

# Triennial Advisory Council Report on Inclusion in NICHD Clinical Research Fiscal Years 2019-2021

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# **NIH Inclusion Policies: History & Goals**

***NIH  
Revitalization  
Act of 1993  
(PL 103-43)***

# **Goals: Minimize Bias & Enhance Generalizability**

## Inclusion Policy Requirements:

- 1. Women and racial/ethnic minorities be included** in NIH-supported clinical research in a manner “appropriate to the scientific question under study”
- 2. Phase III clinical trials be designed to produce accurate estimates of differences** in outcomes by sex/gender and race/ethnicity (i.e., “valid analysis”)

# ***21st Century Cures Act of 2016 (PL 114-255)***

## **Goals: Increase Transparency & Expand Inclusion to Age**

### Inclusion Policy Requirements:

- **Submit results of valid analyses to [Clinicaltrials.gov](https://clinicaltrials.gov)**  
(Applicable Phase III clinical trials only)
- **Publish sex/gender, race, and ethnicity inclusion data in the Research, Condition, and Disease Classification ([RCDC](#)) [Inclusion Statistics Report](#)**
- **Include participants across the lifespan:**
  - identify and provide a rationale for the ages of participants
  - scientifically or ethically justify exclusion of any age group(s)
  - report on participants' age of enrollment in progress reports

# Implementation of NIH Inclusion Policies

- **Applications & proposals for clinical research must:**
  - Describe the composition of the proposed study population in terms of sex/gender, racial/ethnic groups, and age
  - Include a rationale for participant selection and plans to recruit and retain the proposed study population
  - Provide a scientific or ethical justification for any exclusions based on sex/gender, race, ethnicity, or age
- **Peer Review:** Scientific Review Groups assess whether inclusion based on sex/gender, race, ethnicity, and age is acceptable or unacceptable
- **Program Review:** Award recipients annually update enrollment data by sex/gender, race, and ethnicity in progress reports reviewed by Program Officials



# **NICHD Triennial Report for Fiscal Years 2019-2021**

## **Report Contents:**

- I. Background/Overview: NICHD Mission & Research Portfolio
- II. Strategies for Ensuring Compliance
- III. Enrollment Data Analysis & Interpretation**
- IV. Additional Information:
  - a. Publications with analysis of gender/race/ethnicity
  - b. Highlighted research areas addressing inclusion of women and/or minority populations

**Enrollment  
Data:  
Aggregate  
annual data on  
*projects and  
participants***

**Tabulated by:**

- **Type of Study:** Clinical Research and Phase III Trials
- **Study Site:** U.S. and Non-U.S.
- **Division:** Extramural and Intramural
- **Sex or Gender:** Women and Men
- **Race:** American Indian/Alaska Native, Asian, Black, Native Hawaiian/Pacific Islander, White, and More than One Race
- **Ethnicity:** Hispanic and Non-Hispanic
- **Age at Enrollment:** Broad and detailed age groups

Enrollment data in the Triennial Report exclude Inclusion Data Records (IERs) using existing data (i.e., secondary analysis).



# **Overview: NICHD Inclusion Data Records (IERs)**

# More than 85% of NICHD clinical research was domestic

FY	Clinical Research			Phase III Clinical Trials		
	IERs	% Domestic	% Foreign	IERs	% Domestic	% Foreign
<b>2019</b>	1,062	87%	13%	45	89%	11%
<b>2020</b>	1,073	89%	11%	48	88%	13%
<b>2021</b>	1,026	87%	13%	60	82%	18%

IERs = Inclusion Data Records (i.e., studies). Studies with no enrollment are excluded.  
Grants may include more than one study.



# How many NICHD studies included only women?

**Clinical research studies – Almost one-quarter**  
**Phase III trials – More than one-third**

FY	Clinical Research				Phase III Clinical Trials			
	IERs	% Women-Only	% Men-Only	% All Others	IERs	% Women-Only	% Men-Only	% All Others
<b>2019</b>	1,062	25%	4%	71%	45	40%	0%	60%
<b>2020</b>	1,073	22%	4%	73%	48	38%	0%	63%
<b>2021</b>	1,026	22%	3%	75%	60	38%	0%	62%

IERs = Inclusion Data Records (i.e., studies). Studies with no enrollment are excluded.  
 Grants may include more than one study.



# Most NICHD Phase III trials required valid analysis by race/ethnicity or sex/gender

## NICHD Phase III Clinical Trial IERs by Valid Analysis Requirements

FY	IERs+	% Requiring Valid Analysis by:	
		Race or Ethnicity	Sex or Gender
2019	80	89%	89%
2020	88	93%	93%
2021	92	84%	72%

