



National Institutes of Health
Office of Disease Prevention

Prevention Research: Building a Healthier Future

Spotlight on 2019



Strategic Priorities and Cross-Cutting Themes

The Office of Disease Prevention (ODP) is the lead office at the National Institutes of Health (NIH) responsible for advancing and disseminating research in disease prevention. Our work to help all Americans live longer, healthier lives is guided by these interconnected strategic priorities and cross-cutting themes.

Conduct Portfolio Analysis & Impact Assessment



Identify Research Gaps



Improve Research Methods



CROSS-CUTTING THEMES

- » Leading Causes and Risk Factors for Premature Morbidity and Mortality
- » Health Disparities
- » Dissemination and Implementation Research



Promote Collaborative Research



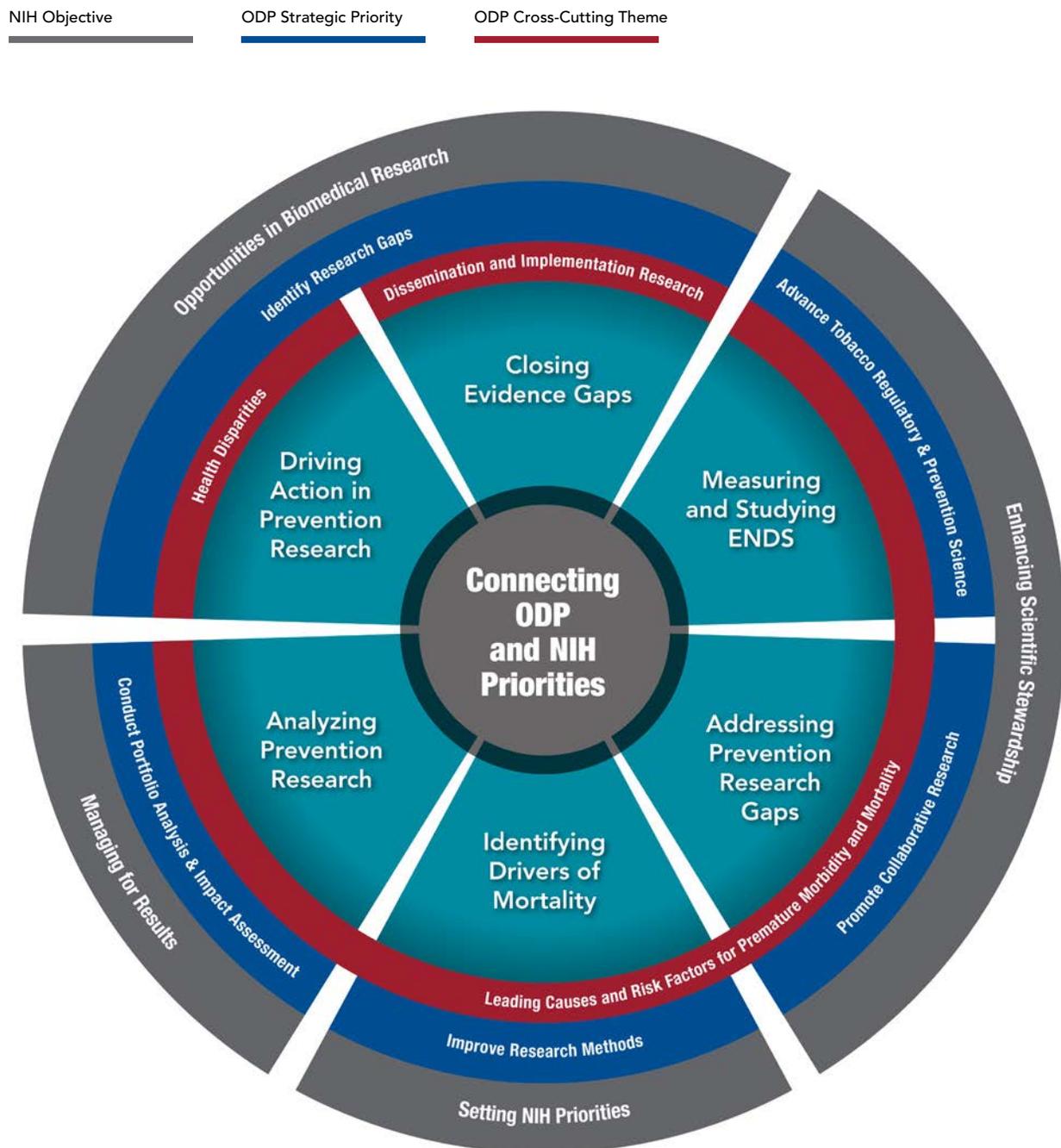
Advance Tobacco Regulatory & Prevention Science



