Report to the White House Office of Science and Technology Policy

GOLD STANDARD SCIENCE AT HHS

Annual Report

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Gold Standard Science at HHS: Annual Report

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Report to OSTP:
Gold Standard Science at HHS

Executive Summary

High-quality, trustworthy science enables the U.S. Department of Health and Human Services (HHS or the Department) to carry out its mission to enhance the health and well-being of all Americans. Rigorous science supports policy- and decision-making, enhances public health and well-being, and strengthens public trust in scientific institutions. In alignment with the May 23, 2025, Executive Order *Restoring Gold Standard Science* (EO) and related guidance from the White House Office of Science and Technology Policy (OSTP), HHS and its Divisions are implementing the nine tenets of Gold Standard Science – reproducibility, transparency, communication of error and uncertainty, collaboration and interdisciplinary science, constructive skepticism of findings and assumptions, use of falsifiable hypotheses, use of unbiased peer review, acceptance of negative results as positive outcomes, and minimizing conflicts of interest. The first HHS report on *Implementing Gold Standard Science*, published in 2025, highlighted key examples of the policies, programs, and activities being implemented at HHS in support of each of the nine tenets of Gold Standard Science.

In 2026, HHS and its Divisions continue to advance Gold Standard Science by implementing new trainings, refining existing policies and practices, and harnessing cutting-edge technology. This report discusses the latest actions taken by HHS Divisions to adhere to the principles of Gold Standard Science.

List of Acronyms

ACF	Administration for Children and Families
AHRQ	Agency for Healthcare Research and Quality
AI	Artificial Intelligence
ARPA-H	Advanced Research Projects Agency for Health
ASPE	Assistant Secretary for Planning and Evaluation
ASPR	Administration for Strategic Preparedness and Response
CDC	Centers for Disease Control and Prevention[1]
CMS	Centers for Medicare & Medicaid Services
EO	Executive Order on *Restoring Gold Standard Science*
FDA	Food and Drug Administration
HHS	Department of Health and Human Services
HRSA	Health Resources and Services Administration
IHS	Indian Health Service
IQA	Information Quality Act
NIH	National Institutes of Health
OASH	Office of the Assistant Secretary for Health
OCIO	Office of the Chief Information Officer
ORI	Office of Research Integrity
OSTP	Office of Science and Technology Policy
SAMHSA	Substance Abuse and Mental Health Services Administration
SMG	Staff Manual Guides at FDA

[1] References in this document to "CDC" refer to both CDC and the Agency for Toxic Substances and Disease Registry (ATSDR).

Report to OSTP:
Gold Standard Science at HHS

Introduction

The U.S. Department of Health and Human Services (HHS or the Department) is committed to advancing biomedical research, guarding against emerging threats to public health, delivering human services that enhance well-being, and helping Americans live healthier lives. In pursuit of those goals, HHS must continually strengthen its scientific practices, ensuring that the evidence used in policy- and decision-making is of the best possible quality. To remain competitive on the global stage, HHS also recognizes the importance of technological leadership and strives to responsibly develop and deploy emerging technologies.

The May 23, 2025, Executive Order Restoring Gold Standard Science (EO) and subsequent guidance from the Office of Science and Technology Policy (OSTP) directs agencies to advance science that is: (i) reproducible; (ii) transparent; (iii) communicative of error and uncertainty; (iv) collaborative and interdisciplinary; (v) skeptical of its findings and assumptions; (vi) structured for falsifiability of hypotheses; (vii) subject to unbiased peer review; (viii) accepting of negative results as positive outcomes; and (ix) without conflicts of interest. Since the EO on Gold Standard Science, additional reports and guidance, including the Executive Order Launching the Genesis Mission and the OSTP report Science: A New Golden Age, have also informed HHS strategies for upholding these principles.

HHS is committed to upholding the nine tenets of Gold Standard Science and ensuring that the information and evidence generated within the Department is grounded in scientific excellence.

Over the past year, HHS and its Divisions have continued to implement and improve the regulations, policies, and processes that bolster the rigor and robustness of the science conducted and supported by the Department. In 2026, the HHS Scientific Integrity Policy was updated to incorporate several principles of Gold Standard Science. The revisions support publishing raw data and code in publicly accessible repositories, where feasible and consistent with applicable security, privacy, and confidentiality requirements. They also support practices such as preregistering study protocols, using appropriate control groups, and transparently reporting all results, including null or negative findings. HHS continues to promote transparent communication of scientific information through compliance with the Freedom of Information Act (FOIA), the Information Quality Act (IQA), and the Evidence Act, which support the generation, dissemination, and use of strong science.