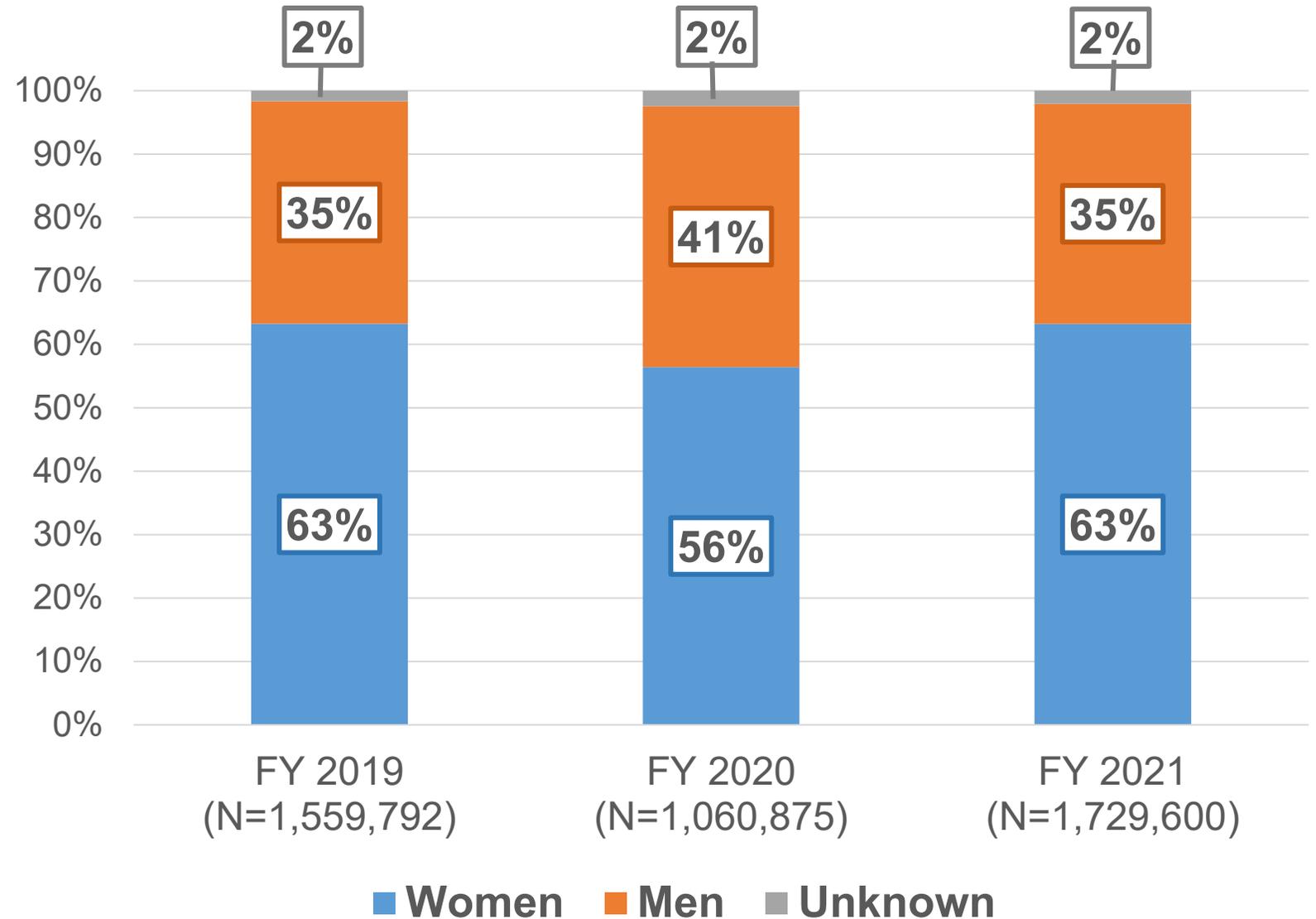
IERs+ = Includes all studies, including those with no enrollment data (i.e., studies and *planned* studies). Grants may include more than one study.



