Strategic Goal 4: Foster Sound, Sustained Advances in the Sciences

Strategic Objective 4.1: Improve surveillance, epidemiology, and laboratory services

Strategic Objective 4.2: Expand the capacity of the scientific workforce and infrastructure to support innovative research

Strategic Objective 4.3: Advance basic science knowledge and conduct applied prevention and treatment research to improve health and development

Strategic Objective 4.4: Leverage translational research, dissemination and implementation science, and evaluation investments to support adoption of evidence-informed practices

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According to a recent study, the United States makes about 44 percent of the total global biomedical research investments worldwide. Together with foundations, charities, private industry, and State, Tribal, local, and territorial governments, the Department's scientific investments seek to unlock mysteries to improve health and well-being; reduce the burden of death, disease, and disability; and extend and improve quality of life. These scientific investments are to be conducted consistent with the understanding that all human life is valuable and that the human subjects protection regulations apply to all human beings from conception to natural death.

Making better decisions in health, public health, and human services often depends on data obtained through surveillance, epidemiology, and laboratory services—at the Federal, State, Tribal, local, and territorial levels. HHS efforts in this area help to track and trace disease outbreaks, connect the data to tell a more complete story of public health issues, and facilitate speedier responses to threats to health and well-being.

Success in this domain starts with our scientific workforce. To date, 153 NIH-supported researchers have received Nobel Prizes for their achievements. HHS strives to expand the capacity of the research workforce, and equip them with the tools to make the discoveries of tomorrow.

The NIH's Human Genome Project—completed under budget and 2 years ahead of schedule—has led to the discovery of more than 1,800 disease genes and is sparking the development of more powerful, preventive, personalized medical interventions. Basic science and applied research investments—whether intramural or extramural—seek solutions to the health, public health, and human services challenges articulated throughout this Strategic Plan.

To be truly effective, these discoveries must be shared, adopted, scaled up, and implemented with fidelity. HHS is working to promote evidence-informed practices in the health, public health, and human services domains. As a steward of the public trust, HHS has a responsibility to promote approaches that will improve health and well-being.

Within HHS, the following divisions are working to achieve this goal: Administration for Children and Families (ACF), Administration for Community Living (ACL), Agency for Healthcare Research and Quality (AHRQ), Centers for Disease Control and Prevention (CDC), Centers for Medicare & Medicaid Services (CMS), Food and Drug Administration (FDA), Health Resources and Services Administration (HRSA), National Institutes of Health (NIH), Office for Civil Rights (OCR), Office of Global Affairs (OGA), Office of the Assistant Secretary for Health (OASH), Office of the Assistant Secretary for Preparedness and Response (ASPR), and Substance Abuse and Mental Health Services Administration (SAMHSA).

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Strategic Objective 4.1: Improve surveillance, epidemiology, and laboratory services

In an increasingly interconnected world, public health threats can quickly escalate from an isolated incident to a regional or even global emergency. A flu outbreak in one State can quickly spread to multiple States—keeping children out of school and adults away from work, and threatening the lives of the very young and very old. Rapid changes in public health patterns—such as the growth in opioid use and overdose—can strain the resources and capacity of first responders, health systems, and communities.

Identifying and mitigating urgent and persistent threats to public health depends on the quality of surveillance, epidemiology, and laboratory services—at the Federal, State, and local levels as well as with U.S. territories, Tribes, and international partners. Public health surveillance data, applied epidemiology, and laboratory best practices can guide better decision making to target interventions more responsibly, and ultimately improve health.

The Department is dedicated to conducting and funding scientific research that leads to evidence-based, high-quality care and responsive interventions to mitigate health crises. Data and information from surveillance, epidemiology, and laboratory services can aid in the prevention and early intervention of foodborne illnesses, such as listeria and norovirus, and infectious disease outbreaks, such as Zika and Ebola. To achieve this objective, the Department is working to facilitate information exchange to identify risks quickly and efficiently, strengthen the quality and safety of our Nation’s laboratories, and strengthen the alignment of surveillance, epidemiology, and laboratory services.

As response rates to surveys fall and primary data collection costs increase, the need to use and leverage new sources of data for public health surveillance becomes critical. Within the Department, efforts are underway to use electronic health records for infectious disease surveillance and to facilitate coding of causes of death on death certificates. At the National Center for Health Statistics, linkages between survey data, mortality data, hospital administrative data, electronic health records, Medicare data, and housing data have been created and should greatly expand public health surveillance opportunities. In addition, HL7 Continuity of Care Document specifications have been published to facilitate the submission of standardized electronic health information to the National Health Care Surveys, enhancing their usability for surveillance.

