National Institutes of Health
Environmental influences on Child Health Outcomes (ECHO)



Environmental influences on Child Health Outcomes (ECHO) Program Office

2026-2030 Strategic Plan

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Message from the ECHO Director

Matthew Gillman, M.D, S.M.

It is with great enthusiasm that I share the Environmental influences on Child Health Outcomes (ECHO) Program Office's Strategic Plan for 2026-2030. This plan reflects our continued commitment to advancing scientific understanding to enhance the health of children for generations to come. We enter ECHO's second decade with clarity of purpose: to **promote scientific vision, mobilize nationwide capacity to catalyze research that will enhance the health of children for generations to come.**

Since its inception, ECHO has demonstrated the power of collaboration, innovation, and community-engaged science. Our new strategic plan builds on these strengths. Guided by the principles of **teamwork, impact, value, and responsibility**, we position ECHO to deliver actionable, solution-oriented science that meets the evolving needs of children, families, and communities across the United States.

Over the next five years, we will focus on **three goals** that chart a bold path forward: enhancing organizational effectiveness, enabling high-impact research, and expanding ECHO's reach. These goals are supported by research priorities that span both observational and intervention science. Across all this work, we will continue to elevate the cross-cutting themes that define ECHO's identity: **continuous quality improvement, solution-oriented research, team science, and cross-NIH coordination**.

The challenges facing children's health today are complex—but they are not insurmountable. With the collective expertise of our investigators, the engagement of communities nationwide, and the partnership of colleagues across NIH, ECHO is uniquely positioned to deliver insights that inform policy, shape practice, and improve lives. I am profoundly grateful for the dedication and creativity of everyone who contributes to this mission.

Thank you for your commitment to ECHO and to the children and families whose lives our work aims to uplift. I look forward to all that we will achieve together.

Matthew W. Gillman

Director, Environmental influences on Child Health Outcomes (ECHO) Program Office
National Institutes of Health

National Institutes of Health
Environmental influences on Child Health Outcomes (ECHO)

Environmental influences on Child Health Outcomes (ECHO) Program Office

2026-2030 Strategic Plan At-A-Glance

Program Mission



Promote scientific vision and **mobilize** nationwide capacity to **catalyze** observational & intervention research that will **enhance the health of children for generations to come**

Guiding Principles



Observational Research Priorities

- Detect **modifiable early developmental exposures**
- Explore **pathways** to ECHO health outcomes
- Examine **resilience or susceptibility factors**
- Identify **periods of development most sensitive** to exposures
- Measure effects of **natural experiments** or new innovations

Intervention Research Priorities

- Address **prevention** and **treatment** of common pediatric conditions
- Conduct **efficacy** and **effectiveness** trials where kids eat, sleep, learn, play
- Implement **shovel-ready** interventions in **rural** or **underserved communities**
- **Expand reach** through scalable interventions

Note: ECHO investigators work cooperatively to set their own research priorities

Cross-cutting Themes and Program Office Goals

- **Continuous Quality Improvement**
- **Solution-oriented Research**
- **Team Science**
- **Cross-NIH Coordination**

Goal 3
Expand ECHO's Reach

Goal 2
Enable High- Impact Research

Goal 1
Enhance Organizational Effectiveness



Preface, Process, and Data Disclaimer

Preface

The ECHO Program's initial strategic plan for 2020-2024 articulated three goals to guide program development and impact. Two goals emphasized sustaining a well-functioning program office and robust research enterprise, while the third goal focused on establishing ECHO as a national research resource. These first two goals remain remarkably similar in 2026-2030 strategic plan.

The major evolution that this strategic plan reflects is in the third goal. Since ECHO is now established as a national research resource, our focus has shifted toward expanding the reach, use, and impact of that resource. This includes strengthening ECHO's role as a national hub for child health research to enhance its ability to inform programs, policies, and practices to enhance children's health.

By maintaining continuity in the first two goals while advancing the third, this strategic plan builds on ECHO's established foundation and positions the program to amplify its ability to drive health impacts well into the future.

Strategic Planning Process

To set the goals for this strategic plan, ECHO Program Office staff outlined their vision for the next five years during a series of meetings in the beginning of 2024. From January 2024–May 2025, several activities, and a working group of Program office staff iterated on this vision, considering various factors, such as NIH community needs, public health needs, scientific challenges, and opportunities, to develop the Framework for this strategic plan (see Appendix A)

Point-in-Time Data Disclaimer

All numerical values and analyses presented in this document reflect the point-in-time data available as of January 08, 2026. These data were accurate at the time of publication; however, subsequent updates, corrections, or newly available information may result in current numbers that differ from those presented here.

I. Overview of the ECHO Program

The Office of the Director of the National Institutes of Health (NIH) launched the ECHO Program in 2016 with the mission to enhance the health of children for generations to come. The *Child Health Act of 2000* Informed ECHO's incorporation of multiple longitudinal mother-child cohort studies under one umbrella with an initial recruitment goal of 50,000 children. Now the ECHO Cohort Consortium ("Consortium"), which underpins the Program's observational research, includes investigators from across the United States, and involves the study of nearly 60,000 participants from before conception to age 21 years.