This report highlights key actions taken across HHS and its divisions to advance Gold Standard Science. The report is not intended to be a comprehensive list of relevant actions but rather provides selected highlights of accomplishments and ongoing work across HHS.

Advancing Gold Standard Science at HHS with Emerging Technology

Over the past year, HHS has taken major steps to harness emerging technologies, reaching key milestones that support biomedical research and accelerate discoveries to improve the health of

the American people. In July 2026, HHS joined the Genesis Mission, a coordinated national effort to unleash a new age of AI-accelerated innovation and discovery that can solve the most challenging problems of this century.

To support this mission, HHS will launch a series of National Science and Technology Challenges that invite America's scientific community to apply next-generation artificial intelligence (AI) to some of the nation's most urgent health challenges, working in partnership with the White House Office of Science and Technology Policy. Challenges will delve deep into the nation's chronic disease epidemic, accelerate research on pediatric cancer, and transform drug discovery and development. A centerpiece to HHS's participation in the Genesis Mission is the NIH-led Bio Genesis Mission, which will use AI, advanced computing, and cross-sector partnerships to modernize the biomedical research ecosystem and cut in half the time it takes for scientific discoveries to reach patients. By applying advanced AI tools to large and complex datasets spanning multiple scientific disciplines with appropriate security and privacy protection, researchers will be challenged to uncover previously unseen patterns, generate new hypotheses, and identify promising pathways for prevention and treatment.

HHS has continued to make advancements in the One HHS technology enterprise through a network of collaborative teams within The Office of the Chief Information Officer (OCIO). These teams strengthened the delivery of technology that is secure, accessible, and innovative across the Department. OCIO partners across HHS divisions, federal partners, industry, and the public health sector to foster innovation and advance data-driven solutions. Their wide range of programs and services helps ensure that technology is used effectively to support public health at every level. HHS has developed several department-level AI resources, including the HHS AI Strategy, HHS AI Compliance Plan, and the HHS AI Use Case Inventory.

The adoption of emerging AI technologies is unfolding across HHS Divisions. Divisions have strategically deployed new, powerful AI tools to support staff in a range of functions, from evidence-based respirator selection at CDC to consolidation of application and submission data sources at FDA. Divisions are integrating AI into their work by:

- Piloting secure AI tools to help organize and summarize proposal information for expert reviewers at ARPA-H, with human experts retaining responsibility for all evaluation decisions
- Funding research portfolios that incorporate AI technology, such as AI-powered rapid blood tests that bring testing closer to the patient and AI-enabled imaging technologies to improve the diagnoses of burn, skeletal and lung injuries resulting from a nuclear blast, at ASPR's Center for the Biomedical Advanced Research and Development Authority (BARDA)
- Developing AI-Supported Scientific Quality Review at CDC's Office of Science's Preclearance AI Review Tools (PARTs)
- Integrating AI-assisted workflows in the One CDC Data Platform for legal epidemiology research and legislative monitoring at CDC
- Launching Elsa 4.0, an upgraded internal AI tool, to all staff at FDA, and consolidating more than 40 disparate application and submission data sources, systems, and portals into the Elsa-integrated platform HALO (Harmonized AI & Lifecycle Operations for Data)

- Publishing *Guiding Principles of Good AI Practice in Drug Development* that industry and product developers can consider when using artificial intelligence (AI) to advance drug and biological product development
- Employing the CHIRP Enterprise, a secure generative AI platform that can summarize scientific literature, analyze information, draft research and administrative documents, review grant materials, and support software development, at NIH

HHS is committed to using AI and other emerging technologies securely and responsibly. The Office of Research Integrity (ORI) at OASH is developing guidelines for institutions on the acceptable use of generative AI-driven tools in Gold Standard Science which will help promote reproducible, transparent research by encouraging disclosure of generative-AI use providing clarity in generative AI use processes. The HHS OCIO offers ongoing training opportunities for HHS staff, including a new mandatory training course on the Secure Use of Artificial Intelligence (AI) Tools at HHS.

The Tenets of Gold Standard Science at HHS

HHS is committed to producing, supporting, and using Gold Standard Science. This section highlights key actions and accomplishments across HHS that are advancing each tenet of Gold Standard Science.

Reproducibility. To produce generalizable and robust scientific findings, it is essential that HHS conducts and uses science that is reproducible and replicable. Fundamental strategies to promote reproducibility include the use of rigorous and justifiable methodological approaches, comprehensive documentation and sharing of study materials (e.g., data and analysis code), and independent verification of findings.

