Prevention Research: Building a Healthier Future

The Office of Disease Prevention Strategic Plan FY 2019–2023

DEPARTMENT OF HEALTH & HUMAN SERVICES · USA

NIH National Institutes of Health
Office of Disease Prevention

Foreword

Disease prevention has been a central component of the NIH mission from its earliest days. Today, along with investments in fundamental science and treatments and cures, the NIH continues to emphasize health promotion and disease prevention as a key strategy for advancing opportunities in biomedical research. With a focus on the importance of prevention at all stages of life, the Office of Disease Prevention (ODP) plays a vital role in identifying emerging scientific opportunities and developing strategies for addressing public health challenges.

NIH-supported prevention research is the foundation upon which new public health programs are developed. The ODP's new strategic plan outlines efforts to strengthen this research through increased coordination and facilitation among NIH Institutes, Centers, and Offices, including leveraging the power of new portfolio analysis tools, ensuring ongoing communication with stakeholders, and building trans-NIH partnerships to address gaps in prevention research. The ODP also has a growing role in shaping the appropriate use of research methods and improving the design of prevention research studies. Better studies mean better results, which in turn will improve the quality, value, and impact of NIH-funded prevention research.

The ODP's reach goes beyond the NIH. ODP staff represent the agency on important initiatives across the Department of Health and Human Services (HHS). The ODP ensures that the U.S. Preventive Services Task Force, administered by the Agency for Healthcare Research and Quality, has the most up-to-date research results to provide well-informed clinical preventive service recommendations. In partnership with the HHS Office of Disease Prevention and Health Promotion, the ODP coordinates input from across the NIH on the science-based 10-year national objectives for the Healthy People initiative, which is designed to help all Americans attain high-quality, longer lives free of preventable disease, disability, injury, and premature death.

Over the past 5 years, the ODP has improved the quality of prevention research supported by the NIH. The new ODP Strategic Plan outlines how the Office will continue to work across the NIH and with other partners to advance prevention research. I fully support the ODP's new strategic approach to improving public health by increasing the scope, quality, dissemination, and impact of prevention research supported by the NIH.

Francis S. Collins, M.D., Ph.D.
Director, National Institutes of Health

The ODP Strategic Plan for Fiscal Years 2019–2023

A Message from the Director

A Message from the Director

I am pleased to present the ODP Strategic Plan for Fiscal Years 2019–2023, titled Prevention Research: Building a Healthier Future. This document outlines the priorities for the Office and how our efforts will help to shape the landscape of prevention research over the next 5 years. It also highlights our continued focus on primary and secondary prevention research in humans, and on related methods research. The ODP holds a unique position at the NIH, serving as the lead program office focused on assessing, facilitating, and stimulating research in disease prevention and health promotion, and disseminating the results of this research to improve public health. Investigating the causes of and developing strategies to prevent illness and disability has been a core component of the NIH mission since its earliest days, and it remains a principal focus today. Throughout ODP's new strategic plan, we have taken steps to highlight the ways in which ODP programs represent the building blocks for how the NIH approaches and prioritizes prevention research to ensure that the agency supports the highest quality prevention science, with the greatest possible effect.

The ODP Strategic Plan builds upon the progress made over the previous planning period while adding new elements to address needs and opportunities in prevention research that may otherwise go unmet through other federal or private sector efforts. For example, the ODP will be able to identify patterns and trends in the NIH prevention research portfolio by leveraging data made available through an innovative portfolio analysis approach created by the Office. In collaboration with NIH Institutes, Centers, and Offices, we are now able to better report on how NIH prevention research investments have informed clinical preventive services recommendations, as well as to determine where additional research is needed. And, the Office will continue to enhance the rigor and reproducibility of prevention research by further expanding its rich repository of training resources for prevention researchers around the world. By understanding what the best available research methods are in the field of prevention science—as well as how and when to use them—researchers will be better equipped to perform high-quality prevention research and ultimately improve public health.

New activities that will cut across the ODP's strategic priorities include an increased focus on advancing the understanding of the leading causes of and risk factors for premature mortality and morbidity, strengthening research to address health disparities, and promoting prevention-related dissemination and implementation research. In addition, the Office is now including its focus on tobacco regulatory science and tobacco prevention research as a new strategic priority to reflect the need for continued research to reduce the impact of tobacco on public health.

While many causes of disease, disability, and premature death are already well-understood, challenges persist. There are still too many people getting sick and dying due to modifiable and preventable risk factors such as tobacco use, obesity, and hypertension. Moreover, life expectancy differs when looking across socioeconomic status and race/ethnicity, and that variability is often mediated by behavioral and metabolic risk factors. All of this points to the need for better evidence-based interventions to move research into practice and ultimately improve public health.

The ODP Strategic Plan was created with significant input from our colleagues and stakeholders across the NIH, the federal government, the broader biomedical research community, and the public. We were grateful for their input as we refined our priorities and outlined our role in advancing prevention research. Moving forward, the ODP recognizes that we will succeed only with the close cooperation of all our stakeholders. Together, we can foster discovery to improve public health and build a healthier future.

David M. Murray, Ph.D.
Associate Director for Prevention
Director, Office of Disease Prevention, NIH

Overview

What is the Office of Disease Prevention?

The National Institutes of Health (NIH) established the Office of Disease Prevention (ODP) in 1986 in response to a directive in the Health Research Extension Act of 1985 to create the position of NIH Associate Director for Prevention (see Appendix B: History of the Office of Disease Prevention). Among other responsibilities, the Associate Director was charged with promoting and coordinating prevention research among NIH Institutes, Centers, and Offices (ICs) and between the NIH and other public and private entities. Today, the mission of the ODP is to improve the public health by increasing the scope, quality, dissemination, and impact of prevention research supported by the NIH. Under the direction of the Associate Director for Prevention, who is also the Director of the ODP, the Office fulfills this mission by providing leadership for the development, coordination, and implementation of prevention research in collaboration with NIH ICs and other partners.

The Office of Dietary Supplements (ODS) is an administrative unit within the ODP and promotes scientific research in dietary supplements. The mission of ODS is to strengthen knowledge and understanding of dietary supplements by evaluating scientific information, stimulating and supporting research, disseminating research results, and educating the public to foster an enhanced quality of life and health for the U.S. population. The goals of ODS are guided by its own strategic plan.

The ODP is part of the Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI) within the NIH Office of the Director. The mission of DPCPSI includes identifying emerging scientific opportunities, rising public health challenges, and scientific knowledge gaps that merit further research. In addition to disease prevention, DPCPSI also includes offices that coordinate research and activities related to AIDS, behavioral and social sciences, portfolio analysis, program evaluation and performance, research infrastructure, sexual and gender minority research, tribal health, and women's health.

What is Prevention Research?

Under the leadership of the ODP, the NIH Prevention Research Coordinating Committee (PRCC) has worked to ensure that a definition of prevention research communicates the breadth and depth of prevention research funded by the NIH while also retaining sufficient specificity to be of practical value.

PRCC Definition of Prevention Research

Prevention research at the NIH encompasses both primary and secondary prevention. It includes research designed to promote health; to prevent onset of disease, disorders, conditions, or injuries; and to detect, and prevent the progression of, asymptomatic disease. Prevention research targets biology, individual behavior, factors in the social and physical environments, and health services, and informs and evaluates health-related policies and regulations. Prevention research includes studies for:

- Identification and assessment of risk and protective factors
- Screening and identification of individuals and groups at risk
- Development and evaluation of interventions to reduce risk
- Translation, implementation, and dissemination of effective preventive interventions into practice
- Development of methods to support prevention research.

Research on disease prevention is an important part of the NIH mission. The NIH Institutes, Centers, and Offices (ICs) have broad portfolios of prevention research and training, as well as programs to disseminate the findings to scientists, health professionals, and the public. Each IC has the flexibility to adapt the PRCC Definition of Prevention Research to reflect its mission and the state of the science of its programs. As the ODP implements its strategic plan and begins to examine specific areas within the NIH prevention portfolio, the Office will work closely with the PRCC and NIH IC representatives to identify a process that enables the ODP to focus its efforts, while encouraging a broad spectrum of prevention research across the NIH, fostering collaborative efforts, and communicating the importance of prevention research widely.