# **Enrollment in NICHD Clinical Research FYs 2019 - 2021**

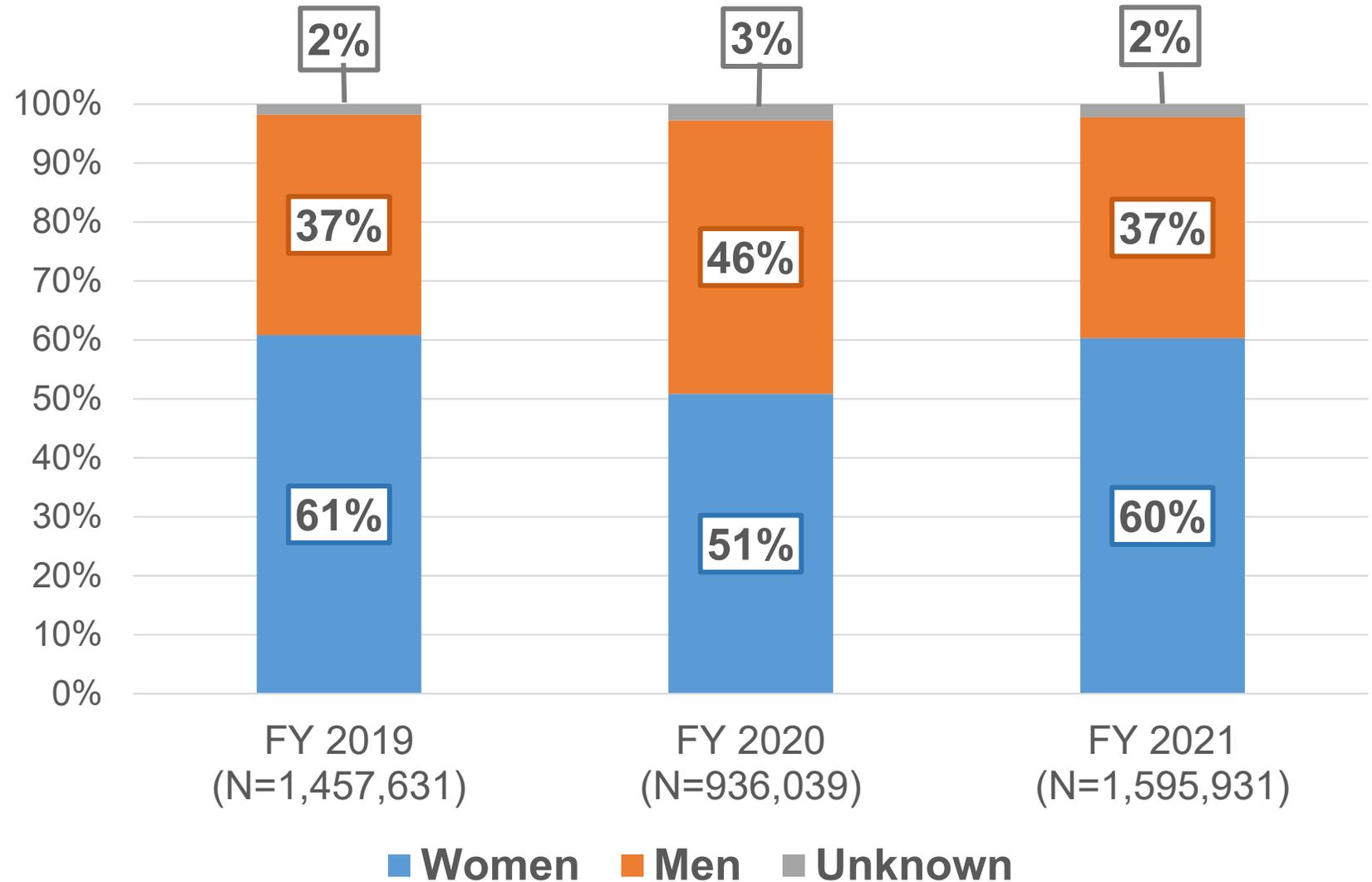
***Inclusion of Women***

# Women were a majority of NICHD clinical research participants



## Enrollment in NICHD Clinical Research by Gender

# When single-gender projects were excluded, women remained a majority



## Enrollment in NICHD Clinical Research by Gender: Single-Gender Projects Excluded

**Enrollment in  
NICHD Clinical  
Research by  
Sex or Gender  
and U.S. versus  
Non-U.S. Sites:  
*Single-Gender  
Studies Excluded***

**Women were a larger percentage of foreign than domestic participants; “unknown” gender was a smaller percentage**

FY	Women		Men		Unknown	
	U.S.	Non-U.S.	U.S.	Non-U.S.	U.S.	Non-U.S.
<b>2019</b>	50%	66%	45%	33%	4%	0%
<b>2020</b>	50%	53%	46%	47%	4%	0%
<b>2021</b>	55%	62%	39%	37%	6%	1%

# Limitations to the Interpretation of NIH Inclusion Data by Sex/Gender

**The data are aggregated, but what constitutes appropriate and ethical science is study-specific**

**The meaning of the sex/gender categories differ across studies: sometimes sex is used, sometimes gender**

- Because of limitations of the reporting system, researchers can report on sex or gender, but not both
- Researchers determine which categorization (sex or gender) is most relevant to their project, but, in the reporting system, there is no way to indicate which was used
- The reporting system allows only three responses: Men, Women, and “Unknown/Not Reported.” Some scientists use the “Unknown/Not Reported” category for transgender, nonbinary, or intersex research subjects

**Single-gender studies are defined by current enrollment**

- Current enrollment does not reveal what was deemed scientifically or ethically justified in review and by program staff
- Comparing actual enrollment to the inclusion code could generate a more meaningful assessment of inclusion efforts

## Women made up more than half of NICHD clinical research participants

FY	Total	% Women	% Men	% Unknown
2019	1,559,792	63%	35%	2%
2020	1,060,875	56%	41%	2%
2021	1,729,600	63%	35%	2%

## Even when single-gender (women-only, men-only) studies were excluded

FY	Total	% Women	% Men	% Unknown
2019	1,457,631	61%	37%	2%
2020	936,039	51%	46%	3%
2021	1,595,931	60%	37%	2%

## NICHD Enrollment in Clinical Research by Sex/Gender

# Women were a larger percentage of foreign than domestic participants; “unknown” gender was a smaller percentage

## Enrollment in NICHD Clinical Research by Sex/Gender and Site, Single-Gender Studies Excluded

FY	All sites			
	Total	Women	Men	Unknown
2019	1,457,631	61%	37%	2%
2020	936,039	51%	46%	3%
2021	1,595,931	60%	37%	2%

