

# The National Longitudinal Study of Adolescent to Adult Health (Add Health): Brief History & Update on Wave VI\*

---

ROBERT A. HUMMER, DIRECTOR

HOWARD W. ODUM DISTINGUISHED PROFESSOR OF SOCIOLOGY

UNIVERSITY OF NORTH CAROLINA - CHAPEL HILL

\* PRESENTATION PREPARED FOR THE ADD HEALTH USERS CONFERENCE, JUNE 17-18, 2024 \*

# Overview of Presentation

- 1) Add Health Background
- 2) Goals & Design of Wave VI
- 3) Add Health Data Access
- 4) Acknowledgements

# 1. Brief Background

# Add Health Origins & Evolution

Developed in response to a 1993 Congressional mandate; project began in 1994 with primary funding from NICHD

Originally two waves; evolved into multi-wave design in early 2000s

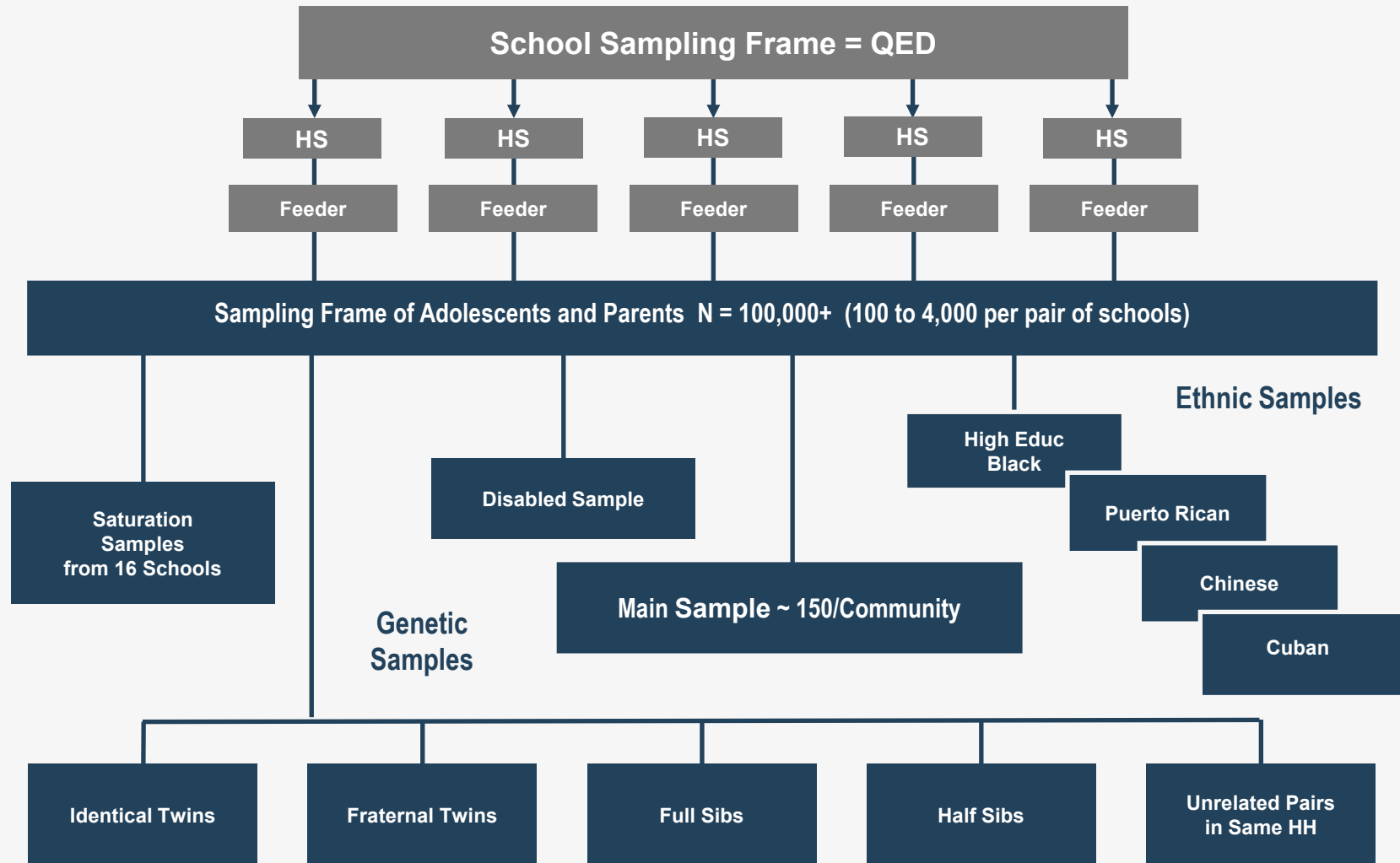
Renamed the National Longitudinal Study of Adolescent to Adult Health with Wave V funding in 2014