How Does the ODP Strategic Plan Support NIH's Vision for Biomedical Research?

The ODP Strategic Plan makes valuable contributions to the goal of turning scientific discoveries into health by drawing on specific connections to the NIH-Wide Strategic Plan, Fiscal Years 2016–2020. The NIH-Wide Strategic Plan, which was developed to "ensure the agency remains well positioned to capitalize on new opportunities for scientific exploration and address new challenges for human health," includes four objectives:

OBJECTIVE 1: Advance Opportunities in Biomedical Research	**OBJECTIVE 2: Foster Innovation by Setting NIH Priorities**
OBJECTIVE 3: Enhance Scientific Stewardship	**OBJECTIVE 4: Excel as a Federal Science Agency by Managing for Results**

NIH OBJECTIVE 1: Advance Opportunities in Biomedical Research highlights health promotion and disease prevention as a core component of the agency's research agenda, along with exploring fundamental science and developing treatments and cures. The ODP is committed to working closely with NIH colleagues, as well as other federal and non-federal partners, to address the prevention research priorities laid out in the NIH-Wide Strategic Plan, including "studying healthy individuals across the lifespan; applying technological advances in early detection, diagnosis, and prevention; and utilizing evidence-based interventions to reduce health disparities." Examples of how the ODP is contributing to these efforts can be found throughout the ODP Strategic Plan.

A key element of **NIH OBJECTIVE 2: Foster Innovation by Setting NIH Priorities** focuses on efforts to strengthen the collection of high quality, comparable data on the burden of disease and to integrate analyses of such data into its priority setting process. As outlined in the ODP Strategic Plan, the Office will develop metrics to monitor the leading causes and risk factors for premature death (defined as death before age 70) by year in the United States, both for the population as a whole and for men, women, and other population subgroups. By further leveraging new portfolio analysis tools developed by the Office, the ODP will be able to examine how the leading causes of premature mortality and morbidity align with NIH investments in prevention research, providing valuable data the agency can use in its priority-setting process.

Underlying **NIH OBJECTIVE 3: Enhance Scientific Stewardship** are the foundational principles of rigor, reproducibility, and innovation in research. Ensuring that researchers use the most appropriate methods in their work plays a central role in the ODP Strategic Plan. Over the next 5 years, the ODP will continue to

promote the use of the best available methods in prevention research supported by the NIH. For example, the ODP will continue to provide resources that make it easier for NIH review staff to identify experts in specific study designs and research methods to review NIH research applications. Including reviewers with the most appropriate content and methodological expertise on study sections will enhance the quality of peer review and, in turn, improve the overall value of research funded by the NIH.

As the world's premier biomedical research agency, it is imperative that the NIH maintains public trust and serves as an efficient and effective steward of public resources. The aims of the ODP Strategic Plan include improving the understating of the NIH prevention research portfolio through new portfolio analysis approaches, assessing the impact of NIH investments in prevention research, and communicating the results of these efforts to the public. The ODP's work, which increases the awareness of how NIH investments are helping improve the health of the nation, directly supports **NIH OBJECTIVE 4: Excel as a Federal Science Agency by Managing for Results.**

In addition to the activities outlined above, many of the initiatives and programs coordinated by the ODP address the need for new research examining the influence of sex and gender on health and disease and support the NIH's commitment to women's health. Considering these factors in research informs the development of prevention strategies and treatment interventions for areas in which women and men differ, such as depression, smoking cessation, and cardiovascular health. As part of the Office's ongoing commitment to promoting the best available methods in prevention research, the ODP is well positioned to provide advice on issues, such as research design, intervention development, measurement, and analysis, that highlight how sex and gender influence health outcomes. Improving the quality of the research supported by the NIH will result in improved clinical preventive screening guidelines as well as implementation strategies targeted specifically on improving women's health.

Strategic Priorities for FY 2019–2023

The ODP Strategic Plan for fiscal years (FY) 2019–2023 includes six strategic priorities that will guide the activities of the Office over the next 5 years. The priorities are interconnected, allowing each area to leverage staff expertise and build upon prevention-related resources, tools, and initiatives developed across the ODP.

Strategic Priority I
Systematically monitor NIH investments in prevention research and the progress and results of that research.

Strategic Priority II
Identify prevention research areas for investment or expanded effort by the NIH.

Strategic Priority III
Promote the use of the best available methods in prevention research and support the development of better methods.

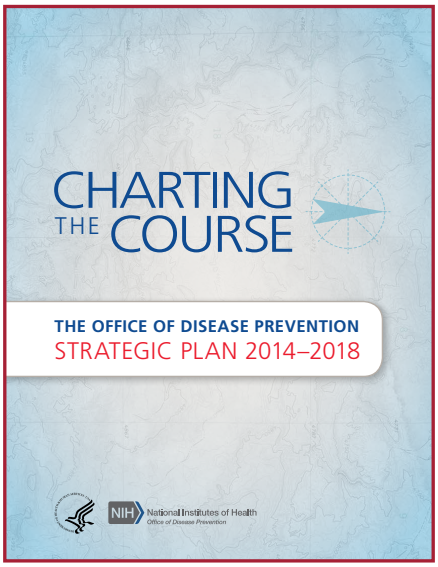
Strategic Priority IV
Promote collaborative prevention research projects and facilitate coordination of such projects across the NIH and with other public and private entities.

Strategic Priority V
Promote and facilitate tobacco regulatory science and tobacco prevention research.

Strategic Priority VI
Communicate the importance and value of prevention research, disseminate prevention research resources and programs, and build and enhance relationships with key stakeholders.

Selected Accomplishments

Each strategic priority builds upon progress from the previous planning period, which included the development of programmatic resources for the ODP's stakeholders and the creation of new initiatives designed to identify and address gaps in prevention research and methods. Examples of accomplishments include:



- Creation of a novel approach for characterizing the NIH prevention research portfolio to enable the identification of patterns and trends, as well as research areas that may benefit from targeted efforts by NIH Institutes, Centers, and Offices (ICs)
- Development of a new systematic process for highlighting NIH activities relevant to the U.S. Preventive Services Task Force (USPSTF) "insufficient evidence" (I) statements, providing an opportunity for ICs to consider whether additional activity may be warranted to better inform the development of clinical preventive services recommendations
- Coordination of the Pathways to Prevention program, which is designed to advance important areas of public health research that have incomplete or underdeveloped research and for which there is a need for a critical assessment of the current state of the science
- Development of the Prevention Research Expertise Survey (PRES), a new process for identifying methods experts in the extramural community and characterizing their level of expertise on a variety of prevention-related design, analysis, and content areas to support the recruitment of highly qualified scientific review panel members and improve the quality of prevention research supported by the NIH
- Launch of five new Scientific Interest Groups aimed at identifying and developing collaborative prevention initiatives to address research gaps in childhood screening; adult screening; genetics of prevention; evaluation of environmental, policy, and systems-level interventions; and interventions to prevent or delay onset of multiple chronic conditions
- Establishment of the Tobacco Regulatory Science Program, a unique collaboration with the U.S. Food and Drug Administration (FDA), to coordinate trans-NIH research that is necessary to inform the FDA's regulatory activities and tobacco-related research priorities
- Redesign and expansion of the ODP website to provide improved access to information and interactive tools that support investigators in developing and funding quality projects that address a wide range of prevention research needs, gaps, and priorities.

What's New

The FY 2019–2023 Strategic Plan includes several new components. In addition to highlighting specific connections to the NIH-Wide Strategic Plan noted previously, the new plan includes three cross-cutting themes to be considered across all ODP priorities and formally integrates the Tobacco Regulatory Science Program into the ODP Strategic Plan.

Cross-Cutting Themes

The ODP engaged a variety of internal and external stakeholders during the development of the FY 2019–2023 Strategic Plan (See Appendix A: Strategic Planning Process and Stakeholder Engagement). Feedback from these sessions informed not only the priorities and objectives included in the plan but also helped the ODP identify three cross-cutting themes to guide Office activities over the next 5 years. These cross-cutting themes represent areas of opportunity for the ODP to serve as a catalyst for developing, coordinating, and implementing new activities and to better integrate disease prevention into trans-NIH initiatives. The three themes are:

- Stimulate research to address the leading causes and risk factors for premature mortality and morbidity.
- Support activities that strengthen research to address health disparities.
- Promote prevention-related dissemination and implementation research.