Contributing Operating Divisions and Staff Divisions

ASPR, CDC, CMS, FDA, NIH, OCR, OGA, and SAMHSA

Strategies

The value of data, as articulated by the HHS Data Council, is its relevance, timeliness, availability when needed, and distinctive contributions. The Department will apply surveillance data and epidemiological findings to improve outcomes through the following strategies:

- Establish data standards and, as appropriate, ensure that Federally conducted or supported healthcare or public health programs, activities, or surveys collect and report data in five specific demographic categories: race, ethnicity, sex, primary language, and disability status
- Engage with American Indians/Alaska Natives to explore opportunities to improve data collection efforts
- Collect, analyze, and report granular or disaggregated data to support population health

In addition to these more general strategies with applicability across settings, the Department will apply surveillance data and epidemiological findings to improve health, public health, and human services through the following strategies:

- Promote use of youth-focused surveillance and data collection to inform school and community actions that improve the health of adolescents
- Identify and assess adverse events related to the use of regulated human and animal medical products, including the development and more effective use of large nationally representative database systems, electronic health records, common data models, and natural language processing
- Implement advanced laboratory, epidemiologic, and environmental methods across Federal and State agencies to identify, investigate, and stop foodborne outbreaks sooner and prevent future illness by identifying and addressing gaps in the food safety system
- Enhance domestic and global capacity for influenza surveillance to ensure rapid detection and reporting of cases or outbreaks of influenza viruses that have pandemic potential and to monitor trends in seasonal influenza epidemiology
- Strengthen understanding of the opioid crisis through better public health surveillance to inform clinical management decisions for patients, including effects of opioid use in pregnancy and neonatal abstinence syndrome
- Analyze data on behavioral health disparities to increase understanding of factors contributing to disparities, identify disadvantaged and at-risk populations, assess trends, and inform policy and program development
- Support a data-driven approach to emergency preparedness, response, and recovery
- Assess healthcare use and costs associated with violence and unintentional injury, including patient safety events that occur in healthcare settings

- Develop and enhance timely, coordinated data systems to monitor injuries and violence by using expanded surveillance, innovative methods, and new technology to inform and evaluate national and State prevention activities

Improving data's value also involves integrating data from two or more sources such as surveys, administrative and claims data, public health surveillance data, and clinical data. The Department is working to facilitate better information sharing, exchange, and alignment of data through the following strategies:

- Improve data collection methodologies and systems for enhancing real-time and local data collection in order to minimize local burden, and improve timeliness, reliability, and comparability of the data, allowing for local public health and healthcare providers to use data for decision making and response mobilization
- Implement information technology solutions that support timely information exchange among local, State, international, and Federal agencies, healthcare facilities, and laboratories while ensuring that these systems minimize threats to information security
- Modernize domestic and international infectious and chronic disease surveillance systems to improve system interoperability and enable more rapid reporting, data exchange, and use to drive timely public health and medical action and response
- Promote new and innovative methods to rapidly collect, store, standardize, share, and analyze data across all levels of government, and with nongovernmental partners, to improve situational awareness and public health surveillance before, during, and after public health and medical emergencies
- Consistent with any limitations on the use or disclosure of such data, develop and implement a Department-wide data collection strategy to strengthen the capacity of HHS resources; promote synergy across systems; assure efficiencies, quality, utility, and timeliness; and address high-priority data gaps

Across the Department, laboratories house efforts to find the cures to disease; detect infectious organisms, foodborne outbreaks, and biosecurity threats; screen for genetic and health risks; and identify environmental hazards. Ensuring that laboratories follow safe practices and meet high standards of quality is essential to preserve the integrity of these essential resources. The Department works to promote and protect laboratory quality and safety through the following strategies:

- Provide ongoing professional development opportunities to help the laboratory-based workforce remain on the cutting edge of relevant scientific and technological advancements
- Ensure training for laboratory personnel and management, and promote employee safety, security, and occupational health through laboratory evaluations and inspections
- Review standards for laboratory quality and strengthen guidance to increase patient and laboratory safety

- Enhance and sustain national and international laboratory capacity to manage samples, conduct research, and analyze and report test results that leads to the development of interventions associated with disease detection and surveillance