FY	U.S. sites				Non-U.S. sites			
	Total	Women	Men	Unknown	Total	Women	Men	Unknown
2019	500,463	50%	45%	4%	957,168	66%	33%	0%
2020	610,190	50%	46%	4%	325,849	53%	46%	0%
2021	400,700	55%	39%	6%	1,195,231	62%	36%	1%





# **Enrollment in NICHD Clinical Research FYs 2019 - 2021**

***Inclusion of Minorities***

## Nearly half of participants in NICHD studies were racial or ethnic minorities

### Minority Enrollment in NICHD Clinical Research at U.S. Sites

FY	Total Enrollment	All Minorities	Hispanic Latino	Racial Minorities
2019	572,701	46%	17%	34%
2020	685,030	47%	17%	34%
2021	474,729	47%	17%	34%

- Racial Minorities includes all non-white racial groups
- Hispanic/Latinos can be of any race
- All Minorities includes racial minorities and white Hispanics/Latinos

# Minority enrollment in NICHD studies was about 50% higher than at NIH overall

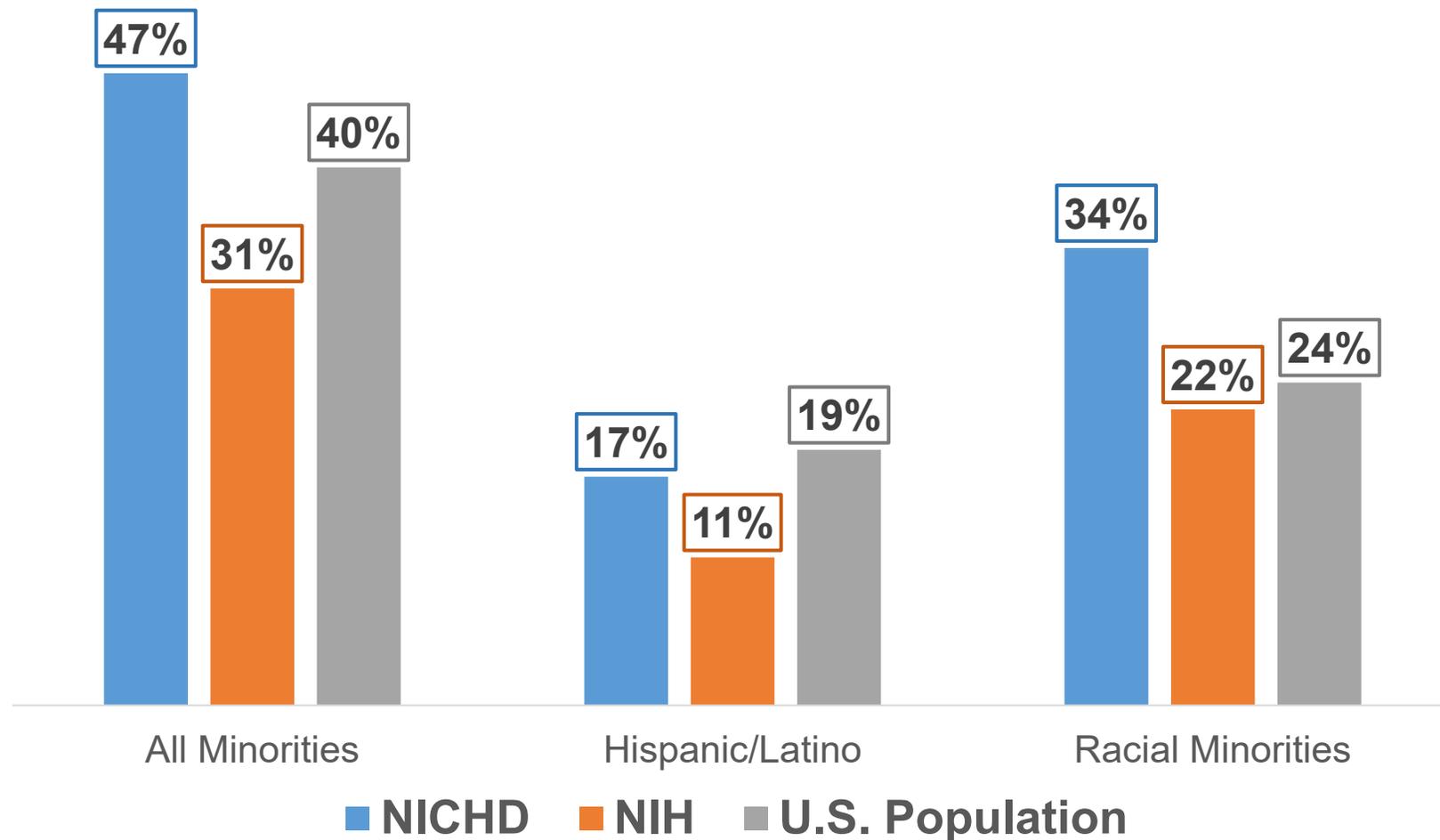
## Minority Enrollment in Clinical Research at U.S. Sites: NICHD vs. NIH

