

Research News

International Alzheimer's Disease Research Portfolio (IADRP) aims to capture global Alzheimer's disease research funding

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Abstract

Alzheimer's disease (AD) is a recognized international public health crisis. There is an urgent need for public and private funding agencies around the world to coordinate funding strategies and leverage existing resources to enhance and expand support of AD research. To capture and compare their existing investments in AD research and research-related resources, major funding organizations are starting to utilize the Common Alzheimer's Disease Research Ontology (CADRO) to categorize their funding information. This information is captured in the International Alzheimer's Disease Research Portfolio (IADRP) for further analysis. As of January, 2014, over fifteen organizations from the US, Canada, Europe and Australia have contributed their information. The goal of the IADRP project is to enable funding organizations to assess the changing landscape of AD research and coordinate strategies, leverage resources, and avoid duplication of effort.

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Alzheimer's disease; Research classification; Biomedical research; Ontology

1. Introduction

Alzheimer's disease is a public health crisis worldwide. As public and private funding agencies around the world enhance and expand their support of Alzheimer's disease (AD) research, there is an urgent need to coordinate funding strategies and leverage resources to maximize the impact on public health and avoid duplication of efforts and inefficiency. Such coordination requires a comprehensive assessment of the current landscape of AD research internationally. To facilitate such an assessment, the National Institute on Aging (NIA) and the Alzheimer's Association launched the International Alzheimer's Disease Research Portfolio (IADRP) project to: (i) capture the changing landscape of AD research funded by different agencies and organizations; (ii) identify opportunities for possible coordi-

nation of support for AD research; and (iii) identify funding gaps as well as areas of overlap within and across domestic and international funding agencies.

2. Common Alzheimer's Disease Research Ontology

The Common Alzheimer's Disease Research Ontology (CADRO), first introduced by the NIA and the Alzheimer's Association in 2012 as a standardized and dynamic resource for organizing and classifying AD research [1], is constructed as a 3-tier classification system organized around 7 major categories: 5 in research and 2 resource-related. These are:

- Category A. Molecular Pathogenesis and Pathophysiology of Alzheimer's Disease
- Category B. Diagnosis, Assessment, and Disease Monitoring
- Category C. Translational Research and Clinical Interventions
- Category D. Epidemiology

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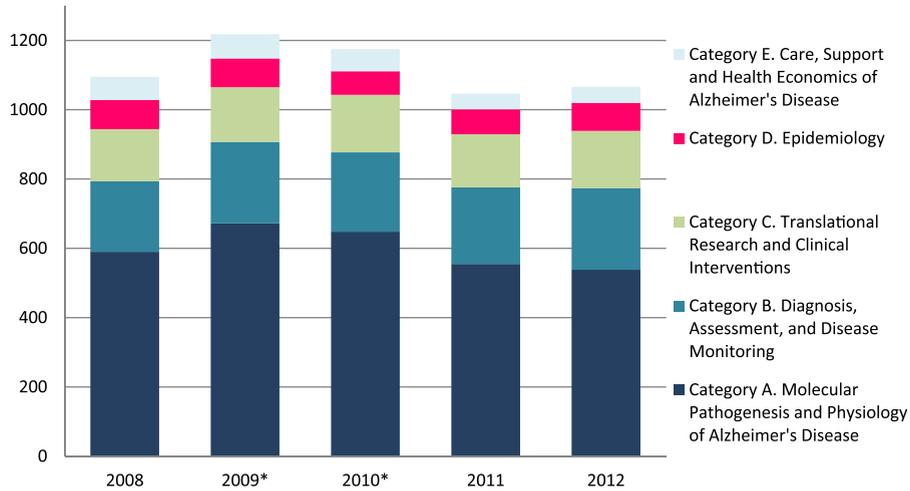


Fig. 1. Graphic summary of funded research projects by agencies included in the IADRP across the 5 scientific categories of the CADRO. *The years 2009 and 2010 include additional funding via American Recovery & Reinvestment Act for AD research at NIH.

- Category E. Care, Support, and Health Economics of Alzheimer's Disease
- Category F. Research Resources
- Category G. Consortia and Public–Private Partnerships

Using information from the projects' abstracts and research aims, the 7 categories are then stratified into research "topics" and these are further divided into research "themes" as appropriate [1]. The 3 levels of classification (Category, Topic, and Theme) are meant to enable funders to capture both the depth and breadth of AD research. Examples are provided in what follows.

