

National Institutes of Health



The following tables are in millions of dollars.

Institutes/Centers	2020 /2	2021 /3	2022	2022 +/- 2021
National Cancer Institute	6,440	6,559	6,733	+174
National Heart, Lung, and Blood Institute	3,625	3,665	3,846	+181
National Institute of Dental and Craniofacial Research	478	485	516	+31
National Institute of Diabetes and Digestive and Kidney Diseases	2,265	2,282	2,361	+79
National Institute of Neurological Disorders and Stroke	2,447	2,511	2,783	+272
National Institute of Allergy and Infectious Diseases	5,876	6,067	6,246	+179
National Institute of General Medical Sciences	2,937	2,991	3,096	+105
Eunice K. Shriver National Institute of Child Health and Human Development /4	1,798	1,838	1,942	+104
National Eye Institute	823	836	859	+23
National Institute of Environmental Health Sciences: Labor/HHS Appropriation	803	815	937	+122
National Institute of Environmental Health Sciences: Interior Appropriation	81	82	84	+2
National Institute on Aging	3,546	3,900	4,036	+136
National Institute of Arthritis and Musculoskeletal and Skin Diseases	625	634	680	+46
National Institute on Deafness and Communication Disorders	491	498	512	+14
National Institute of Mental Health	2,043	2,106	2,214	+108
National Institute on Drug Abuse	1,458	1,480	1,853	+372
National Institute on Alcohol Abuse and Alcoholism	547	555	570	+15
National Institute of Nursing Research	172	175	200	+25
National Human Genome Research Institute	604	616	633	+17
National Institute of Biomedical Imaging and Bioengineering	405	411	422	+11
National Institute on Minority Health and Health Disparities	336	392	652	+261
National Center for Complementary and Integrative Health	152	154	184	+30
National Center for Advancing Translational Sciences	833	855	879	+24
Fogarty International Center	81	84	96	+12
National Library of Medicine	457	462	475	+13
Office of the Director /4, 5	2,007	2,175	2,245	+70
21st Century Cures Innovation Accounts /6	157	109	150	+41
Buildings and Facilities	200	200	250	+50
Advanced Research Projects Agency for Health	--	--	6,500	+6,500
Total, Program Level	41,685	42,936	51,953	+9,017

NIH Budget Totals	2020 /2	2021 /3	2022	2022 +/- 2021
Total, Program Level	41,685	42,936	51,953	+9,017
Less Funds from Other Sources	-1,381	-1,422	-1,413	+9
<i>Public Health Service Evaluation Funds (non-add)</i>	-1,231	-1,272	-1,272	--
<i>Current Law Mandatory Funding – Type 1 Diabetes (non-add) /7</i>	-150	-150	-141	+9
Total, Discretionary Budget Authority	40,304	41,514	50,540	+9,026
Full-Time Equivalents /8	17,619	18,781	19,299	+518

Appropriations	2020	2021	2022	2022 +/- 2021
Labor/HHS Appropriation	40,223	41,432	50,456	+9,024
Interior Appropriation	81	82	84	+2

- 1/ Totals may not add due to rounding.
- 2/ The FY 2020 column reflects final levels, including required and permissive transfers, but does not include \$3.6 billion in COVID-19 supplemental resources.
- 3/ The FY 2021 column reflects enacted levels, including required transfers and HIV/AIDS transfers, but does not include other permissive transfers or \$1.3 billion in COVID-19 supplemental resources.
- 4/ Amounts for FY 2020 and FY 2021 are comparably adjusted for the proposed transfer of the ECHO and INCLUDE programs from OD to NICHD in FY 2022.
- 5/ Amounts for all fiscal years reflect directed transfer of \$5 million to the HHS Office of Inspector General.
- 6/ Total funding available through the 21st Century Cures Act is \$496 million in FY 2022. It is allocated to NCI (\$194 million), NINDS (\$76 million), NIMH (\$76 million), and the Innovation Account (\$150 million).
- 7/ Reflects mandatory sequester of 5.7 percent in FY 2022.
- 8/ Excludes 4 FTEs funded by the Public Health Service trust funds in all years.

