

## **Concept Clearance: Environmental influences on Child Health Outcomes (ECHO) Pediatric Cohorts Program Renewal (2023-2029)**

### **Purpose**

To extend and expand the ECHO Cohort, a nationwide consortium, to further investigate the roles of a broad range of early exposures from society to biology, including the preconception period, on ECHO's five key child health outcomes among diverse populations.

### **Background**

To meet its mission to enhance the health of children for generations to come, since its inception in 2016, the ECHO Cohort has woven together data from 72 existing and ongoing longitudinal maternal-child studies into a single large consortium—the ECHO Cohort. This unprecedented resource for the research community comprises a diverse population of over 50,000 children plus their family members from 33 states, Washington D.C., and Puerto Rico.

### **Accomplishments in the Initial Phase**

The ECHO Program has achieved success across three Strategic Goals:

1. *Enabling High-Impact Research.* ECHO investigators have disseminated findings through more than 800 research [publications](#), including collaborative research on the five key ECHO outcome areas—Pre, Peri-, and Postnatal; Upper and Lower Airways; Obesity; Neurodevelopment; and Positive Health, or Well-being—as well as how the COVID-19 pandemic has affected pregnant women and children.
2. *Facilitating Establishment of a National Resource.* ECHO provides a publicly available data and biospecimen collection [protocol covering the prenatal period through age 21 years](#), standardized data collection forms, and high-quality harmonized data and biospecimens. The data platform contains nearly 100,000 participants that are diverse in age, socioeconomic status, geography, race/ethnicity (45% Non-Hispanic White, 13% Non-Hispanic Black, 11% Non-Hispanic Other, 25% Hispanic, 6% Unknown/not reported/other). The biorepository contains over 42,000 biospecimens.
3. *Building the Next Generation of a Diverse Scientific Workforce.* ECHO supports 51 Opportunities and Infrastructure Fund awards for early-stage investigators, and 15 Research Supplements to Promote Diversity for pre- and post-doctoral trainees.

### **Renewal of the ECHO Cohort**

To build upon these successes, ECHO will *extend* its reach by following nearly 40,000 existing ECHO children for an additional 7 years. The ECHO Cohort will also *expand* to include a new diverse (i.e., populations underserved in research such as racial and ethnic minorities and rural populations) sample of 20,000 women and their partners recruited during pregnancy with follow-up of their children. Based on findings from a 2021 NIH [workshop](#), ECHO will also include a subset of these participants in a preconception pilot study of 10,000 women and men who are at moderate to high probability of having a subsequent child during the study period. We anticipate 3,000 births from this preconception pilot study, followed for 1 year.

Combined, these strategies will yield an ECHO Cohort representing life stages from preconception through adolescence and focusing on the five key ECHO child health outcome areas. New or expanded scientific themes will include, but will not be limited to, health

disparities and health equity, social determinants of health, response to natural experiments or health crises, environmental exposure to novel chemicals, resilience/reversibility, health trajectories, biological pathways, and preconception exposures.

### **Features of the ECHO Cohort Renewal**

- The renewal period will start in FY 2023. Funding is contingent upon continued Congressional appropriation of \$165 million per year.
- Awards will be cooperative agreements (U mechanisms) between NIH and grantees
- All grants will be 7 years, including a 2-year UG3 phase followed by a 5-year UH3 phase.
- We estimate 50 awards to:
  - ECHO Cohort study sites for following children already enrolled in existing ECHO cohorts, resulting from a limited competition
  - Cohort study sites, open to any applicant, for the pregnancy recruitment and preconception pilot study, with follow-up of the children
  - A Coordinating Center
  - A Data Science Center
  - A Measurement Core
  - A Laboratory Core

### **Summary/Impact**

With renewed investment, ECHO research will continue to inform programs, policies, and practices that influence common childhood conditions with high public health significance.