3. International Alzheimer's Disease Research Portfolio

Guided by the CADRO, the International Alzheimer's Disease Research Portfolio (IADRP) database categorizes AD research portfolios of 13 funding organizations, as of November 2013. The 13 contributors include:

- National Institutes of Health
- Administration on Aging
- Department of Veterans Affairs
- Agency on Healthcare Research and Quality
- Centers for Disease Control and Prevention

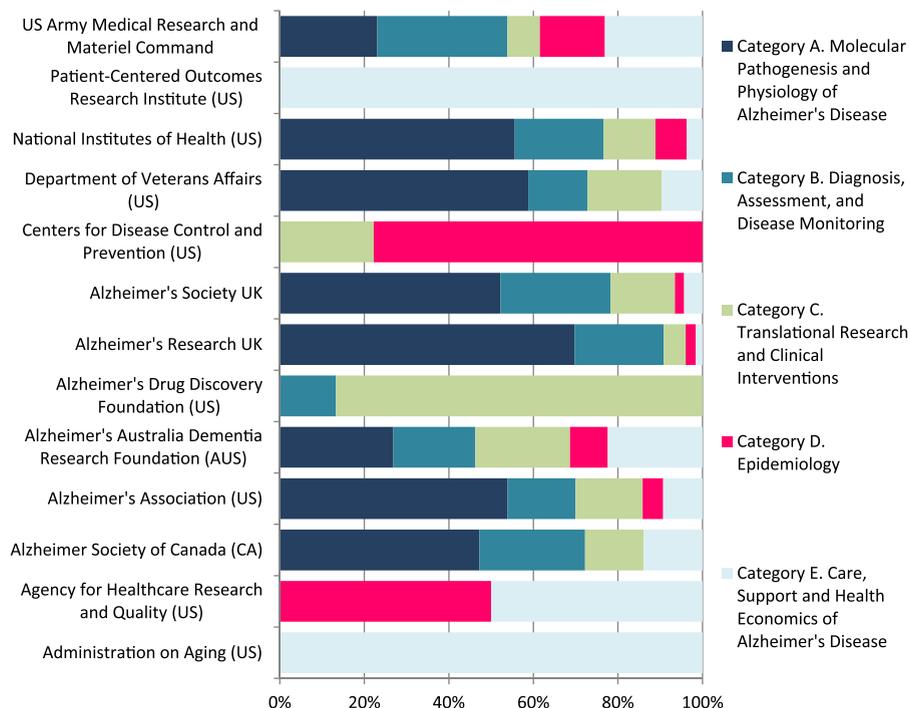


Fig. 2. Summary of projects by participating funders across CADRO research categories from 2008 through 2012 for the majority of funders and 2013 for the Alzheimer's Society of Canada.

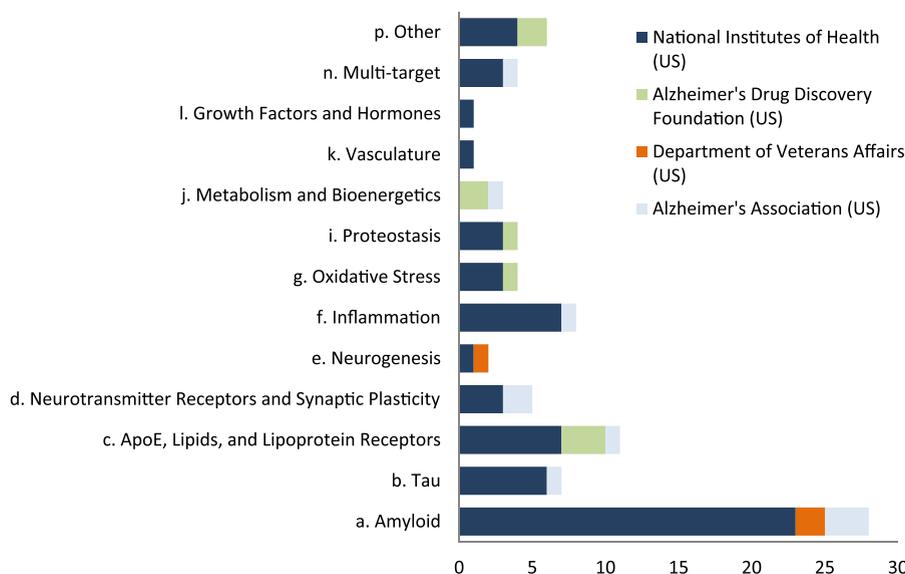


Fig. 3. Diverse therapeutic targets funded by participating organizations in 2012 in the themes captured under “Category C. Translational Research and Clinical Interventions—Topic 1: Drug Discovery (small molecule and biologics).”