Recipient of 2016 Golden Goose Award

Most recently (2021-25), Wave VI was funded by NIA and five Co-funders (NICHD, NIMHD, NIDA, OBSSR, ODP)



# Add Health Sampling Structure



# Foundational Strengths of Add Health

Very large, nationally representative sample

Extensive health data: e.g., physical, mental, functional

Contextual Design: direct measurement of adolescent social environment:

- Schools
- Peer Networks
- Families
- Neighborhoods

Parent survey data from Wave I

Oversamples of minoritized groups

Biological Domain in Original Design (lots of twins, sibs) ... enhanced over time with extensive biomarker collection

Nearly 30-year cohort follow-up to date with excellent response rates

# Add Health longitudinal, multi-level, intergenerational design

(Each wave also includes contextual data specific to various levels)

Wave	Administrative		Survey Administration		Biological Data Collection
Wave I 1994-95 (RR=79%)	Students N=90,118	School Admin N = 144	Adolescents in grades 7-12 N = 20,745	Parent N=17,670	Height, weight
Wave II 1996 (RR=89%)		School Admin N = 128	Adolescents in grades 8-12 N = 14,738		Height, weight
Wave III 2001-02 (RR=77%)	High school transcripts		Young adults Aged 18-26 N = 15,197	Partner N=1,507	Height, weight, STI, HIV, genetic (buccal cell DNA)
Wave IV 2008-09 (RR=80%)			Adults Aged 24-32 N = 15,701		Height, weight, waist, metabolic, immune, inflammation, cardiovascular, medications, candidate genes, GWAS
Wave V 2016-18 (RR=72%)	Birth & death records	Sexual Orientation, Gender Identity & Health N = 2,665	Adults Aged 33-43 N = 12,300	Parent N=3,001	Height, weight, waist, metabolic, immune, inflammation, cardiovascular, renal, medications, gene expression, epigenetic, microbiome
Wave VI 2022-24	Birth & death records; College transcripts		Adults Aged 39-49 N ~ 13,000	Parent N=5,000	Height, weight, waist, metabolic, immune, Covid-19, inflammation, cardiovascular, renal, medications, microbiome, cognitive, physical functioning, neurocognitive

# 2. Goals & Design of Wave VI



# Goals for Add Health Wave VI

(Average age = 44)

Collect & disseminate high-quality data on life course determinants and trajectories of health, cognition, health behavior, and health disparities among a large, nationally representative cohort aging into midlife.

# Summary of Wave VI Plan

1. Survey (web or in-person) Add Health cohort members
2. Collect in-depth cognitive data on cohort members, both web & in-person
3. Re-visit cohort members for in-home health exam
4. Conduct key blood-based assays
5. Archive blood & microbiome samples for scientific community use
6. Conduct mortality surveillance; gather birth record & college transcript data
7. Build contextual & environmental data files
8. Clean, document, disseminate, promote, & provide support for the scientific community

# Key Wave VI Innovations

## Two-Sample Design

- Sample 1: Web-based with NRFU
- Sample 2: In-person with ethnoracial oversamples

## Survey Content Enhancements

- Ethnoracial identity detail
- Enhanced Discrimination
- Criminal Justice Contacts & Trust in Institutions
- Stress; Caregiving; Social Support; Optimism
- More depth on physical health (e.g., menopause, pain)
- More depth on mental & behavioral health
- More depth on cognitive, physical & sensory function

