DEPARTMENT OF HEALTH AND HUMAN SERVICES

NATIONAL INSTITUTES OF HEALTH

Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

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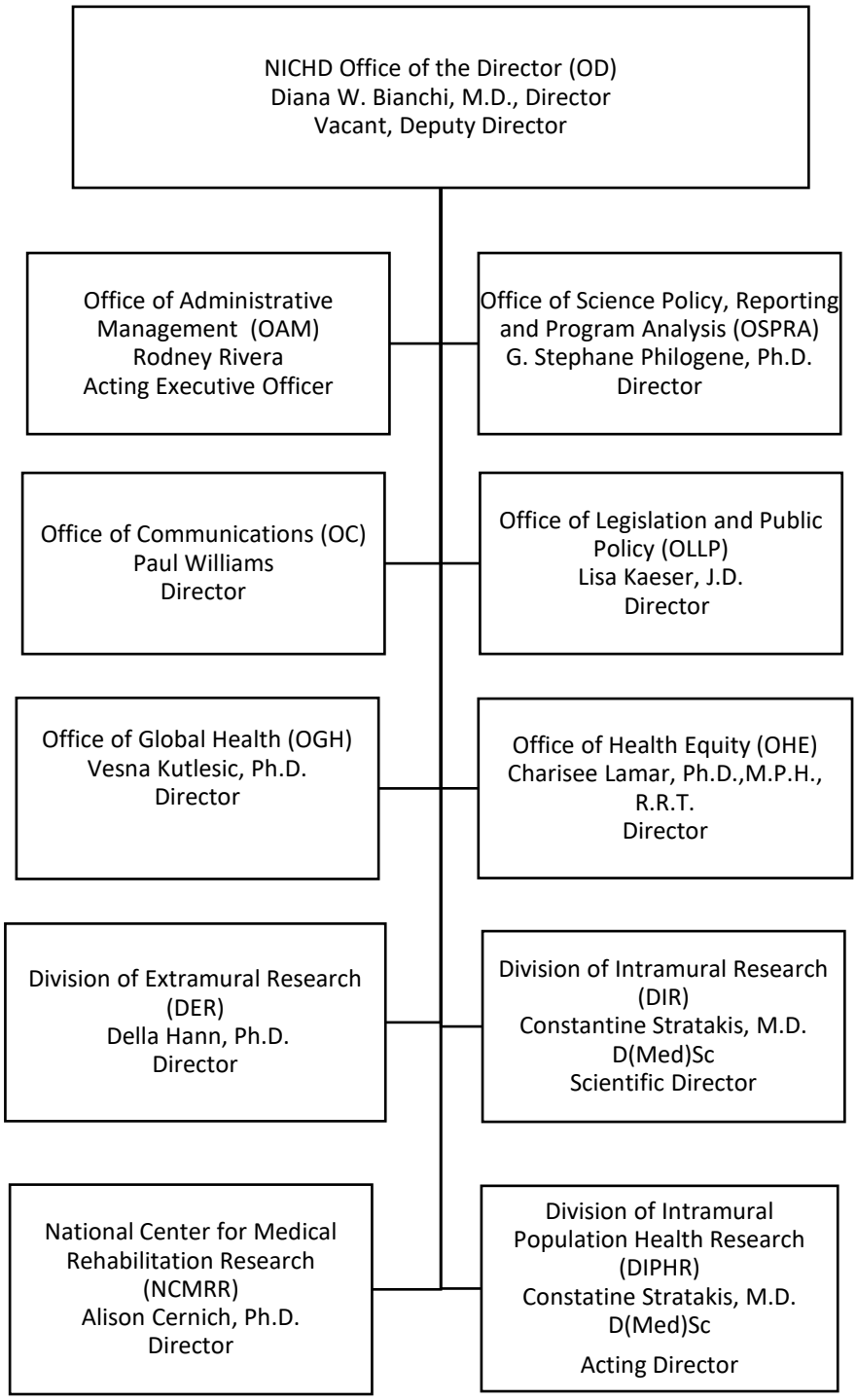
NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development



NATIONAL INSTITUTES OF HEALTH

EUNICE KENNEDY SHRIVER NATIONAL INSTITUTE OF CHILD HEALTH AND HUMAN DEVELOPMENT

For carrying out section 301 and title IV of the PHS Act with respect to child health and human development, [$1,506,458,000]$1,296,732,000.

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Amounts Available for Obligation[1]
(Dollars in Thousands)

Source of Funding	FY 2018 Final	FY 2019 Enacted	FY 2020 President's Budget
Appropriation	$1,452,006	$1,506,458	$1,296,732
Mandatory Appropriation: (non-add)	-	-	-
Type 1 Diabetes	*(0)*	*(0)*	*(0)*
Other Mandatory financing	*(0)*	*(0)*	*(0)*
Rescission	0	0	0
Sequestration	0	0	0
Secretary's Transfer	-3,411	0	0
Subtotal, adjusted appropriation	$1,448,595	$1,506,458	$1,296,732
OAR HIV/AIDS Transfers	-1,369	0	0
HEAL Initiative Transfer from NINDS	10,000	0	0
Subtotal, adjusted budget authority	$1,457,226	$1,506,458	$1,296,732
Unobligated balance, start of year[2]	0	7,501	0
Unobligated balance, end of year[2]	-7,501	0	0
Subtotal, adjusted budget authority	$1,449,725	$1,513,959	$1,296,732
Unobligated balance lapsing	-112	0	0
Total obligations	$1,449,613	$1,513,959	$1,296,732

[1] Excludes the following amounts (in thousands) for reimbursable activities carried out by this account:
FY 2018 - $30,603 FY 2019 - $33,000 FY 2020 - $29,584.

[2] Reflects HEAL Initiative funding not oblgiated in FY 2018, and carried over into FY 2019.

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Budget Mechanism - Total[1]
(Dollars in Thousands)

MECHANISM	FY 2018 Final[2]		FY 2019 Enacted		FY 2020 President's Budget		FY 2020 +/- FY 2019 Enacted	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
Research Projects:								
Noncompeting	1,141	$558,382	1,268	$614,334	1,353	$587,460	85	-$26,874
Administrative Supplements	*(43)*	6,461	*(20)*	4,000	*(15)*	3,000	*(-5)*	-1,000
Competing:								
Renewal	46	24,230	45	23,666	25	11,845	-20	-11,821
New	509	196,014	497	190,533	282	95,364	-215	-95,169
Supplements	2	1,038	0	0	0	0	0	0
Subtotal, Competing	557	$221,282	542	$214,199	307	$107,209	-235	-$106,990
Subtotal, RPGs	1,698	$786,125	1,810	$832,533	1,660	$697,669	-150	-$134,864
SBIR/STTR	107	43,158	111	43,943	93	37,493	-18	-6,450
Research Project Grants	1,805	$829,282	1,921	$876,476	1,753	$735,162	-168	-$141,314
Research Centers:								
Specialized/Comprehensive	47	$62,755	43	$61,409	38	$50,281	-5	-$11,128
Clinical Research	0	0	0	0	0	0	0	0
Biotechnology	4	5,000	4	4,977	4	4,341	0	-636
Comparative Medicine	0	510	0	510	0	449	0	-61
Research Centers in Minority Institutions	0	0	0	0	0	0	0	0
Research Centers	51	$68,265	47	$66,896	42	$55,071	-5	-$11,825
Other Research:								
Research Careers	228	$39,751	229	$39,904	203	$38,461	-26	-$1,443
Cancer Education	0	0	0	0	0	0	0	0
Cooperative Clinical Research	57	32,285	56	29,603	51	24,978	-5	-4,625
Biomedical Research Support	0	0	0	0	0	0	0	0
Minority Biomedical Research Support	0	0	0	0	0	0	0	0
Other	133	50,406	136	40,326	99	32,988	-37	-7,338
Other Research	418	$122,442	421	$109,833	353	$96,427	-68	-$13,406
Total Research Grants	2,274	$1,019,990	2,389	$1,053,205	2,148	$886,660	-241	-$166,545
Ruth L Kirchstein Training Awards:	FTTPs		FTTPs		FTTPs		FTTPs	
Individual Awards	174	$8,292	207	$9,880	191	$9,140	-16	-$740
Institutional Awards	423	22,178	422	22,548	394	21,005	-28	-1,543
Total Research Training	597	$30,470	629	$32,428	585	$30,145	-44	-$2,283
Research & Develop. Contracts	108	$135,567	114	$139,931	114	$132,934	0	-$6,997
(SBIR/STTR) (non-add)	*(2)*	*(86)*	*(3)*	*(450)*	*(3)*	*(428)*	*(0)*	*(-22)*
Intramural Research	314	198,831	321	206,217	321	179,784	0	-26,433
Res. Management & Support	225	72,369	239	74,677	239	67,209	0	-7,468
Res. Management & Support (SBIR Admin) (non-add)	*(0)*	*(0)*	*(0)*	*(350)*	*(0)*	*(315)*	*(0)*	*(-35)*
Construction		0		0		0		0
Buildings and Facilities		0		0		0		0
Total, NICHD	539	$1,457,226	560	$1,506,458	560	$1,296,732	0	-$209,726