FY	All Minorities		Hispanic Latino		Racial Minority	
	NIH	NICHD	NIH	NICHD	NIH	NICHD
2019	30%	46%	9%	17%	22%	34%
2020	32%	47%	11%	17%	23%	34%
2021	31%	47%	11%	17%	22%	34%

- Racial Minorities includes all non-white racial groups
- Hispanic/Latinos can be of any race
- All Minorities includes racial minorities and white Hispanics/Latinos

# Minority enrollment in NICHD studies in FY 2021 exceeded the proportion of minorities in the U.S. population

## FY 2021 Minority Enrollment in NIH & NICHD Domestic Clinical Research vs. 2021 U.S. Population Estimates



[2021 U.S. Population Estimates from the U.S. Census Bureau](#)

# For most minority racial groups, % of enrollment in NICHD studies exceeded or was similar to the % for all NIH

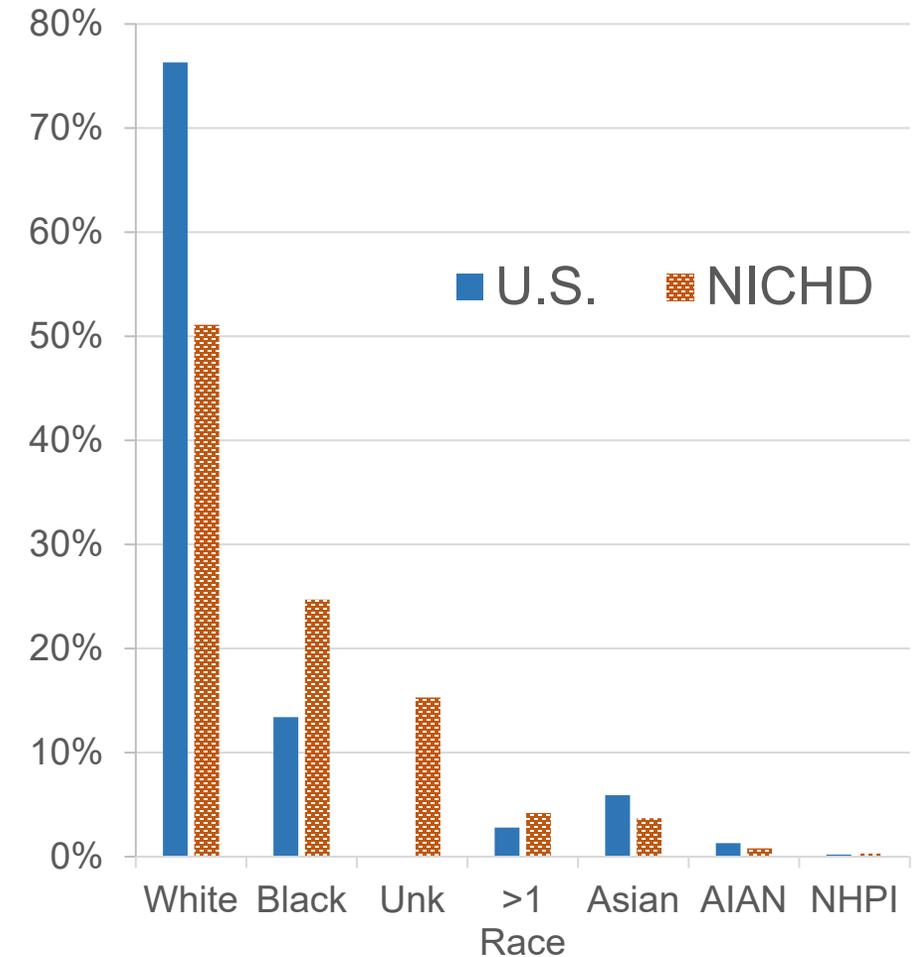
## Enrollment in Domestic Clinical Research by Race: NICHD versus NIH

	FY 2019		FY 2020		FY 2021	
	NICHD	NIH	NICHD	NIH	NICHD	NIH
<b>Total Enrollment</b>	<b>572,701</b>	10,356,075	<b>685,030</b>	11,080,871	<b>474,729</b>	9,957,714
<b>White</b>	<b>52.2%</b>	65.9%	<b>51.2%</b>	61.2%	<b>51.1%</b>	64.2%
<b>Black/African American</b>	<b>22.6%</b>	15.7%	<b>22.5%</b>	14.9%	<b>24.7%</b>	13.0%
<b>Asian</b>	<b>3.4%</b>	3.2%	<b>3.5%</b>	4.0%	<b>3.7%</b>	5.0%
<b>American Indian/Alaska Native</b>	<b>0.9%</b>	1.0%	<b>0.8%</b>	1.0%	<b>0.8%</b>	0.9%
<b>Native Hawaiian/Pacific Islander</b>	<b>0.2%</b>	0.2%	<b>0.2%</b>	0.3%	<b>0.3%</b>	0.8%
<b>More than One Race</b>	<b>6.9%</b>	2.1%	<b>6.7%</b>	2.7%	<b>4.2%</b>	2.0%
<b>Unknown/Not Reported</b>	<b>13.9%</b>	11.9%	<b>15.0%</b>	16.0%	<b>15.3%</b>	14.0%