Test My Brain Assessment (four cognitive domains) in both Sample 1 & Sample 2

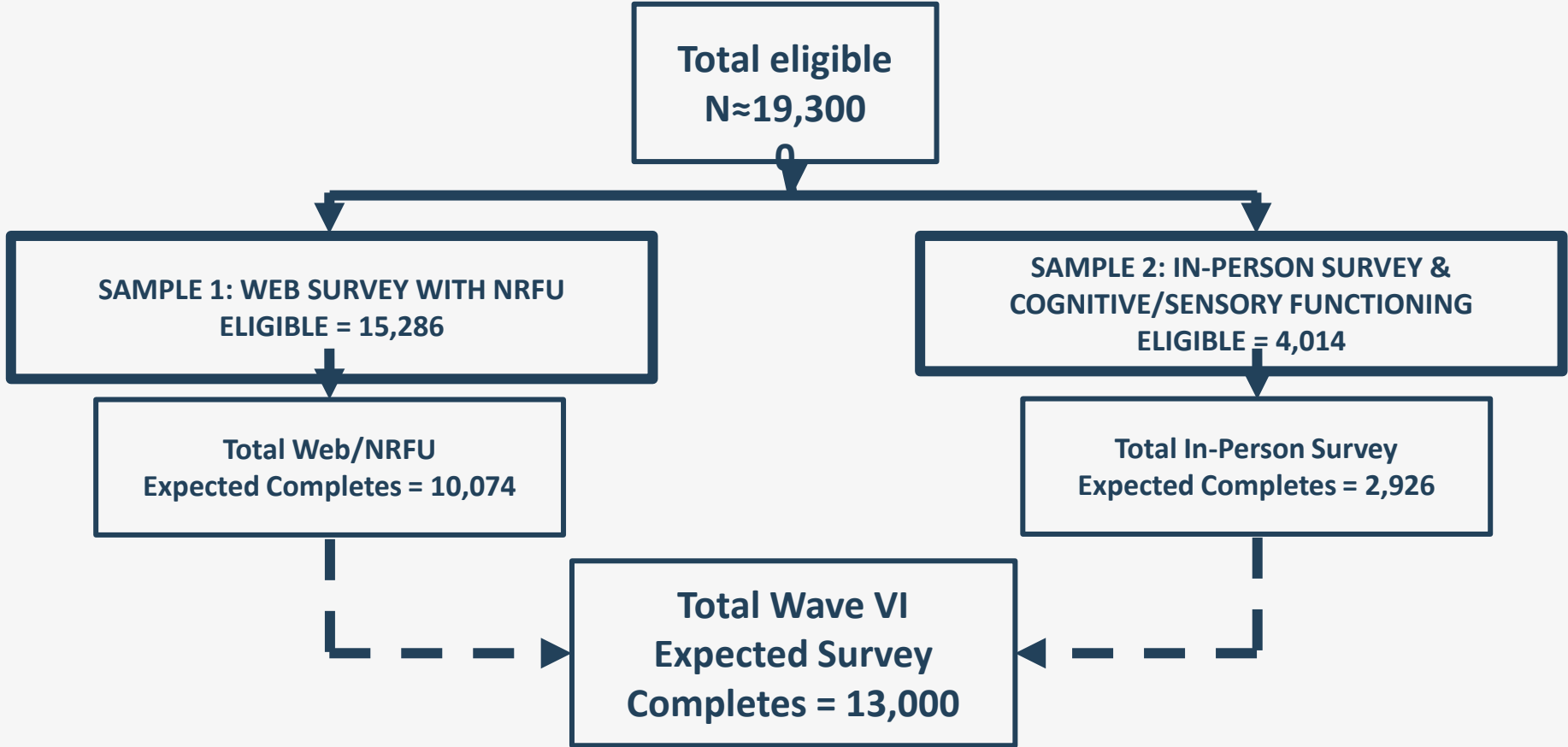
Add CAPS: Battery of Cognitive, Physical & Sensory Function Measures in Sample 2