The National Institutes of Health's (NIH) mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

The National Institutes of Health (NIH) is the nation's medical research agency and the world's largest funder of innovative multidisciplinary biomedical and behavioral research. NIH investments in basic research support translating scientific discovery into tangible improvements in clinical practice, public health, and preparedness. NIH fosters a talented and diverse workforce of scientists and researchers. To date, 163 NIH supported researchers have been sole or shared winners of 96 Nobel Prizes.

The FY 2022 President's Budget includes \$52 billion for NIH, an increase of \$9 billion above FY 2021 enacted, reflecting the Administration's commitment to increasing investments in transformative biomedical research to advance the health of the nation and promote innovation. Of the \$9 billion increase, \$6.5 billion will support the establishment of the Advanced Research Projects Agency for Health (ARPA-H), a bold new entity within NIH that will speed transformational innovation in health research. The remaining \$2.5 billion will continue NIH's long-standing commitment to investing in basic research and translating it into clinical practice to address the most urgent challenges, which include ending the opioids crisis, climate change, and gun violence.

In FY 2022, NIH estimates it will support a total of 44,343 research project grants, an increase of 2,260 above FY 2021, including a total of 12,664 new and competing grants. About 85 percent of the funds appropriated to NIH will flow out to the extramural community, which supports work by more than 300,000 research personnel at over 2,500 universities, medical schools, research facilities, small businesses,

and hospitals. About nine percent of the budget will support an in-house, or intramural, program of basic and clinical research and training activities managed by world class physicians and scientists. The intramural research program, which includes the NIH Clinical Center, gives the nation the unparalleled ability to respond immediately to national and global health challenges. Another six percent will provide for agency leadership, research management and support, and facilities maintenance and improvements.

ADVANCED RESEARCH PROJECTS AGENCY FOR HEALTH

As part of the Administration's actions to renew America's commitment to research and development, the budget includes \$6.5 billion to create ARPA-H. Modeled after the Defense Advanced Research and Development Agency (DARPA), ARPA-H will make pivotal investments to drive transformational innovation in health research and speed application and implementation of health breakthroughs to reduce illness and save lives. ARPA-H will strive to collapse barriers and accelerate the development of evidence-based, real-world-driven cures for and transformative advances in a range of biomedical and health research areas and diseases – from cancer to hypertension to population-level behavioral interventions. ARPA-H will promote a culture that values a relentless drive for transformative technical results and a willingness to take risks and be nimble – one that is built on teamwork, broad and active engagement, a collaborative spirit across disciplines, a sense of urgency, and constantly pushing towards a common set of goals.

ARPA-H will fund projects with the potential to transform entire areas of medicine and health by:

- Tackling bold challenges requiring large scale, sustained coordination
- Creating new capabilities (e.g., technologies, data resources, disease models)
- Supporting high-risk exploration that could establish entirely new paradigms
- Overcoming market failures through critical solutions, including financial incentives

ARPA-H will boost progress towards treatments and cures by working with industry, academia, nonprofits, and other Federal agencies, using traditional and nontraditional mechanisms like Other Transaction Authority, to scale up projects with the most promise for improving health and saving lives. A federal advisory panel will be established to provide an avenue for interagency coordination and idea generation. ARPA-H will have a distinctive culture and organizational structure, and will complement NIH's existing research portfolio, providing an agile and flexible arm to advance biomedical science quickly and robustly.

“The Defense Department has an agency called DARPA —the Defense Advanced Research Projects Agency—that's there to develop breakthroughs to enhance our national security—which led to the internet and GPS and so much more. The National Institutes of Health, the NIH—should create a similar Advanced Research Projects Agency for health. To develop breakthroughs—to prevent, detect, and treat diseases like Alzheimer's, diabetes, and cancer. This is personal to so many of us. I can think of no more worthy investment. And I know of nothing that is more bipartisan.” — President Biden

RESEARCH PRIORITIES IN FY 2022

Combating the Opioid and Methamphetamine Crisis

The national crisis of opioid misuse, addiction, and overdose, one of the largest and most complex public health crises that our nation has faced, continues to affect communities across America. Overdose deaths were increasing prior to COVID-19 and preliminary drug overdose death data from 2020 suggest that overdose deaths accelerated

during the pandemic. The FY 2022 President's Budget requests an historic investment to end the opioid crisis including \$2.2 billion across NIH Institutes and Centers for opioids, stimulant, and pain research, an increase of \$627 million above FY 2021 enacted. Within this total, \$811 million supports the Helping to End Addiction Long-term (HEAL) Initiative, NIH's aggressive, trans-agency effort to provide scientific solutions to the opioid crisis and offer new hope for individuals, families, and communities affected by this devastating crisis. Over \$1.4 billion supports ongoing research in this critical area.