# Percentage Enrolled in FY 2021 NICHD Domestic Clinical Research by Race versus U.S. Population 2021

	NICHD	U.S.
<b>White</b>	51.1%	76.3%
<b>Black/African American</b>	24.7%	13.4%
<b>Unknown/Not Reported (Unk)</b>	15.3%	—
<b>More than One Race (&gt;1 Race)</b>	4.2%	2.8%
<b>Asian</b>	3.7%	5.9%
<b>American Indian/Alaska Native (AIAN)</b>	0.8%	1.3%
<b>Native Hawaiian/Pacific Islander (NHPI)</b>	0.3%	0.2%



[2021 U.S. population estimates from the U.S. Census Bureau](#)



## **Limitations to the Interpretation of NIH Inclusion Data by Race/Ethnicity**

**Data on race and ethnicity are aggregated, but appropriate design and ethical science are study-specific**

**The racial and ethnic distribution of current enrollment is not compared to the distribution that was deemed scientifically appropriate**

- Comparing actual enrollment to the inclusion code could generate a more meaningful assessment of inclusion efforts

**IERs are not disaggregated by race or ethnicity, so it is unclear whether racial or ethnic minority enrollment is concentrated in specific projects or broadly distributed**

**Third largest racial group is “unknown/not reported”**

- NICHD is not an outlier on this—similar percentages to all of NIH
- Determining why these data are not known or reported and how to reduce missing data in future years requires analysis by project

# Domestic NICHD Clinical Research: Enrollment by Race

## Percentage Distributions and Counts

FY	Percentages			Counts		
	2019	2020	2021	2019	2020	2021
<b>Total</b>	100%	100%	100%	572,701	685,030	474,729
<b>White</b>	52.2%	51.2%	51.1%	298,746	350,985	242,487
<b>Black African American</b>	22.6%	22.5%	24.7%	129,189	154,328	117,116
<b>Asian</b>	3.4%	3.5%	3.7%	19,572	24,019	17,549
<b>American Indian Alaska Native</b>	0.9%	0.8%	0.8%	5,260	5,743	3,632
<b>Native Hawaiian Pacific Islander</b>	0.2%	0.2%	0.3%	1,118	1,458	1,194
<b>More than One Race</b>	6.9%	6.7%	4.2%	39,308	45,869	20,144
<b>Unknown Not Reported</b>	13.9%	15.0%	15.3%	79,508	102,628	72,607



# Minority enrollment in NICHD research in FY 2021 exceeded the proportion of minorities in the U.S. population

**FY 2021 Minority Enrollment in NIH & NICHD Domestic Clinical Research vs. 2021 U.S. Population Estimates**

FY	All Minorities		Hispanic Latino		Racial Minority	
	NIH	NICHD	NIH	NICHD	NIH	NICHD
2019	30%	46%	9%	17%	22%	34%
2020	32%	47%	11%	17%	23%	34%
2021	31%	47%	11%	17%	22%	34%
2021 U.S. Population	40%		19%		24%	

[2021 U.S. population estimates from the U.S. Census Bureau](#)