Neurocognitive & Covid-19 Bio-Assays

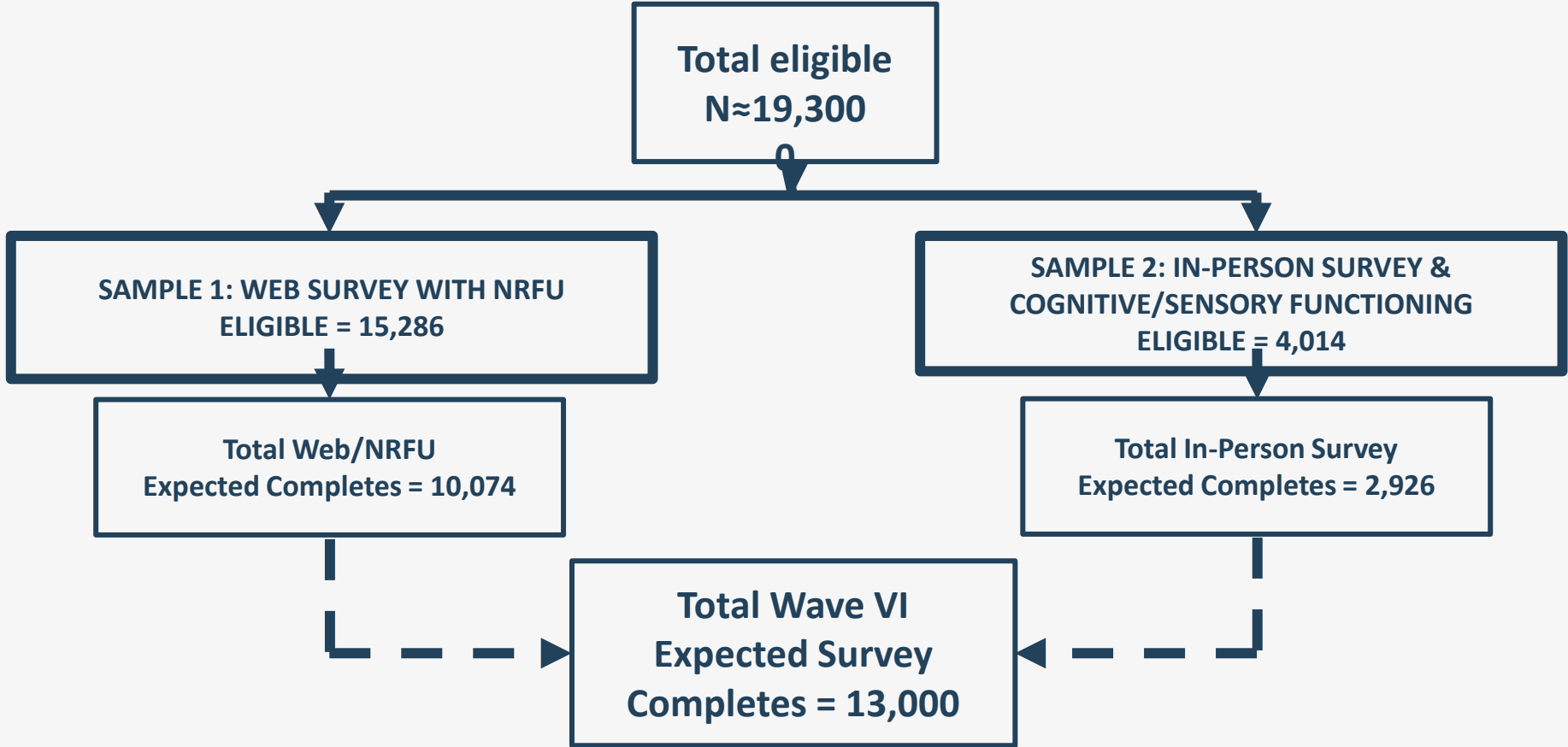
Linkages: Death Records, Birth Records, College Transcripts