The HEAL Initiative was launched in 2018 to enhance pain management and to improve prevention and treatment strategies for opioid misuse and addiction. The HEAL Initiative leverages expertise from almost every NIH Institute and Center to approach the crisis from all angles and disciplines, and across the full spectrum from basic research to implementation science. HEAL accelerates the preclinical and translational development of new medications and devices to treat pain. Clinical trials to evaluate the safety and efficacy of innovative, non-addictive therapies for pain management help inform evidence-based guidelines for the treatment of pain with non-opioid therapies and reduce the risk of prescription opioid medications. Additionally, a series of highly focused studies is expediting the development of therapies to treat opioid use disorder (OUD) and reverse overdose, yielding 16 Investigational New Drug applications filed with the Food and Drug Administration authorizing human studies. HEAL research also tests promising prevention strategies and integration of evidence-based treatments for OUD in multiple settings, including primary and emergency care, the criminal justice system, and other community settings, and in communities highly affected by the opioid crisis.

Through HEAL, the Advancing Clinical Trials in Neonatal Opioid Withdrawal Syndrome (ACT NOW) study is informing care for infants exposed to maternal opioid use while in the womb. These infants often experience extreme irritability, problems eating and sleeping, and seizure and neonatal opioid withdrawal syndrome, with an estimated frequency of seven per 1,000 hospital births. Through ACT NOW, researchers test both drug-free treatment approaches and currently used medications for neonatal opioid withdrawal

syndrome. One trial is testing the Eat, Sleep, and Console function-based assessment for neonatal opioid withdrawal syndrome among 864 families over two years. A second trial is testing the effectiveness of two different pharmacological treatments for neonatal opioid withdrawal syndrome, morphine and methadone, among over 500 infants. The ACT NOW Longitudinal Study measures the effects of prenatal opioid exposure, together with maternal and environmental factors to influence childhood neurodevelopment and behavior. Despite COVID-19, all three ACT NOW studies began recruitment in 2020.

NIH HEAL INITIATIVE RESEARCH OVERVIEW



Health Disparities and Inequities Research

While the diversity of the American population is one of the nation's greatest assets, one of its greatest challenges is reducing the profound disparity in the health status of its racial and ethnic minority, rural, low-income, and other underserved populations. NIH aims to expand its investment in research on health disparities, fostering collaborations and partnerships to promote and support evidence-based science to address long-standing inequities. The budget provides an additional \$330 million to enhance health disparities and inequities research, including \$250 million for the National Institute on Minority Health and Health Disparities. The remaining \$80 million is targeted for cardiovascular, nursing, and international health disparities and inequities research at the National Heart, Lung, and Blood Institute, the National Institute of Nursing Research, and the Fogarty International Center respectively.

EQUITY PROGRAM HIGHLIGHT

The National Institute on Minority Health and Health Disparities, in collaboration with multiple other NIH Institutes and Centers, has announced support for a new research program - Understanding and Addressing the Impact of Structural Racism and Discrimination on Minority Health and Health Disparities. This is built upon the recognition that structural racism and discrimination contribute to poorer health outcomes for racial/ethnic minorities and other populations that experience health disparities based in part on experiences of racism and discrimination. Projects must address structural racism and discrimination in one or more NIH-designated populations with health disparities in the US and should address documented disparities in health outcomes.

Impacts of Climate Change on Human Health

The FY 2022 President's Budget includes an additional \$100 million for NIH, in collaboration with other federal agencies, to continue its collaboration and coordination of research and other activities related to climate change. NIH not only provides research on human health impacts related to climate change and adaptation but also raises awareness and creates new partnerships to advance key areas of health research and knowledge development on the effects of climate change on human health. In FY 2022, NIH will continue to work towards advancing the key areas of health research and knowledge development on human health effects of climate change. While climate change is a global process, it has very local impacts that can profoundly affect communities, which the Department considers to be one of the top public health challenges in our time.