[1]All items in italics and brackets are non-add entries.

[2]Includes $7.5 million of HEAL Initiative funding not obligated in FY 2018, and carried over into FY 2019.

Major Changes in the Fiscal Year 2020 President's Budget Request

Major changes by budget mechanism and/or budget activity detail are briefly described below. Note that there may be overlap between budget mechanisms and activity detail and these highlights will not sum to the total change for the FY 2020 President's Budget for NICHD, which is a reduction of 13.9 percent below the FY 2019 Enacted level, for a total of $1,296,732,000. The FY 2020 President's Budget reflects the Administration's fiscal policy goals for the Federal Government. Within that framework, NICHD will pursue its highest research priorities through strategic investments and careful stewardship of appropriated funds.

Research Project Grants (RPGs) (-$141.3 million, total $735.2 million):

NICHD will support a total of 1,753 Research Project Grant (RPG) awards in FY 2020. Non-competing RPGs will increase by 85 awards and the amount to support the costs associated with the commitments of prior year competing awards will decrease by $26.9 million compared to the FY 2019 Enacted level. Competing RPGs will decrease by 235 grants compared to the FY 2019 Enacted level of 542 awards and the amount to support the costs associated with new competing awards will decrease by $107.0 million compared to the FY 2019 Enacted level. In addition, awards under the Small Business Research programs will decrease by 18 awards and $6.5 million compared to the FY 2019 Enacted level.

Research Centers (-$11.8 million, total $55.1 million):

NICHD will support a total of 42 Research Centers awards in FY 2020, five less than the FY 2019 Enacted level.

Other Research (-$13.4 million, total $96.4 million):

NICHD will support a total of 353 awards in the Other Research areas in FY 2020, a decrease of 68 awards compared with the FY 2019 Enacted level of 421 awards.

Research & Development Contracts (-$7.0 million, total $132.9 million):

NICHD will support a total of 114 contracts in the Research and Development Contracts areas in FY 2020, the same number as the FY 2019 Enacted level, reducing support for existing contracts while prioritizing work within those contracts.

Intramural Research (-$26.4 million, total $179.8 million):

NICHD will reduce support for the Intramural Research program by $26.4 million compared to the FY 2019 Enacted level, while still maintaining support for research and innovation at the Clinical Center.

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Summary of Changes
(Dollars in Thousands)

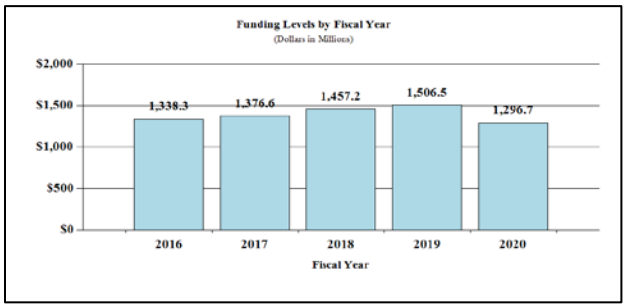
FY 2019 Enacted				$1,506,458
FY 2020 President's Budget				$1,296,732
Net change				-$209,726
CHANGES	**FY 2020 President's Budget**		**Change from FY 2019 Enacted**	
	FTEs	**Budget Authority**	**FTEs**	**Budget Authority**
A. Built-in:				
1. Intramural Research:				
a. Annualization of January 2019 pay increase & benefits		$63,493		$62
b. January FY 2020 pay increase & benefits		63,493		194
c. Paid days adjustment		63,493		186
d. Differences attributable to change in FTE		63,493		0
e. Payment for centrally furnished services		35,585		0
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		80,706		0
Subtotal		-		$442 -
2. Research Management and Support:				
a. Annualization of January 2019 pay increase & benefits		$37,619		$33
b. January FY 2020 pay increase & benefits		37,619		100
c. Paid days adjustment		37,619		108
d. Differences attributable to change in FTE		37,619		0
e. Payment for centrally furnished services		1,176		-118
f. Cost of laboratory supplies, materials, other expenses, and non-recurring costs		28,414		0
Subtotal		-		$124 -
Subtotal, Built-in				$566

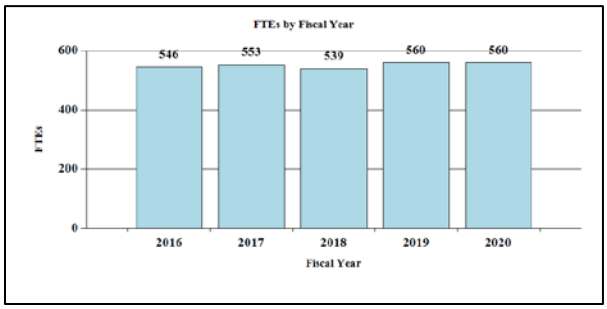
NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Summary of Changes
(Dollars in Thousands)

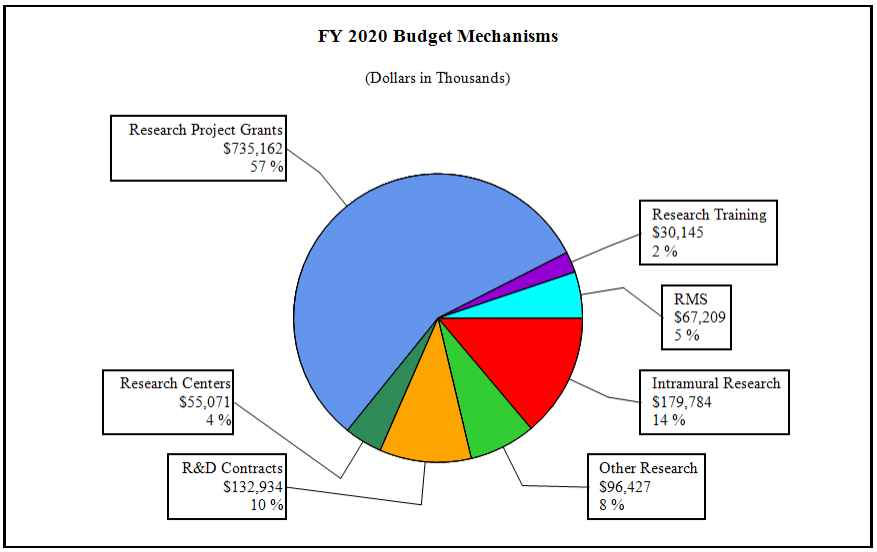
CHANGES	FY 2020 President's Budget		Change from FY 2019 Enacted	
	No.	Amount	No.	Amount
B. Program:				
1. Research Project Grants:				
a. Noncompeting	1,353	$590,460	85	-$27,874
b. Competing	307	107,209	-235	-106,990
c. SBIR/STTR	93	37,493	-18	-6,450
Subtotal, RPGs	1,753	$735,162	-168	-$141,314
2. Research Centers	42	$55,071	-5	-$11,825
3. Other Research	353	96,427	-68	-13,406
4. Research Training	585	30,145	-44	-2,283
5. Research and development contracts	114	132,934	0	-6,997
Subtotal, Extramural		$1,049,739		-$175,825
	FTEs		FTEs	
6. Intramural Research	321	$179,784	0	-$26,875
7. Research Management and Support	239	67,209	0	-7,592
8. Construction		0		0
9. Buildings and Facilities		0		0
Subtotal, Program	560	$1,296,732	0	-$210,292
Total changes				-$209,726