Extensive Additions of Contextual (e.g., Structural Racism) & Environmental Data

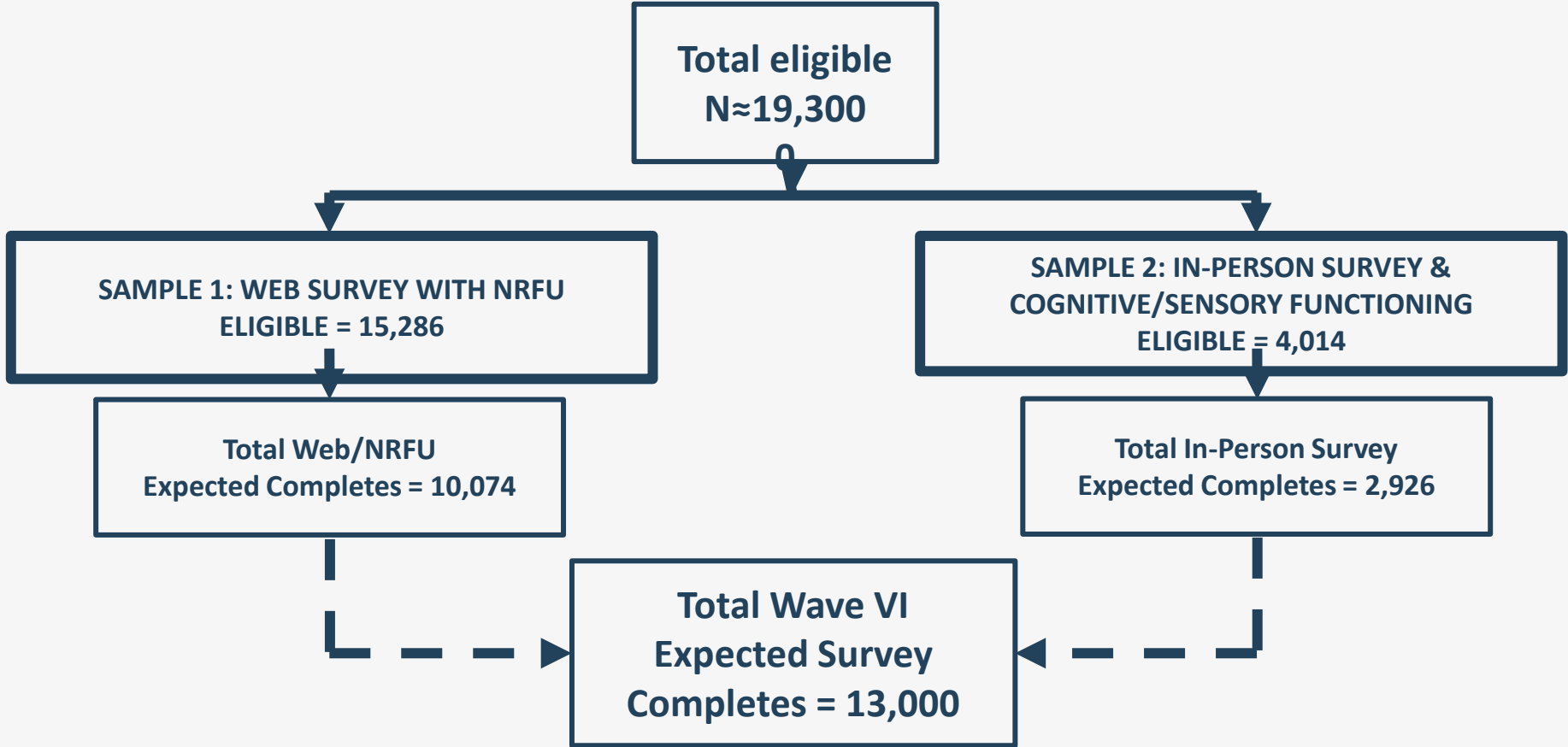
# Wave VI Survey Design: 2 Sub-Samples



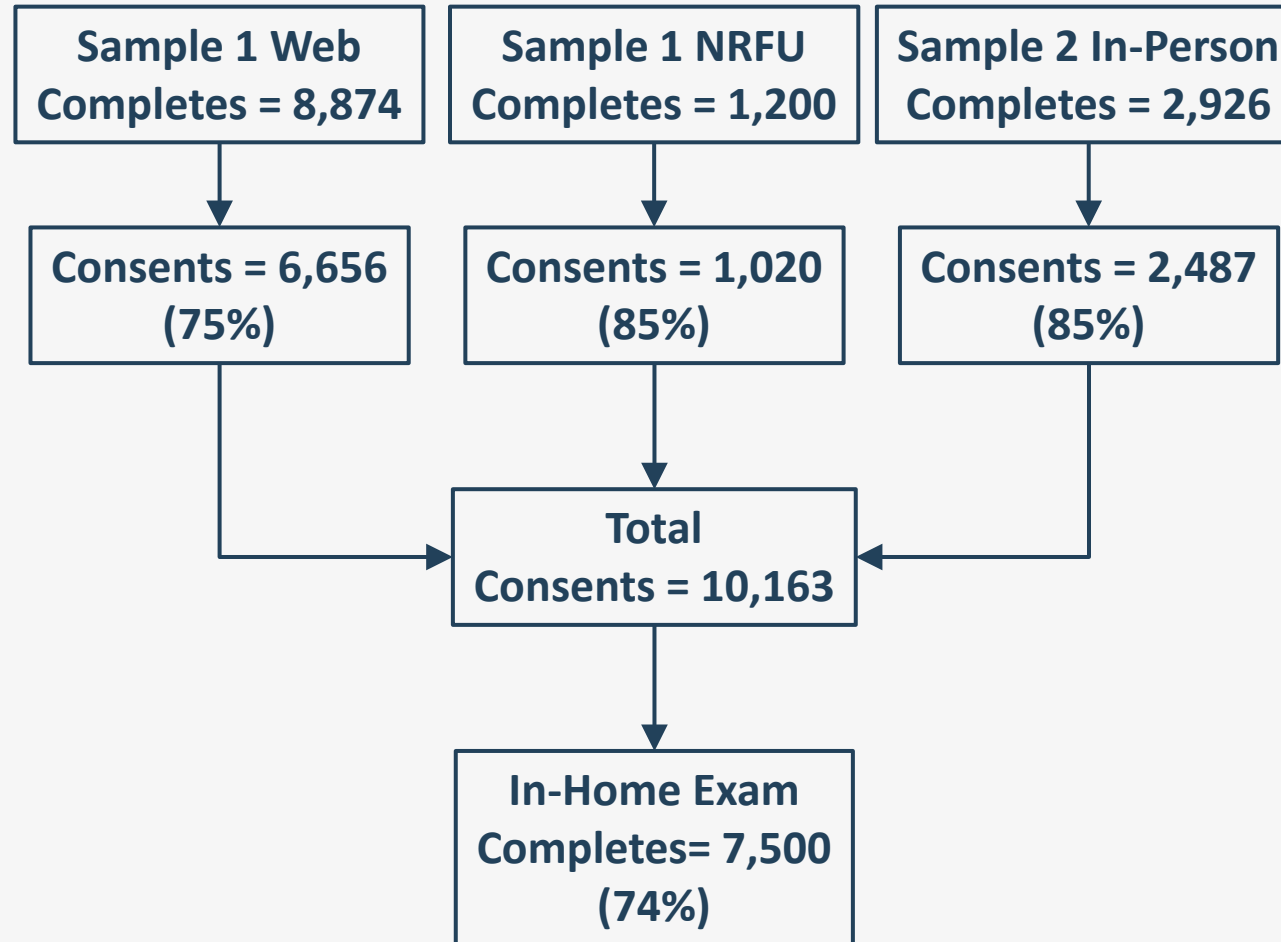
# Wave VI Survey Design: 2 Sub-Samples



# Wave VI Survey Design: 2 Sub-Samples



# Wave VI Home Exam Goals for Consents and Completes



# Survey & Home Exam Completes Data

(as of 6/16/24)

	<u>Current</u>	<u>Goals</u>
Sample 1 Completes	8,292	10,074
Sample 2 Completes	1,369	2,926
Total: Survey Completes	9,661	13,000
Home Exam Completes	4,420	7,500



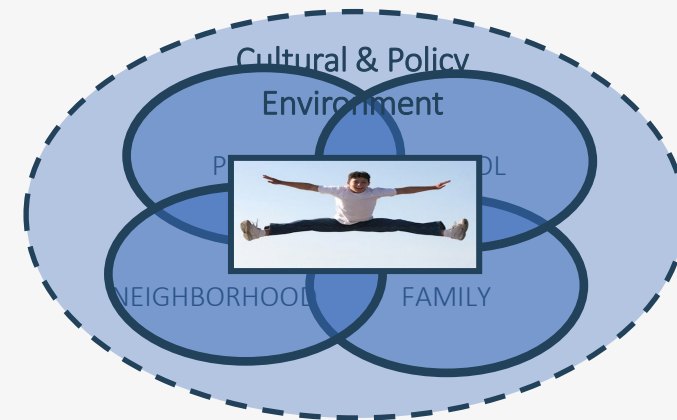
# Contextual & Environmental Data

Core Emphasis in Add Health Since Wave I →

## Thousands of Available Variables

- Social, economic, health, commercial, policy, etc.
- Schools, neighborhoods, counties, states, etc.
- Much more in progress; several ancillary studies
- Searchable tool for users:

<https://addhealth.cpc.unc.edu/documentation/add-health-contextual-variable-inventory/>



## Exposome Supplement: Rich Contextual/Environmental Measures Coming!

- Structural Racism, Sexism, Heterosexism, & Xenophobia
- Physical Environment (Pollution, Water, Landscape, Noise, etc.)