Ending the HIV Epidemic in the U.S.

The Administration is committed to ending the HIV epidemic in the United States and the budget proposes significant investments across HHS to aggressively reduce new HIV cases while increasing access to treatment, expanding the use of pre-exposure prophylaxis (also known as PrEP), and ensuring equitable access to services and supports.

NIH investments in innovative HIV and AIDS research over more than three decades produced

groundbreaking advances that enabled the development of safe, effective antiretroviral medications to extend the lifespan of people with HIV, and the design and implementation of effective interventions to prevent HIV transmission and acquisition. While these advances have led to a significant decline in new HIV diagnoses from their peak in the mid-1980s, progress has stalled with an estimated 38,000 Americans being newly diagnosed each year.

NIH-supported basic, clinical, behavioral, and social science research on preventing new infections, developing optimal treatments, addressing comorbidities, and tackling health inequalities will support the development of effective and culturally responsive interventions whose implementation will be essential to achieving the goals of the initiative. The FY 2022 President's Budget provides \$26 million, an increase of \$10 million above FY 2021 enacted, for NIH-sponsored Centers for AIDS Research to support the initiative to end HIV/AIDS through evidence-based research on new strategies for the successful delivery of integrated prevention and treatment.

Improving Maternal Health

In response to rising U.S. rates of pregnancy-related deaths, or maternal mortality, NIH launched the Implementing a Maternal health and PRenancy Outcomes Vision for Everyone (IMPROVE) initiative. The initiative supports research to reduce preventable causes of maternal deaths and improve health for women before, during, and after delivery. The IMPROVE initiative focuses on the leading causes of maternal mortality in the United States—cardiovascular disease, infection, and immunity—as well as contributing health conditions or social factors, such as mental health disorders, diabetes, obesity, substance use disorders, and structural and healthcare system issues. The initiative also focuses on significant pregnancy-related health complications called severe maternal morbidity.

The budget includes an additional \$30 million investment for IMPROVE to build upon ongoing efforts among federal partners and other stakeholders to accelerate progress towards reducing maternal mortality and severe maternal morbidity. IMPROVE will launch a national network of Maternal Health Research Centers of Excellence that supports

integrated biological and biopsychosocial research. Research projects will incorporate local community needs and perspectives to develop, implement, and evaluate community-tailored interventions to address maternal health disparities, as well as investigate biological, behavioral, sociocultural, and structural risk factors and mechanisms of the leading causes of maternal mortality and severe maternal morbidity. This NIH effort will complement and advance activities across HHS to improve maternal health.

Addressing Gun Violence in America

Nearly 40,000 people in the U.S. die from firearm-related injuries each year and many more have experienced non-fatal firearm injuries. When firearms are involved with violent events, the risk for injury and mortality increases. Firearm violence is responsible for three quarters of homicide deaths and is the most common and lethal means of suicide. Firearm injury and mortality also contribute to health disparities—among males aged 20-24, the firearm homicide rate is more than 10 times higher for black men than for white men.

The Administration is committed to addressing gun violence as a public health issue and the budget doubles funding within NIH to \$25 million for firearm violence prevention research. NIH will expand efforts to improve understanding of the determinants of firearm injury, the identification of those at risk of firearm injury (including both victims and perpetrators), the development and evaluation of innovative interventions to prevent firearm injury and mortality, and the examination of approaches to improve the implementation of existing, evidence-based interventions to prevent firearm injury and mortality.

Research on the Effects of COVID-19

Available research from prior disasters and other stressful and traumatic events underscores the likelihood that the experience of the COVID-19 pandemic will have a negative impact on the mental health of people from all age groups. Receipt of mental health services has proven challenging, as health care systems have been understandably pulled to mitigating the initial effects of viral infection and many shifted to telehealth delivery to protect the health of providers and patients. The budget includes \$25 million within the National Institute of Mental

Health for research to understand the risks, mechanisms, and treatment in response to COVID-19 among individuals at risk for, or experiencing, mental disorders, across the full lifespan.

