Affairs & Information Committee,
National Academy of Neuropsychology

Dear Dr. Lamont:

We are writing on behalf of the National Academy of Neuropsychology (NAN), a professional association with 3,500 members dedicated to the advancement of neuropsychology as a science and health profession for the benefit of the culturally diverse patients and caregivers that we serve.

Clinical neuropsychologists are licensed, independent doctoral level practitioners with special expertise in the applied science of brain-behavior relationships. We provide neurocognitive assessment, diagnosis, treatment, and integrated support of culturally diverse patients (and their caregivers) suffering from a variety of neurological, medical, neurodevelopmental, and psychiatric conditions, including neurodegenerative diseases such as Alzheimer's disease (AD; cf. Goals 2, 3 & 4 of the Draft HHS Plan). Our patients are referred by a variety of medical specialties. Neuropsychological assessment measures brain functioning with standardized, well-researched tests of attention, processing, memory, language, spatial, motor, sensory, and executive functions as well as social-emotional aspects of behavior and mood (cf. NINCDS-ADRDA, Goal 1 of the Draft HHS Plan). This information aids diagnosis, medical management, placement, and practical life-related patient and caregiver decisions and can stage disease progression and recovery (consequent to future biological interventions). Neuropsychologists are most often located in metropolitan areas, but many have developed part time rural practices to serve outlying communities, and consult with general clinical psychologists and primary care physicians in rural areas.

We thank you for the opportunity to submit comments on the Draft HHS National Plan to Address Alzheimer's disease. We appreciate the effort and diligence of the HHS staff and of the National Advisory Council on Alzheimer's Research, Care, and Services in guiding the agenda for AD research and services which will positively impact the lives of the patients and caregivers that all of us serve.
We would also like to thank you for including Psychology in your revised document, given the role that many psychologists play in service to AD patients and caregivers

via research, education, and direct services. While neuropsychologists and psychologists share many things in common, neuropsychologists are more specialized in their knowledge of brain-behavior relationships, neuroanatomy, biological bases of cognition and behavior, standardized neurocognitive assessment, and management of neurodegenerative diseases (such as AD). Neuropsychologists frequently consult with their clinical/counseling psychologist colleagues and provide additional highly specialized diagnostic and intervention planning services for the benefit of AD patients and their caregivers. Below we will provide information regarding the critical role that neuropsychological/neurocognitive assessment plays in AD diagnosis, treatment, education, and research, specifically with regard to linking biomarkers to neurobehavioral phenotypes and clinical presentation. Currently neuropsychology and neurocognitive assessment are not acknowledged in the draft HHS plan. We hope to persuade you to redress this omission.

We want to highlight that neuropsychologists already play an active and instrumental role in AD research (e.g., via understanding the neurocognitive and behavioral profile of the disease, determining early clinical signs and symptoms of the disease, and providing the neurocognitive clinical correlates needed for biomarker research). Neuropsychology also plays a key role in education (e.g., to other medical professionals, to patients and caregivers) and direct care of AD patients and their caregivers (e.g., innovative quality of life programs). Your acknowledgement of neuropsychology's role in the future direction of care and research in AD will help to perpetuate neuropsychology's involvement in research and innovative service programs of importance to the Alzheimer's community. Conversely, exclusion of neuropsychologists from the Draft HHS Plan may limit opportunities for neuropsychologists to remain active in AD research, education, and clinical service, and this could seriously disadvantage AD patients and caregivers who are amidst the AD experience.

Specifically, we seek to have neuropsychology included in (1) **Strategy 1.C, Action 1.C.1: Identify imaging and biomarkers to monitor disease progression**, which stresses the importance of the use of biological markers in the diagnosis of AD. Currently, this section of the document fails to recognize the importance of neuropsychological/neurocognitive markers of the AD phenotype that are currently the gold standard for determining the presence and progression of AD. Additionally, (2) inclusion of neuropsychologists as direct service providers (Strategy 2.A., below) is also critical to AD patients and caregivers needing this help.

1. Strategy 1.C, Action 1.C.1: Identify imaging and biomarkers to monitor disease progression

Regarding Strategy 1.C, Action 1.C.1: Identify imaging and biomarkers to monitor disease progression, we offer the following wording suggestions for your consideration (italics ours):

> Under Strategy 1.C: "Significant advances in the use of imaging and biomarkers in brain, blood, and spinal fluids *in relation to neuropsychological manifestations* have made it possible to detect the onset of Alzheimer's disease, …"
>
> and/or
>
> Action 1.C.1: "Identify imaging and biomarkers *in relation to sensitive neuropsychological measures* to monitor disease progression."

In support of these suggestions we offer the following information and references:

Neurocognitive decline is the hallmark of AD, and according to the NIH neurocognitive assessment is essential to the diagnosis of Alzheimer disease, along with clinical history (symptoms and their course), medical tests (such as blood work), and neuroimaging (http://www.nia.nih.gov/alzheimers/topics/diagnosis). Also, While the National Institute on Aging-Alzheimer's Association workgroup on diagnostic guidelines for AD has recommended continued research on biological markers, they continue to consider AD to be a clinical diagnosis based on neurocognitive and functional data,[1,2] which are hallmarks of neuropsychological evaluation at very sensitive and detailed levels.