History of Budget Authority and FTEs:

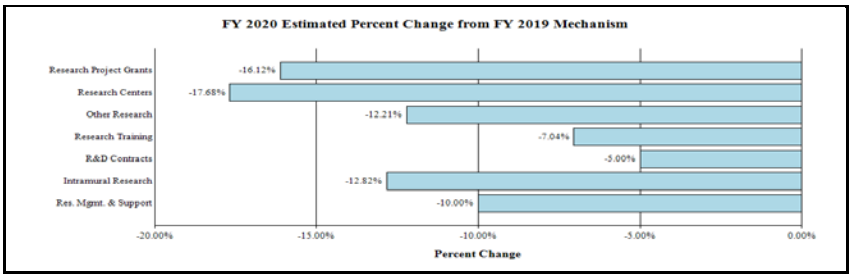




Distribution by Mechanism:



Change by Selected Mechanisms:



NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Budget Authority by Activity[1]
(Dollars in Thousands)

	FY 2018 Final		FY 2019 Enacted		FY 2020 President's Budget		FY 2020 +/- FY2019 CR	
Extramural Research	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**	**FTE**	**Amount**
Detail	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-
Reproductive Health, Pregnancy, and Perinatology		$347,165		$351,519		$301,089		-$50,431
Child Health		353,014		367,824		315,054		-52,770
Intellectual and Developmental Disabilities		130,486		135,961		116,455		-19,506
Demography and Behavior		276,135		287,710		246,434		-41,276
Rehabilitation		79,226		82,550		70,707		-11,843
Subtotal, Extramural		**$1,186,026**		**$1,225,564**		**$1,049,739**		**-$175,825**
Intramural Research	**314**	**$198,831**	**321**	**$206,217**	**321**	**$179,784**	**0**	**-$26,433**
Research Management & Support	**225**	**$72,369**	**239**	**$74,677**	**239**	**$67,209**	**0**	**-$7,468**
TOTAL	**539**	**$1,457,226**	**560**	**$1,506,458**	**560**	**$1,296,732**	**0**	**-$209,726**

[1]Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Authorizing Legislation

	PHS Act/ Other Citation	U.S. Code Citation	2019 Amount Authorized	FY 2019 Enacted	2020 Amount Authorized	FY 2020 President's Budget
Research and Investigation	Section 301	42§241	Indefinite	$1,506,458,000	Indefinite	$1,296,732,000
National Institute of Child Health and Human Development	Section 401(a)	42§281	Indefinite		Indefinite	
Total, Budget Authority				$1,506,458,000		$1,296,732,000

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Appropriations History

Fiscal Year	Budget Estimate to Congress	House Allowance	Senate Allowance	Appropriation
2011	$1,368,894,000		$1,366,750,000	$1,329,528,000
Rescission				$11,674,048
2012	$1,352,189,000	$1,352,189,000	$1,303,016,000	$1,323,900,000
Rescission				$2,502,171
2013	$1,320,600,000		$1,324,603,000	$1,321,397,829
Rescission				$2,642,796
Sequestration				($66,325,085)
2014	$1,339,360,000		$1,330,459,000	$1,282,595,000
Rescission				$0
2015	$1,283,487,000			$1,286,571,000
Rescission				$0
2016	$1,318,061,000	$1,305,586,000	$1,345,355,000	$1,339,802,000
Rescission				$0
2017[1]	$1,338,348,000	$1,373,408,000	$1,395,811,000	$1,380,295,000
Rescission				$0
2018	$1,032,029,000	$1,401,727,000	$1,426,092,000	$1,452,006,000
Rescission				$0
2019	$1,339,592,000	$1,469,346,000	$1,507,251,000	$1,506,458,000
Rescission				$0
2020	$1,296,732,000			

[1]Budget Estimate to Congress includes mandatory financing.

Justification of Budget Request

Eunice Kennedy Shriver National Institute of Child Health and Human Development

Authorizing Legislation: Section 301 and Title IV of the Public Health Service Act, as amended.

Budget Authority (BA):

	FY 2018 Final	FY 2019 Enacted	FY 2020 President's Budget	FY 2020 + / - FY 2019
BA	$1,447,226,000	$1,506,458,000	$1,296,732,000	-$209,726,000
FTE	539	560	560	0

Program funds are allocated as follows: Competitive Grants/Cooperative Agreements; Contracts; Direct Federal/Intramural and Other.

Director's Overview

For over five decades, the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD) has provided national leadership and scientific expertise for research on child health and development; pediatrics; gynecology and reproductive sciences; pregnancy and maternal health; and intellectual, developmental, learning and physical disabilities. To inform evidence-based health care across such a broad range of distinct populations, NICHD employs the full range of scientific disciplines and types of research, from fundamental basic sciences to large-scale clinical trials. Research progress is built on key insights into the fundamental physiological processes underlying health and disease. NICHD-funded discoveries in basic science paved the way for today's childhood vaccines, newborn screening tests, and treatments for both rare and common conditions. NICHD's commitment to inclusion begins with basic, preclinical, and translational research, where biological variables including age, sex, developmental stage, or co-existing conditions can greatly affect study outcomes. In clinical research, NICHD supports both specialized studies that focus in detail on the unique characteristics of a particular population, as well as studies that include a range of populations, to assess how interventions work for children and adults, men and women, pregnant women, minority populations, and individuals with and without specific disabilities.

For all individuals, time in the womb (the first nine months) profoundly influences their lifelong health. For example, preterm birth and birth weight are associated with greater lifelong risks for obesity, diabetes, and having a fatal heart attack. Pregnancy is also considered to be a stress test for the pregnant woman herself. For example, gestational diabetes that develops during pregnancy is associated with an increased maternal risk for type II diabetes and cardiovascular disease later in life. NICHD-supported research has also found that children of women who take either folic acid or a daily multivitamin before or during pregnancy are less likely to be diagnosed with autism spectrum disorder, compared to children whose mothers did not take prenatal vitamins. Assessing differences in biological processes or the effects of different exposures during pregnancy and lactation is crucial, yet research to test the safety and

effectiveness of medications typically does not include pregnant and lactating women. Many pregnant and lactating women who take medication for chronic health conditions, and their providers, face difficult decisions. They may not have sufficient information to assess whether their current treatment is still appropriate, because response to treatment may be affected by the physiological effects of pregnancy – such as changes in how rapidly medications may be processed through the kidneys. Moreover, leaving a chronic condition untreated could harm the fetus. The 21st Century Cures Act established an HHS Task Force on Research Specific to Pregnant Women and Lactating Women (PRGLAC) to advise the Secretary of HHS on gaps in knowledge and research on safe and effective therapies for pregnant and lactating women. This collaborative effort, led by NICHD, included members from across NIH, HHS, and other Federal agencies, as well as representatives from medical societies, nonprofit organizations, and industry. PRGLAC made recommendations to accelerate research, address ethical and regulatory concerns, and improve communications to providers and the public.

Maternal mortality remains an important public health problem. NICHD supports a broad portfolio of research on the leading causes of maternal morbidity and mortality. Clinician-scientists within NICHD's Maternal-Fetal Medicine Units Network found that in low-risk women who were giving birth for the first time, inducing labor at 39 weeks of gestation resulted in a lower frequency of cesarean delivery. Other NICHD efforts include continuing a strong research focus on preeclampsia, a condition involving pregnancy-associated hypertension; beginning a National Academy of Medicine assessment of the state of the science on birth settings, maternal obesity, and maternal mortality; and a population-level study of maternal pregnancy complications.