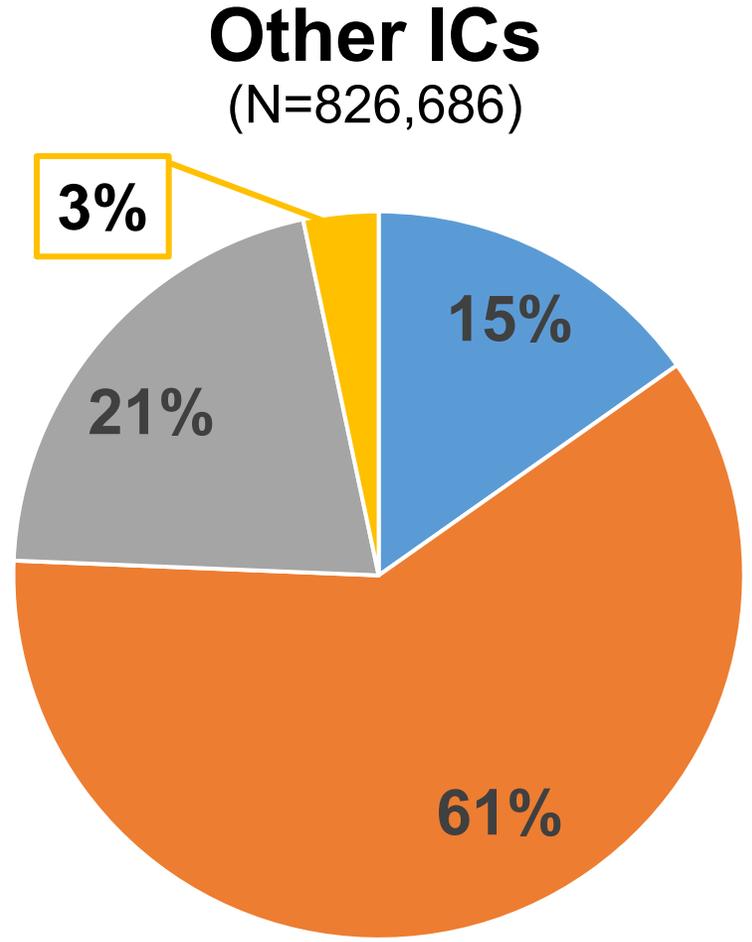
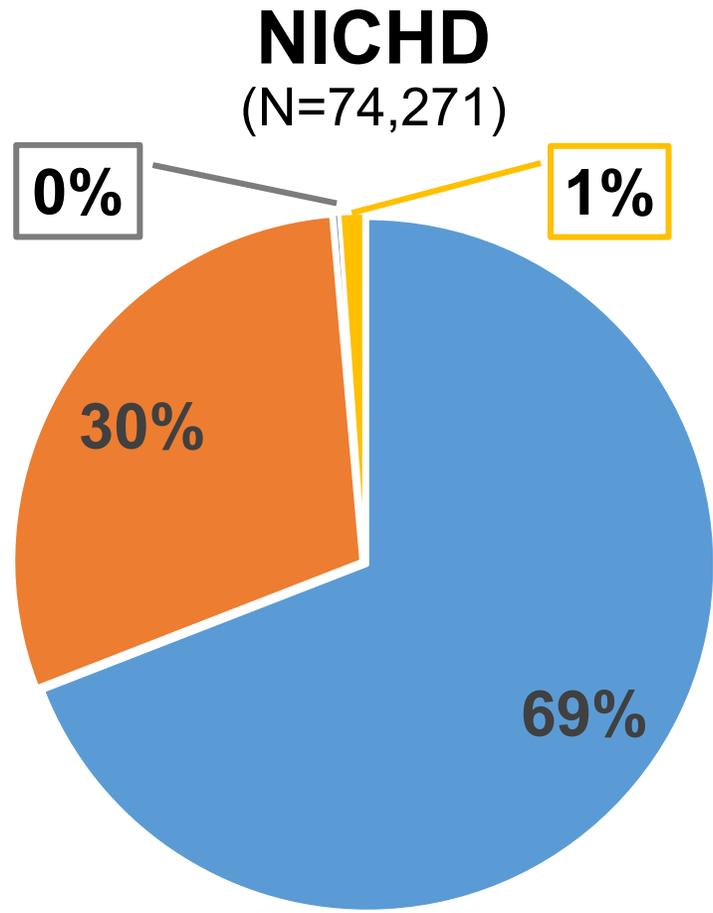


# **Enrollment in NICHD Clinical Research FY 2021**

***Inclusion by Age***

# Children were 69% of NICHD participants, but only 15% of those at other ICs

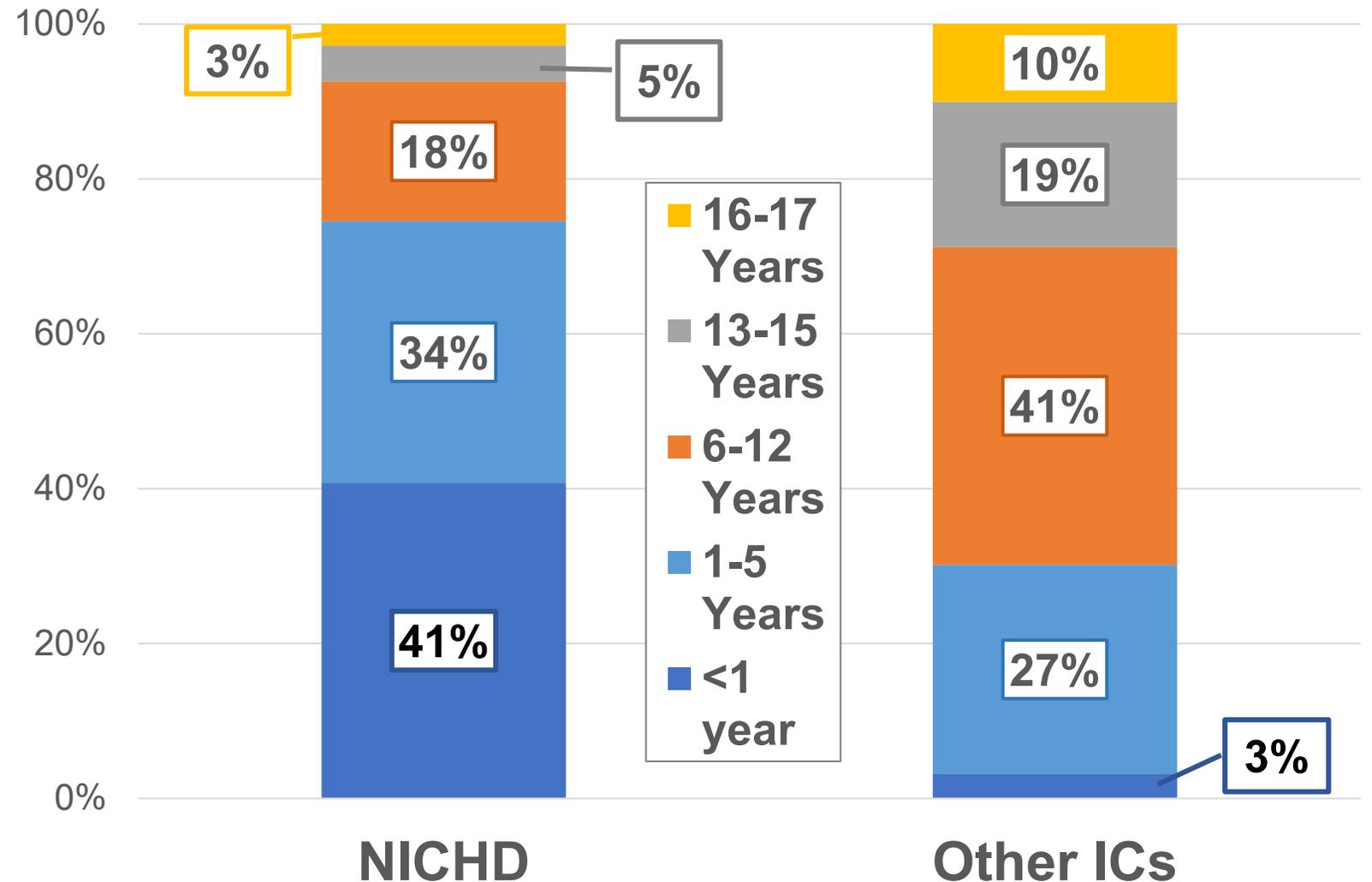
**FY 2021 Enrollment in Studies Reporting Age, by Broad Age Group: NICHD versus Other ICs**