The *National Pediatric Research Network Act of 2013*, mandated by the *21st Century Cures Act* of 2016, informed ECHO's launch of the Institutional Development Award (IDeA) States Pediatric Clinical Trials Network (ISPCTN or "Network") to carry out intervention-based research. The ISPCTN brings state-of-the-art clinical trials to children living in rural or underserved communities

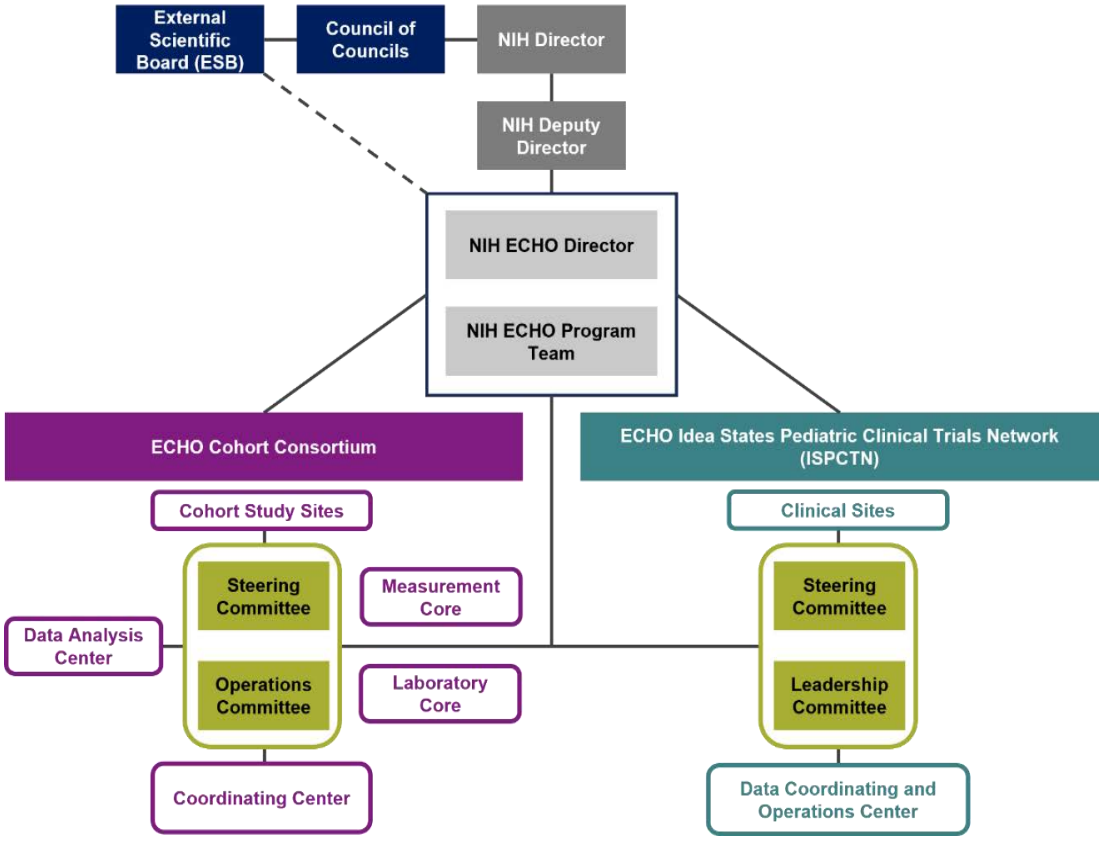
ECHO Program Organization

As shown in Figure 1, the ECHO Director, who reports to the NIH Deputy Director for Program Coordination, Planning, and Strategic Initiatives (DPCPSI), works closely with a team of experts in the Program Office, including a Deputy Director, Chief of Staff, program officers, project scientists, analysts, specialists, and administrators who carry out essential programmatic functions.

An External Scientific Board reports to the Council of Councils helps the Program Office consider how to navigate challenges facing ECHO. The Council of Councils advises the NIH Director on the ECHO Program's overall progress. The External Scientific Board includes scientific and biomedical experts in pediatrics, early childhood development, maternal-fetal medicine, public health, environmental toxins, epidemiology, community-based participatory research, human subjects research, clinical trials, data science, bioinformatics, bioethics, parent/participant representation, as well as research with American Indian and Alaska Native peoples.

The Program Office funds the Consortium with awards for Cohort Study Sites, a Measurement Core, Laboratory Core, Coordinating Center, and Data Analysis Center. The Network includes awards for Clinical Sites and a Data Coordinating and Operations Center. ECHO's cooperative agreements consitute steering committees comprising investigators from these sites, cores, and centers that govern the scientific directions for each side of the program. The Consortium also has an Operations Committee to enable achievement of observational research priorities. The Network has a Leadership Committee that provides oversight for strategic issues, resource use, and prioritization of clinical trial activities.

Figure 1. ECHO Program Organization Structure



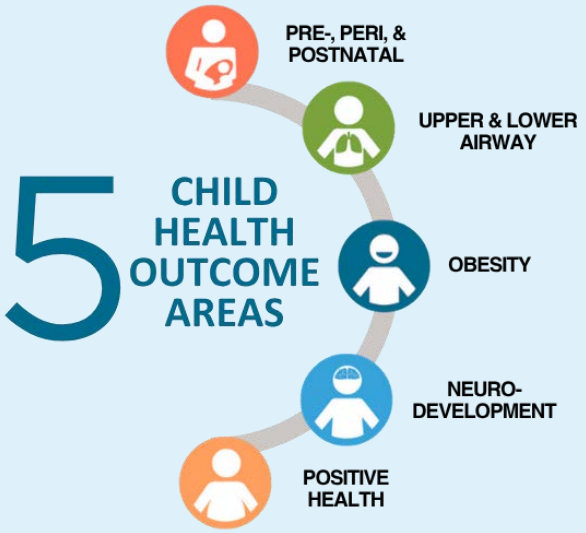
ECHO Program Research

As a program, ECHO dedicated to both learning what factors affect child health through observational research and finding ways to enhance it through intervention research.

