News from NIH: translational research for an aging population

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The National Institute on Aging (NIA) has long been the primary sponsor of research in the basic social and behavioral sciences on the processes of aging. These investments have generated a large body of knowledge about change in physical health, social and psychological function, and economic behavior over the adult life course; on the inter-relationships between older people and social institutions; and on the economic impact of both changing age-composition of the population and public/private programs that serve older populations. (For more information visit the Division of Behavioral and Social Research (BSR) website at: <http://www.nia.nih.gov/research/dbsr>). As recent years have seen an explosion of fundamental insights in the basic social and behavioral sciences, translating this knowledge into practical advances to benefit the health and well-being of older Americans has increasingly become a priority for the NIA. Of particular interest are approaches that apply these evidence-based insights to (1) translation into state/federal/international public policy; (2) adoption by agencies or firms (e.g., government agencies, insurance companies, employers, nursing homes); (3) translation into public health practice; (4) development of new technologies and; (5) development of behavior change/behavior maintenance programs.

One of NIA's signature efforts to advance the development and testing of new interventions is our set of nine *Roybal Centers for Translational Research on Aging* [1]. Examples of Roybal Center research domains include: financial decision making; behavioral economic approaches for improving health and health care delivery; approaches to maintaining mobility, physical activity, and driving skills in older age; technological enhancements for independent living; and pain management in later life. These centers offer opportunities for affiliated investigators to apply for pilot research funding, although the potential impact of some projects belies the use of the term pilot. For example, in one pilot from the National Bureau of Economic Research's Roybal Center, which is co-sponsored by the NIH Office of Behavioral and Social Sciences Research (OBSSR) and the Social Security Administration (SSA), Kathleen Milkman and colleagues recently designed and tested an extremely low-cost method for significantly increasing influenza vaccination rates: just have

participants commit to a specific time and date to be vaccinated [2]. In another recent study, Michelle Ackerman and colleagues found that older drivers who were told they did not qualify for an insurance discount based on their performance on the Useful Field of View (UFOV) test were more likely to avoid driving during a 3-month follow-up period [3].

The development of the UFOV test itself highlights another important avenue for real-world translation of aging research, namely the SBIR program. Dr. Karlene Ball used a series of Small Business Innovation Research (SBIR) grants to develop UFOV and bring it to market, where it is now used to screen potentially at-risk drivers by several state DMVs and insurance companies. Another recent SBIR project led by Dr. Blair Irvine successfully developed an internet program to train nursing aides to effectively manage and prevent aggressive resident behaviors, which pose significant risk to workers in long term care facilities [4]. NIA has recently released two Requests For Application (RFAs) focusing on small businesses (see: RFA-AG-12-010 and RFA-AG-12-009). Sample areas of interest include the development of software to improve financial decision making, novel devices or methods to identify at-risk older drivers, tools for zoning boards and others to assess the elder-friendliness of neighborhoods, and development of evidence-based risk reduction programs for older workers.

Historically, BSR has also supported traditional larger-scale randomized trials, including interventions to promote healthy cognitive aging (such as the ACTIVE trial, co-funded by the National Institute of Nursing Research [NINR] [5]), and to support caregivers of family members with dementia (e.g., REACH-II also co-funded by NINR [6]). The latter intervention is now being used system-wide by the Veterans Administration. In the domain of pension policy, NIA supported research (co-funded by the Sloan Foundation) on the impact of plan design on retirement savings has led to widespread adoption of automatic enrollment in 401(k) plans upon employment in many large organizations, including the federal government [7]. More recently, BSR has supported work to evaluate natural experiments. Finkelstein and col-

leagues found that uninsured individuals randomized to receive health insurance in the Oregon Health Insurance Lottery experiment (launched when Oregon could not meet the demand for an insurance program) truly did benefit from the receipt of insurance [8]. Similarly, Ludwig and colleagues recently reported longer-term positive health effects of the US Department of Housing and Urban Development's Move to Opportunity trial, which randomized families living in deeply impoverished neighborhoods to receive either normal section 8 housing vouchers, vouchers usable only in very low poverty areas, or treatment as usual; a decade later, participants randomized to move to lower poverty areas were less likely to be morbidly obese and diabetic than either the normal housing voucher group or the control group [9].