- Support the development, implementation, and evaluation of new laboratory technologies (such as telemedicine, metagenomics, next-generation sequencing), and their use for emerging infectious diseases, antimicrobial resistance, food safety, pharmaceutical safety, chronic disease risk factors, and environmental biomonitoring

- Develop reporting guidelines for microbiology laboratories, based upon Federal, State, and local requirements, to improve surveillance of antimicrobial resistance

- Leverage expertise of clinical and public health laboratory partners on improving regulatory compliance to ensure quality laboratory testing operations during emergency response efforts

Note: Additional strategies to strengthen the scientific workforce and infrastructure are in Strategic Objective 4.2.

Effective surveillance systems not only serve as an early warning system for threats to public health; when aligned with epidemiological and laboratory services, they can investigate and confirm outbreaks to facilitate a speedier response. The Department is strengthening the alignment of surveillance, epidemiology, and laboratory services to improve health outcomes through the following strategies:

- Develop innovative solutions for conducting population health monitoring, risk assessments, and analysis of epidemiological data to improve our understanding of health risk factors and the effectiveness of health interventions

- Foster State, Federal, and international partnerships to improve surveillance and laboratory capacity across the continuum of care to identify and control threats to public health and health security, including infectious disease threats, healthcare-associated infections, antimicrobial-resistant pathogens, and environmental health hazards

- Support the private and secure collection, maintenance, analysis, and sharing of information to improve surveillance and expand the evidence base for high-quality care and rapid interventions, through Health Insurance Portability and Accountability Act of 1996 (Pub. L. 104–191) rules and guidance

- Enhance domestic and international information systems (e.g., data linkage, shared services, data standards) and apply modern data science methods to provide timely, high-quality, and actionable data for early outbreak detection, rapid response to public health threats, programmatic planning, and targeted interventions for populations at risk

- Improve health and behavioral health outcomes for children and their parents by using surveillance data to build epidemiological capacity in States and counties to identify high-need issues and particular areas of risk, and then responding with appropriate evidence-based interventions and policy development

Performance Goals

- Increase the percentage of laboratory reports on reportable conditions that are received through electronic means nationally
- Increase the percentage of notifiable disease messages transmitted in HL7 format to improve the quality and streamline the transmission of established surveillance data
- Number of medical product analyses conducted through the FDA's Sentinel Active Risk Identification and Analysis system

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Strategic Objective 4.2: Expand the capacity of the scientific workforce and infrastructure to support innovative research

Tomorrow's scientific breakthroughs depend on a highly trained and ethical scientific workforce, working in facilities and with tools that foster innovation. Efforts to expand the capacity of the scientific workforce and infrastructure can better prepare the Nation for global health emergencies, extend the reach and impact of scientific investigations, and contribute to research of national or global significance.

Through various initiatives and programs, HHS recruits and trains students, recent graduates, and other professionals to conduct rigorous and reproducible research. HHS provides research training and career development opportunities to ensure that highly trained investigators will be available across the range of scientific disciplines necessary to address the Nation's biomedical and scientific research needs.

HHS invests in Federal statistical units responsible for national surveys that provide reliable, timely, and policy-relevant information for policymakers and researchers. HHS also invests in strengthening the research infrastructure, ensuring that research facilities are constructed, modernized, and equipped with state-of-the-art tools and resources to support the scientific community.

A critical component of this objective is HHS leadership in protecting the rights, welfare, and well-being of human subjects involved in research, and in investigating unethical behavior and misconduct in research. These human subjects protections apply to all human beings, from conception to natural death. Through the Federal Policy for the Protection of Human Subjects (The Common Rule, 45 CFR Part 46, Subpart A), the Department describes Institutional Review Boards, informed consent processes, and Assurances of Compliance, as well as additional protections for biomedical and behavioral research involving pregnant women, human fetuses, neonates, prisoners, and children (45 CFR Part 46, Subparts B–D).

Scientific integrity is a priority for the Department. Divisions responsible for research have developed policies and procedures to ensure the highest degree of scientific integrity in the research HHS conducts, funds, and supports—to ensure that our research is credible and worthy of the public's confidence.