ECHO looks at the whole child—rather than focusing on a single disease, by focusing on five key pediatric outcome areas (*Figure 2*) that have a high public health impact:

1. **Pre, Peri, & Postnatal**, such as preterm birth and maternal depression
2. **Upper & Lower Airway**, such as asthma and allergies
3. **Obesity**, and it's consequences
4. **Neurodevelopment**, such as autism specturm disorder, Attention Deficit Hyperactivity Disorder (ADHD), and mental health.
5. **Positive health,** or well-being

Figure 2. ECHO's Five Pediatric Outcome Areas



The ECHO Cohort Consortium

The ECHO Cohort is the largest longitudinal study of children in the United States. Consortium investigators answer solution-oriented questions about the effects of a broad range of early environmental exposures on child health and development.

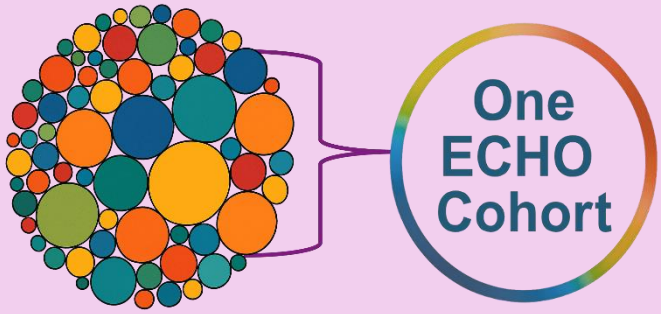


Figure 3. One ECHO Cohort.

Within 7 years after launch, ECHO transformed a collection of many independent studies into a single, unified ECHO Cohort, which incorporates standardized data and biospecimen collection protocols that all 78 ECHO sites use. To harmonize data across NIH, ECHO also shares the protocol with other pediatric research programs.

In its second seven-year cycle (2023–2030), ECHO has transitioned fully to one cohort operating across multiple sites under a single standardized protocol.

From 2016 to 2023, ECHO harmonized data from over 130,000 participants from 69 pre-existing, ongoing longitudinal maternal child studies (see *Figure 3*), many of which pre-dated ECHO. The Consortium established a large protocol that informs its collection of data and biospecimens. This protocol is available to other programs seeking to align their research with ECHO.

In its second seven-year cycle (2023-2030), The ECHO Cohort Consortium involves 48 awards, over 70 study sites, along with four cores and centers for research support. Together, the Consortium is following up with 30,000 child participants from cycle 1, enrolling 30,000 new pregnant participants, and plans to follow them and their children long-term, until they reach 21 years of age. Additionally, the Consortium follows many of these women—and their partners when available—during the period after birth because the likelihood of a subsequent pregnancy is high. Studying this interpregnancy period allows investigators to gain insight into how *preconception* (pre-pregnancy) exposures may influence health outcomes during subsequent pregnancies and childhoods. Ultimately, the ECHO Cohort plans to study at least 60,000 total children, along with their families, through 2030.

Since 2016, Consortium investigators have used the data and biospecimens they have collected from the ECHO Cohort to publish nearly 2,000 manuscripts that address how chemical, physical, psychosocial lifestyle, behavioral, and biological exposures during pregnancy and early childhood influence the major drivers of public health in children.

Moreover, the Consortium makes the combined dataset and biospecimens from the ECHO Cohort available to the broader scientific community to facilitate innovative pediatric research with high potential impact.

Observational Research Priorities

The ECHO Cohort Consortium cooperated to set the following observational research priorities in their endeavor to answer solution-oriented questions about the effects of a broad range of early environmental exposures on child health and development.



1. Detect **modifiable early developmental exposures** that - if addressed by programs, policies, and practices - could enhance child health outcomes across the life course and reduce health disparities.



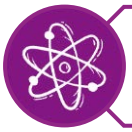
2. Explore **pathways** to ECHO health outcomes using state-of-the-art biochemical, analytic, and statistical methods.



3. Examine **resilience and susceptibility factors** that buffer or amplify the effects of adverse early-life exposures on child health outcomes



4. Identify developmental **periods most sensitive** to specific beneficial or harmful exposures to inform new strategies to promote child health.



5. Measure the effects of **natural experiments,** health innovations, or paradigm shifts on child health outcomes.

The ECHO IDeA States Pediatric Clinical Trials Network

ECHO ISPCTN is the only NIH clinical trials network focused on children from rural or underserved communities. Its goals are to

- Provide access to state-of-the-art clinical trials for these populations, and
- Build national pediatric research capacity to conduct clinical trials and compete for future funding.

The Network conducts multi-center clinical trials to support future trials in research areas that disproportionately affect rural communities - where more than 28% of the ISPCTN clinical trial participants reside. These efforts contribute to building research capacity at ISPCTN's 18 clinical sites and Data Coordinating and Operations Center.