■ Children (<18 years) ■ Adults (18-64 years) ■ Older Adults (65+ years) ■ Unknown or Not Reported

# 75% of enrolled children at NICHD were ages 5 or under, compared to 30% at other ICs

## FY 2021 Proportion of Enrolled Children by Narrow Age Group: NICHD versus Other ICs



## Children were 69% of NICHD participants, but only 15% of those at other ICs

**FY 2021  
Enrollment in  
Studies  
Reporting Age,  
by Broad  
Age Group:  
NICHD, Other ICs,  
and NIH**

	Percentages			Counts		
	NICHD	Other ICs	NIH	NICHD	Other ICs	NIH
<b>Total</b>	<b>100%</b>	100%	100%	<b>74,271</b>	826,686	900,957
<b>Children (&lt;18 years)</b>	<b>69%</b>	15%	20%	<b>51,310</b>	125,696	177,006
<b>Adults (18-64 years)</b>	<b>30%</b>	61%	58%	<b>21,930</b>	499,679	521,609
<b>Older Adults (65+ years)</b>	<b>0%</b>	21%	19%	<b>185</b>	173,848	174,033
<b>Unknown or Not Reported</b>	<b>1%</b>	3%	3%	<b>846</b>	27,463	28,309

## 75% of enrolled children at NICHD were ages 5 or under, compared to 30% at other ICs

### FY 2021 Proportion of Enrolled Children by Narrow Age Group: NICHD, Other ICs, and NIH

	Percentages			Counts		
	NICHD	Other ICs	NIH	NICHD	Other ICs	NIH
<b>Total Children</b>	<b>100%</b>	100%	100%	<b>51,310</b>	125,696	177,006
<b>&lt;1 year</b>	<b>41%</b>	3%	14%	<b>20,890</b>	3,954	24,844
<b>1 – 5 years</b>	<b>34%</b>	27%	29%	<b>17,354</b>	33,985	51,339
<b>6 – 12 years</b>	<b>18%</b>	41%	34%	<b>9,265</b>	51,555	60,820
<b>13 – 15 years</b>	<b>5%</b>	19%	15%	<b>2,372</b>	23,563	25,935
<b>16 – 17 years</b>	<b>3%</b>	10%	8%	<b>1,429</b>	12,639	14,068



# **Conclusions & Vision for Future Analyses**

# Looking Back, Looking Ahead

## Conclusions

- NICHD has effective processes in place for ensuring compliance with NIH inclusion policies
- Comparisons of NICHD enrollment data to NIH-wide enrollment data and current population distributions suggest appropriate inclusion of women and minorities across the NICHD research portfolio in Fiscal Years 2019 – 2021

## Vision & Future Efforts

- Further analyze:
  - “unknown” race and ethnicity data
  - inclusion by RCDC terms
  - alignment between actual enrollment and assigned inclusion codes
- Collaborate with colleagues in the trans-NIH working group on inclusion to develop improved metrics for assessing inclusion
- Present complete data on inclusion across the lifespan in future triennial reports





**Thank You! Questions?**