\*\* All being linked to Wave I to Wave VI respondent home addresses \*\*

# Administrative Data

## Birth Records for Add Health Sample Members

- Five states in progress



## College Transcript Records

- Working with National Educational Clearinghouse
- Aim to link Wave VI consented cases and release in 2025



## Mortality Surveillance

- Deaths released through end of 2021 (N=647); 2022 data released soon

# 3. Add Health Data Access

# Obtaining & Using Add Health Data

## 1) Restricted Use:

Through User Contracts

GWAS Data ... through dbGaP

For info, go to:

<https://addhealth.cpc.unc.edu/data/>

<https://www.cpc.unc.edu/projects/addhealth/documentation>

## 2) Public Use: through ICPSR ... go to:

<https://www.icpsr.umich.edu/web/DSDR/studies/21600>

# Looking Ahead to Dissemination of Wave VI Data:

## **Domains:**

Survey data (3/4 web; 1/4 in-person)

Cognitive, sensory, and physical functioning

Biological data (biomarker, anthropometric, meds)

Mortality surveillance

Birth Records; College Transcripts

Contextual & Environmental data from multiple levels

**Data ETA:** 2025 (Not January 1<sup>st</sup> ... 😊 ... more like Sept → Dec)

# 4. Acknowledgements

# Current Add Health Funders

National Institute on Aging (NIA)

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

National Institute on Minority Health and Health Disparities (NIMHD)

National Institute on Drug Abuse (NIDA)

NIH Office of Behavioral and Social Sciences Research (OBSSR)

NIH Office of Disease Prevention (ODP)

# Acknowledgements, continued

Wave VI of Add Health is supported by two cooperative agreements from the National Institute on Aging (1U01AG071448, principal investigator Robert A. Hummer, and 1U01AG071450, principal investigators Robert A. Hummer and Allison E. Aiello) to the University of North Carolina at Chapel Hill. Co-funding for Wave VI is being provided by the Eunice Kennedy Shriver National Institute of Child Health and Human Development, the National Institute on Minority Health and Health Disparities, the National Institute on Drug Abuse, the NIH Office of Behavioral and Social Science Research, and the NIH Office of Disease Prevention. Waves I-V data are from the Add Health Program Project, grant P01 HD31921 (Kathleen Mullan Harris) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 23 other federal agencies and foundations. The content of this presentation is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health or the University of North Carolina at Chapel Hill.

Add Health was originally designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris at the University of North Carolina at Chapel Hill. Add Health is currently directed by Robert A. Hummer; it was previously directed by Kathleen Mullan Harris (2004-2021) and J. Richard Udry (1994-2004).

Information on obtaining Add Health data is available on the project website (<https://addhealth.cpc.unc.edu>).



# 4. Acknowledgements, continued

**Staff:** Sarah Dean, Caroline Jackson, Kathryn Carrier, Bob Angel, Alejandro Vazquez, Tiffany Jensen, Anna Tortorici, Cherese Parker, Julie Kouzoukas, Carrie Baeckstrom, Jenna Gordon, Sarah Rodan, Vishali Muthuvinayagam, Mary Jane Hill, Janne Groner, Lixin Qu, Tim Monbureau, John Knapp, Jason Grago, Michelle Lemon-Russell, Elyssa Trani, Brandt Levitt, Brian Frizzelle, Stephen Loo, Ian Hoyt-McCullough, Ed Van Duinen

**Research Scientists and Postdocs:** Rebecca Stebbins, Carlyn Graham, Sarah Petry, Youngjoon Bae

**Students:** Nicolette Rojas, Fatima Touma, Athena Owirodu, Andrea Goodwin, Sylvie Tuder, Hantao Jiang, Annie Flanagan, Kurtis Anthony, Scott Reid, Lynn Ngo, Nihil Varimalia, Sadie Steelman, Aydin Bandukwala

**Data Monitoring Committee** (Chair: Pamela Herd)

**Deputy Director:** Allison Aiello

**Add Health Director 2004-21:** Kathleen Mullan Harris

**Investigators:** Eric Whitsel, Carolyn Halpern, Y. Claire Yang, Taylor Hargrove, Lauren Gaydos, Chantel Martin, Christy Avery, Kathleen Mullan Harris, Laura Loehr, Carmen Gutierrez, Elizabeth Lawrence, Alexis Dennis

**RTI International** (PI: Brian Burke)

**Laboratory for Clinical Biochemistry Research at University of Vermont** (PI: Mary Cushman)

**ExamOne:** Our Home Exam Contractor