The ODP works closely with colleagues at NIH Institutes, Centers, and Offices and with other federal and non-federal partners to assess, facilitate, and stimulate research in disease prevention across a variety of content areas. Through these partnerships and improved integration of the cross-cutting themes into the ODP's strategic priorities, the Office will promote trans-NIH strategies that build a stronger public health research enterprise, advance health care, and inform prevention-related policy.

Leading Causes and Risk Factors for Premature Mortality and Morbidity

The ODP defines prevention research to include primary and secondary prevention research in humans, together with relevant methods research. During the FY 2019–2023 planning period, the ODP will seek to develop data on the leading causes and risk and protective factors for premature death in the United States, defined as death before age 70. The ODP will also seek to advance research to address the leading causes and risk factors for premature morbidity and mortality. Death is inevitable, but premature death is often preventable and so is an appropriate focus for the ODP.

> **OBJECTIVE 2: Foster Innovation by Setting NIH Priorities.** "NIH will work with its many partners, including CDC, to strengthen the collection of high quality, comparable data on the burden of disease and will integrate analyses of such data into its priority setting process."

Several existing sources provide information relevant to the leading causes and risk and protective factors for morbidity and mortality for the United States as a whole. The Centers for Disease Control and Prevention (CDC) identifies the leading causes of death in the United States. The Global Burden of Disease project reports the burden of diseases, injuries, and risk factors at the state-level in the United States; outcomes include mortality, life expectancy, years of life lost, and disability-adjusted life years.

Data on causes and risk and protective factors for premature death are not regularly available for the United States as a whole, or for subgroups defined by sex, age, or race/ethnicity. Making such data available will help guide the work of the ODP, the NIH, and the extramural research community. The ODP will seek to make the data available as part of its new strategic plan. The ODP will use these sources, and others, to guide its work on each of the priorities described in this plan.

Health Disparities

In the FY 2019–2023 Strategic Plan, the ODP remains committed to working closely with NIH colleagues to promote a prevention research agenda that addresses the complex and multifaceted nature of health disparities. Prevention research is a key component to improve health outcomes across the life course for the whole population. Health disparities reflect a health difference that adversely affects disadvantaged populations based on one or more of the following health outcomes: higher incidence or prevalence of disease, including earlier onset or more aggressive progression; premature or excessive mortality from specific conditions; greater global burden of disease such as Disability Adjusted Life Years (DALY) measured by population health metrics; or worse outcomes on self-reported measures that reflect daily functioning or symptoms from specific conditions. The ODP will work with stakeholders to promote prevention research that addresses the needs of disadvantaged populations in order to identify and address the factors that contribute to health disparities and improve outcomes at the individual, family/organizational, community, and population health level.

> NIH **OBJECTIVE 1: Advance Opportunities in Biomedical Research.** "Importantly, NIH will continue to pursue research aimed at developing evidence-based interventions to reduce health disparities."

During the FY 2019–2023 planning period, the ODP will participate in efforts coordinated by the National Institute on Minority Health and Health Disparities to implement a new trans-NIH strategic plan to address health disparities. Several ODP strategic priorities align with key components of the NIH plan. For example, the ODP will help advance trans-NIH efforts that focus on developing and testing interventions to reduce health disparities through the review of available evidence—to (1) identify key gaps in prevention science related to health disparities and (2) promote targeted research on appropriately tailored public health, clinical, and community preventive

services in diverse settings and contexts. The ODP will consider approaches that integrate research across observational and experimental designs and use systems thinking to enhance the capacity to identify promising directions for research in this complex field. As part of the larger ODP effort to promote the use of best available methods in prevention research and support the development of better methods, the ODP will participate in activities to create and improve scientific methods, metrics, measures, and tools that support health disparities research. Furthermore, through the ODP's various partnerships, the Office will support the dissemination of research results to promote intra-agency collaboration and coordination of new research activities.

Dissemination and Implementation Research

Dissemination and implementation (D&I) research seeks to identify, develop, evaluate, and refine strategies and interventions that improve adoption of evidence-based approaches in routine practice across public health, clinical, and community settings. D&I research is needed to achieve full return on the NIH's collective investment in research, as well as to ensure the equitable uptake and sustainability of successful prevention strategies.[1] In the previous planning period, the ODP included a strategic priority focused on identifying and promoting the use of evidence-based interventions and promoting the conduct of D&I research in prevention. During that time, the ODP developed partnerships with implementation science programs and staff across the NIH and the federal government. These partnerships have led to an improved understanding of the D&I landscape at the NIH and in the extramural community and have allowed the ODP to work collaboratively to incorporate prevention components into the D&I research agenda and activities. For example, the ODP developed and posted D&I resources on its website, including a collection of evidence-based disease prevention programs and practices.

> **OBJECTIVE 1: Advance Opportunities in Biomedical Research.** "While NIH supports its own distinct and robust research portfolio, it collaborates with CDC, AHRQ, the HRSA , and other HHS agencies involved in complementary activities related to health promotion and disease prevention, including efforts in dissemination and implementation."

For the FY 2019–2023 planning period, the ODP will build on these successes by shifting its work in prevention-related D&I research from a single strategic priority to a broader effort that spans all its strategic priorities. For example, ODP staff will support and enhance prevention-related D&I research by serving on the trans-NIH D&I Working Group, which coordinates relevant funding opportunity announcements, trainings, and other initiatives across the NIH. The ODP will continue to increase the visibility of prevention in D&I research and promote the use of evidence-based interventions by identifying and sharing related events, resources, and training opportunities on its website, through social media, and by working with stakeholders. Other opportunities include characterizing the NIH D&I research portfolio to better understand the progress of research over time, as well as enhancing partnerships within this field of research. The ODP will also translate prevention research into practice by working with partners to streamline the effective use of rigorously evaluated evidenced-based interventions in real-world settings.

[1]Brownson RC, Colditz GA, Proctor EK, eds. *Dissemination and Implementation Research in Health, Second Edition.* New York: Oxford University Press; 2018.

Integration of the Tobacco Regulatory Science Program

Established in 2013 as a component of the ODP, the Tobacco Regulatory Science Program (TRSP) coordinates the trans-NIH collaborative effort with the Food and Drug Administration's (FDA) Center for Tobacco Products (CTP) to conduct research supporting its regulatory activities over tobacco products. With the passage of the 2009 Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act), the FDA acquired the authority to regulate the manufacture, marketing, and distribution of tobacco products in order to protect public health. The FDA is committed to educating the public—especially young people—about the harms of tobacco products, keeping tobacco products out of the hands of America's youth, and dramatically reducing the appeal of these deadly products. The NIH-FDA partnership is designed to advance research to inform strategies for reducing the impact of tobacco on public health, including preventing individuals from starting to use tobacco, encouraging current users to quit, and decreasing the harms of tobacco product use.

TRSP has been formally incorporated into the FY 2019–2023 Strategic Plan to highlight the importance of this research aimed at addressing a pressing public health problem. Tobacco use is the single most preventable cause of death and disease in the United States. Each year, approximately 480,000 Americans die from tobacco-related illnesses. For every person who dies from tobacco use, 30 more people suffer with at least one serious tobacco-related illness.[2] In addition, tobacco use costs the United States $170 billion annually in direct medical expenses and lost productivity.[3] A recent analysis found that tobacco was the second leading cause of death and the leading risk factor for disability adjusted life years.[4] Including TRSP in the broader ODP Strategic Plan will help the Office further identify gaps in tobacco research, develop new partnerships to advance these gaps, and further educate the public about how to prevent tobacco-related death and disease to improve public health.

[2]U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2014.

[3]Xu X, Bishop EE, Kennedy SM, et al. Annual healthcare spending attributable to cigarette smoking: an update. American Journal of Preventive Medicine. 2015;48(3):326–333. doi: 10.1016/j.amepre.2014.10.012.

[4]Mokdad AH, Ballestros K, Echko M, et al. The state of U.S. health, 1990–2016: burden of diseases, injuries, and risk factors among U.S. states. JAMA. 2018;319(14):1444–1472. doi: 10.1001/jama.2018.0158.