NIH is leading efforts to understand how SARS-CoV-2, the virus that causes COVID-19, affects children, who account for roughly 13 percent of the total cases of COVID-19 in the United States. The Collaboration to Assess Risk and Identify Long-term Outcomes for Children with COVID (CARING for Children with COVID) research program is developing and funding studies to investigate why some children are at greater risk for SARS-CoV-2 infection than others, why symptoms vary among children who are infected, and how to identify children at risk for severe illness from SARS-CoV-2 infection, like multisystem inflammatory syndrome in children or Long COVID. The budget provides \$15 million within the Eunice K. Shriver National Institute of Child Health and Human Development to enroll additional children into existing studies, expand sites across the country where the studies could occur, and allow for long-term follow-up of these children to understand lasting effects.

Creating a Diverse Biomedical Workforce

Every facet of the United States scientific research enterprise—from basic laboratory research, to clinical and translational research, to policy formation—requires superior intellect, creativity, and a wide range of skill sets and viewpoints. NIH's ability to help ensure that the nation remains a global leader in scientific discovery and innovation is dependent upon a pool of highly talented scientists from diverse backgrounds who will help to further NIH's mission. There are many benefits that flow from a diverse NIH-supported scientific workforce, including: fostering scientific innovation, enhancing global competitiveness, contributing to robust learning environments, improving the quality of the researchers, advancing the likelihood that underserved or health disparity populations participate in and benefit from health research, and enhancing public trust.

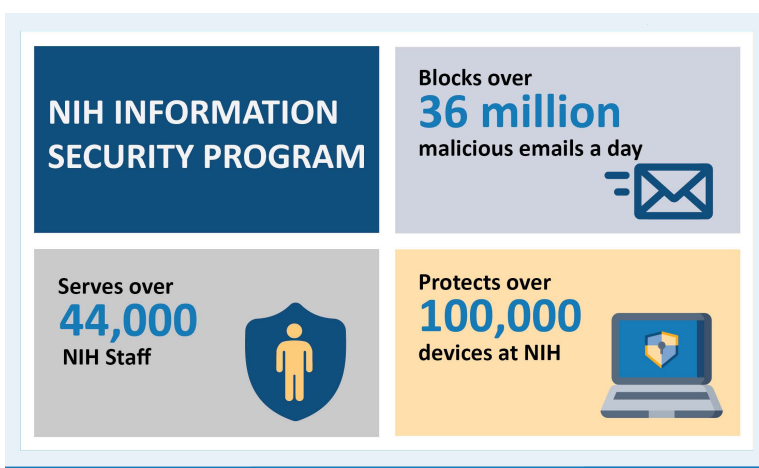
NIH will continue efforts implemented over the past decade to recruit and advance the careers of people traditionally underrepresented in the biomedical and behavioral research workforce. This includes increasing opportunities for early-career investigators, improving upon data collection and evaluation efforts

to determine the most effective approaches for reaching underrepresented groups, and implementing systematic tracking and evaluation of diversity and inclusion metrics for the intramural research program for each NIH Institute and Center through the NIH Equity Committee. The budget provides an additional \$16 million for these activities, managed by the Chief Officer for Scientific Workforce Diversity.

Protecting Biomedical Research

The Administration is committed to supporting agencies as they modernize, strengthen, and secure antiquated information systems and bolster federal cybersecurity including as it relates to biomedical research data. The need for a robust and facile NIH cybersecurity posture has never been greater, particularly as increased attention has been paid to its work addressing the COVID-19 pandemic. NIH transmits a massive amount of data per day on its network, all while blocking 36 million malicious emails and tens of thousands of intrusion attempts every single day.

To address NIH's priorities of protecting loss of personally identifiable or personal health information, research data integrity, and financial stewardship, the budget provides an additional \$100 million in FY 2022 to enhance Security Operations Center functions, expand threat mitigation and incident response support capabilities, implement important architectural improvements to the NIH network, and implement standard cyber tools and technologies that allow real time monitoring of activity across a variety of sources. These improvements will significantly strengthen the overall NIH cybersecurity enterprise.



RESEARCH INFRASTRUCTURE

Buildings and Facilities

A total of \$250 million is requested for NIH intramural Buildings and Facilities, an increase of \$50 million above FY 2021 enacted, to ensure the necessary infrastructure for cutting-edge science. The budget also increases flexibility for Institutes and Centers to fund, construction, repair, and improvement projects. These two proposals are part of a long-term effort to strengthen stewardship of NIH facilities. A 2019 independent review of facility needs by the National Academies of Sciences, Engineering, and Medicine substantiates the need for a sustained increase in annual facilities funding. Building upon administrative improvements to its capital planning process, additional resources will stem the growth of NIH's backlog of maintenance and repair.