Communicate Efforts & Findings

Connecting ODP Projects and Priorities with NIH Objectives

Our work makes valuable contributions to NIH's goal of turning scientific discoveries into health. We are dedicated to working closely with our NIH colleagues, as well as other federal and non-federal partners, to address NIH's four strategic objectives.



Spotlight on Progress

Research on disease prevention is an important part of the NIH's mission. Our work developing, coordinating, and implementing prevention research helps strengthen clinical practice, health policy, and community health programs.

This section highlights a few of our 2019 accomplishments.



Closing Evidence Gaps and Informing Clinical Practice with NIH Prevention Research

The ODP serves as NIH's liaison to the U.S. Preventive Services Task Force (USPSTF), an independent panel of experts that make evidence-based recommendations about clinical preventive services such as screenings, behavioral counseling, and medications. The ODP monitors gaps in the scientific evidence that are identified by the USPSTF and NIH's progress toward addressing them through additional research.

As a part of these efforts, the ODP identified several examples that demonstrate how NIH-supported research has contributed to upgrading [USPSTF "insufficient evidence" \(I\) statements](#) to definitive recommendations for clinical preventive services. The USPSTF issues an I statement when there isn't enough evidence, or the quality of the evidence is poor, and the USPSTF cannot recommend for or against using a clinical preventive service. When there is enough new scientific evidence to inform a more conclusive decision, the USPSTF will move an I statement to a definitive recommendation.

The ODP's review of USPSTF I statements that have been upgraded to definitive recommendations suggests that NIH-supported prevention research plays an important role in filling evidence gaps, moving science forward, and improving the nation's health.

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SUCCESS STORY

Screening for lung cancer provides an excellent example of NIH-supported research that contributed to an upgraded recommendation by the USPSTF. In 2004, the USPSTF found insufficient evidence to recommend for or against using a type of scan called low-dose computed tomography (LDCT) to screen for lung cancer in people without any symptoms. In 2013, the USPSTF re-examined the lung cancer screening topic and identified enough new, high-quality evidence to issue an upgraded statement recommending that adults between the ages of 55 and 80 with a history of smoking be screened for lung cancer every year using LDCT. The ODP found that the most significant piece of new evidence that informed the USPSTF's updated recommendation was the National Lung Screening Trial, a large multicenter randomized controlled trial sponsored by the National Cancer Institute.

The ability to screen for and potentially detect lung cancer early, when it may be more treatable, is an important achievement for public health. Drawing in part on NIH-funded prevention research, the USPSTF recommendation to screen for lung cancer with LDCT has influenced the care of millions of Americans.

From 2017 to 2018, use of e-cigarettes and vaping devices among high school students increased by 78 percent, prompting calls for more research and interventions to address the youth vaping epidemic.

Partnering To Better Measure and Study Electronic Nicotine Delivery Systems

Since their introduction into the United States more than a decade ago, the prevalence of electronic nicotine delivery systems (ENDS), such as e-cigarettes and vaping devices, has increased rapidly, particularly among youth. From 2017 to 2018, use among high school students increased by 78 percent (11.7% to 20.8%), prompting calls for more research and interventions to address the youth vaping epidemic. Emerging evidence suggests that ENDS use and their relationship to other tobacco products may vary by population subgroup; however, limited attention has been given to examining these differences.