Recent work across HHS reflects continued progress in strengthening the reproducibility of HHS-supported science.

- ARPA-H launched the Intelligent Generator of Research (IGoR) program, a systemic effort to strengthen rigor and trust in biomedical science in response to broader concerns that some findings across scientific fields cannot be reliably reproduced. IGoR is designed to create an AI-enabled, interoperable research ecosystem that supports more rigorous and reproducible experimentation by developing mechanistic disease models, identifying key knowledge gaps, establishing standardized step-by-step protocols that qualified laboratories can replicate, and creating a network of laboratories that generate high-quality data to continuously refine and validate results. In this way, the program directly targets longstanding barriers to reproducibility while aiming to accelerate discovery and improve confidence in scientific findings.
- CDC's Center for Forecasting and Analytics (CFA) exemplifies open science and analytical transparency through their Behind the Model series, which publishes the modeling code, computational pipelines, machine-readable data, and methodological explanations behind the modeling tools and capabilities used for public health preparedness. This effort enables their public health partners to reproduce and build upon CDC analyses.
- CDC's Office of Science and Office of Public Health Data, Surveillance, and Technology established a cross-CIO (Centers, Institutes, and Offices) Data Disclosure Review Board

Working Group to develop a structured, repeatable process for evaluating and approving CDC data for release, improving consistency and reproducibility in data stewardship.

- FDA's initiatives are detailed in a landmark report Reducing Animal Testing in Nonclinical Studies (April 2026). These initiatives include: providing validation framework for New Approach Methodologies (NAMs), strengthening the internal infrastructure for NAMs evaluation and incorporation in regulatory reviews, providing guidance to pharmaceutical companies on the use of NAMs and other approaches that can reduce animal testing, and increasing collaborations with other Agencies and Regulatory Authorities. The report also depicts FDA's research projects and scientific publications to increase transparency and accelerate adoption of NAMs.
- NIH launched the Replication to Enhance Research Impact Initiative (Replication Initiative) to provide support to independently replicate significant lines of research and validate novel technologies. The Replication Initiative will support replication efforts for preclinical, translational, and technology development research studies from programs supported by NIH's Common Fund as well as NIH-supported research across different scientific research areas.
- NIH developed the Reproducibility and Integrity Guidance to Optimize Research (RIGOR) for Dietary Supplements initiative to strengthen the quality and public health impact of NIH-funded dietary supplement and related nutrition research. RIGOR activities support more reliable characterization of dietary supplement interventions, promote improved study designs and outcome measures, and inform NIH prioritization of scientific opportunity areas and resource development.
- OASH's ORI released six funding opportunities in June 2026 designed to support tenets of Gold Standard Science, including transparency and reproducibility, through conferences and workshops, research on research integrity, and program development and evaluation.

Transparency. Transparency, in conjunction with appropriate peer review, produces science that is trustworthy and accountable to the scientific community and the public. HHS continues to foster an "open by default" culture to strengthen transparency and expand the access and use of open data. HealthData.gov serves as the central hub for HHS Open Data, providing access to resources including the Open Data Catalog, HHS Data Inventory, Living HHS Open Data Plan, and HHS Metadata Standard. In August 2026, HHS modernized its Information Quality Guidelines webpages, enhancing public access to Department-wide policies, correction procedures, and resources that support the quality, objectivity, utility, and integrity of information disseminated by HHS.

Across HHS Divisions, public data repositories and related resources continue to be updated to make certain HHS data available in open, accessible, and machine-readable formats. Examples include data repositories and/or catalogues by CMS (data.cms.gov), HRSA (Data Warehouse), ACF (Child & Family Data Archive; ACF Data Catalog), CDC (data.cdc.gov), FDA (Performance Data), SAMHSA (SAMHSA Data; Data Analysis System), and AHRQ (Medical Expenditure Panel Survey; Healthcare Cost and Utilization Project). Public access policies that ensure federally funded research and scientific publications are made freely available continue to be in effect across HHS, including at NIH, CMS, CDC, FDA, ACL, AHRQ, and ASPR.