On another frontier, the number of infants who have been exposed to opioid drugs *in utero* has risen substantially. Currently, health care providers in the United States lack standard, evidence-based treatments for neonatal opioid withdrawal syndrome (NOWS). NICHD's Neonatal Research Network has more than 30 years of experience designing and implementing clinical trials involving newborns. This network, in collaboration with the NIH Office of the Director's Environmental influences on Child Health Outcomes (ECHO) Program, supports the Advancing Clinical Trials in Neonatal Opioid Withdrawal Syndrome (ACT NOW). Pilot studies have assessed the prevalence of NOWS across more than 20 research hospitals and surveyed current management approaches in preparation for developing research protocols for large-scale studies.

Drugs approved for adults may not always be safe and effective in children, yet children are often excluded from clinical studies. With partners across the NIH, NICHD leads pediatric pharmacology studies under the Best Pharmaceuticals for Children Act (BPCA). BPCA efforts aim to identify and sponsor clinical trials for drugs that lack dosing, safety, or efficacy data in children, submitting carefully-monitored clinical study data to the FDA to modify label information. NICHD also supports a spectrum of research on infectious diseases in children. For example, research from NICHD informed a recent FDA decision to approve an anti-HIV drug combination (pre-exposure prophylaxis, or PrEP therapy) for adolescents at risk of HIV.

NICHD is broadening available data through transformational technologies and tools. Individuals with intellectual or developmental disabilities have often been overlooked in clinical research studies. DS-Connect® is a participant registry in which individuals with Down

syndrome and their families can connect with researchers and health care providers, express interest in clinical studies, and take confidential health-related surveys to help researchers better understand Down syndrome across the lifespan. NICHD is working with other NIH Institutes on the INvestigation of Co-occurring conditions across the Lifespan to Understand Down syndromE (INCLUDE) initiative. INCLUDE will investigate conditions that affect individuals with Down syndrome and the general population, such as Alzheimer's disease/dementia, autism, cataracts, celiac disease, congenital heart disease, and diabetes. NICHD's National Center for Medical Rehabilitation Research (NCMRR) has supported technologies for individuals with physical disabilities, such as tools that can help children with cerebral palsy or individuals recovering from stroke to recover limb function. Building on basic science, NICHD intramural researchers have found a protein in a mouse model responsible for post-nerve-injury pain and inflammation, suggesting potential new ways to treat long-term pain without opioids.

NICHD's collaborations and partnerships are key to furthering science that protects and improves the health of all populations, including those historically excluded from research. To address the issue of including all populations in biomedical research, NICHD works in partnership with other Institutes and Centers at NIH. For example, NICHD leads the Trans-NIH Pediatric Research Consortium (N-PeRC), which was established in June 2018 to further develop collaborative opportunities in pediatric research across the NIH. In conjunction with several NIH Institutes, NICHD is spearheading the effort to develop a national plan in Fragile X research. Collaborations across Federal agencies have also promoted the health of special populations. For example, NICHD's NCMRR is currently working with the Department of Defense to build a nationwide database to support rehabilitation research on improving function for individuals with limb loss. From the bench to the bedside to beyond borders, NICHD also supports international collaborations, such as partnering with organizations in South and Central America and Africa to combat the Zika virus and further reduce transmission of HIV, especially in mothers and children.

Throughout FY 2019, NICHD will undergo a strategic planning effort, a collaborative process that will incorporate feedback from a wide array of internal and external scientific advisors and stakeholders. Through this process, NICHD will continue to identify new opportunities in scientific research that addresses both long-standing and emerging challenges for child health and human development, reproductive science, and medical rehabilitation.

Program Descriptions and Accomplishments

Reproductive Health, Pregnancy, and Perinatology: The program in reproductive health, pregnancy, and perinatology supports basic, clinical, and translational research on gynecologic disorders, contraception, fertility and infertility, pregnancy, and newborn care. NICHD manages a broad research portfolio to understand, treat, and prevent common, painful, and costly reproductive health conditions, including uterine fibroids, chronic pelvic pain, pelvic floor disorders, and endometriosis. NICHD supports research on developing potential interventions, as well as comparing the effectiveness of current options. For example, one randomized controlled clinical trial found that gabapentin, an approved treatment for types of nerve pain, was not effective in treating vulvodynia. Another recent study found that two common surgeries to treat pelvic organ prolapse had similar success rates. To strengthen the scientific research base

in reproductive health, NICHD plans to stimulate additional research into the role of pluripotent progenitor/stem cells in the pathogenesis and potential treatment of common gynecologic disorders. NICHD also has encouraged small businesses to collaborate with scientists and clinicians to develop, advance, and validate new devices and methods for non-invasive diagnosis of endometriosis, adenomyosis, and/or uterine fibroids, which affect millions of women in the United States.

Millions of couples across the United States have difficulty conceiving and establishing a healthy pregnancy, yet only limited information is available to understand the causes of infertility, minimize risk factors, and improve treatment options. To remedy this gap, NICHD supports basic, translational, clinical, and population research, such as assessing how dietary, lifestyle, and other risk factors affect fertility in both men and women. Two separate teams of scientists recently uncovered evidence that women with iodine deficiency, and women with insufficient vitamin D levels, are less likely to become pregnant. Other risk factors for infertility focus on the male partner. One NICHD-funded study indicated that among couples being treated for infertility, depression in the male partner was linked to lower pregnancy chances, while depression in the female partner did not influence the rate of live birth.

NICHD-supported pregnancy-related research spans preconception care, pregnancy, fetal growth, labor and delivery, and maternal and neonatal health. Beyond initiating the ACT NOW study mentioned earlier, NICHD has also supported studies on the medications used to treat opioid use disorder in pregnant women. Compared to women treated with methadone, women treated with buprenorphine had more prenatal care visits, a higher chance of delivering vaginally, and a lower risk of testing positive for illicit drugs after treatment began. These results underscore the complexity of selecting the most appropriate medication given a patient's disease severity, mental health, and recovery resources.

NICHD supports prevention research to help reduce the dangers associated with high-risk pregnancies and preterm birth, as well as the associated lifelong problems for mother and child. In analyzing data on more than 21,000 pregnancies, NICHD-supported scientists found significant associations between taking vitamin D supplements before pregnancy and a lower risk of gestational diabetes. In a study performed in New York City, researchers found that maternal exposure to specific types of air pollution particles four to six days before giving birth were associated with increased risk of acute-onset placental abruption. NICHD's ongoing Human Placenta Project, designed to provide information about placental health noninvasively and in real time, is yielding new insights to help researchers further their efforts to improve maternal health and pregnancy outcomes.

Budget Policy: The FY 2020 budget request for this program is $301.1 million, a decrease of $50.4 million or 14.35 percent compared to the 2019 Enacted level. The program will continue to invest in highly productive research networks to address maternal, fetal, and neonatal health and to improve treatments for the millions of women with pelvic floor disorders. NICHD plans to continue to support studies to assess the structure, function, and development of the human placenta, capitalizing on existing datasets and emerging technology. New efforts are planned to improve diagnostics for gynecologic and reproductive conditions.