To address gaps in ENDS research, ODP staff, including members of the [Tobacco Regulatory Science Program \(TRSP\)](#), formed a prevention-focused subgroup of the [NIH Tobacco and Nicotine Research Interest Group \(TANRIG\)](#) to develop and release four companion funding opportunity announcements (FOAs). The purpose of these FOAs is to support studies on ENDS that examine the basic mechanisms of effects in preclinical and clinical studies; and population, clinical, and applied prevention research, including studies on epidemiology, etiology of patterns of use, and the role of ENDS in harm reduction. We hope these studies will build a more comprehensive understanding of ENDS products within the health research community.

In contrast to cigarettes, for which standard measures and methods have existed for a long time, the diversity of ENDS devices, liquid solutions used in the devices, and the more than 7,000 flavors available to consumers make standardized measurement very challenging. To address this issue, TRSP and other ODP staff collaborated with TANRIG to sponsor a workshop to advance quality and standardization of measurement related to ENDS use behaviors and laboratory assays of ENDS products. The workshop working group is currently developing two companion manuscripts to provide recommendations for the assessment and reporting of ENDS measures. This workshop represents an early and vital step toward creating a set of common measures for ENDS-related research studies.

Collaborating Across the NIH To Address Prevention Research Gaps

The [Prevention Scientific Interest Groups \(SIGs\)](#) are coordinated by the ODP and develop collaborative research initiatives to address unmet prevention research needs. The Prevention SIGs focus on screening in children and in adults; the genetics of prevention; environmental, policy, and systems-level intervention; comorbidities; electronic nicotine delivery systems (ENDS); and physical activity. These groups, which concentrate on areas that are not addressed by existing trans-NIH or federal groups, engage many federal staff interested in advancing research within these areas and have been met with enthusiasm across the NIH and U.S. Department of Health and Human Services.

[SIG accomplishments](#) include coordinating and developing prevention-related funding opportunities; developing workshops on key methodologic issues in prevention; creating new research resources; and conducting literature reviews and topical analyses of the NIH grant portfolio.

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Identifying Current and Future Drivers of Mortality

The [ODP worked with the Global Burden of Disease \(GBD\) Study](#), which is coordinated by the World Health Organization and the Bill and Melinda Gates Foundation, to generate a new age category—birth to 70 years of age—for the study. The data for this category, which tracks the causes and risk factors for premature death (defined as death before the age of 70) and disability, are now available in all GBD results generated using the [GBD data visualization tools](#) (select “Use advance settings”).

The GBD is the world’s largest systematic, scientific effort to quantify health loss from all diseases, injuries, and risk factors by age, sex, and geographic location over time. Until ODP’s collaboration with the GBD, data on the causes and risk factors for premature death and disability were not regularly available for the United States as a whole, or by sex, age, or race/ethnicity. Now, as a result of this collaboration, the NIH and the extramural research community can identify and track the causes and risk factors of premature death and disability in the United States over time (both historically and projecting up to 25 years in the future).

Premature death is often preventable, so these data not only improve our understanding of the burden of disease and key health outcomes in the United States, but also enhance our ability to focus on the most pressing health challenges facing the nation.



Analyzing the NIH Prevention Research Portfolio

An ODP analysis found that NIH support of prevention research on the leading risk factors and causes of death and disability in the United States is not proportionate to the nation's burden of disease. Overall, only about half of the NIH prevention research portfolio measures at least one of the top 10 risk factors or causes of death and disability as an exposure – for example, what happens to people's health if they have a poor diet – or as an outcome – for example, what may lead to someone developing cancer. If we put this into the context of the NIH portfolio of grants and cooperative agreements as a whole, this means that just 8.5 percent of all NIH-funded grants and cooperative agreements are focused on preventing the leading risk factors or causes of death and disability in the United States.