Non-human Primate Research Infrastructure Expansion

The current COVID-19 pandemic has highlighted the need to expand non-human primate resources to

ensure numbers and housing sufficient for allocation to high-priority research. Non-human primates and their specialized containment laboratory space are both very limited resources nationally. Non-human primate research has provided valuable insights into the molecular and cellular mechanisms that underlie infection and pathogenesis of SARS-CoV-2 and other potential pandemic agents and proved essential for developing and testing therapeutics and vaccines. The program is also critical for other areas of research such as HIV/AIDS and neuroscience.

The budget includes an additional \$30 million to support a 27 percent expansion of non-human primate resource infrastructure at the National Primate Research Centers and Caribbean Primate Research Center located in seven states plus Puerto Rico. These resources will address space and infrastructure capability needs such as animal purchase and transport along with investments to expand housing and support space.

Overview by Mechanism

The following tables are in millions of dollars except as indicated.

Mechanism	2020 /1	2021 /2	2022 /3	2022 +/- 2021
Research Project Grants (dollars)	23,982	24,559	26,228	+1,669
[# of Non-Competing Grants]	28,415	29,040	29,718	+678
[# of New/Competing Grants]	11,395	11,189	12,664	+1,475
[# of Small Business Grants]	1,833	1,854	1,961	+107
[Total # of Grants]	41,643	42,083	44,343	+2,260
Research Centers	2,708	2,779	2,873	+94
Other Research	2,811	2,997	3,097	+100
Research Training	907	952	1,019	+67
Research and Development Contracts	3,296	3,363	3,561	+199
Intramural Research	4,461	4,549	4,696	+147
Research Management and Support	1,979	2,091	2,184	+94
Office of the Director /4	1,230	1,335	1,432	+96
<i>NIH Common Fund (non-add)</i>	639	649	659	+10
<i>Office of Research Infrastructure Programs (non-add)</i>	294	300	305	+5
<i>OD Appropriation (non-add)</i>	2,164	2,284	2,395	+111
Buildings and Facilities /5	230	230	280	+50
National Institute of Environment Health Services Interior Appropriation (Superfund)	81	82	84	+2
Advanced Research Projects Agency for Health	0	0	6,500	+6,500
Total, Program Level	41,685	42,936	51,953	+9,017

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<i>Current Law Mandatory Funding – Type 1 Diabetes (NIDDK) (non-add) /7</i>	-150	-150	-141	+9
Total, Discretionary Budget Authority	40,304	41,514	50,540	+9,026
Full-Time Equivalents /8	17,619	18,781	19,299	+518

Appropriations	2020 /1	2021 /2	2022 /3	2022 +/- 2021
Labor/HHS Appropriation	40,223	41,432	50,456	+9,024
Interior Appropriation	81	82	84	+2

1/ Reflects the FY 2020 Final Level including funding authorized by 21st Century Cures Act and directed and permissive transfers.

2/ Reflects the FY 2021 enacted level including the \$5 million directed transfer to the HHS Office of Inspector General.

3/ Reflects \$5 million directed transfer to the HHS Office of Inspector General.

4/ Number of grants and dollars for the Common Fund and Office of Research Infrastructure Programs components of the Office of the Director (OD) are distributed by mechanism and the dollars are noted here as a non-add. OD appropriations are noted as a non-add because the remaining funds are accounted for under OD Other.

5/ Includes Buildings and Facilities appropriation and funds for facility repairs and improvements at the National Cancer Institute Federally Funded Research and Development Center in Frederick, Maryland.

6/ Number of grants and dollars for Program Evaluation Financing are distributed by mechanism above; therefore, the amount is deducted to provide subtotals only for the Labor/HHS Budget Authority.

7/ Number of grants and dollars for mandatory Type I Diabetes are distributed by mechanism above; therefore, Type I Diabetes amount is deducted to provide subtotals only for the Labor/HHS Budget Authority.

8/ Excludes 4 FTEs funded by the Public Health Service trust funds in all years.