Program Portrait: Global Network for Women's and Children's Health Research

FY 2019 Level: $7.1 million

FY 2020 Level: $6.1 million

Change: -$1.0 million

Despite global successes in reducing pediatric and maternal morbidity and mortality, pregnant women and young children remain at risk, particularly in countries with limited resources. Maternal hemorrhage, infection, preeclampsia, prolonged or obstructed labor, preterm birth, and neonatal asphyxia contribute significantly to pediatric and maternal deaths. To help address these issues, NICHD funds and provides scientific oversight for the Global Network for Women's and Children's Health Research (Global Network). Through clinical studies jointly conducted by scientists in the U.S. and in Latin America, Asia, and Africa, the Global Network evaluates affordable and sustainable means of enhancing the health of women and children, while also building local research capacity and infrastructure. The Global Network has completed research projects in neonatal resuscitation, diet, malaria, tobacco usage, emergency obstetric and neonatal care, and prevention of maternal hemorrhage and pediatric infection. The Network's Maternal Newborn Health Registry has been tracking pregnancy service usage and outcomes in low-resource regions for over a decade. Two recent studies using data from this registry yielded information about the causes of death for pregnant women and stillborn babies in six low-income countries. Obstetric hemorrhage, infection, and preeclampsia were the most common causes of maternal death; asphyxia, infections, congenital anomalies, and premature birth were the most common causes of stillbirth. Overall, the results suggested that many of these deaths may be preventable. Another current Global Network study focuses on the role of maternal nutrition during the first trimester for normal growth and development during the first thousand days, from conception to the child's second birthday. Scientists are assessing whether a comprehensive maternal nutrition intervention, commencing at least 3 months prior to conception and continuing throughout pregnancy, can improve birth outcomes in poor communities. The results of this trial will make a major contribution to refining evidence-based strategies for maternal nutrition supplementation and evaluating the cost-benefits of extending such strategies beyond pregnancy to virtually all women of child-bearing age, including adolescent girls.

Child Health: Research on child health builds on the basic science of biological processes that govern healthy or atypical development. Child health research encompasses translational research, health promotion and prevention of disease, behavioral and social science research, and clinical studies in pediatric pharmacology, trauma and critical illness, endocrinology and metabolism, infectious diseases, and other aspects of pediatric and adolescent medicine.

NICHD's basic research portfolio on developmental biology has led to understanding normal embryonic development, as well as mechanisms that cause structural and functional birth defects. Researchers continue to use and expand the transformational genomic sequencing data developed under the NIH Common Fund's Gabriella Miller Kids First Pediatric Research Program, which has a major focus on structural birth defects. The program's ten-year effort will yield a powerful, integrated publicly-available pediatric data resource, populated by genomic and phenotypic data. Already, data sets from children with some cancers, congenital heart disease, and congenital diaphragmatic hernia are available to researchers worldwide. The resource will enable researchers to perform data mining across diverse disorders, to understand shared developmental pathways. Other transformational NIH tools include The Bloomington Drosophila Stock Center and the Zebrafish International Resource Center, two comprehensive resources that develop animal models for experiments that enable studies on the developmental origins and mechanisms of human diseases in infancy and childhood, as well as health across the lifespan. Powerful new techniques allow efficient production of mutations that shed light on genes that affect early development, organ growth, physiology, and behavior.

Infants and older children differ physiologically from adults, with different considerations at different developmental stages. BPCA recognizes that therapies developed for and tested in adults typically require specialized research to ensure safe and effective pediatric use. Approved BPCA clinical trials are managed by the Pediatric Trials Network (PTN), an alliance of clinical research sites that cooperate to assess safety and effectiveness of pharmaceuticals in children. Accounting for possible variations in how a drug affects children at different developmental stages, researchers have produced data on appropriate intravenous and oral dosing.

For example, a recent clinical study focused on drug therapy (pantoprazole) for gastroesophageal reflux in children and adolescents with obesity, who are more likely than their peers to have this difficult condition. Study findings indicated that lower, rather than higher doses, are appropriate for children with obesity; their bodies eliminated the drug more slowly, and their exposure to the drug was higher. Another research team examined the common practice of using diuretic medicine to help drain fluid from the lungs of preterm infants, and found, unexpectedly, that extremely preterm infants who received diuretics were more likely to require additional respiratory support in the days after the drug therapy, compared to others with similar respiratory problems who were not treated by the drugs. Data from intensive care units also indicated that hospitals varied widely in their use of the diuretic therapy, raising questions about a clinical practice with little previous research evidence to support its application.

The rapid rise of opioid use in the U.S. over the last decade has raised concerns about prescription opioids for young children and adolescents. Researchers examined records of children enrolled in the Tennessee Medicaid program between 1999 and 2004, finding that opioids were prescribed in about 15 percent of the children studied, most commonly for short-term or less severe conditions, such as dental procedures, outpatient medical procedures, or surgery. In well over a million prescriptions, one of every 2,611 was followed by an adverse event, such as an emergency department visit, hospitalization, or death. Of the adverse events, 70 percent were related to the prescribed opioid.

For children affected by trauma or critical illness, evidence-based emergency and critical care can be lifesaving. NICHD's Collaborative Pediatric Critical Care Research Network (CPCCRN) aims to improve care for infants, children, and adolescents with life-threatening, often complex conditions that may require technology-intensive interventions. For example, extracorporeal membrane oxygenation (ECMO) helps patients with impaired cardiac and lung function by infusing the blood with oxygen and eliminating carbon dioxide in a machine, then channeling the blood back into the body. Researchers found that if the availability of oxygen is too low or too high, patients may have worse outcomes; these findings will help optimize ECMO therapy. In another study, to determine optimum cardiac pulmonary resuscitation (CPR) for children experiencing cardiac arrest, CPCCRN researchers analyzed hospital monitors and charts of 164 children during CPR at 11 U.S. hospitals over a period of three years. They found that maintaining age-specific blood pressure rates during CPR for infants and for children age one year or older gave these children a 70 percent greater likelihood of surviving cardiac arrest and a 60 percent higher likelihood of survival with favorable neurological outcomes. These data provide a foundation to improve CPR guidelines for infants and children.

A portion of the child health program supports and conducts domestic and international research related to infectious diseases in children and adolescents. NICHD-supported researchers developed a way to make a four- to eight-month treatment for multidrug-resistant tuberculosis effective and less painful for children and adolescents by administering the amikacin antibiotic injections with lidocaine, a local anesthetic.

Budget Policy: The FY 2020 budget request for this program is $315.1 million, a decrease of $52.8 million or 14.35 percent compared to the 2019 Enacted level. The program will maintain its investments in research on pediatric pharmacology, pediatric critical care, and the implications of HIV and HIV treatment in adolescents. New initiatives are planned to support studies of long-acting drug delivery systems for children and adolescents with HIV, to further advance research on neonatal opioid withdrawal, and to advance research on rare diseases.

Program Portrait: Technology and Child Development

FY 2019 Level: $16.1 million

FY 2020 Level: $13.8 million

Change: -$2.3 million

Despite rapid increases in the use of mobile devices (such as smartphones and tablets) by families with young children, there has been very little research examining how the use of computers, tablets, and mobile phones—by both parents and children—may affect parent-child interactions, children's health and development, and families' ability to navigate health challenges. NICHD is supporting a small but growing body of research to explore how the rapid growth in portable technology use may affect children's health, both positively and negatively. For example, one early-career scientist supported by NICHD is exploring how parent and child traits influence parents' use of mobile devices, and in turn how this use affects parent-child verbal exchange, parental responsivity, parent-child conflict, and parents' ability to read their child's behavioral cues. Another researcher is focusing on how adolescents use social media. This study will assess if adolescents' social media behaviors (for example, use of social media to convey social support, make plans, or convey criticism) at age 13 is associated with mental health and wellbeing in later adolescence. A larger-scale longitudinal study of children from pre-teen years through adolescence is designed to investigate how qualities of parent-child and peer relationships in middle childhood predict social aggression in adolescence, both online and offline. Mobile device applications have been developed for medical and social purposes, but often without evidence that they help parents and children address pediatric health challenges. NICHD also supports several studies designed to assess whether mobile device and/or social media applications can help families manage medical conditions including food allergies, cerebral palsy, and HIV.