The study also found that most NIH-funded prevention research involving leading risk factors and causes of death and disability included observational studies or analyses of existing data, while only a small fraction included randomized intervention trials. Further, even though it is common for one person to have multiple risk factors (e.g., individuals who smoke also often have a poor diet and engage in little physical activity), few studies took advantage of this pattern to address multiple risk factors at the same time. These results, based on an analysis of NIH grants and cooperative agreements awarded between fiscal years 2012 and 2017, were published in [JAMA Network Open](#). We targeted [primary and secondary prevention research](#) in humans together with related methods research, which is the ODP's primary focus for prevention research. These areas of research can have a more immediate effect on human health and well-being than basic or preclinical work that could still be years away from preventing disease or disability in people.

Preventing disease is preferable to treatment, and [our findings suggest](#) that to lessen the burden of disease and improve public health, more prevention research and intervention studies are needed that address the leading risk factors and causes of death and disability in the United States.

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Synthesizing the Evidence, Shaping Research Agendas, and Driving Action

NIH Pathways to Prevention (P2P) workshops identify research gaps in a selected scientific area and outline ways to move the field forward.

In June 2019, more than 1,000 in-person and online attendees participated in a P2P workshop on [Achieving Health Equity in Preventive Services](#), which was co-sponsored by the ODP, National Institute on Minority Health and Health Disparities, National Cancer Institute, National Institute of Diabetes and Digestive and Kidney Diseases, and National Heart, Lung, and Blood Institute.

It has been well established that social determinants of health, including language barriers and culture, affect the acceptance and use of preventive services among minority populations and in people with low socioeconomic status. Limitations in the available data, insufficient evidence, and research gaps make it challenging to develop recommendations to increase the use of preventive services among specific groups. More research is required to understand the root causes of disparities in the use of these services, as well as how barriers can be addressed through provider and community interventions. The [workshop panel identified 26 recommendations](#) for future research in this area, including increasing collaboration with community organizations, emphasizing the role of multicomponent interventions, and using more innovative research methods.

Also in 2019, the ODP, along with co-sponsors, the National Institute of Arthritis and Musculoskeletal and Skin Diseases and the National Institute on Aging, completed the last step in the P2P process for the workshop on [Appropriate Use of Drug Therapies for Osteoporotic Fracture Prevention](#). Partners from across the federal government came together to develop an [action plan](#) to address the recommendations in the workshop panel's final report. More than 10 million people in the United States have osteoporosis, which puts them at higher risk for bone fractures. In addition to lifestyle changes, medications may help prevent these kinds of fractures, but significant gaps exist in the scientific data about their long-term use. The workshop highlighted areas where more research is needed to help individuals and physicians make informed decisions about osteoporosis treatment. At the Federal Partners Meeting, attendees identified opportunities to better promote existing resources, encourage studies into barriers to drug therapy, and promote greater collaboration across scientific fields and federal agencies.



Office of Disease Prevention 2019 at a Glance

Mind the Gap Webinars

8

Webinars

1,543



Attendees

3,793



YouTube Views

Research Coordination

7

Active ODP-Led Funding
Opportunity Announcements

47



Co-Funded
Projects

\$3.6M

Total Amount of
Co-Funding

Coordinated
NIH Review of

509

Healthy People 2030
Objectives



Scientific Activities

14

Papers Published
in Peer-Reviewed
Journals

13

Presentations and
Posters Given at National
Conferences

ODP Resources

Training in Prevention Research

124



Resources

- » Most Popular
- » Dissemination & Implementation
- » Measurement and Evaluation
- » Methods

Resources for Researchers

174



Resources

- » Most Popular
- » Dissemination & Implementation
- » Evidence-Based Practices
- » Suicide Prevention

Prevention Research-Related Funding Opportunities

390

Funding Opportunity
Announcements Featured
on the ODP Website

Digital Outreach

Twitter

999



New Followers

19,799

Total Followers

Email

2,540



New Subscribers

29,731

Total Subscribers

Website Visits

106,403



Website
prevention.nih.gov



Listserv
prevention.nih.gov/subscribe



Twitter
[@NIHprevents](https://twitter.com/NIHprevents)