Transparency of HHS-supported science has continued to advance through several initiatives across HHS Divisions over the past year:

- In March 2026, ARPA-H launched a public Award Directory that allows users to search awards by keyword, award year, award type, managing office, and location. This resource improves visibility into ARPA-H's funded portfolio and supports public understanding of agency investments. ARPA-H also expanded a centralized Submission Resources and FAQs page to provide greater transparency into the agency's funding award process.
- CDC strengthened transparency in data stewardship through enhancements to Data.CDC.gov, including improved dataset discovery and metadata, the cross-Center, Institute, and Office (CIO) Data Disclosure Review Board Working Group, and the development of CDC's first agencywide Data Use Agreement policy.
- NIH implemented the Biographical Sketch Common Form and the Current and Pending (Other) Support (CPOS) Common Form, which reinforces a standardized, government-wide approach to disclosing active, pending, and in-kind research support across NIH submissions. Use of the forms is designed to strengthen transparency, identify potential conflicts or scientific overlap, and improve stewardship of federally funded research by ensuring investigators fully disclose outside support and collaborations. It exemplifies the NIH commitment to public trust and research integrity by making disclosure expectations clearer, more consistent, and more accountable across the biomedical research enterprise.
- FDA issued two public access policies on August 15, 2025, to encourage transparency. These policies are: "Public Access Requirements for Intramural Researchers and FDA Authors of Scholarly Publications Based on FDA-Funded Scientific Research" (SMG 2126.5) and "Public Access Requirements for Extramural Research" (SMG 2126.6). The goal of these dual policies is to grant public access to peer-reviewed articles and data generated from FDA-funded research, whether conducted by FDA staff or outside organizations with funding from FDA.

Communication of error and uncertainty. Many scientific methodologies generate estimates that inherently involve uncertainty and margins of error or that reflect ranges of possible values. Any given scientific approach also has inherent limitations on the scope of conclusions that may be drawn from data or analyses. Measuring and communicating potential sources of statistical error and uncertainty are crucial for scientific integrity and the robust generation of new scientific advancements. Communicating error and uncertainty includes reporting standard quantitative metrics of statistical error and clearly explaining potential sources of uncertainty, as well as the limitations of the scientific approach employed. Importantly, the scientific method represents a perpetual pursuit toward a more comprehensive understanding of truth. In that regard, HHS is committed to communicating both knowns and unknowns transparently with the public – honesty and humility in this pursuit now guide the approach. Constructive debate and rational inquiry are welcome as we seek to expand and refine our scope of knowledge. At HHS, science is applied to a wide range of contexts, from research studies to evidence-based policymaking. In all of these applications, science is interpreted within an appropriate scope, accounting for statistical error, uncertainty, and methodological limitations. For example:

- CDC's Community Guide Program conducts systematic reviews using a transparent, standardized methodology that explicitly assesses the strength and certainty of evidence, documents limitations and evidence gaps, and characterizes uncertainty in both effectiveness and economic evidence. In 2026, the program adopted updated methods for communicating uncertainty in economic evidence and interpreting economic findings.
- Research funding opportunities at ACL, ARPA-H, NIH, OASH, and others across the Department continue to prioritize communication of error and uncertainty by setting explicit application requirements and fostering a culture of open and honest communication.

Collaboration and interdisciplinary science. HHS possesses a rich scientific culture, characterized by a broad spectrum of expertise, methodologies, and perspectives across diverse disciplines. This is a core strength of HHS that supports the Department's ability to overcome complex scientific challenges and uncover impactful discoveries that improve health and wellbeing. HHS strives to continuously enhance and expand collaborative and interdisciplinary approaches to support innovation and public benefit.

Many HHS efforts to integrate collaborative and interdisciplinary scientific approaches center around fostering partnerships within and across agencies, disciplines, institutions, and sectors. For example:

- NIH produces an annual report of all collaborations with other HHS Divisions, known as the HHS Collaborations Report, to identify opportunities for new partnerships and build on existing trans-agency partnerships. This publicly accessible report documents the nature and frequency of collaborations across HHS agencies and divisions. NIH also maintains records of collaborations among its Institutes, Centers, and Offices to facilitate internal partnerships, coordinate scientific priorities, and promote co-funding opportunities.
- In 2026, ARPA-H advanced collaboration and interdisciplinary science through cross-agency efforts ranging from environmental health to clinical trial innovation, including a joint announcement with the Environmental Protection Agency (EPA) on protecting Americans from microplastics and continued discussions with FDA on modernizing clinical trials.
- Since 2023, the Office of Policy, Performance, and Evaluation (OPPE) within CDC has advanced the Public Health Guidance Process, which brings together scientific, communications, programmatic, and policy experts to develop evidence-based guidance that emphasizes transparency, communicates uncertainty, incorporates external stakeholder input, and supports consistent, high-quality public health recommendations.
- FDA collaborated with the European Medicines Agency (EMA) to develop the Guiding Principles of Good AI Practice in Drug Development. Released in January 2026, this document outlines a common set of principles to inform, enhance, and promote the use of AI for generating evidence across all phases of the drug product life cycle. These principles also identify areas where the international regulators, international standards organizations, and other collaborative bodies could work to advance good practice in drug development.