Contributing Operating Divisions and Staff Divisions

AHRQ, CDC, FDA, NIH, OASH, OGA, and SAMHSA

Strategies

The Department recognizes that our ability to develop the breakthroughs of tomorrow depends on our ability to recruit the next generation into careers in science, technology, engineering, and math today. The Department is recruiting, training, and retaining a scientific workforce responsive to future demands through the following strategies:

- Support fellowships and other training programs in academic, industry, and government settings to help recruit and train early-career scientists, laboratory scientists, public health scientists, and survey statisticians
- Provide research training and career development opportunities to ensure that a diverse pool of highly trained investigators will be prepared for and available across the range of scientific disciplines necessary to address the Nation's biomedical and scientific research needs
- Implement and evaluate the effectiveness of scientific workforce development programs, including training and formal mentorship of new scientists, including data scientists, to guide and support staff performance and professional development and to improve the sustainability and quality of workforce programs
- Conduct joint fellowship programs and other training programs targeted to researchers and regulatory reviewers to provide multidisciplinary training across the interrelated areas of basic and translational science
- Ensure administrative systems and policies are aligned with anticipated workforce needs to support comprehensive capacity building and consistent quality improvement programs

Guidelines for ethical and responsible research consider the boundaries between biomedical and behavioral research and the accepted and routine practice of medicine, risk-benefit criteria, appropriate guidelines for selection of human subjects for participation, and informed consent. The Department promotes ethical and responsible research through the following strategies:

- Assess peer review practices and provide the workforce with best practices for peer review
- Improve human subjects protection, and enforcement of human subjects protection regulations and other laws governing research, especially with respect to research involving human embryos or embryonic stem cells/tissue, fetal tissue, genetic engineering and manipulation of the germ cell, and the creation of chimeras
- Provide guidance and tools, including required trainings, to ensure that researchers are able to conduct research ethically, safely, securely, and responsibly
- Improve the methodological rigor, transparency, and reproducibility of federally funded research and surveys to strengthen public confidence in federally supported research and survey findings

Approximately 84 percent of the NIH budget - PDF is dedicated to supporting more than 300,000 members of the research workforce in the extramural biomedical, behavioral, and social science research communities. The Department collaborates with the broader research community to strengthen innovation through the following strategies:

- Facilitate interactions with domestic and international partners to promote basic science and research/educational collaborations and to engage in innovative joint research projects
- Promote a culture of responsible data sharing, openness, and collaboration to better engage with academia and the private sector, consistent with applicable privacy and security requirements

Core facilities are centralized shared resources that provide access to instruments, technologies, services, expert consultation, and other services to scientific and clinical investigators. The Department is strengthening core facilities and infrastructure capacity through the following strategies:

- Leverage facilities as shared resources, which provide investigators access to advanced technologies through cutting-edge instrumentation operated by appropriately trained staff
- Ensure that the scientific research workforce has access to modern tools, including resources for data science and scientific computing
- Support modernization and improvements of research facilities through alterations, renovations, and new equipment purchases

Performance Goals

- By 2021, develop, validate, and/or disseminate three to five new research tools or technologies that enable better understanding of brain function at the cellular and/or circuit level
- Increase the percentage of scientists retained at the FDA after completing fellowship or traineeship programs

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Strategic Objective 4.3: Advance basic science knowledge and conduct applied prevention and treatment research to improve health and development

The impact of scientific discoveries cannot be underestimated. Research-related gains in average life expectancy between 1970 and 2000 have an economic value of $3.2 trillion dollars per year. A $1.00 increase in public basic research stimulates an additional $8.38 of industry research and development investment after 8 years.

Basic science and applied prevention and treatment research are critical not just to the American economy, but to quality of life. Infant mortality - PDF has dropped by more than 75 percent since 1960. For children born in 2009, childhood vaccinations are expected to save $13.5 billion in direct healthcare

costs over the course of their lifetimes. The death rate from unintentional injuries - PDF has decreased almost 40 percent since 1969. And a 20-year-old HIV - PDF-positive adult receiving treatment to suppress the virus can expect to live into their early 70s—nearly as long as someone without HIV.

For nearly every Strategic Objective in this Strategic Plan, HHS is conducting, supporting, or funding research to expand our knowledge about how to achieve positive outcomes—to improve health and well-being and extend quality of life. Partnerships with the private sector, academia, and governments at the Federal, State, Tribal, local, and international levels are critical to success in this objective.