Intellectual and Developmental Disabilities: Intellectual and developmental disabilities (IDDs) were once thought to be permanent and untreatable, but new basic science discoveries have challenged this belief, inspiring renewed efforts to improve the lives of individuals with IDDs. The program on IDDs supports research and research training aimed at preventing and ameliorating common and rare neurodevelopmental and neuromuscular disorders, such as Down syndrome, Fragile X syndrome (FXS), and Rett syndrome; inborn errors of metabolism; autism spectrum disorders; congenital conditions currently or potentially detectable through newborn screening; and IDDs that have no identified cause or are not associated with a specific syndrome.

The *Eunice Kennedy Shriver* Intellectual and Developmental Disabilities Research Centers (IDDRCs) employ advanced technologies to support a broad range of research projects. For example, one IDDRC project studies Angelman syndrome, a neurodevelopmental disorder that

causes global developmental delay, intellectual disability, epilepsy, and other symptoms. Angelman syndrome occurs in 1 in 12,000 to 20,000 people. The IDDRC researchers assessed the effects of levodopa, a drug used to treat Parkinson's disease that has been used off-label to treat Angelman syndrome. They found that levodopa was not effective for children with Angelman syndrome when compared to a placebo. Similarly, the Centers for Collaborative Research in Fragile X support research to improve the diagnosis and treatment of FXS by stimulating multidisciplinary and multi-institutional research. In 2018, a brain imaging study of infants with FXS showed that 12 of 19 major white matter connections were significantly diminished in children with FXS, compared with typically developing children. NICHD is leading the effort to update the NIH's national research plan on Fragile X syndrome and associated disorders.

Up to half of people with Fragile X also meet the criteria for autism spectrum disorder (ASD). NICHD supports a broad portfolio of research on ASD, encompassing research on genetic and other causes, especially including the interaction between genes and environmental exposures; comorbid conditions, including gastrointestinal dysfunction and mental illness; early screening and diagnosis; and developing effective interventions. Another important component of NICHD's portfolio is the NIH Autism Centers of Excellence (ACE) Program, supported by NICHD along with four other NIH Institutes. The ACE program supports innovative, multi-disciplinary research that promises to yield interventions for people with ASD.

As more individuals with IDDs are included in clinical research, more data have become available about comorbid conditions. For example, researchers found that compared with typically-developing children, children with ASD and gastrointestinal symptoms have an imbalance in their immune system responses, which could be influenced by or could influence genetic changes that would impair normal gut function.

Newborn screening programs across the United States currently screen four million infants each year for conditions that, if left untreated, may predispose to IDDs. NICHD's Newborn Screening Translational Research Network (NBSTRN) works with other organizations to provide infrastructure support to researchers working on projects relevant to newborn screening. Another NICHD-sponsored initiative encourages studies that will lead to a broad understanding of the natural history of disorders that could benefit from early identification via newborn screening, to facilitate appropriate interventions for infants.

Budget Policy: The FY 2020 budget request for this program is $116.5 million, a decrease of $19.5 million or 14.35 percent compared to the 2019 Enacted level. The program will continue its investments in the Intellectual and Developmental Disabilities Research Centers, an engine for basic and translational research in IDDs that supports crucial infrastructure and innovative projects for the field. NICHD will also continue its work with other NIH ICs in support of the Autism Centers of Excellence and the Fragile X Research Centers. Future plans include continued research on Down Syndrome, mitochondrial diseases, and genetic and genomic factors related to the development of IDDs.

Program Portrait: Mitochondrial Disorders

FY 2019 Level: $13.5 million

FY 2020 Level: $11.7 million

Change: -$1.8 million

Mitochondria are tiny, specialized structures within human cells that generate the bulk of the energy used by the body. Genetic mutations in the mitochondria can lead to impaired energy production, mitochondrial dysfunction, cell injury and death, and multi-systemic disorders. Mitochondrial diseases can affect virtually any organ system, especially high-energy organs like the heart, lungs, and brain. Symptoms experienced by individuals with mitochondrial diseases vary greatly in type and severity, but can include seizures, strokes, developmental delays, and sensory or physical impairments. Mitochondrial diseases typically affect children, but adult-onset diagnoses are becoming more frequent as knowledge about these conditions increases.

NICHD supports and spearheads projects and activities to better identify, understand, and develop therapeutics for mitochondrial disorders. For example, one group of NICHD-supported researchers developed detailed genetic, clinical, and biochemical descriptions of patients with mutations in the gene *VARS2*, which lead to mitochondrial encephalomyopathy. Another research team recently identified specific proteins responsible for mitochondrial dysfunction in animal models with glycogen storage disease type 1a. A third group of researchers found that antioxidant drugs, including N-acetylcysteine and vitamin E, were effective in reducing oxidative stress and promoting survival in multiple pre-clinical models of mitochondrial complex I disease. NICHD, the National Institute of Neurological Disorders and Stroke (NINDS), and the National Center for Advancing Translational Sciences fund the North American Mitochondrial Disease Consortium and the Mitochondrial Disease Sequence Data Resource Consortium, which conduct studies on mitochondrial diseases, maintain associated tissue and data repositories, and refine diagnostic criteria. NICHD also actively solicits research into how mitochondrial dysfunction in oocytes can affect fertility in women and the health of their offspring.

Demography and Behavior: The program in demography and behavior incorporates NICHD's strong portfolio on behavioral and social influences on health. The program also supports research and research training in the characteristics and dynamics of populations and subpopulations. Researchers studied a home visiting program called Minding the Baby (MTB) that focused on first-time mothers and their babies, consisting of weekly home visits from a social worker and pediatric nurse beginning in early pregnancy and continuing until the child is two years old. The MTB program was not designed as an obesity prevention program but focused more broadly on mother-child attachment and health. However, the study results clearly showed that the rate of child obesity at age two was significantly lower in the MTB group. NICHD continues to support the Population Dynamics Centers Research Infrastructure Program, providing resources for analyses of health and development at the population level.

NICHD research on learning disabilities and associated symptoms seeks to understand causes and risk factors for these complex conditions. One of the most common neurobehavioral disorders in children is attention deficit hyperactivity disorder (ADHD). While not in itself a learning disability, ADHD is associated with challenges in focus, attention, and behavior control, and thus can interfere with a child's learning. Using high-resolution brain-scans, researchers have found significant differences in brain structures between children as young as age four with and without ADHD symptoms. The researchers will continue to monitor brain changes and differences as these children grow. In another project, researchers found that about 9 percent of a largely urban, low-income, minority population of children had elevated blood lead levels that were associated with an increased risk of ADHD in boys, though not in girls. For the boys, the

risk of ADHD was less if their mothers had had low levels of stress and/or high blood levels of high-density lipoprotein (which combats high blood cholesterol) during pregnancy.

Health disparities research cuts across all NICHD's programs and is an essential component of many of the Institute's demographic and behavioral studies. For example, researchers assessed whether a child's race or ethnicity – or the race or ethnicity of the prescriber -- was associated with differences in prescribing opioid or non-opioid medication. White children in outpatient health care were more commonly prescribed opioids than minority children, except that opioid prescribing for Native American children was similar to that of white children. Black children who had a black health care provider were less likely to receive an opioid prescription compared with black children who had a white health care provider.

Budget Policy: The FY 2020 budget request for this program is $246.4 million, a decrease of $41.3 million or 14.35 percent compared to the 2019 Enacted level. NICHD plans to continue its investments in the Population Research Infrastructure Program, which provides essential infrastructure for the population sciences field. NICHD will participate in NIH-wide efforts to advance the science of behavioral change.

Rehabilitation: The NICHD's National Center for Medical Rehabilitation Research (NCMRR) fosters research and research training to enhance the health, independence, and quality of life of people with disabilities. With a dedicated budget, and a leading role in trans-NIH and broader medical rehabilitation research collaborations, this program supports and contributes to advancing a broad range of research, including efforts to understand the underlying biology of injury and disability, and the body's mechanisms of recovery and adaptation.