Constructive skepticism of findings and assumptions. Science is trustworthy precisely because it is skeptical of itself, and HHS strives to uphold this ideal in the science it conducts and supports. Throughout the Department, scientific findings are subject to review, such as external peer review to assess methodology, data interpretation, and experimental design. Meetings that bring in members of the public help scientists to maintain outside perspectives. From the high-risk, high-rewards ARPA-H Model that embeds constructive skepticism through progressive milestone-based reviews to FDA's Scientific Dispute Resolution process that ensures that open debate and skepticism are built into the decision-making process, HHS fosters constructive skepticism across its Divisions. HHS has built on this foundation by:

- Scientific efforts across HHS rely on Federal Advisory Committees made up of non-federal subject matter experts to provide constructive skepticism and inform recommendations for government actions. Open and transparent public meetings of these committees promote deliberation and healthy debate. For example, many Divisions across HHS engage with the Presidential Advisory Council on Combating Antibiotic-Resistant Bacteria (PACCARB), a federal advisory council that provides advice, information, and recommendations on combating antimicrobial resistance. The 2026 public meeting provided information that will support development of the next five-year CARB National Action Plan.
- In 2026, CDC relaunched Public Health Grand Rounds as a forum for scientific exchange and critical evaluation of emerging public health evidence.

Use of falsifiable hypotheses. Strong science makes precise claims that can be tested and then rejected if the tests produce evidence that is inconsistent with those claims. Structuring studies around falsifiable hypotheses is one way of promoting rigor in the research process. In addition to the efforts described under the other tenets, which support the generation and critical evaluation of robust scientific approaches, HHS emphasizes falsifiability of hypotheses across its operations. Specific examples include:

- The ACF Evaluation Policy specifically encourages advance publication of study plans (e.g., pre-registration), where researchers publicly share their research and analysis plans prior to starting a study, which can in turn encourage researchers to develop falsifiable hypotheses.
- ARPA-H's go/no-go milestone structure requires performers to demonstrate, against predefined quantitative criteria, whether an approach is achieving staged, demonstrable progress toward the program's breakthrough goal. When a performer does not meet a milestone, the structure enables early detection of underperformance and a deliberate management decision: redefining the milestone and pivoting based on scientific findings, or down-selecting and discontinuing that line of work, thereby preserving resources and re-allocating to more promising paths to innovative health outcomes.
- The Office of Public Health Law Services (OPHLS) at CDC applies standardized legal epidemiology methods to create reproducible datasets that enable researchers to test hypotheses about the relationships between laws, policies, and public health outcomes. Through the Legal Epidemiology Learning Cohort, CDC is expanding the application of these methods through interdisciplinary training and collaborative research.
- The NIH Common Fund Data Ecosystem (CFDE) helps researchers discover, access, and use datasets generated across NIH Common Fund programs by offering a unified entry point and

shared technical infrastructure that provides pathways to program specific data sources. CFDE exemplifies NIH's commitment to falsifiability of hypothesis by connecting previously siloed data resources, applying consistent metadata and interoperability standards, and providing researchers with the context needed to examine, compare, validate, and build upon existing findings.

Use of unbiased peer review. Rigorous science requires that plans for conducting research, as well as the analyses and conclusions drawn from that research, be evaluated by independent experts for validity before being approved or subsequently disseminated. HHS makes extensive use of peer review across its intramural research activities, implements world-class peer review in the process of awarding extramural research funding, and strongly encourages all HHS-supported scientists to publish in peer-reviewed journals. HHS complies with the Information Quality Act (IQA) and offers guidelines and staff training on its requirements. The IQA requires that information disseminated by the agency meet quality, utility, objectivity, and integrity standards, and that if an agency disseminates influential scientific information, agency guidelines shall include a high degree of transparency about data and methods to facilitate the reproducibility of such information by qualified third parties. HHS adheres to the Office of Management and Budget Final Information Quality Bulletin for Peer Review, which is designed to improve the quality, objectivity, utility, and integrity of information disseminated by the Federal Government to the public. HHS is dedicated to continually improving the quality and integrity of Departmental research through peer review. For example:

- In 2026, CDC began offering an on-demand orientation for external peer reviewers of CDC funding opportunities. The training provides consistent guidance on reviewer responsibilities, scoring, critique development, and review procedures, helping promote fairness, consistency, and objectivity across peer review activities.
- NIH is implementing the Simplified Peer Review Framework and centralization of first-level peer review within the NIH Center for Scientific Review (CSR). These efforts highlight NIH's commitment to ensuring that funding decisions are informed by rigorous, independent, and unbiased scientific evaluation by reducing the potential for reputational bias, focusing reviewer attention on the importance, rigor, and feasibility of the proposed research, and promoting consistent review practices across the agency.

Acceptance of negative results as positive outcomes. The "publish or perish" mindset prevalent in research, and the lack of journals that publish negative results, can lead researchers to publish only results that confirm a given hypothesis and may lead to research being unnecessarily duplicated. HHS recognizes that negative or null results can provide valuable contributions to scientific knowledge, public health, and programmatic and policy decision-making, and strives to advance a research culture that values negative results as a positive outcome. For example:

- Policies and programs across HHS, such as FDA's ClinicalTrials.gov Civil Money Penalty Program, help ensure that the results of clinical trials and other scientific studies and evaluations, including negative results, are made public.
- In 2024, NIH convened the Novel Approaches to Preventing Publication Bias Workshop, bringing together researchers, publishers, funders, scientific societies, and other stakeholders to

identify practical strategies for improving the communication and accessibility of null findings across the biomedical research ecosystem.

- CDC's Center for Forecasting and Analytics (CFA) routinely compares forecasts with observed outcomes and uses instances where model predictions do not perform as expected to refine model structure, incorporate new data streams, and improve future forecasting performance. CFA provides important risk assessments of events like the 2026 Ebola virus and Andes virus outbreaks.
- The ACF Evaluation Policy calls for the timely release of all evaluation findings, including favorable, unfavorable, and null findings.
- Grant awardees are often encouraged or required to publish their findings regardless of outcome. Results of the NIH-supported Fast Antimicrobial Susceptibility Testing (FAST) Randomized Clinical Trial, published in 2026, evaluated whether a new rapid testing approach could help doctors choose the most effective antibiotics more quickly for patients with serious bloodstream infections. The study found no benefit to patient outcomes using the rapid testing approach and published the result, noting that the findings could inform clinical practice. The trial highlights that well-designed studies generate valuable knowledge regardless of the outcome, helping researchers identify whether new approaches are most effective and where additional innovation may be needed.

Avoiding conflicts of interest. Freedom from inappropriate conflicts of interest is essential for fostering trust in science and scientific results. Across Divisions, HHS incorporates conflict-of-interest review and screening in its funding and procurement activities, scientific processes, research security, and Federal Advisory Committee selection. HHS provides ethics training to all staff on how to avoid conflicts of interest and complies with all relevant conflict of interest statutes. Divisions also have specific conflict of interest policies, for example, governing evaluation at ACF or extramural peer review at NIH. HHS and many of its Divisions retain ethics and integrity experts who can advise on matters relating to conflicts of interest. Examples of recent efforts to eliminate problematic conflicts of interest include:

- In 2026, the National Center for HIV, Viral Hepatitis, STD, and TB Prevention's Extramural Research Program Office (ERPO) at CDC developed an on-demand training for external reviewers that provides consistent guidance on reviewer responsibilities, scoring, critique development, and review procedures, helping promote fair, impartial, and scientifically rigorous evaluation of research applications.
- Through new Research Security Training requirements for senior/key personnel, NIH is equipping researchers with the knowledge needed to identify, disclose, and appropriately manage activities that could present conflicts of interest, conflicts of commitment, or other risks to research integrity. By establishing a consistent foundation in research security principles, NIH is helping to minimize potential conflicts, promote objective and ethical research practices, and reinforce public trust in NIH-supported science.
- The Office for Human Research Protections (OHRP) within OASH maintains the HHS policy on financial conflicts of interest. The policy was reviewed on June 2, 2026, and continues to reflect OHRP's general thinking on this topic.

HHS will continue to innovate and find new ways to minimize conflicts of interest to the greatest degree possible.

Training and Evaluation

Ongoing training and evaluation are two critical elements to fostering a culture of Gold Standard Science, supporting the consistent application of high standards across the Department. Many Divisions across HHS have developed new trainings and evaluations and continue to diligently implement existing functions that support Gold Standard Science.