Strategic Priorities for FY 2019–2023

Strategic Priorities for FY 2019–2023

STRATEGIC PRIORITY I

Systematically monitor NIH investments in prevention research and the progress and results of that research.

Rationale

Comprehensive methods are needed to identify the characteristics of NIH-funded prevention research studies, and to summarize their findings in a meaningful way. Such methods will enable the identification of patterns and trends, as well as research areas that may benefit from targeted efforts by the NIH Institutes, Centers, and Offices (ICs). Such categorization also will enable monitoring of the progress and changes in prevention research over time.

NIH **OBJECTIVE 4: Excel as a Federal Science Agency by Managing for Results.** "NIH will take greater leadership in developing and validating the methodologies that are needed to evaluate scientific investments."

Progress Report

During the previous planning period, the ODP developed new methods and tools to better characterize the NIH prevention research portfolio. The ODP developed a prevention research taxonomy, a team-coding approach, and an accompanying protocol to enable standardized classification of prevention research projects funded by the NIH. The taxonomy provides a framework for classifying research according to characteristics such as risk factors, health conditions, study designs, and populations studied; the protocol provides instructions, definitions, and examples to ensure the taxonomy is consistently applied to all research projects during the coding process.

The ODP also built custom software, the Prevention Abstract Classification Tool (PACT), to support the manual coding of research awards, including recording individual and team coding and calculating inter-rater reliability.

Using these tools, the ODP coded more than 16,000 research projects across 12 activity codes awarded in FY 2010–2017, leading to the first-ever detailed analysis of the NIH prevention research portfolio. For these activity codes, primary and secondary prevention research represented 16.7% of research projects and 22.6% of research funding.[5]

Additionally, the ODP collaborated with the NIH Office of Portfolio Analysis (OPA) to develop novel machine learning (ML) algorithms that identify prevention research projects. Using ML to characterize the

[5]Murray DM, Villani J, Vargas AJ, Lee JA, Myles RL, Wu JY, Mabry PL, Schully SD. NIH primary and secondary prevention research in humans during 2012-2017. American Journal of Preventive Medicine. In press.

NIH prevention research portfolio as a whole and in specific topic areas is an efficient way for the ODP to describe trends in NIH-funded prevention research, identify gaps in the NIH prevention research portfolio, and ultimately help inform the agency's funding priorities.[6]

Objectives for FY 2019–2023

The objectives supporting Strategic Priority I focus on the classification of prevention research within the broader NIH portfolio. The ODP will ensure that this process connects with other efforts at the NIH, such as the Research, Condition, and Disease Categorization process. Furthermore, the ODP will work closely with colleagues in the OPA to apply existing approaches and develop new tools to improve our understanding of NIH prevention research investments. The ODP will also work with partners across the NIH to develop metrics for measuring the long-term progress of and changes in NIH investments in prevention research.

OBJECTIVE I.1:	Characterize and report on the NIH prevention research portfolio and submitted applications based on the taxonomy for prevention research developed by the ODP.
OBJECTIVE I.2:	Assess the impact of NIH investments in prevention research.
OBJECTIVE I.3:	Partner with NIH ICs to disseminate ODP portfolio analysis tools and related data.

[6]Villani J, Schully SD, Meyer P, Myles RL, Lee JA, Murray DM, Vargas AL. A machine learning approach to identify NIH-funded applied prevention research. American Journal of Preventive Medicine. In press.

STRATEGIC PRIORITY II

Identify prevention research areas for investment or expanded effort by the NIH.

Rationale

The ODP assists NIH ICs by identifying prevention research needs and gaps. In this process, the ODP makes use of a variety of prevention research data sources, including NIH portfolio analysis and reports from other federal agencies and task forces. Regular engagement with stakeholders such as the U.S. Preventive Services Task Force (USPSTF), the Community Preventive Services Task Force (CPSTF), the Healthy People program, and the extramural prevention research community also informs the identification of prevention research areas for investment or expanded effort by the NIH. In addition, the ODP works closely with NIH colleagues to promote a prevention research agenda that examines a variety of issues, including disease burden, population trends, health disparities and social determinants of health, and environmental factors in disease prevention, and it seeks to improve health across the life course.

> **OBJECTIVE 1: Advance Opportunities in Biomedical Research.** "It is imperative that NIH act upon opportunities to advance [health promotion and disease prevention], which is complementary to the discovery of treatments and is integral to the entire biomedical research continuum."

Progress Report

During the previous planning period, the ODP implemented and/or strengthened a number of activities to address this priority area. These included enhancing collaborations with the Agency for Healthcare Research and Quality (AHRQ) and the Centers for Disease Control and Prevention (CDC) in support of the USPSTF and CPSTF, and actively engaging with the Office of Disease Prevention and Health Promotion (ODPHP) of the Department of Health and Human Services to monitor progress toward meeting Healthy People 2020 objectives and contributing to the planning effort for Healthy People 2030. The ODP developed and maintains a network of representatives from the ICs that serve as a communications link for USPSTF, CPSTF, and Healthy People information and activities. The ODP created the annual Partners for Prevention newsletter and enhanced the information provided on its website to facilitate communications with the NIH ICs about USPSTF and CPSTF research needs and gaps and Healthy People activities.

The ODP also established the USPSTF "insufficient evidence" (I) statement annual reporting survey, which is used to communicate important prevention research gaps to the NIH ICs and track NIH activities related to addressing and closing these gaps. Survey results have been used in IC discussions about research opportunities and priorities as well as by AHRQ and the USPSTF in prioritizing the clinical preventive services topics under consideration for Task Force review.

Through the Pathways to Prevention program, the ODP partnered with its NIH colleagues to convene scientific workshops on several important prevention topics: The Role of Opioids in the Treatment of Chronic Pain, Advancing the Research on Myalgic Encephalomyelitis/Chronic Fatigue Syndrome, Total Worker Health®—What's Work Got to Do With It?, Advancing Research To Prevent Youth Suicide, and Methods for Evaluating Natural Experiments in Obesity. Each of these workshops brought together a systematic review of published evidence, content area experts, an unbiased independent panel, and public discussion, resulting in the development of a set of findings and recommendations for moving the field forward. The ODP published the evidence reports and independent panel recommendations for the workshops. In addition, following each workshop, the ODP hosted a Federal Partners meeting to create an action plan that could be implemented by the relevant federal agencies. The ODP has also created a plan and metrics for evaluating the longer-term impact of completed workshops.

Objectives for FY 2019–2023

Strategic Priority II relies on building collaborations between the ODP and NIH ICs, other federal agencies, non-federal organizations that routinely conduct systematic evidence reviews (e.g., USPSTF, CPSTF, Cochrane Collaboration, National Academy of Medicine), established evidence-based public health initiatives (e.g., Healthy People), and other stakeholders to identify, promote, and address needs in prevention research. In carrying out its overarching goal and three primary objectives, Strategic Priority II applies a transdisciplinary approach.

OBJECTIVE II.1:	Work with a variety of stakeholders to identify needs in prevention research.
OBJECTIVE II.2:	Compare identified needs in prevention research with the current NIH portfolio to identify prevention research gaps (i.e., those areas that are not being addressed or have insufficient funding).
OBJECTIVE II.3:	Work with NIH ICs and other stakeholders to identify prevention research gaps that warrant greater investment or expanded effort.

STRATEGIC PRIORITY III

Promote the use of the best available methods in prevention research and support the development of better methods.

Rationale

Progress in prevention research depends on the use of the best available methods in prevention science. This includes methods related to research design, intervention development, measurement, and analysis. The ODP can encourage investigators to use the best available methods as they prepare their applications for NIH support and can encourage reviewers to look for those methods as they review the applications. The Office also plays a role in helping program and review staff understand those methods so they can more effectively guide the work of both investigators and reviewers. The ODP can also collaborate with other ICs to review both funding opportunity announcements aimed toward developing better methods and major projects to ensure the use of the best available methods.

> NIH **OBJECTIVE 3: Enhance Scientific Stewardship.** "NIH will take the lead in promoting new approaches toward enhancing the rigor of experimental design, analysis, and reporting."