NCMRR's rehabilitation research investments continue to be guided by the 2016 comprehensive NIH Research Plan on Rehabilitation[1], developed with stakeholders across the NIH and other Federal agencies, as well as researchers and representatives of individuals with disabilities and practitioners. The plan identifies the following six priority areas: rehabilitation across the lifespan; family and community; technology use and development; research design and methodology; translational science; and building research capacity and infrastructure.

NCMRR will lead a multi-Institute initiative to stimulate pediatric rehabilitation research. Examples of priority areas include children with spinal cord injury, spina bifida, cerebral palsy/stroke, and limb loss. This initiative complements existing NCMRR investments, including a large, international study to evaluate the impacts of interventions on outcomes in children with severe traumatic brain injury (TBI), and large trials of "constraint-induced movement therapy" (CIMT) for children with cerebral palsy (CP). In CIMT, a device forces patients to use an impaired limb by restricting the patient's ability to use their unaffected limb.

NCMRR places a special emphasis on translational research to create and refine real-world interventions that can help individuals with disabilities where they live and work. For example, researchers have typically developed and tested assistive devices for stroke survivors in

[1]https://www.nichd.nih.gov/sites/default/files/publications/pubs/Documents/NIH_ResearchPlan_Rehabilitation.pdf.

controlled clinical research settings, where the participants practice simulated functional tasks. Recently, NCMRR-supported research tested a new spring-operated wearable device to help stroke survivors perform real-life activities at home.

NCMRR takes a collaborative approach to rehabilitation science, working with other NIH Institutes, Federal agencies, the business community, advocates, and other stakeholders. NCMRR interactions with the Centers for Medicare and Medicaid Services (CMS) Coverage and Analysis Group made clear that the evidence base of clinical care for amputees is poorly developed. Further, some technologies that may seem to address challenges of individuals living with limb loss do not necessarily translate into functional improvements. A new collaboration between NCMRR and the Department of Defense (DOD) will, within five years, create a national limb-loss and preservation registry—combining clinical and other information on active duty military personnel, veterans, and civilian members of the population who have experienced limb loss.

Budget Policy: The FY 2020 budget request for this program is $70.7 million, a decrease of $11.8 million or 14.35 percent compared to the 2019 Enacted level. The program will continue its efforts to strengthen coordination and enhance medical rehabilitation research across the NIH. Within the NICHD, the NCMRR will continue to emphasize promising new technologies in medical rehabilitation and to support the implementation of the NIH Rehabilitation Research Plan. This includes new initiatives to support pediatric rehabilitation research and trans-NIH efforts to improve rehabilitation research in neurologic conditions through the use of common data elements.

Intramural Research: NICHD's Division of Intramural Research (DIR) comprises a multidisciplinary environment that investigates the physics, chemistry, and biology of cells; the processes that govern and regulate cellular function; and the effects when these processes fail. DIR researchers build on basic science insights to answer fundamental biomedical research questions, and also to solve difficult clinical problems in human health and development. For example, drawing from basic science findings in neuroscience, DIR scientists identified a key enzyme in the processes that insulate and form the connections between nerve cells, which could help researchers better understand a range of neurodegenerative diseases. Other DIR scientists have identified a different protein that triggers long-term pain and inflammation after nerve injury, which could lead to insights on new ways to treat long-term pain without opioids. Another group of DIR scientists has identified cells in the zebrafish brain that prevent sensory overload, which could help explain how the brain filters information from the environment.

Exposures during pregnancy can greatly affect development. DIR researchers have determined that fetal mice exposed in the uterus to THC, the primary active ingredient in marijuana, lose a key subset of neurons. This may shed insights on why children born to women who used marijuana during pregnancy have more difficulty with problem-solving, memory, and attention. Other exposures during pregnancy can cause birth defects in the developing fetus. Zika virus infection has been linked to microcephaly in newborn babies, a condition in which the brain and skull are smaller than normal. DIR researchers conducted a small study of women who had given birth after testing positive for Zika virus infection. The women who gave birth to children with reduced head size and other Zika-related birth defects were more likely to have variations in

two genes essential for making a protein called adenylate cyclase, which could shed some light on how Zika virus affects neurodevelopment.

On a global scale, malaria infections numbered nearly 216 million worldwide in 2016. DIR researchers have solved a long-standing mystery of why iron supplements can sometimes worsen malaria infection: extra iron interferes with ferroportin, a protein that prevents a toxic buildup of iron in red blood cells and helps protect these cells against malaria infection. They also found that a mutant form of ferroportin that occurs in African populations appears to protect against malaria. Scientists also identified how malaria parasites are released from infected red blood cells, a finding that could inform the development of new antimalarial drugs.

Over 25 million Americans live with a rare disease, showing that rare diseases can be a cumulatively large public health need. Researchers in DIR have built on basic sciences in rare diseases in hematology, bone disorders, and glycogen storage disorders, developing technologies and tools to address underlying cellular processes. For example, there are only about 400 known cases of a bone disorder known as melorheostosis, a disease characterized by pathological thickening of the bones. DIR researchers worked with researchers from the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) to study 15 patients from around the world to determine the genetic basis for this disease, and in the process uncovered fundamental information about the role of a cancer-related gene in the metabolic pathways of normal bone.

NICHD's Division of Intramural Population Health Research (DIPHR) studies health and disease outcomes at the population level. For example, one DIPHR study of over 1200 healthy women between 18 and 40 years of age reported that a daily low-dose of aspirin may help some women with a history of miscarriage conceive and carry the pregnancy to term. DIPHR researchers have also found that diet may influence fertility. Monounsaturated fatty acids (a "healthy" type of fat found in olive oil, nuts, and avocados) were associated with a shorter time to becoming pregnant, whereas polyunsaturated fatty acids (another type of "healthy" fat found in salmon, sunflower seeds, or soybean oil) were associated with a longer time to pregnancy. In contrast, saturated fats and trans fats were not associated with time to pregnancy.

Budget Policy: The FY 2020 budget request for this program is $179.8 million, a decrease of $26.4 million or 12.82 percent compared to the 2019 Enacted level. The DIR will continue to work closely with the NIH Clinical Center to move promising interventions closer to the bedside. In addition, DIR's basic and translational research programs will continue to emphasize discoveries in how cells process input from the environment and communicate with other cells in the body during development.

Research and Management Support (RMS): RMS activities include administrative and technical functions that support and enhance the effectiveness of the Institute's research investments. Included among these functions are public communications; budget, contracts, and grants management; peer review; reporting; program evaluation; public policy; and information technology. The RMS budget also supports NICHD's health-related outreach activities. For example, the NICHD-led Safe to Sleep® campaign, formerly the Back to Sleep® campaign, provides information to educate parents and caregivers about a safe sleep environment, including the importance of placing healthy babies on their backs to sleep, for naps and at night to reduce

the risk of Sudden Infant Death Syndrome (SIDS). To support responsible stewardship of valuable resources, NICHD will continue to support systematic evaluations of NICHD's scientific and administrative programs, helping to identify ways to ensure program effectiveness. For example, as part of these activities, NICHD is currently working with NINDS, the National Heart, Lung, and Blood Institute, and NIAMS to review the Wellstone Centers of Excellence for Muscular Dystrophy Research. NICHD will also devote resources to efforts to improve stewardship of clinical trials.

Budget Policy: The FY 2020 budget request for this program is $67.2 million, a decrease of $7.5 million or 10.0 percent compared to the 2019 Enacted level. The NICHD RMS activities will continue to focus on improving dissemination of NICHD science, including efforts to manage and update web content and to take advantage of new media opportunities for reaching new audiences. NICHD will continue to implement and further strengthen its data-driven approach to portfolio analysis, program evaluation, and performance assessment.