HHS conducts, funds, and supports a broad and diverse portfolio of biomedical research in a range of scientific disciplines, including basic and translational research, to augment scientific opportunities and innovation for public health needs. HHS works to strengthen basic and applied science and treatment pipelines to assess potential health threats and bolster the fundamental science knowledge in these risk areas to expedite the development of therapies. As described in *Strategic Objective 4.2, Expand the capacity of the scientific workforce and infrastructure to support innovative research,* research is conducted ethically and responsibly.

Contributing Operating Divisions and Staff Divisions

ACL, AHRQ, CDC, FDA, NIH, and OASH

Strategies

Heart disease, cancer, chronic lower respiratory diseases, unintentional injuries, stroke, Alzheimer's disease, diabetes, influenza and pneumonia, kidney diseases, and suicide were the 10 leading causes of death in 2016. The Department is working to reduce the incidence of the leading causes of death through the following research strategies:

- Discern risk factors and mechanisms underlying the leading causes of death to accelerate applied and preventive research solutions
- Support research to prevent the leading causes of death in adults by improving the quality and specificity of reporting causes of death, developing systematic studies, and testing interventions to determine and prevent the actual causes of death
- Develop and test methods to increase adoption by primary care providers of recommendations from the U.S. Preventive Services Task Force for clinical preventive services that address the leading and actual causes of death
- Assess the 5-year health outcomes and adverse events of preventive interventions that target the actual and leading causes of death, to assist the U.S. Preventive Services Task Force in providing evidence-informed recommendations

Strategic Objective 1.2, Expand safe, high-quality healthcare options, and encourage innovation and competition, describes the Department's efforts to improve patient safety and healthcare quality, including within healthcare settings. *Strategic Objective 1.3, Improve Americans' access to healthcare and expand*

choices of care and service options, describes how the Department works to connect the people HHS serves to quality options. To build knowledge about effective approaches, the Department is investing in research to promote access, patient safety, and healthcare quality through the following strategies:

- Facilitate patient-focused medical product development to inform regulatory decision making
- Conduct and support data collection, research, and evaluations to support healthcare safety, delivery, quality, efficiency, and effectiveness for all populations, including those experiencing healthcare disparities
- Conduct research that takes into account individual differences in lifestyle, environment, and biology, to determine new pathways for preventing and treating disease
- Foster and capitalize on advances in personalized medicine to accelerate health research and medical breakthroughs, enabling individualized prevention, treatment, and care for all people and addressing unmet medical needs
- Support research to provide evidence on how to ensure access to affordable, physical, oral, vision, behavioral, and mental health insurance coverage for children and adults
- Conduct research to facilitate development and availability of innovative, safe, and efficacious human and animal medical products, including development of regulatory science
- Conduct, fund, and apply research on the role of other risk factors and their impact on health access, quality, and safety
- Facilitate the development and qualification of clinical outcome assessment tools to measure clinical benefit in medical product development
- Support and facilitate the adoption of innovative pharmaceutical technology to modernize product development and manufacturing, ensuring the consistent supply of high-quality medicine for patients
- Produce and promote healthcare delivery methods and interventions that improve care quality, promote healthcare access, reduce disparities, and address other risk factors among populations at risk for poor health outcomes
- Expand our understanding of the causes of, treatments for, and prevention of Alzheimer's disease and related dementias, including accelerating efforts to identify early and presymptomatic stages and translating findings into medical practice and public health programs

Strategic Objective 1.4, Strengthen and expand the healthcare workforce to meet America's diverse needs, describes the Department's efforts to recruit, retain, and train the healthcare workforce. To build our knowledge, the Department is investing in research on strengthening and supporting healthcare providers through the following strategies:

- Evaluate the adoption, implementation, and impact of clinical decision support systems, and evidence-based guidelines on clinical and community preventive services and treatments to improve both

behavioral and physical health and well-being

- Fund research on shared decision making to support healthcare providers' efforts to deliver healthcare services that empower patients, families, and caregivers to implement lifestyle behavior modification aimed at better health and healthcare outcomes
- Fund applied research, development, training, and sharing of information and products to improve knowledge and practice of service delivery professionals who are supporting disadvantaged and at-risk populations
- Conduct research and disseminate findings on systems of care and strategies such as team-based care, enhanced communication, and improvements in technology that reduce burden and burnout of healthcare professionals and that create healthy workplaces

Strategic Objective 2.1, Empower people to make informed choices for healthier living, describes the Department's efforts to promote health and wellness in the public. To expand our knowledge base, the Department is investing in research to promote health and wellness through the following strategies:

- Invest in research and education on behavior change methods, such as effective stress management, proper nutrition, and regular exercise
- Accelerate research and national efforts to implement solutions at the individual, family and community level, including through partnerships with Tribes and faith-based and community organizations, to reduce childhood obesity, including focusing on the pregnancy period to age five in terms of the etiology and interventions

Strategic Objective 2.2, Prevent, treat, and control communicable diseases and chronic conditions, describes the Department's efforts to promote public health on the ground. To develop our understanding about best practices and build the evidence base, the Department is investing in research to prevent, treat, and control chronic conditions and communicable diseases through the following strategies:

- Support basic science and applied prevention and treatment research on approaches to reduce the global burden of infectious diseases such as HIV, viral hepatitis, tuberculosis, malaria, and neglected tropical diseases
- Support basic and applied research to prevent and treat enteric and respiratory diseases
- Conduct basic science and applied research and disseminate findings to maximize the use of age-appropriate vaccines to minimize the burden of preventable diseases across the lifespan
- Develop and assess improved methods for rapidly detecting and investigating disease outbreaks and developing new preventive and therapeutic strategies
- Develop, evaluate, and implement high-impact public health interventions domestically and internationally, and advance policies to increase community and individual engagement in infectious disease prevention efforts

- Invest in research on the use of specific social and behavioral interventions to prevent, treat, and control communicable and chronic conditions
- Identify, develop, and evaluate effective prevention and control practices for Lyme and other vector-borne diseases

Strategic Objective 2.3, Reduce the impact of mental and substance use disorders through prevention, early intervention, treatment, and recovery support, describes the Department's direct supports related to mental health and substance abuse. To expand the knowledge base, the Department is investing in research to improve behavioral health through the following strategies:

- Conduct applied research to identify the most effective health and community-based system interventions that address the modifiable risk factors for prescription opioid misuse, heroin initiation, and opioid use disorder and overdose
- Foster integration of behavioral and social science research into research involving acceptability and understanding of genomics and proteomics, to accelerate time-to-trial as well as improve study designs

Strategic Objective 2.4, Prepare for and respond to public health emergencies, articulates the Department's emergency preparedness and response activities. The Department is developing the knowledge to support evidence-based interventions for public health emergencies through the following strategies:

- Enhance the portfolio of strategies, interventions, and evaluations to prevent and respond to public health emergencies
- Accelerate research on novel therapeutics, vaccines, rapid diagnostics, and behavioral interventions to expand evidence-based biomedical countermeasures and preparedness strategies

The Strategic Objectives in *Strategic Goal 3: Strengthen the Economic and Social Well-Being of Americans Across the Lifespan* describe the Department's efforts to provide high-quality, evidence-based human services programs. The Department is investing in research and evaluation to strengthen human services programs through the following strategies:

- Develop evidence on policies and practices that support stable, economically secure families, with a focus on TANF, employment, education and training, behavioral science, and safety-net research
- Invest in rigorous research and evaluation to identify effective violence and injury prevention strategies, and support the adoption of evidence-based practices to address these issues
- Invest in rigorous research on and evaluation of domestic violence programs
- Invest in research - PDF on individual and community-wide interventions and approaches for children, youth, and adults who have experienced adverse childhood experiences, to learn what trauma-informed programs and services demonstrate positive effects

- Conduct applied research and disseminate findings to maximize use of evidence-based strategies to improve the well-being of children at all stages of development, youth, and families
- Support research and test approaches to effective housing with services for people with disabilities and older adults aimed at maximizing independence, choice, and health

Performance Goals

- By 2023, develop, optimize, and evaluate the effectiveness of nano-enabled immunotherapy (nano-immunotherapy) for one cancer type
- By 2022, evaluate the safety and effectiveness of one to three long-acting strategies for the prevention of HIV
- By 2023, identify risk and protective alleles that lead to one novel therapeutic approach, drug target, or pathway to prevention for late-onset Alzheimer's disease.

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Strategic Objective 4.4: Leverage translational research, dissemination and implementation science, and evaluation investments to support adoption of evidence-informed practices

Translational research, dissemination and implementation science, and evaluation investments help to ensure that critical knowledge from basic and applied research finds its way into practice in clinical, public health, and community settings.