Progress Report

During the previous planning period, the ODP developed and implemented the Prevention Research Expertise Survey (PRES) to identify methods experts in the extramural community and to characterize their level of expertise on a variety of prevention-related design, analytic, and content areas. The results of the survey are housed in a database that can be accessed via a web-based Prevention Research Expertise Directory. The ODP developed a video tutorial to provide training for Scientific Review Officers across the NIH who can use this directory to identify prevention science experts they may wish to invite to participate on review panels. More than 3,000 methodologists have completed the survey and are contributing to the database thus far, and the ODP will continue to recruit additional methodologists over time. The participation of highly qualified methods experts will strengthen the review panels and improve the quality of prevention research supported by the NIH. The ODP also developed and implemented the Internal Prevention Research Expertise Survey (iPRES) to gather similar data from NIH methods experts.

The ODP created new training resources, including a centralized list of training opportunities in prevention research methods available to the research community. An important recent addition is a seven-part online course on the Design and Analysis of Pragmatic and Group-Randomized Trials in Public Health and Medicine. This course is designed both for extramural investigators who may need to use these methods and for NIH program and review staff who may need to advise investigators or review applications based on these methods.

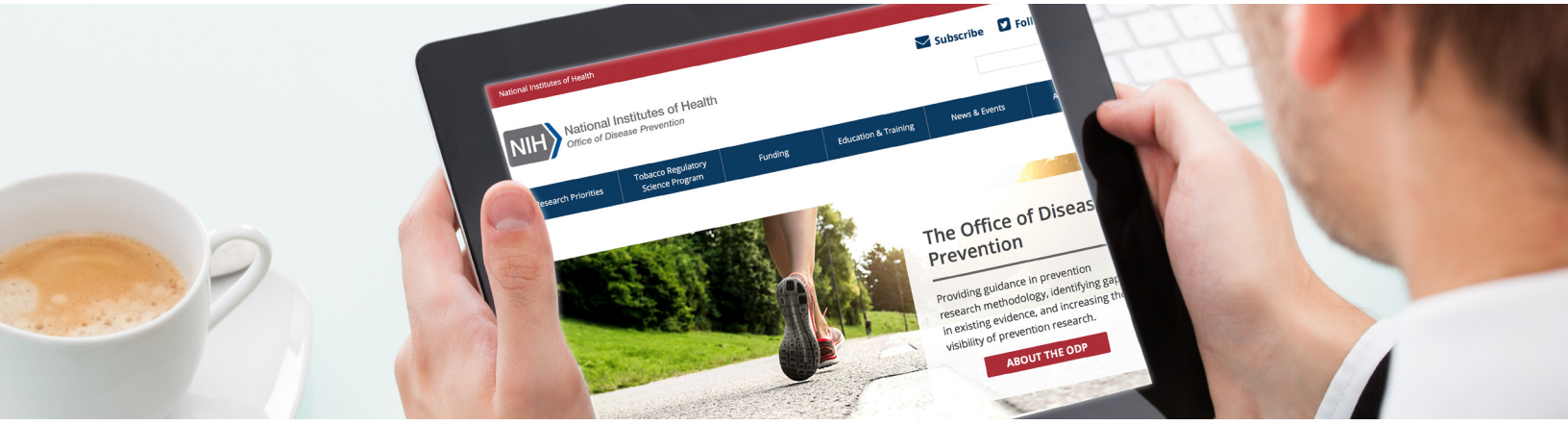
The ODP refocused the Methods: Mind the Gap webinar series to explore research design, measurement, intervention, data analysis, and other methods of interest to prevention scientists. This webinar series provides training in these methods areas for extramural investigators and also for NIH program and review staff. Webinars are offered almost monthly and videocasts are archived for future viewing.

Most recently, the ODP created the Research Methods Resources website to provide background, references, and answers to frequently asked questions for investigators considering group-randomization or delivery of interventions to groups. The ODP worked with the Office of Extramural Research (OER) to add alerts to the NIH Application Guide regarding the methodological issues inherent in group-randomization and delivery of interventions to groups, including links to the Research Methods Resources website. The ODP and OER also added language to the Review Criteria for clinical trials to alert reviewers about the need to attend to these issues. The Research Methods Resources website is designed both for extramural investigators who are considering these methods and for NIH program and review staff who may need to advise investigators or review applications based on these methods. It includes a sample size calculator for group-randomized trials and key references for design and analytic methods, sample size calculations, and state of the practice reviews.

Objectives for FY 2019–2023

The objectives supporting Strategic Priority III focus on providing resources, training, and consultation, and strengthening policies and procedures to improve the quality of the methods used in prevention research supported by the NIH.

OBJECTIVE III.1:	Refresh catalogs and directories of existing NIH and other federal resources pertaining to prevention science methods.
OBJECTIVE III.2:	Provide resources for review staff to identify experts in prevention science methods for recruitment to review panels.
OBJECTIVE III.3:	Provide training in prevention science methods to NIH program and review staff, NIH investigators, and investigators external to the NIH.
OBJECTIVE III.4:	Serve as a resource to ICs on prevention science methods as they develop new funding opportunity announcements, workshops, meetings, and other activities.
OBJECTIVE III.5:	Collaborate with ICs to strengthen NIH policies and procedures to encourage the use of the best available methods in applications for prevention research.
OBJECTIVE III.6:	Develop metrics to monitor the leading causes and risk factors for premature death (prior to age 70) in the United States on an annual basis.
OBJECTIVE III.7:	Conduct periodic reviews of methods used in prevention research.



STRATEGIC PRIORITY IV

Promote collaborative prevention research projects and facilitate coordination of such projects across the NIH and with other public and private entities.

Rationale

Prevention research is supported through all of the NIH ICs within specific mission and disease areas, and in trans-NIH Scientific Interest Groups (SIGs) and task forces that address major causes and contributors to morbidity and mortality in the United States. However, enhanced collaboration and coordination among NIH ICs and other research partners could accelerate discoveries in prevention research.

OBJECTIVE 3: Enhance Scientific Stewardship.
"To increase the reach of NIH-funded research, NIH will leverage its resources by partnering with other organizations in the public and private sectors."

Progress Report

During the previous planning period, one area of focus addressed defining and streamlining co-funding activities and clarifying the scope of ODP prevention research priorities, including the major contributors to morbidity and mortality in the United States, screening for risk factors and disease, health disparities and health equity across the lifespan, and prevention methods and measurement. In this process, the ODP supported the use of a wide range of prevention research designs, including observational studies, experimental research designs to advance the uptake of evidence-based interventions, and the application of modeling and systems science approaches to prevention. The products of these co-funding activities contributed to advancing prevention science.

To enhance the ODP's engagement in NIH strategic planning relevant to prevention research, the ODP reviewed the scope of activities of all NIH SIGs to identify those most relevant for prevention science. ODP staff became actively engaged in these trans-NIH and other federal groups addressing prevention to enhance the focus on prevention within initiatives developed by the groups. ODP staff led the development of trans-NIH funding opportunity announcements in the areas of Electronic Nicotine Delivery Systems (ENDS) as part of the NIH Tobacco and Nicotine Research Interest Group and Health-Enhancing Physical Activity Intervention as part of the NIH Exercise Interest Group. ODP staff also contributed to trans-NIH workshops designed to identify future research needs as well as trans-NIH funding opportunity announcements. The ODP facilitated the development of a methods workshop related to measurement of the use and assessment of ENDS products that will enhance the quality and standardization of measurement in this field and facilitate comparison of results across diverse studies.

The ODP also worked with prevention leaders across the NIH and within the Prevention Research Coordinating Committee (PRCC) to identify collaborative prevention research gap areas. This effort led to the development of five new Prevention SIGs addressing prevention research gaps in the areas of screening for children and adults; the prevention or delay of multiple comorbid diseases; the evaluation of

environmental-, policy-, and systems-level interventions; and advancing the use of genetics in prevention research. Products of the Prevention SIGs include workshops, systematic reviews, funding opportunity announcements, identification of relevant research resources, and ODP website enhancements. For example, in the genetic SIG, ODP staff have overseen the development of an online database that characterizes the NIH-wide cohorts with genetics data, the Catalog of Observational Networks Enabling Collaborations Trans-NIH (CONnECT); this resource can be used to advance planning of trans-NIH activities related to such cohorts. The comorbidity SIG held a workshop that addressed challenges and innovations in the measurement of comorbid conditions—a longstanding need in this field. In identifying prevention research gaps, ODP staff also examined research gaps noted in the "insufficient evidence" (I) statements produced by the U.S. Preventive Services Task Force as well as the research gaps identified through the Pathways to Prevention program.