All HHS employees have access to training on scientific integrity, which includes guidance on supporting science that is reproducible, transparent, communicative of error and uncertainty, collaborative and interdisciplinary, subject to unbiased peer review, and without conflicts of interest. In 2026, the training was updated to incorporate several principles of Gold Standard Science and align with corresponding revisions to the HHS Scientific Integrity Policy. Several HHS Divisions require or plan to require the HHS Scientific Integrity Training as part of onboarding for new staff or as part of ongoing staff training activities. CDC staff are required to take an additional CDC-specific scientific integrity training. FDA is launching a new training on Gold Standard Science-related topics in Summer 2026 and requires each of its Centers, Offices, and Programs to develop Gold Standard Science policies, practices, and trainings specific to their unique functions.

Additional trainings available to HHS or Division staff help establish a strong foundation for Gold Standard Science by addressing ethics, responsible conduct of research, good laboratory practice, records management, privacy, cybersecurity, and responsible data stewardship. In 2026, CDC began offering a training series on scientific writing for public health that addresses transparency, communication of uncertainty and limitations, collaboration and interdisciplinary science, use of unbiased peer review, and scientific integrity and ethical conduct. To support HHS employees in the responsible use of emerging technologies and artificial intelligence, HHS has several related training programs, including training on the Secure Use of Artificial Intelligence (AI) Tools.

Several Divisions also offer publicly available trainings that strengthen Gold Standard Science in the broader research community. NIH provides resources and training on many aspects of rigor and reproducibility, including modules, resources, and articles. OASH continues to provide education to researchers and responses to questions and clarifications regarding regulations under the Office of Human Research Protections to ensure that good research is not held back by ambiguity in regulations. OASH's program offices, the Office for Human Research Protections and ORI provide a foundational training on human research protections, responsible conduct of research, and basic and clinical biomedical research. Together, these public trainings facilitate trustworthy research and substantially cover the Gold Standard Science tenets of reproducibility, transparency, communication of error and uncertainty, constructive skepticism of findings and assumptions, use of falsifiable hypotheses, acceptance of negative results as positive outcomes, and minimizing conflicts of interest.

In addition to training staff on the conduct of Gold Standard Science, HHS Divisions regularly evaluate various aspects of Gold Standard Science implementation. These evaluation mechanisms are numerous and span every HHS Division, but a few specific examples include:

- In April 2025, the NIH Council of Councils established the Working Group on Science of Science to identify priority scientific opportunities that could strengthen NIH's programs, policies, and impacts in the biomedical research enterprise. The Working Group drafted a report that will be presented to the Council of Councils in September 2026 and is expected to provide actionable recommendations to ensure NIH's adoption of the best practices to implement and adhere to Gold Standard Science.
- In November 2025, NIH launched its internal Evaluation Module, which strengthens NIH's capacity to evaluate its programs by disseminating evaluation knowledge, methodologies, resources, and guidance; supporting peer-to-peer learning among the NIH evaluation community; and providing a connection hub for the NIH Evaluation & Analytics Community of Practice. The NIH Evaluation Module offers a suite of practical tools, including a logic model builder, implementation tracking features, and data visualization tools, which are key to designing evaluations that can assess adherence to the nine tenets of Gold Standard Science.
- ARPA-H's Heilmeier Questions (HQs) provide a standardized framework for designing, communicating, and pitching programs: assessing scientific rigor, technical feasibility, potential impact, and clear articulation of risks, assumptions, and success criteria. ARPA-H employees receive training on the HQs, which promote transparency, communication of error and uncertainty, skepticism of findings and assumptions, falsifiability of hypotheses, and collaboration across disciplines.
- CDC's Program Evaluation Office (PEO) leads implementation of the CDC Program Evaluation Framework and complementary performance monitoring processes, including the Performance Improvement Framework and Notice of Funding Opportunity (NOFO) evaluation requirements. These efforts promote consistent, rigorous, transparent, and ethical evaluation practices across CDC programs and strengthen assessment of multiple Gold Standard Science tenets.
- CDC programs assess adherence to Gold Standard Science through established governance and compliance processes. For example, the Information Collection Review Office (ICRO) evaluates information collection activities for consistency with Office of Management and Budget requirements and Administration guidance throughout the Paperwork Reduction Act clearance process, while the Office of Public Health Law Services (OPHLS) uses standardized legal epidemiology methods and training to promote reproducibility and interdisciplinary collaboration in legal research.
- FDA's dispute-resolution mechanisms are important tools that facilitate scientific rigor and integrity. FDA's Office of Scientific Integrity tracks dispute-resolution metrics, including the number of formal adjudications requested under Gold Standard Science Policy Section 6 ("Reporting GSS-Related Concerns"), the number of research misconduct investigations conducted, the number of authorship dispute matters appealed to the Office of the Commissioner under SMG 9010.3 (Authorship Dispute Resolution at FDA), and the number of scientific dispute resolution matters appealed to the Office of the Commissioner under SMG 9010.1 (Scientific Dispute Resolution at FDA).
- The IHS Program Evaluation Policy establishes the procedures for planning, funding, conducting, and using program evaluations across IHS programs. The policy aligns with the U.S. Department of Health and Human Services (HHS) Evaluation Principles rigor, relevance and utility, independence and objectivity, transparency, and ethics and ensures a