Translational research, dissemination, and implementation science help increase understanding about how best to support knowledge, adoption, and faithful implementation of best practices in the community. Selecting and adopting evidence-based approaches to tackle health, public health, and human services challenges can be a complex undertaking. HHS programs balance requirements to implement high-quality programs with fidelity, while acknowledging the unique needs of specific individuals or target populations, recognizing differences in program and community settings and resources, and respecting linguistic or cultural differences. Understanding threats to successful implementation of a promising practice can help the Department prevent and mitigate those risks early.

Evaluation and evidence can support the Department’s efforts to improve program performance by applying existing evidence about what works, generating new knowledge, and using experimentation and innovation to test new approaches to program delivery. HHS is committed to integrating evidence into policy, planning, budget, operational, and management decision making. HHS funds multiple types of evaluation and evidence-generating activities; these activities may examine how well a program is implemented, whether it achieves intended outcomes, the overall impact of a program, or all three. Results of these types of activities may be used to plan programs, assess program performance, understand how to improve a program, and inform policy decisions.

Contributing Operating Divisions and Staff Divisions

ACF, ACL, AHRQ, CDC, FDA, HRSA, NIH, OASH, and SAMHSA

Strategies

Numerous factors affect whether an intervention will have a positive health, public health, or human services outcome on individuals or targeted populations, including the selected model of the intervention, the population served, and the fidelity of implementation. The Department works to improve programs for populations at risk for poor health and well-being outcomes through the following strategies:

- Assess evidence-based practices and service delivery system improvements to increase access to services and improve outcomes for disproportionately affected populations
- Support research conducted in a variety of settings and populations, to improve the quality and utility of evidence generated from HHS investments and the impact of those investments on a broad range of outcomes
- Evaluate multifaceted strategies to apply evidence-based interventions to reach disproportionately affected populations and reduce health disparities
- Analyze data on behavioral health disparities to increase understanding of factors contributing to disparities, identify disadvantaged and at-risk populations, assess trends, and inform policy and program development

Dissemination is the intentional, strategic distribution of information and intervention materials to a specific public health or clinical practice audience. HHS is working to disseminate knowledge about evidence-based interventions through a number of strategies:

- Increase dissemination and implementation of evidence-based practices and provide training and technical assistance to stakeholders to improve outcomes
- Systematically review current evidence on the effectiveness of programs and policy, and disseminate findings in easily accessible formats to practitioners and decision-makers
- Disseminate patient-centered outcome research findings to health professionals and organizations that deliver healthcare

Evaluation involves the systematic collection of information about the activities, characteristics, and outcomes of programs to make judgments about a program, improve program effectiveness, and/or inform decisions about future program development. HHS invests in programs to determine their efficiency and effectiveness through several strategies, including the following:

- Encourage the use of learning agendas - PDF or other tools to prioritize critical questions that generate evidence to guide decision making and continuous learning, including short- and long-term questions that build a portfolio of evidence about what works for whom
- Foster a culture of learning through opportunities for coordination and collaboration within and across HHS and with external partners

- Identify improvements to existing evidence-based programs and policies to share broadly with local communities for public health impact
- Promote the use of common evidence standards, principles and practices for evaluation, and policies that support rigorous, relevant, transparent, independent, and ethical evidence-building activities

Implementation science is the study of methods to promote the integration of research findings and evidence into healthcare policy and practice. HHS is working to support the uptake, adoption, and implementation of evidence-based interventions through a number of strategies:

- Engage healthcare, public health, and human service system research networks to study and support local adaptation or customization of evidence-based practices
- Develop and disseminate tools and provide technical assistance that supports adoption and implementation of evidence-based practices to improve access to high-quality public health, healthcare, and human services
- Support knowledge translation capacity and practice to ensure that knowledge generated by grantees and others working in the field is used or adopted by its intended users

Facilitating the adoption of evidence-based solutions into practice requires active engagement of change agents and innovators across health, public health, and human services domains. The Department works to accelerate change through the following strategies:

- Promote innovative approaches to translating research into interventions that improve health and well-being, by modernizing processes and removing obstacles to bring more effective practices to more people more quickly
- Leverage cutting-edge science to support product development strategies, regulatory evaluation, and implementation science by establishing platforms for interaction with academic institutions, other government agencies and their investments, and industry

Performance Goals

- Increase the percentage of Community-Based Child Abuse Prevention total funding that supports evidence-based and evidence-informed child abuse prevention programs and practices
- By 2020, develop and test the effectiveness of two strategies for translating cancer knowledge, clinical interventions, or behavioral interventions to underserved communities in community-based clinical settings

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