- U.S. Army Medical Research and Materiel Command
- Alzheimer’s Association
- Alzheimer Drug Discovery Foundation
- Patient-Centered Outcomes Research Institute
- Alzheimer’s Research UK
- Alzheimer’s Society UK
- Alzheimer’s Australia Dementia Research Foundation
- Alzheimer’s Society Canada

Funding organizations utilized the CADRO to code research projects that focused on advancing basic understanding, improving research and clinically based tools, assessing therapeutic strategies, and enhancing research resources related to AD and related dementias.

The coded projects are now included in the searchable, online IADRP database, where they are fully accessible to the research community and other AD stakeholders (<http://iadrp.nia.nih.gov/>). The database currently includes funded research representing over 3800 unique grant projects, approximately 2600 principal investigators, and 500 grantee institutions in 25 countries. Figure 1 summarizes the number of AD projects represented in the IADRP across the 5 research categories for all participating funders from 2008 through 2012.

The IADRP database enables users to search research projects across all 3 tiers of the CADRO, by different criteria, including: funding organization; grantee institution; funding announcements; and/or country. Results are also downloadable to enable users to summarize and analyze AD research funding. Figure 2 summarizes the proportion of projects allocated by participating funders across the CADRO research categories cumulatively between 2008 and 2012 for the majority of funders and 2013 for the Alzheimer Society of Canada.

4. Portfolio analysis

Standardizing the classification of AD research projects across multiple funding organizations has created a unique opportunity to analyze and provide insight into the allocation and composition of AD research funding for major stakeholders. The availability of the IADRP will advance the field of Alzheimer’s disease research by providing a means for the following types of analyses:

- Defining a baseline to frame any subsequent and future planning and investment of funding and resources
- Determining examples of research and project areas that may reveal overlap and overemphasis
- Assessing gaps and needs in critical areas of research and practice
- Identifying potential opportunities for collaborations and investment, leveraging critical resources.

The overall goal of the IADRP project is to inform strategic planning and encourage targeted collaborations among funding organizations through the use of this 3-tiered coding system. Figure 3 demonstrates the high level of granularity possible at the third tier or theme level of the CADRO, highlighting the diversity of mechanisms represented in “Category C. Translational Research and Clinical Interventions, Topic 1—Drug Discovery (small molecules and biologics).”

5. Next steps

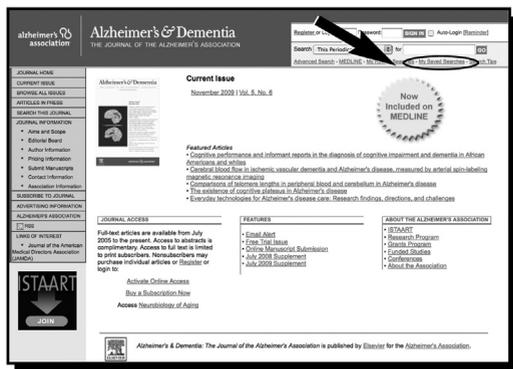
The IADRP participating organizations continue to solicit the participation of other interested funders of AD research. Additional application of CADRO to research portfolios across the AD field will only serve to make the IADRP a more robust tool and resource for the

community. A more complete picture of the AD research landscape will help both organizations and researchers increase efficiency in the allocation of funding by strategically leveraging critical resources, prioritizing specific areas of AD research, and identifying potential collaborative opportunities.

Reference

[1] Refolo LM, Snyder H, Liggins C, Ryan L, Silverberg N, Petanceska S, et al. Common Alzheimer's disease research ontology: National Institute on Aging and Alzheimer's Association collaborative project. *Alzheimers Dement* 2012;8:372–5.

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