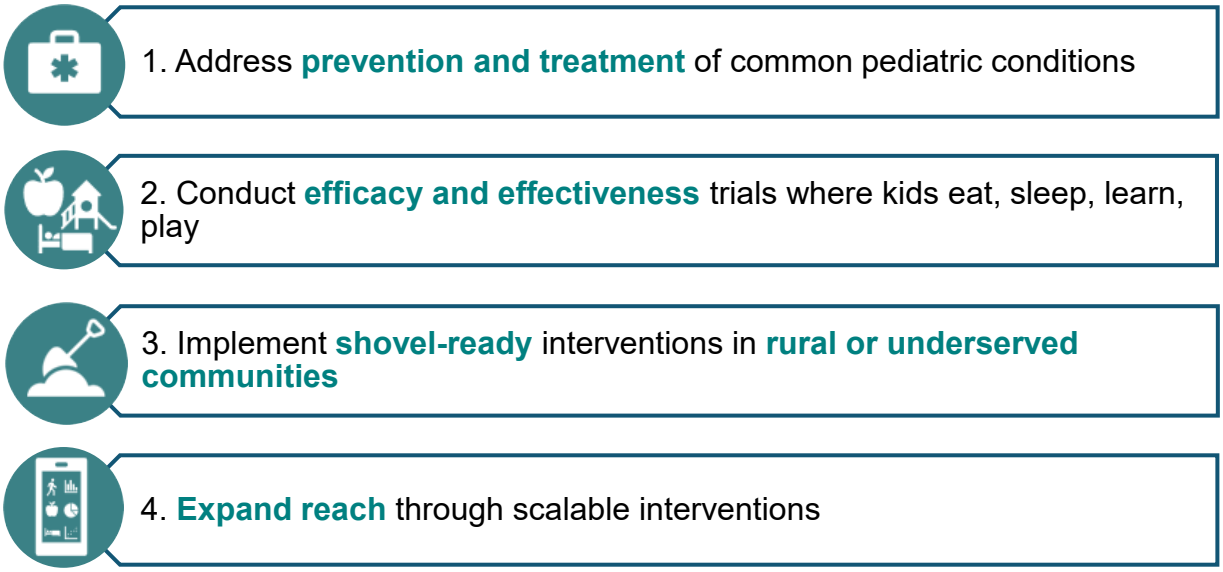
From 2016 through 2025, ECHO ISPCTN successfully developed, implemented, and disseminated findings from nine multi-center pediatric clinical trials, from which it published peer-reviewed papers in The New England Journal of Medicine, JAMA Network Open, American Journal of Public Health, and others. The Network makes data from all

completed trials publicly available to support broader analysis by the scientific community. ECHO ISPCTN has also supported:

- Salary and training for 37 early-stage investigators
- Five pilot studies
- Seven research supplements to promote pre- and postdoctoral research.

Intervention Research Priorities

The Network cooperated to set the following intervention priorities focused on treatments and care delivery, especially in rural or medically underserved communities.



II. The ECHO Program Office

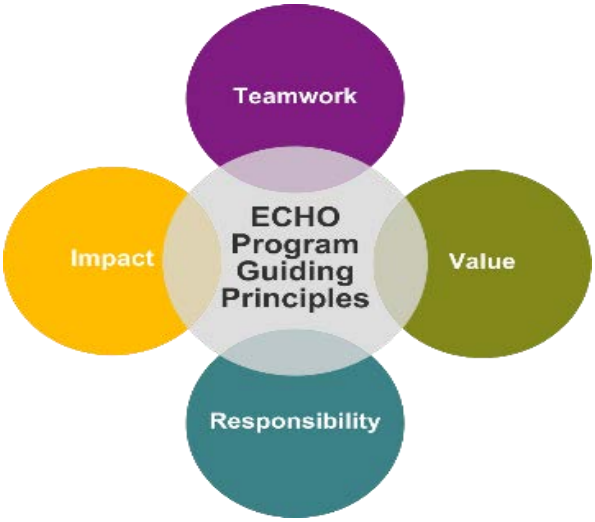
Mission

The mission of the ECHO Program Office is to promote a unified scientific vision and mobilize nationwide capacity to catalyze observational and intervention research aimed at enhancing the health of children for generations to come. The Program Office mission has mission of the whole program—to enhance the health of generations to come—embedded within it.

The ECHO Program Office supports the high-impact research conducted by ECHO investigators and collaborates with awardees to engage a broad range of interested parties committed to advancing ECHO's mission. These parties include ECHO participants—children and families; the American public; Congress; Interested-party organizations—professional societies and advocacy groups; NIH Institutes, Centers, Offices and Programs; other federal agencies; and the broader scientific community.

Guiding Principles

Figure 4. ECHO Guiding Principles



The ECHO Program Office uses four foundational principles to guide its day-to-day activities (see *Figure 4*). These guiding principles form a set of related ideals that help the program advance toward achieving its mission. These principles are Teamwork, Value, Responsibility, and Impact. The ECHO Program Office promotes excellence by integrating these principles into all aspects of its work.

Teamwork

The ECHO Program Office defines *teamwork* as individuals working well together. It promotes inclusivity by welcoming the viewpoints of each staff member involved in office activities. The intent of this principle is to achieve collaborative integration that transcends the disciplinary boundaries between staff—as well as the investigators they work with—so that the whole becomes greater than the sum of its parts. The Program Office promotes collaboration through activities that foster a culture that builds trust through open communication and idea sharing. The Program Office encourages program coordination so that the full breadth of ECHO resources work to advance high-impact research that enhances children's health.

Value

The ECHO Program Office understands that its *value* lies in return on public investment. It carefully evaluates how its funding leads to the development of innovative research that can translate into meaningful enhancements in children's health. To strengthen this value, the Program Office sets clear expectations, allocates award funding strategically, and provides guidance to ensure that investigators stay focused on achieving their scientific priorities. Supervisors work to align program-staff capabilities with responsibilities that maximize benefit to ECHO. Program officers oversee grant resources to keep ECHO projects within scope, on schedule, and on budget. Additionally, ECHO Program analysts support value creation by promoting a culture of shared accountability while guiding implementation of Plan-Do-Study-Act approaches to mitigate risks to scientific progress.

Responsibility

The ECHO Program Office defines *responsibility* as ensuring that ECHO investigators conduct transparent and unbiased scientific research. To support this guiding principle, the Program Office outlines staff roles, promotes collaboration, and encourages

independent action when appropriate. The ECHO Program Office also provides the necessary resources and support to help staff fulfill their duties while also fostering accountability. The Program Office also upholds responsibility by setting clear expectations for ECHO investigators to conduct research in an ethical manner—recognizing the involvement of sensitive populations since ECHO participants include pregnant women and children—to produce valid and reliable scientific findings, and to share findings in a timely manner.