In general, the cognitive screening tests used in the medical context lack sensitivity to early cognitive decline[3], and this is further complicated when assessing premorbidly intellectually bright or well-educated patients. Neuropsychological assessment, using standardized and demographically normed tests of cognition, is known to

be more sensitive to early cognitive decline.[4] Further, neuropsychologists are listed by the NIH along with Geriatricians, Geriatric Psychiatrists, and Neurologists, as specialists in assessment who can provide detailed diagnosis of AD (http://www.nia.nih.gov/alzheimers/topics/diagnosis). In fact, clinical neuropsychologists often field referrals from the other three specialties mentioned by the NIH to provide very detailed assessments to assist in their patient evaluations, and often refer to the other specialists for the benefit of AD patients.

Neuropsychology has significantly advanced the research exploring biological markers of Alzheimer disease through the development of very sensitive neurocognitive tests; tests that are critical to early identification of neurocognitive decline (complementing Strategy 1:C of the HHS draft document).[5] In fact, it is not uncommon for a detailed neuropsychological evaluation to detect progressive neurocognitive decline before pathology is observed on neuroimaging such as brain MRI. Such work has assisted countless AD patients and their caregivers to enhance what time they have left, and is now being effectively used by physicians to initiate and monitor the effects of dementia delaying medications (such as cholinesterase inhibitors).

In the final analysis, however, there is still much that needs to be learned of the relationship between AD biomarkers and neurocognitive/functional (neuropsychological) symptoms and outcomes. As Jeffrey Cummings, M.D., noted expert on dementing conditions, has written:

> The predictive relationship between biomarker changes and clinical outcomes is critical to their successful utilization in AD drug development programs. This is not known for any AD-related biomarker. Preliminary correlations have been established for some clinical outcomes and some biomarkers; it is unknown if changes in a biomarker (such as reduced MRI ventricular enlargement with treatment) will correlate with reduced decline in cognition or function following treatment (p.1482).[6]

Dr. Cummings' insightful comments lead to at least three conclusions based on the totality of biomarker research to date. First, more work needs to be done, including continued development of very sensitive standardized neuropsychological measures in relation to biomarkers for earlier identification of AD (as a clinical syndrome). Second, while there may be a correlation between biomarkers and clinical manifestations, the correlation is not perfect. Consequently, AD remains a clinical diagnosis at present, and the measurement of neurocognitive decline or enhancement (based on biological intervention) still requires detailed standardized neuropsychological assessment results (i.e., standardized and objective clinical correlates) to help press forward in biomarker research and to benefit AD sufferers. Third, neuropsychological measures are needed within the research itself as the best current means of characterizing the disease for which biomarkers are sought (i.e., neuropsychological markers remain the gold standard for biomarker research).

2. Strategy 2.A: Build a workforce with the skills to provide high-quality care

Regarding the inclusion of neuropsychologists as direct care providers: While clinical neuropsychology and clinical psychology are related, and often work together in a complementary manner in the community for the benefit of AD patients and caregivers, they are not the same specialty. Consequently, we suggest that you consider including "neuropsychologists" (along with "psychologists") as distinct additional providers within "The workforce that cares for people with Alzheimer's disease…" (Strategy 2.A.), and also in receiving HHS information regarding "…dementia curricula and practice recommendations…" (Action 2.A.3).

In closing, NAN again applauds your efforts to aggressively address AD, and we offer our support and services as researchers and clinicians in this endeavor. Thank you for your time in reviewing our comments. Please direct any comments, questions, or concerns to us via the NAN central office.

Respectfully,

Tresa Roebuck Spencer, Ph.D., ABPP/CN
Co-Chair
National Academy of Neuropsychology
Professional Affairs and Information Committee

Timothy F. Wynkoop, Ph.D., ABPP/CN
Co-Chair
National Academy of Neuropsychology
Professional Affairs and Information Committee

References and Annotations:

1. McKhann, G.M., Knopman, D.S., Chertkow, H, et al. The diagnosis of dementia due to Alzheimer's disease: recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimer's & Dementia*, 2011; 7(3):263-269. (From the abstract: "The core clinical criteria for AD dementia will continue to be the cornerstone of the diagnosis in clinical practice, but biomarker evidence is expected to enhance the pathophysiological specificity of the diagnosis of AD dementia.")

2. Jack, C.R. Jr, Albert, M.S., Knopman, D.S., et al. Introduction to the recommendations from the National Institute on Aging-Alzheimer's Association workgroups on diagnostic guidelines for Alzheimer's disease. *Alzheimer's & Dementia,* 2011; 7(3):257-262. (From the Biomarkers of AD section of the article: "Progression of clinical symptoms closely parallels progressive worsening of neurodegenerative biomarkers," and "In the *symptomatic predementia*, *MCI, phase* biomarkers are used to establish the underlying etiology responsible for the clinical deficit." Both of these statements, and others in the article, emphasize the importance and effectiveness of neuropsychological/neurocognitive measures in the identification and tracking of clinical symptoms of AD.)

3. Stephan, B. C., Kurth, T., Matthews, F. E., Brayne, C., & Dufouil, C. (2010). Dementia risk prediction in the population: are screening models accurate? *Nature Reviews, Neurology,* 6, 318-26.

4. Smith, G. E., Ivnik, R. J., & Lucas, J. A. (2008). Assessment techniques: Tests, test batteries, norms, and methodological approaches. In: *Textbook of Clinical Neuropsychology*. J Morgan and J Ricker (Eds.). New York: Taylor & Francis.

5. Petersen, R.C., Gill, D.P., Phillips, L.E., & Aisen, P. Early MCI as an imaging target: Data from the National Alzheimer's Coordinating Center. *Alzheimer's & Dementia*; 6(4): S58.

6. Cummings, J.L. Integrating ADNI results into Alzheimer's disease drug development programs. *Neurobiology of Aging*, 2010; 31(8): 1481-1492. (This article includes ample neuropsychological test data.)

Notes:

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