consistent review process for all Notices of Funding Opportunity (NOFOs). These evaluations help IHS assess its health care services and related functions to inform decision-making and support continuous improvement.
- ASPE continues to coordinate the HHS Scientific Integrity Council and works across HHS Divisions to identify further opportunities to collaborate on Gold Standard Science implementation.
- OASH, through ORI, continues to safeguard the integrity of Public Health Service research. The office implements policies, programs, and procedures to address research misconduct to hold bad actors accountable and champions the responsible conduct of research across the scientific community. ORI's Program Development and Evaluation Program (PDE) seeks to support projects for the development and implementation of innovative approaches and tools to promote research integrity and prevent misconduct.

Looking Ahead: Future Opportunities and Challenges

HHS is committed to upholding high standards for scientific activities and improving those standards over time. Many efforts across the Department are underway to build upon HHS's strong scientific foundation, and HHS will continue to implement Gold Standard Science and incorporate best practices to strengthen scientific standards. Divisions are investing in modern scientific methods, workforce capabilities, and innovative technologies to advance the principles of Gold Standard Science and support evidence-based policy- and decision-making.

- ASPR has framed "advancing gold standard science" under the goal of addressing emerging health security threats in its Strategic Plan for FY2026–2029. Specifically, the goal focuses on advancing gold-standard science to address chemical, biological, radiological, and nuclear (CBRN) threats and future pandemics.
- In 2026, CDC's Community Guide Program adopted updated methods for characterizing and communicating uncertainty in economic evidence and interpreting economic findings. The program is also evaluating the use of artificial intelligence to support systematic review workflows in ways that improve efficiency while maintaining scientific rigor.
- CDC is developing plans to standardize biomonitoring protocols and analytical methods, expand collaborations with academic and other external partners, develop a unified community assessment tool and chemical emergency decision-support framework, and enhance event surveillance capabilities through advanced analytics while maintaining appropriate scientific oversight.
- OASH has built a modern infrastructure that can expand in scope and is building out new features, including structural determinants of health reporting through standardized analytic tools, consistent indicators, and structural-determinant methodologies. America's HIV Epidemic Analysis Dashboard (AHEAD) infrastructure user interface is modernized, scalable, and utilizes real use cases driven by analysis of performance data for real users.
- The Center for Behavioral Health Statistics and Quality (CBHSQ) within SAMHSA is finalizing and implementing Standard Operating Procedures for statistical products that explicitly

incorporate relevant Gold Standard Science principles and federal statistical quality standards and exploring development of related training and onboarding materials.

Implementing Gold Standard Science across HHS requires coordination, resources, and guidance encompassing HHS's vast array of operations, including basic and translational biomedical research, services delivery, regulatory decision-making, public health monitoring, and many more. Improving scientific standards across the Department is an ambitious undertaking and not without its challenges. Several Divisions have faced staffing challenges that make it challenging to sustain high-quality scientific activities. Staffing and other resources to support the planning, implementation, evaluation, and dissemination of evidence-based practices, strengthen evaluation capacity, and enhance policy and operational decision-making would bolster Divisions' ability to implement Gold Standard Science. Another challenge HHS and its Divisions have faced is in implementing consistent practices across diverse organizational missions, particularly those that may not conduct hypothesis-driven research. Divisions are addressing these and other challenges head-on by developing standardized guidance, modernizing their workforces, and continuing to collaborate across HHS to share best practices.

Conclusions

Strengthening science and the decisions that rely on it requires consistent, incremental improvements and a dedication to pursuing ever-increasing standards of rigor, reproducibility, and transparency. This report highlights HHS's commitment to improving its standards and implementing the principles of Gold Standard Science Department-wide.