Impact

The ECHO Program Office defines impact as measurable enhancements in child health. The vision of the Program Office is for ECHO to contribute to this improvement by producing research that informs programs, policies, or practices. This vision aligns with ECHO's effort to catalyze solution-oriented observational and intervention research. As ECHO investigators make new research findings, the ECHO Program facilitates their broad dissemination to ensure results are widely accessible and maximally translatable into real-world enhancement of child health. To help drive impact, the Program Office engages actively with investigators – promoting trust, fostering a culture of idea- and data-sharing, encouraging innovative transdisciplinary research, and supporting strategic, solution-focused initiatives that involve end users from the development of research questions through to the dissemination of results.

Functions of the ECHO Program Office

The ECHO Program Office provides guidance, coordination, and oversight to its research sites but does not set the specifics of scientific direction. Instead, the investigators of the Cohort Consortium and the ISPCTN Network set their respective research priorities through collaborative processes that consider the state of the science along with the strengths of the research teams involved.

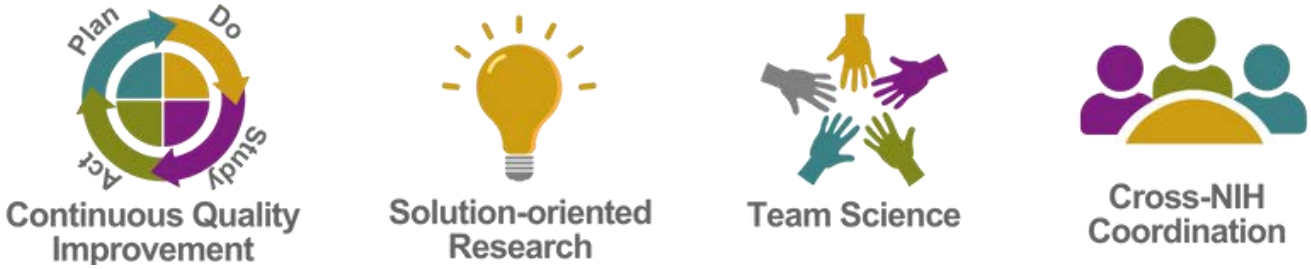
The Program Office supports organizational excellence, infrastructure, resources, collaboration, and opportunities to enhance impact. The objectives under each goal in this plan describe how the Program Office supports the scientific enterprise rather than which scientific questions the program pursues.

The remainder of the plan this strategic plan codifies the cross-cutting themes and goals of these critical Program Office functions that keep ECHO's research agenda rigorous, investigator-driven, responsive to emerging child health research needs, and highly impactful.

III. Cross-Cutting Themes

The Program Office has identified four cross-cutting themes that cut across all three goals of this strategic plan. To account for these features, that this plan highlights: continuous quality improvement, solution-oriented research, team science, and cross-NIH coordination. The figures in section IV of this plan are call-out boxes—each marked with an icon representing the corresponding cross-cutting theme shown in *Figure 5* below—to highlight how these themes weave together the elements of the Strategic Plan.

Figure 65. Cross-cutting Themes



Continuous Quality Improvement



Continuous quality improvement which involves ongoing evaluation and improvement to enhance efficiency, improving outcomes. Continuous quality improvement involves regularly evaluating progress toward time-bound performance targets and using those findings to steadily enhance system operations, work environments, and process outputs. The ECHO Program will continue to implement continuous quality improvement strategies to address challenges that arise from executing complex scientific activities needed to produce high-impact research.

Solution-Oriented Research



Solution-oriented research questions generate results that can inform programs, policies, and practices. The paradigm applies to intervention studies and observational studies that provide insights for new intervention trials, health policies, and guidelines for clinical practice. This plan emphasizes solution-oriented research as key to generating science that end users can more readily translate into actions that enhance health.

Team Science



The ECHO Program incorporates the principles from the Science of Team Science to bear on all aspects of its programmatic activities. Rather than simply referring to collaboration among a few investigators, team science encompasses coordinated, interdisciplinary efforts that bring together an array of disciplinary perspectives to address complex scientific challenges. In addition to the investigators funded by the program, staff in the Program Office comprise a variety of disciplinary experts from maternal and child health, pediatrics, neonatology, epidemiology, public health, clinical, psychosocial, and biochemical sciences, data analytics, and other fields to guide ECHO's research. The multi-disciplinary implementation of team science principles within the Program Office complements the transdisciplinarity of ECHO's investigators, helping to produce innovative research with high-potential impact.

Cross-NIH Collaboration



Throughout its tenure, the ECHO Program Office has collaborated with approximately 30 Institutes, Centers, Offices, and Programs at NIH to enhance its own research while advancing NIH science more broadly (see Appendix C). ECHO benefits from expert counsel from these NIH partners on two ECHO Trans-NIH Working Groups, one for the ECHO Cohort and one for ISPCTN. In one recent collaboration, the Program Office and the *All of Us* Research Program have started working together to facilitate the follow up children from the ECHO Cohort into adulthood as participants in the *All of Us* Cohort.

IV. ECHO Program Office Goals

To achieve its mission, the ECHO Program Office has identified three goals to guide its efforts for fiscal years 2026-2030:

1) Enhance Program Office organizational effectiveness
2) Enable high-impact research
3) Expand ECHO's reach as a national research resource

The first two goals continue from the previous strategic plan. The third goal shifts from establishing ECHO as a national research resource to expanding its reach.