ODP staff contributed to federal reports on major causes and contributors to morbidity and mortality. Staff served lead roles in creating the first National Nutrition Research Roadmap that engaged more than 90 federal scientific staff and summarized research needs in human nutrition. Staff also served as federal liaisons to the 2018 Physical Activity Guidelines Advisory Committee, which was charged with reviewing and reporting on the evidence that would serve as the basis for the 2018 Physical Activity Guidelines for Americans. Finally, the ODP has highlighted opportunities for translation of evidence into programs and practice with federal partners such as the Centers for Disease Control and Prevention (CDC), as well as with private and public partnerships.

Objectives for FY 2019–2023

The objectives supporting Strategic Priority IV focus on the coordination of prevention research, the development of new, collaborative prevention initiatives, and the support of ongoing prevention research initiatives across the NIH. These efforts will include the development and enhancement of prevention research resources, workshops to address prevention research gaps, and funding opportunity announcements. In addition, in collaboration with its prevention program and practice partners, the ODP will seek to identify and support opportunities for more rapid translation of prevention research evidence into programs and practices to improve public health.

OBJECTIVE IV.1:	Establish or promote infrastructures and processes to foster prevention research coordination and collaboration across the NIH and with other public and private partners.
OBJECTIVE IV.2:	Coordinate and support the development of collaborative prevention initiatives to address gaps in prevention research and practice.
OBJECTIVE IV.3:	Advance approaches for projecting future research needs and priorities in prevention and for highlighting trans-NIH efforts to address them.

STRATEGIC PRIORITY V

Promote and facilitate tobacco regulatory science and tobacco prevention research.

Rationale

> **OBJECTIVE 3: Enhance Scientific Stewardship.** "NIH will catalyze innovative research through novel funding mechanisms, groundbreaking initiatives, and creative policy approaches."

The Tobacco Regulatory Science Program (TRSP) was established by the NIH in response to the historic passage of the 2009 Family Smoking Prevention and Tobacco Control Act (Tobacco Control Act). The Act gave the U.S. Food and Drug Administration (FDA) authority to regulate the manufacture, marketing, and distribution of tobacco products to protect public health. Such regulations must be built on a strong scientific base, but that base is insufficient for many tobacco products. For example, to develop effective regulations, the FDA needs research to better characterize product ingredients and their effects on consumption and health and to better characterize marketing strategies and their effects on purchasing patterns. The NIH has the infrastructure for the solicitation, review, and management of research and several NIH ICs have long supported tobacco-related research as part of their missions. The FDA's Center for Tobacco Products (CTP) has expertise in tobacco regulatory science and the resources to support research that is responsive to the FDA's regulatory authority. With the creation of TRSP, the FDA provides resources that the NIH uses to support a diverse portfolio of research that can inform the development of regulations.

As the tobacco-focused program within the ODP, TRSP also monitors NIH investment and facilitates collaboration across NIH ICs for ODP-led opportunities to address research gaps in tobacco prevention that complement the FDA-supported program of tobacco regulatory research.

Progress Report

Establishing TRSP necessitated the development of policies and procedures that could meet the needs of this unique partnership between the NIH and FDA. For example, review criteria for NIH grants, as well as the terms and conditions of grant awards required adaptation to meet FDA requirements. TRSP staff trained and continue to train NIH program, review, and grants management staff on the nuances of the program and how it differs from traditional NIH grants and policies. TRSP staff have provided training to FDA staff regarding NIH grant processes as well.

During the previous planning period, TRSP issued 27 trans-NIH research funding opportunity announcements; supported more than 250 awards (extramural and intramural), totaling approximately $100 million in research funding per year; and established policies and procedures across 13 ICs that require a broad scientific knowledge base to meet the unique requirements of the NIH-FDA partnership in tobacco regulatory science. The centerpiece of this research portfolio, 14 Tobacco Centers of Regulatory Science

(TCORS) transitioned from a program of specialized center grants (P50) to cooperative agreements (U54) in FY 2018. The TCORS represent the largest investment of centers dedicated to tobacco research at the NIH. TRSP staff participate as NIH representatives on trans-TCORS working groups that promote collaborative research, which includes the development of shared standards, improved methods, and adoption of best practices. Working with NIH IC and FDA staff, TRSP is a clearinghouse for vetting research concepts and all applications in response to TRSP funding opportunity announcements to ensure that they are responsive to the CTP's regulatory authorities and address the scientific questions solicited in the funding opportunity announcements. Additionally, TRSP tracks and reviews all TCORS pilot projects to ensure they fall within the purview of the CTP's authorities over the marketing, manufacturing, and distribution of tobacco products.

Since its founding, TRSP has sponsored annual TCORS grantee meetings averaging approximately 300 participants and biennial Tobacco Regulatory Science conferences averaging about 500 participants. Notable conference speakers have included the FDA Commissioner, Assistant Secretary for Health and Human Services, and a former Surgeon General. In order to address gaps in tobacco regulatory research methods and measurement, TRSP initiated and led the development of recommended collections of consensus measures for tobacco regulatory research made available through the PhenX Toolkit. A related outcome of this effort led by TRSP was publication of a supplement in Tobacco Control to promote PhenX tobacco regulatory research measures and to highlight scientific issues and gaps. With its leadership and participation in the NIH Tobacco and Nicotine Research Interest Group, TRSP helped to spearhead a related effort on consensus and development specific to e-cigarette measurement.

To better monitor NIH investment in tobacco prevention, TRSP conducted a portfolio review of e-cigarette grants funded by the NIH and CTP. TRSP also spearheaded a collaborative effort with NIH ICs and the American Association for Aerosol Research (AAAR) leadership to host a day-long special symposium, Electronic Cigarettes: Formulation, Particle Generation, Deposition and Health Effects, at the AAAR 35th Annual Conference. This effort led to the publication of a special issue of the journal, Aerosol Science and Technology, on The Aerosol Science and Technology of Electronic Cigarettes. TRSP also collaborated across NIH ICs in ODP-led funding opportunity announcements to address research gaps in e-cigarette research focusing on basic mechanisms of health effects (PAR-17-476) and population, clinical, and applied prevention research (PAR-17-472).

Objectives for FY 2019–2023

The objectives supporting Strategic Priority V focus on providing resources, training, and consultation, and strengthening policies and procedures to improve research capacity and address emerging topics in tobacco regulatory science and tobacco prevention.

OBJECTIVE V.1:	Serve as primary liaison to the CTP scientific leadership to help identify, develop, characterize, and address tobacco regulatory research priorities and monitor scientific progress of funded research.
OBJECTIVE V.2:	Serve as a resource and provide training in tobacco regulatory science for the FDA and NIH program, review, and grants management staff, and to the extramural community.
OBJECTIVE V.3:	Create opportunities for extramural investigators and federal scientific staff to discuss priority topics and share research results in tobacco regulatory science.
OBJECTIVE V.4:	Oversee and lead NIH ICs and grant recipients in complying with policies unique to the NIH-FDA partnership in tobacco regulatory science.
OBJECTIVE V.5:	Facilitate development of resources and research opportunities to address gaps in tobacco prevention intervention, measurement, and methodology.

STRATEGIC PRIORITY VI

Communicate the importance and value of prevention research, disseminate prevention research resources and programs, and build and enhance relationships with key stakeholders.

Rationale

Strategic communication and outreach play an essential role in moving prevention research findings into practice and, ultimately, improving public health. The ODP develops and disseminates prevention research tools and resources. The Office broadens and strengthens research partnerships by collaborating with stakeholders including NIH ICs, federal agencies, extramural researchers, professional societies, and the public to publicize information about the progress, findings, and future needs of the field.

> **OBJECTIVE 3: Enhance Scientific Stewardship.** "NIH … will also seek to strengthen its existing ties to and forge new partnerships with clinicians and professional societies."