The NIA has also begun to collaborate explicitly with other agencies within the Department of Health and Human Services. Recently, the NIA collaborated with the U.S. Administration on Aging (AoA), to release two Funding Opportunity Announcements (PA-11-123 and PA-11-124) for translational research that helps older adults maintain their health and independence in the community. These announcements encourage collaborations between academic research centers and community-based organizations with expertise serving the elderly. They aim to enhance our understanding of practical tools, techniques, programs, and policies that communities can use to more effectively respond to needs of their aging populations. Although it is too early to tell how successful these projects will be, this joint initiative between the NIA and the AoA addresses complementary goals of the two agencies to improve the health and well-being of older Americans.

With the goal of collecting population level data that can inform the design of interventions and economic and social policies to promote healthy aging, the NIA has supported the development of new measures of subjective well-being to complement objective health measures and traditional economic indicators of progress. Both the Princeton Roybal Center for Health and Well-being (http://www.princeton.edu/news/CREW_NIA/) and numerous longitudinal surveys of midlife and aging, including MIDUS (<http://midus.wisc.edu/>) and the HRS (<http://hrsonline.isr.umich.edu/>) have contributed to this endeavor. Measures of well-being extend the concept of health beyond the mere presence or absence of illness or disability to incorporate the notion of positive health and functioning, which has typically received limited attention in the health sciences. Recent findings from NIA-supported studies have uncovered buffering effects of psychological well-being on inflammation among individuals with low education [10], a positive association between daily experiences of positive affect and longevity [11], and links between purpose in life and reduced

risk of mortality [12], Alzheimer's disease [13], and disability [14], after taking background health and demographic factors into account. The NIA welcomes applications that introduce well-being metrics into interventions to assess their impact on psychological health and quality of life as well as applications on themes outlined in a recent RFA co-funded by the NIH National Center for Complementary and Alternative Medicine on *Subjective Well-being: Advances in Measurement and Applications to Aging* (see: RFA-AG-11-003).

Although many people associate the NIA with research on retirement age adults, our mission within BSR is to focus on the full life course, and particularly on middle-aged populations, as we seek opportunities to prevent behaviors and conditions that would adversely affect health and well-being at older ages. For example, BSR has partnered with the Eunice Kennedy Shriver National Institute of Child Health and Development (NICHD), OBSSR, and the National Institute for Occupational Safety and Health (NIOSH) to fund the Work, Family, Health Network (See: WFHN), which is conducting a randomized trial at 30 worksites in two industries (one blue collar, one white collar) designed to reduce work-related stress and promote family-responsive work environments. The NIA provides funding for a team at Harvard led by Lisa Berkman, which is incorporating objective assessments of cardiovascular risk factors and sleep disruption among participants into the workplace intervention.

Finally, although the workplace can be stressful at times, it also offers important opportunities for cognitive and social stimulation that are lost when workers retire. There is mounting evidence that retired adults benefit from meaningful engagement in the community. BSR's (and NIA's) largest community intervention evaluates the impact of the Experience Corps program on social, cognitive, and physical functioning among poor, inner-city elderly in Baltimore. Experience Corps recruits older people for cognitively challenging, meaningful roles as volunteers (with paid stipends) in inner-city elementary schools in 19 cities nationwide. Although final outcomes from this double-randomized treatment comparison study will not be available until later this year, preliminary data showed an array of positive outcomes for participants (compared with a control group), including more physical activity and some cognitive benefits (and fully 2 h less television watching per day!). The project so far has been very successful in meeting targets for low-income minority elderly in the inner city (a group under-represented in more purely health promotion studies), and ongoing recruitment studies seem to show the most positive response to the "Do something for the kids" message as opposed to the "Improve your health" messages. This study high-

lights the importance of seeking translational opportunities to foster healthy aging and sustain healthy communities by exploiting individuals' basic desires to help others and to maintain meaningful social roles.

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