The Program Office conceptualizes these goals as a tree (see *Figure 6*). The roots of our success, Goal 1, focuses internally on Program Office Efficiency. Building upward, Goal 2 reflects our core mission as an NIH extramural program to enable high-impact research. At the top, Goal 3, focuses on branching out by expanding ECHO's reach and strengthening its role as a national research resource that informs programs, policies, and practices to improve children's health.

Figure 66. Conceptual Model of ECHO Goals and Objectives



Each goal comprises 3 objectives, and each objective includes 1 or more attainable success measures. Together the objectives and success measures allow staff to implement the goals using a "*plan, do, study, act"* approach for continuous quality improvement, which involves planning expected progress at the start of each fiscal year and documenting success measures during the year. At the beginning of each fiscal year, the Program Office will adapt its activities to the previous year's evaluation.

Goal 1: Enhance Program Office Organizational Effectiveness

The first goal recognizes that the roots of ECHO's success lie in the strength, sustainability, and cohesion of the team working in the Program Office. Activities that foster a mission-driven culture, refine internal processes, and strengthen interpersonal connections across the team are key to achieving Goal 1. How we collaborate, adapt, and engage with one another directly shapes our ability to deliver on ECHO's broader mission. As such, the Program Office has organized Goal 1 under three strategic objectives:

A. Promote a Mission-Driven Organization

The first objective under Goal 1 focuses on fostering a mission-driven culture within the ECHO Program Office. In it, staff understand ECHO's commitment to advancing solution-oriented research to enhance children's health (see *Figure 7*). Such buy-in fosters a sense of pride, purpose, and ownership in ECHO's work and reinforces how everyone on the team contributes to the mission.



Solution-Oriented Research

Figure 7. Day-to-Day Solution Orientation

Program Office staff experience a steady reinforcement of the Program Mission, **to enhance the health of children for generations to come**. This mission—grounded in a commitment to solution-oriented research—serves as the central organizing framework for all office's activities. Staff operations, development of funding opportunities, programmatic oversight of ECHO awards, scientific guidance to investigators, dissemination of research findings, and interested party engagement all emphasize the importance of identifying critical knowledge gaps that, when addressed, inform solutions to enhance children's health.



Through this objective, we embed our mission into the daily activities of office life by creating opportunities for reflection, alignment, and engagement around shared values. This mission-focus helps ensure that the "why" behind the work motivates staff so that our collective effort remains focused on delivering meaningful impact.

To evaluate progress toward this objective, we will:

- Track engagement activities—such as all-hands meetings, brown-bag-lunch discussions, and team reflection exercises—that help us link our daily work to ECHO's mission while reinforcing our shared understanding of ECHO's goals, purpose, and intended impact.
- Leverage results from our annual staff questionnaire, specifically focusing on indicators such as satisfaction with individual work, perceived alignment with the office mission, and perceptions of team effectiveness.

By reinforcing the connection between individual roles and our collective mission, we aim to build a strong, mission-driven culture that sustains high performance and deepens ECHO's impact.

B. Refine Operational Resources

The second objective under Goal 1 focuses on refining operational resources within the Program Office. This involves applying continuous quality improvement principles to help the team strengthen the infrastructure that supports how we work together—particularly in the areas of knowledge sharing, communication, and decision-making. By proactively enhancing our processes, we can ensure that staff have access to the tools, guidance, and systems they need to work efficiently, effectively, and collaboratively.

Our approach emphasizes an ongoing learning agenda. As the needs of our team evolve, so too must the systems that support our operations (see *Figure 8*). This evolution includes refining standard operating procedures, streamlining workflows, and ensuring that information flows smoothly across all levels of the Program Office.

A few ways we will measure progress toward this objective include:

- Using engagement trackers to monitor participation in skill-building activities, which we design to equip staff to navigate our evolving operational landscape.
- Implement pulse surveys to collect real-time feedback on individual experiences with core office functions, including onboarding, travel, and standard operations.

By ensuring that data inform our resource refinements, we aim to build a more effective operational environment—one that empowers our team to focus on the high-impact work of the Program Office mission.



Continuous Quality Improvement

Figure 8. Office Systems Improvements

The Program Office uses continuous quality improvement to refine its operational systems. As an example, when Staff request to visit funding award sites or attend national Scientific meetings, they submit requests through the office's travel request and review system. The system tracks time from submission to booking, and the operations team uses satisfaction surveys to assess user-friendliness. By setting regular targets for turnaround time and user satisfaction, the team monitors system efficiency and quality, then implements improvements when helpful.



C. Strengthen ECHO Program Office Interpersonal Cohesion

The third objective under Goal 1 is to strengthen interpersonal cohesion. The Program Office is deeply committed to promoting a culture of collaboration, which depends on relationships that form across the team in a way that staff members feel seen, supported, and involved in ECHO's important work (see *Figure 9*). The activities under this objective emphasize the *Science of Team Science*—a foundational knowledge base that can strengthen interdisciplinary collaboration and the organizational results of building trust, respect, and shared purpose across the team working in the ECHO Program Office.

Some of the ways we will evaluate progress toward this objective include both quantitative and qualitative approaches such as:

- Tracking the number and variety of team-building activities such as retreats, social gatherings, and collaborative cross-team initiatives.

- Assessing the influence of one-on-one meetings between staff and ECHO leadership, which can building trust, transparency, and connection to the mission.
- Annually studying the key analytic domains of ECHO's annual staff questionnaire, especially those that probe the domains of effective teamwork.

Together, these efforts aim to foster a more connected and cohesive workplace culture and to ensure that ECHO remains a supportive and collaborative environment where innovation, communication, and scientific progress can thrive.