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Budget Authority by Object Class[1]
(Dollars in Thousands)

		FY 2019 Enacted	FY 2020 President's Budget	FY 2020 +/- FY 2019
Total compensable workyears:				
	Full-time equivalent	560	560	0
	Full-time equivalent of overtime and holiday hours	0	0	0
	Average ES salary	$175	$175	$0
	Average GM/GS grade	12.3	12.3	0.0
	Average GM/GS salary	$113	$113	$0
	Average salary, grade established by act of July 1, 1944 (42 U.S.C. 207)	$136	$138	$3
	Average salary of ungraded positions	$128	$130	$1
	OBJECT CLASSES	**FY 2019 Enacted**	**FY 2020 President's Budget**	**FY 2020 +/- FY 2019**
	Personnel Compensation	-	-	-
11.1	Full-Time Permanent	35,522	35,657	135
11.3	Other Than Full-Time Permanent	25,400	25,496	97
11.5	Other Personnel Compensation	1,935	1,943	7
11.7	Military Personnel	1,052	1,087	35
11.8	Special Personnel Services Payments	13,478	13,529	51
11.9	**Subtotal Personnel Compensation**	**$77,387**	**$77,712**	**$325**
12.1	Civilian Personnel Benefits	22,153	22,572	419
12.2	Military Personnel Benefits	800	827	27
13.0	Benefits to Former Personnel	0	0	0
	Subtotal Pay Costs	**$100,340**	**$101,111**	**$771**
21.0	Travel & Transportation of Persons	2,043	1,081	-962
22.0	Transportation of Things	159	83	-76
23.1	Rental Payments to GSA	2	2	0
23.2	Rental Payments to Others	9	3	-6
23.3	Communications, Utilities & Misc. Charges	1,168	717	-451
24.0	Printing & Reproduction	1	1	0
25.1	Consulting Services	2,244	1,878	-366
25.2	Other Services	23,059	10,184	-12,875
25.3	Purchase of goods and services from government accounts	153,651	143,121	-10,530
25.4	Operation & Maintenance of Facilities	1,021	967	-53
25.5	R&D Contracts	132,447	126,198	-6,249
25.6	Medical Care	909	909	0
25.7	Operation & Maintenance of Equipment	4,438	2,473	-1,966
25.8	Subsistence & Support of Persons	0	0	0
25.0	**Subtotal Other Contractual Services**	**$317,769**	**$285,730**	**-$32,039**
26.0	Supplies & Materials	11,164	3,808	-7,356
31.0	Equipment	4,588	3,515	-1,073
32.0	Land and Structures	0	0	0
33.0	Investments & Loans	0	0	0
41.0	Grants, Subsidies & Contributions	1,069,204	900,674	-168,530
42.0	Insurance Claims & Indemnities	0	0	0
43.0	Interest & Dividends	12	7	-6
44.0	Refunds	0	0	0
	Subtotal Non-Pay Costs	**$1,406,118**	**$1,195,621**	**-$210,497**
	Total Budget Authority by Object Class	**$1,506,458**	**$1,296,732**	**-$209,726**

[1]Includes FTEs whose payroll obligations are supported by the NIH Common Fund.

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Salaries and Expenses
(Dollars in Thousands)

OBJECT CLASSES	FY 2019 Enacted	FY 2020 President's Budget	FY 2020 +/- FY 2019
Personnel Compensation	-	-	-
Full-Time Permanent (11.1)	$35,522	$35,657	$135
Other Than Full-Time Permanent (11.3)	25,400	25,496	97
Other Personnel Compensation (11.5)	1,935	1,943	7
Military Personnel (11.7)	1,052	1,087	35
Special Personnel Services Payments (11.8)	13,478	13,529	51
Subtotal Personnel Compensation (11.9)	**$77,387**	**$77,712**	**$325**
Civilian Personnel Benefits (12.1)	$22,153	$22,572	$419
Military Personnel Benefits (12.2)	800	827	27
Benefits to Former Personnel (13.0)	0	0	0
Subtotal Pay Costs	**$100,340**	**$101,111**	**$771**
Travel & Transportation of Persons (21.0)	$2,043	$1,081	-$962
Transportation of Things (22.0)	159	83	-76
Rental Payments to Others (23.2)	9	3	-6
Communications, Utilities & Misc. Charges (23.3)	1,168	717	-451
Printing & Reproduction (24.0)	1	1	0
Other Contractual Services:	-	-	-
Consultant Services (25.1)	2,244	1,878	-366
Other Services (25.2)	23,059	10,184	-12,875
Purchases from government accounts (25.3)	111,642	102,148	-9,493
Operation & Maintenance of Facilities (25.4)	1,021	967	-53
Operation & Maintenance of Equipment (25.7)	4,438	2,473	-1,966
Subsistence & Support of Persons (25.8)	0	0	0
Subtotal Other Contractual Services	**$142,403**	**$117,649**	**-$24,754**
Supplies & Materials (26.0)	$11,164	$3,808	-$7,356
Subtotal Non-Pay Costs	**$156,946**	**$123,342**	**-$33,604**
Total Administrative Costs	- **$257,287**	- **$224,454**	- **-$32,833**

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Detail of Full-Time Equivalent Employment (FTE)

OFFICE/DIVISION	FY 2018 Final			FY 2019 Enacted			FY 2020 President's Budget		
	Civilian	Military	Total	Civilian	Military	Total	Civilian	Military	Total
DIPHR	-	-	-	-	-	-	-	-	-
Direct:	27	-	27	29	-	29	29	-	29
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	27	-	27	29	-	29	29	-	29
Division of Extramural Research	-	-	-	-	-	-	-	-	-
Direct:	120	-	120	130	-	130	130	-	130
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	120	-	120	130	-	130	130	-	130
Division of Intramural Programs	-	-	-	-	-	-	-	-	-
Direct:	280	8	288	281	8	289	281	8	289
Reimbursable:			-	3		3	3		3
Total:	280	8	288	284	8	292	284	8	292
National Center for Medical Rehabilitation Research	-	-	-	-	-	-	-	-	-
Direct:	7	-	7	7	-	7	7	-	7
Reimbursable:	-	-	-	-	-	-	-	-	-
Total:	7	-	7	7	-	7	7	-	7
Office of the Director	-	-	-	-	-	-	-	-	-
Direct:	86	-	86	91	-	91	91	-	91
Reimbursable:	11	-	11	11	-	11	11	-	11
Total:	97	-	97	102	-	102	102	-	102
Total	531	8	539	552	8	560	552	8	560
Includes FTEs whose payroll obligations are supported by the NIH Common Fund.									
FTEs supported by funds from Cooperative Research and Development Agreements.	0	0	0	0	0	0	0	0	0

FISCAL YEAR	Average GS Grade
2016	12.2
2017	12.3
2018	12.3
2019	12.3
2020	12.3

NATIONAL INSTITUTES OF HEALTH
National Institute of Child Health and Human Development

Detail of Positions[1]

GRADE	FY 2018 Final	FY 2019 Enacted	FY 2020 President's Budget
Total, ES Positions	0	1	1
Total, ES Salary	0	175,000	175,000
GM/GS-15	57	57	57
GM/GS-14	67	72	72
GM/GS-13	81	93	93
GS-12	58	59	59
GS-11	27	27	27
GS-10	2	2	2
GS-9	10	10	10
GS-8	18	18	18
GS-7	16	16	16
GS-6	5	5	5
GS-5	4	4	4
GS-4	1	1	1
GS-3	1	1	1
GS-2	0	0	0
GS-1	0	0	0
Subtotal	347	365	365
Grades established by Act of July 1, 1944 (42 U.S.C. 207)	0	0	0
Assistant Surgeon General	0	0	0
Director Grade	7	7	7
Senior Grade	1	1	1
Full Grade	0	0	0
Senior Assistant Grade	0	0	0
Assistant Grade	0	0	0
Subtotal	8	8	8
Ungraded	197	200	200
Total permanent positions	347	365	365
Total positions, end of year	549	570	570
Total full-time equivalent (FTE) employment, end of year	539	560	560
Average ES salary	0	175,000	175,000
Average GM/GS grade	12.3	12.3	12.3
Average GM/GS salary	110,426	112,525	112,525

[1]Includes FTEs whose payroll obligations are supported by the NIH Common Fund.