The ODP's communications work directly supports all the strategic priorities and activities of the Office. These efforts raise awareness about the work of the Office and its stakeholders. The communications team develops messaging for ODP initiatives, promotes ODP events and programs, and manages the ODP's website and social media accounts.

Progress Report

During the previous planning period, the ODP greatly increased the availability of information about prevention research. The ODP grew its website exponentially and consequently saw its website traffic greatly increase. The ODP also developed several new tools for researchers, including a filterable list of prevention research-related NIH funding opportunity announcements, a searchable database of NIH training opportunities in prevention research methods, and a collection of evidence-based disease prevention programs and practices. The ODP also instituted a web metrics program and developed monthly analytics reports that mapped both promotional and ODP program activities to website traffic. By better understanding what drove traffic to its website, the ODP was able to adjust and improve its outreach efforts and content strategy.

The ODP expanded its presence on Twitter, and @NIHprevents now has more than 18,000 followers. The ODP developed a cohesive social media strategy that focused on consistently reaching out to the active prevention research community on Twitter and sharing content that resonated with them. The ODP also conducted an audience analysis to better understand its Twitter followers to develop more effective action-oriented tweets.

In 2017, the ODP honored the first winners of its annual Early-Stage Investigator Lecture (ESIL), which highlights the accomplishments of the next generation of prevention researchers. By using targeted promotions, including reaching out to experts in the winner's field of work at the NIH and in the broader biomedical research community, as well as live-streaming the event, the ESIL program quickly became recognized as a valuable new ODP initiative.

The ODP has always worked with its stakeholders to share information about disease prevention research and over the past 5 years, the Office has become more strategic in its outreach tactics. By developing and leveraging partnerships with NIH ICs and with organizations like professional societies whose members are involved in prevention science, the ODP has more effectively spread the word about its events and programs, such as the Pathways to Prevention program, the Methods: Mind the Gap webinar series, and the Robert S. Gordon, Jr. Lecture in Epidemiology.

Objectives for FY 2019–2023

Over the next 5 years, the ODP will build on the momentum of the first strategic plan by further enhancing existing resources and developing new tools for prevention scientists. The ODP will develop visually appealing graphics, use interactive elements, and incorporate plain language, while continuously evaluating and adapting to new technologies.

The ODP will also work to partner with stakeholders to identify and develop new opportunities to communicate about disease prevention research and to strengthen outreach to stakeholders via the ODP website, social media, and other platforms.

The ODP will use a targeted approach to build and leverage its resources and partnerships to highlight the impact of prevention research.

OBJECTIVE VI.1:	Develop strategies and materials that will increase the understanding of the breadth, contributions, and value of prevention research.
OBJECTIVE VI.2:	Improve the availability and visibility of information about prevention research and promote prevention-related events conducted by the NIH and other federal agencies.
OBJECTIVE VI.3:	Build effective relationships and engage with stakeholders to coordinate and enhance communications about disease prevention research.

Appendices

APPENDIX A: Strategic Planning Process and Stakeholder Engagement

1 REVIEWED PROGRESS, IDENTIFIED NEW DIRECTIONS

ODP staff participated in a strategic planning retreat to review progress and achievements from the first strategic plan and identify a framework for the FY 2019–2023 plan.

2 ENGAGED INTERNAL STAKEHOLDERS

The ODP engaged NIH prevention science experts to discuss major opportunities and challenges in prevention research, potential partners, and topics that may transcend prevention research and that the ODP should consider as it developed the new plan.

3 ENGAGED EXTERNAL STAKEHOLDERS

The ODP released a Request for Information (RFI) to gather broad public input on the draft priorities and objectives. The ODP Director presented the draft strategic plan to advisory councils of NIH Institutes, Centers, and Offices with significant investments in prevention research to gather insights related to their communities.

4 FINALIZED PRIORITIES AND OBJECTIVES

ODP staff synthesized the feedback from internal and external stakeholders and revised the priorities, objectives, and tasks accordingly. The revisions to the ODP's strategic priorities were discussed at a second ODP staff planning retreat and the final version of the plan was developed.

5 FINALIZED STRATEGIC PLAN

The ODP presented the FY 2019–2023 Strategic Plan to NIH leadership for review and approval and the plan was released to the public.

APPENDIX B: History of the Office of Disease Prevention

The NIH established the ODP to promote and coordinate prevention research among NIH Institutes, Centers, and Offices and other public and private entities.

- **1986.** The NIH creates the ODP in response to a directive in the Health Research Extension Act of 1985.

  The Office of Medical Applications of Research (OMAR) is transferred to the ODP. A key program in the OMAR is the Consensus Development Program (CDP), designed to hold conferences and produce consensus statements on important and controversial topics in medicine.

  The Prevention Research Coordinating Committee (PRCC) is transferred to the ODP. The PRCC serves as an advisory body to the ODP Director and makes recommendations regarding scientific, programmatic, and policy issues.

- **1988.** The Division of Nutrition Research Coordination (DNRC) is established in the ODP to advise the NIH Director and others on nutrition research issues and to work with the NIH to coordinate nutrition research and research training initiatives.

- **1993.** The Office of Rare Diseases (ORD) is established in the ODP to serve as the federal focal point for rare disease biomedical research.

- **1994.** The DNRC transfers to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK).

- **1995.** In response to a directive in the Dietary Supplement Health and Education Act of 1994, the Office of Dietary Supplements (ODS) is established in the ODP to promote scientific research in the area of dietary supplements.

  The Robert S. Gordon, Jr. Lecture in Epidemiology is established to recognize scientists who have contributed significantly to the field of epidemiology or clinical trials research.

- **2002.** The ORD is codified in statute by the Rare Diseases Act of 2002, which gives the Office the ability to recommend a national research agenda, coordinate research, and provide educational activities for researchers.

- **2003.** The ODP develops Medicine in the Media, an annual course designed to help develop journalists' and editors' abilities to evaluate and report on medical research.

- **2007.** The ODP establishes the Methods: Mind the Gap webinar series to explore issues at the intersection of research, evidence, and clinical practice areas in which conventional wisdom may be contradicted by recent evidence.

- **2008.** The ODP is transferred to the Division of Program Coordination, Planning, and Strategic Initiatives (DPCPSI), which was established to meet the requirements of the NIH Reform Act of 2006. The ORD is renamed the Office of Rare Diseases Research (ORDR).

- **2011.** The ORDR is transferred to the National Center for Advancing Translational Sciences (NCATS).

- **2012.** The OMAR combines its activities, staff, and resources with the ODP.

  The ODP hosts its first Pathways to Prevention workshop. These workshops are designed to identify methodological and scientific weaknesses in a scientific area and move the field forward through an unbiased and evidence-based assessment of a complex clinical issue.

- **2013.** The ODP retires the CDP and the Medicine in the Media course.

  The Tobacco Regulatory Science Program (TRSP) is transferred to the ODP. TRSP is a trans-NIH collaborative effort with the U.S. Food and Drug Administration's (FDA) Center for Tobacco Products to conduct research to support FDA's regulatory authority for tobacco products.

- **2014.** The ODP releases its first Strategic Plan for Fiscal Years 2014–2018 to strengthen existing programs and develop new initiatives to advance prevention research at the NIH. The plan represented an important shift in the core functions of the Office.

- **2015.** To improve the quality of prevention research at the NIH, the ODP launches the Prevention Research Expertise Survey to help identify experts in prevention science methods for NIH scientific review panels.

  The ODP changes the focus of the Methods: Mind the Gap webinar series to research design, measurement, intervention, data analysis, and other methods in prevention science.

- **2016.** To address unmet prevention research needs, the ODP creates five new Prevention Scientific Interest Groups (SIGs). The Prevention SIGs focus on areas where there are no existing collaborative trans-NIH or federal groups.

  The ODP releases Pragmatic and Group-Randomized Trials in Public Health and Medicine, an online course to help researchers design and analyze group-randomized trials.

- **2017.** To recognize the contributions of early-career prevention scientists who have not yet received a substantial NIH research award, the ODP establishes and hosts its first annual ODP Early-Stage Investigator Lecture.

  The ODP helps the NIH develop the Research Methods Resources website, which provides information on the design and analysis of trials that randomize groups or deliver interventions to groups.