Team Science

Figure 9. Collective Decision Making



The ECHO Program Office actively cultivates interpersonal cohesion through everyday work activities grounded in shared commitment to programmatic and institutional policies. Effective collaboration emerges from safe environments where staff can voice differing opinions and work through disagreements constructively. Leadership reinforces unity by involving team members in decisions about funding, oversight priorities, scientific guidance, and communication strategies while maintaining transparency about supervisory decisions whenever possible. ECHO staff collectively weigh options and alternative perspectives, critique their own ideas, and actively support decisions that incorporate others' suggestions. This approach to decision-making strengthens the Program Office's interpersonal cohesion.

Goal 2: Enable High-impact Research

The second goal is to Enable High-impact Research, which represents the core emphasis of our efforts as an extramural program at the National Institutes of Health. As we work toward enabling high-impact research, we support the research priorities that the investigators of the ECHO Cohort Consortium and the ECHO ISPCTN each helped develop (see Function of the *ECHO Program* beginning on page 12).

A. Empower Investigators with research awards

To enable high-impact research, the ECHO Program Office must empower investigators with research awards. Central to this effort is the provision of adequate resources to awardees. The ECHO Program Office uses an annual budgeting process that allocates funds to sites based on their documented costs, effort, and productivity. Program Officers then monitor awardee progress and unexpended balances routinely so awardees can allocate funds appropriately to support the program's most urgent needs. Program Officers ensure that ECHO awardees use their resources as NIH expects and that those

funds translate to the production of meaningful research. To do so, Program Officers engage award investigators through meetings to discuss progress toward standard reports like Milestone Accrual Plans and Research Performance Progress Reports.

Beyond the performance of individual awards, the Program Office considers how the two sides of the program function collectively as cooperatives of many teams in the Consortium and Network (see *Figure 10*). Accordingly, the governance committees of the two sides each set annual operational objectives to accomplish, each with indicators to gauge success and targets—or thresholds—for indicators that constitute annual success to ensure all awardees contribute to achieving ECHO's desired outcomes. These operational objectives and indicators relate to key parts of successful clinical studies, like protocol implementation, study participant retention rates, data quality, and publications. In cases where an award institution or investigator needs substantial help contributing to the program's success, their ECHO Program Officer coordinates with them to develop an action plan for recovery, which includes learning successful strategies from high-achieving peers.



Team Science

Figure 10. Many-Teams Science

ECHO's funding opportunities distinguish themselves by mandating robust team science and multi-site collaboration. While many NIH programs encourage multidisciplinary teams within single awards, ECHO's structure and policies require collaboration across multiple awards within the ECHO Cohort Consortium or within the ECHO ISPCTN. This collaborative framework doesn't constrain investigators—it empowers them. By leveraging the collective expertise and resources across many research teams, ECHO can generate innovations such that the whole is greater than the sum of its parts.



A final way that the ECHO Program Office empowers investigators with research awards is through assuring sound scientific methodology. ECHO Program Officers and Project Scientists collaborate with investigators to ensure ECHO research is not only rigorous in nature, but also solution-oriented, aligned with ECHO's mission, and consistent with NIH priorities.

We will track progress toward this objective through approaches such as:

- Monitoring grantee progress through Research Performance Progress Reports (RPPRs) and Milestone Accrual Plans to assess research production.

- Conducting portfolio analyses to evaluate alignment between awarded research and ECHO's research priorities.
- Using publication bibliometrics to assess visibility of ECHO research.
- Tracking NIH Institute, Center, Office, and Program collaborations to ensure alignment with broader NIH priorities.

By combining grant oversight with performance data, we aim to ensure resources are well-used and enable impactful, solution-oriented science.

B. Implement practices for innovative research

Implementing practices for innovative research is another way the ECHO Program Office seeks to enable high-impact research. The ECHO Program Office emphasizes innovative research paradigms like establishing a multi-team approach to science governance. This approach entails designing a system of cooperating teams to manage scientific decision making, infrastructure, and workflows. Well-designed multi-team systems are essential to enhancing collaboration in large research networks like those involved in ECHO. Multi-team systems can help integrate many disciplinary and career-stage perspectives from a variety of societal sectors into ECHO science.

The Program Office has empowered ECHO's multi-team approach by shifting more authority for scientific governance to ECHO's steering committees (refer to *Figure* 4). In this shared accountability model (see *Figure 11*), Steering Committee members, along with other ECHO investigators, have established a system of teams to carry out the numerous tasks needed to operate in the ECHO Program, from protocol development to implementation to publication review. The Program Office encourages these teams to continually refine ECHO's workflows to ensure that ISPCTN and Cohort investigators produce timely, rigorous, and high-impact research.



Continuous Quality Improvement

Figure 11. Shared Accountability Model

The Program Office has empowered ECHO's multi-team approach to science governance by delegating decisions about scientific direction to ECHO's steering committees. This model depends on shared accountability among ECHO investigators, who employ a "plan, do, study, act" approach to improving scientific excellence and operational effectiveness. To execute these responsibilities, the program's steering committees establish targeted subcommittees, working groups, and task forces—each focusing on distinct scientific or operational processes—while maintaining oversight through regular reporting and feedback loops.



Beyond the investigators themselves, Program Office staff participate in ECHO's scientific governance to offer scientific guidance, boundary setting, and strategic course correction. In addition to the steering committees, there are numerous other groups that interact to facilitate ECHO research, including but not limited to, pods of investigators as part of the governance structure to disseminate information and report feedback, scientific working groups to stimulate multi-team science, and committees tasked with overseeing the production of rigorous research.