- **2018.** The ODP releases its Strategic Plan for Fiscal Years 2019–2023, which builds upon prevention-related resources, tools, and initiatives developed across the ODP.

Associate Directors for Prevention and Directors of the ODP

David M. Murray, Ph.D. (2012–present)
Paul M. Coates, Ph.D. (Acting, 2010–2012)
Barnett S. Kramer, M.D., M.P.H. (2001–2010)
William R. Harlan, M.D. (1991–2001)
John H. Ferguson, M.D. (Acting, 1989–1991)
William T. Friedewald, M.D. (1986–1989)

APPENDIX C: NIH Institutes, Centers, and Offices

NIH Institutes

NCI	National Cancer Institute https://www.cancer.gov
NEI	National Eye Institute https://www.nei.nih.gov
NHGRI	National Human Genome Research Institute https://www.genome.gov
NHLBI	National Heart, Lung, and Blood Institute https://www.nhlbi.nih.gov
NIA	National Institute on Aging https://www.nia.nih.gov
NIAAA	National Institute on Alcohol Abuse and Alcoholism https://www.niaaa.nih.gov
NIAID	National Institute of Allergy and Infectious Diseases https://www.niaid.nih.gov
NIAMS	National Institute of Arthritis and Musculoskeletal and Skin Diseases https://www.niams.nih.gov
NIBIB	National Institute of Biomedical Imaging and Bioengineering https://www.nibib.nih.gov
NICHD	*Eunice Kennedy Shriver* National Institute of Child Health and Human Development https://www.nichd.nih.gov
NIDA	National Institute on Drug Abuse https://www.drugabuse.gov
NIDCD	National Institute on Deafness and Other Communication Disorders https://www.nidcd.nih.gov
NIDCR	National Institute of Dental and Craniofacial Research https://www.nidcr.nih.gov
NIDDK	National Institute of Diabetes and Digestive and Kidney Diseases https://www.niddk.nih.gov
NIEHS	National Institute of Environmental Health Sciences https://www.niehs.nih.gov
NIGMS	National Institute of General Medical Sciences https://www.nigms.nih.gov

NIMH	National Institute of Mental Health https://www.nimh.nih.gov
NIMHD	National Institute on Minority Health and Health Disparities https://www.nimhd.nih.gov
NINDS	National Institute of Neurological Disorders and Stroke https://www.ninds.nih.gov
NINR	National Institute of Nursing Research https://www.ninr.nih.gov
NLM	U.S. National Library of Medicine https://www.nlm.nih.gov

NIH Centers

CC	NIH Clinical Center https://clinicalcenter.nih.gov
CIT	Center for Information Technology https://www.cit.nih.gov
CSR	Center for Scientific Review https://public.csr.nih.gov
FIC	Fogarty International Center https://www.fic.nih.gov
NCATS	National Center for Advancing Translational Sciences https://www.ncats.nih.gov
NCCIH	National Center for Complementary and Integrative Health https://nccih.nih.gov/

NIH Office of the Director

All of Us	*All of Us* Research Program https://www.nih.gov/research-training/allofus-research-program
DPCPSI	Division of Program Coordination, Planning, and Strategic Initiatives https://dpcpsi.nih.gov
> OAMC	Office of Administrative Management and Communications https://dpcpsi.nih.gov/oamc
> OAR	Office of AIDS Research https://www.oar.nih.gov
> OBSSR	Office of Behavioral and Social Sciences Research https://obssr.od.nih.gov

> ODP	Office of Disease Prevention https://prevention.nih.gov
> ODS	Office of Dietary Supplements https://ods.od.nih.gov
> OEPR	Office of Evaluation, Performance, and Reporting https://dpcpsi.nih.gov/oepr
> OPA	Office of Portfolio Analysis https://dpcpsi.nih.gov/opa
> ORIP	Office of Research Infrastructure Programs https://orip.nih.gov
> ORWH	Office of Research on Women's Health https://orwh.od.nih.gov
> OSC	Office of Strategic Coordination - The Common Fund https://commonfund.nih.gov
> SGMRO	Sexual and Gender Minority Research Office https://dpcpsi.nih.gov/sgmro
> THRO	Tribal Health Research Office https://dpcpsi.nih.gov/thro
OCPL	Office of Communications and Public Liaison https://www.nih.gov/institutes-nih/nih-office-director/office-communications-public-liaison
OER	Office of Extramural Research https://grants.nih.gov/grants/oer.htm
OIR	Office of Intramural Research https://oir.nih.gov
OM	Office of Management https://om.od.nih.gov
OSP	Office of Science Policy https://osp.od.nih.gov

APPENDIX D: Online Resources

Agency for Healthcare Research and Quality
https://www.ahrq.gov

American Association for Aerosol Research
https://www.aaar.org

Centers for Disease Control and Prevention
https://www.cdc.gov

Cochrane
https://www.cochrane.org/

Community Preventive Services Task Force (The Community Guide)
https://www.thecommunityguide.org

Design and Analysis of Pragmatic and Group-Randomized Trials in Public Health and Medicine
https://prevention.nih.gov/GRT

Dissemination & Implementation (D&I) Research
https://prevention.nih.gov/research-priorities/dissemination-implementation

Evidence-Based Practices and Programs
https://prevention.nih.gov/research-priorities/dissemination-implementation-research/evidence-based-practices-programs

Family Smoking Prevention and Tobacco Control Act
https://prevention.nih.gov/tobacco-regulatory-science-program/about-tobacco-regulatory-science-program-trsp#FSPTCA

FDA Center for Tobacco Products
https://www.fda.gov/AboutFDA/CentersOffices/OfficeofMedicalProductsandTobacco/AbouttheCenterforTobaccoProducts

Funding Opportunity Announcements
https://prevention.nih.gov/fundingopps

Global Burden of Disease project
https://www.healthdata.org/gbd

Health Research Extension Act of 1985
https://history.nih.gov/research/downloads/PL99-158.pdf

Healthy People
https://www.healthypeople.gov

Leading Causes of Death
https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

Methods: Mind the Gap
https://prevention.nih.gov/mindthegap

National Academy of Medicine
https://nam.edu

National Institutes of Health (NIH)
https://www.nih.gov

National Nutrition Research Roadmap
https://prevention.nih.gov/research-priorities/research-needs-and-gaps#NutritionRoadmap

NIH Application Guide
https://grants.nih.gov/grants/how-to-apply-application-guide.html

NIH Office of the Director
https://www.nih.gov/institutes-nih/nih-office-director

NIH-Wide Strategic Plan, Fiscal Years 2016–2020: Turning Discovery Into Health
https://www.nih.gov/about-nih/nih-wide-strategic-plan

ODP Early-Stage Investigator Lecture
https://prevention.nih.gov/ESIL

ODP Co-Funded Research Projects
https://prevention.nih.gov/funding/odp-co-funded-prevention-research

Office of Dietary Supplements Strategic Plan 2017–2021
https://ods.od.nih.gov/About/StrategicPlan2017-2021.aspx

Office of Disease Prevention and Health Promotion
https://health.gov/

PAR-17-472 grant
https://grants.nih.gov/grants/guide/pa-files/PAR-17-472.html

PAR-17-476 grant
https://grants.nih.gov/grants/guide/pa-files/PAR-17-476.html

Pathways to Prevention
https://prevention.nih.gov/p2p

Phenotypes and eXposures (PhenX Project) Toolkit
https://www.genome.gov/27541903

Physical Activity Guidelines for Americans
https://health.gov/paguidelines

Portfolio Review of E-Cigarette Grants: Host–agent–vector–environment measures for electronic cigarette research used in NIH grants
https://tobaccocontrol.bmj.com/content/early/2018/01/12/tobaccocontrol-2017-054032

Prevention Research Coordinating Committee (PRCC)
https://prevention.nih.gov/about-odp/partnerships-collaborations/prevention-research-coordinating-committee

Prevention Research Expertise Survey (PRES)
https://prevention.nih.gov/PRES

Research, Condition, and Disease Categorization process
https://report.nih.gov/rcdc

Research Methods Resources
https://researchmethodsresources.nih.gov

Review Criteria for Research Project Applications Involving Clinical Trials
https://grants.nih.gov/grants/guide/notice-files/NOT-OD-17-118.html

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