Additionally, the Program Office coordinates trans-NIH working groups for the ECHO Cohort and ISPCTN to allow experts from across NIH Institutes, Centers, and Offices to offer input on ECHO's research methodologies. We also engage ECHO's External Scientific Board twice a year to request their feedback on ECHO's challenges. The feedback the Program Office receives from the External Scientific Board is pivotal toward ensuring programmatic success.

To evaluate our progress on this objective, we will use several methods including:

- Using RPPRs to evaluate the effectiveness of ECHO's multi-team scientific governance structure in supporting efficient and high-quality research.
- Gathering insights from annual staff questionnaires and pulse surveys to assess the functionality and inclusivity of ECHO's team science model.
- Monitoring steering committee activity and the refinement of infrastructure and decision-making processes to promote innovation across the consortium.

By embedding data-informed innovation into our structures and processes, we seek to strengthen ECHO's capacity to produce timely, rigorous, and actionable research.

C. Support ECHO Research Dissemination

The Program Office aims to support research dissemination through activities such as overseeing the program's processes for lay summary production and guiding processes for grantee communication with the media. Program Office staff actively participate in collaborative activities to guide investigators toward development of solution-oriented research publications. The ECHO Program Office Partner Engagement team implements strategies intended, in part, to distribute ECHO's findings to national interested party organizations, NIH partners (see *Figure 12*), and federal agencies well-suited to enact solutions to enhance child health. The Program Office also engages experts in national interested party organizations and federal partners to better understand what evidence needs ECHO can address to better inform programs, policies, and practices that enhance children's health. Once findings are available, we engage our partners to help disseminate them to a wide audience.

We plan to measure success in this area using a range of indicators, such as:

- Tracking research dissemination metrics through publication bibliometrics, including citations and reach of solution-oriented research.
- Reviewing RPPRs to assess how grantees describe and carry out dissemination efforts.
- Documenting the Program Office's contributions to media engagement, lay summary production, and distribution of ECHO research findings and related materials to policy- and practice-relevant audiences.

By supporting clear, targeted dissemination strategies and tracking their impact, we aim to translate ECHO research into meaningful improvements in child health.

Cross-NIH Coordination

Figure 12: Trans-NIH Working Groups

ECHO regularly shares scientific findings widely with its many interested parties, including membership organizations and partners across NIH. The ECHO Program Office engages the NIH community through two Trans-NIH Working Groups: one dedicated to the ECHO Cohort and another to the ECHO ISPCTN. These working groups serve many purposes—two of which are keeping NIH colleagues informed of emerging ECHO research results while enabling wider dissemination of findings through the extensive networks of our NIH partners.



Goal 3: Expand Echo's Reach as a National Resource

Expanding the reach of the ECHO Program is essential to strengthening its role as a national resource and maximizing the impact of its research. The previous strategic plan focused on establishing ECHO as a national resource, a goal achieved through increased visibility, accessibility, and recognition of its capability to generate research with high potential impact. Now ECHO is focusing on expanding its research impact by implementing a comprehensive national strategy to bring more interested parties to the table by enhancing its visibility and influence to advance its mission to enhance the health of children for generations to come.

A. Promote ECHO as a national research resource

ECHO is poised to serve as a national research resource by making its expansive array of data and biospecimens, and pediatric clinical trial capacity, available to the broader

scientific community. When our interested parties and the broader scientific community take advantage of this great resource to study, ECHO amplifies its reach along with the potential for novel, innovative, and high-impact research in high-priority areas of maternal and child health.

The ECHO Cohort has data on approximately 150,000+ maternal and child participants, representing births in all 50 states, D.C., and Puerto Rico, and more than 123,000 biospecimens in its biorepository.

The ECHO Cohort provides access to its data and biospecimens to the broader scientific community in two ways:

1. Through de-identified, controlled access datasets made available to the public via an NIH data repository; and
2. Through ancillary studies, which requires non-ECHO funding, to request access to limited identifiable data on the ECHO Cohort Data Platform with or without assay of biospecimens from the ECHO Biorepository (see *Figure 13*).

Because of the ECHO Cohort's nationwide coverage, analyzing data from ECHO participants takes advantage of ample statistical power for addressing many important child health research questions and may yield highly generalizable findings.



Team Science

Figure 13: ECHO Cohort Ancillary Studies

An ECHO Cohort Ancillary Study, which requires non-ECHO funding often supplied by other ICOs, allows investigators from the broader scientific community to request access to limited identifiable data on the ECHO Cohort Data Platform, with or without biospecimens from the ECHO Biorepository. These ancillary studies allow investigators to explore how early environmental exposures from preconception to age 5 years influence child health outcomes from birth through adolescence. Exposure data involve natural and built environments; physical, chemical, social, behavioral, and biological factors. Outcome data include pre-, peri- and postnatal; upper and lower airways; obesity; neurodevelopment; and positive health.



ECHO ISPCTN, in turn, offers three distinct types of collaborative opportunities for clinical trials, as shown in *Figure 14*:

Figure 14. ISPCTN Trial "Buckets"



1. **ECHO-funded ISPCTN Trials**, ISPCTN investigators and their collaborators propose trials through ISPCTN's trial pipeline, which ISPCTN can then decide whether to fund and implement through its Data Coordinating and Operations Center and clinical sites.
2. **ISPCTN Collaborative Trials** are those for which ECHO is a full collaborative partner, offers use of its ISPCTN facilities and infrastructure, and, in some cases, partial trial funding.
3. **ISPCTN Participating Site Trials** are those in which ISPCTN sites participate, individually or as a group, but for which ECHO does not provide funding or participate in the design. However, the trial benefits from ISPCTN resources.

To further advance ECHO's efforts to collaborate and share data with the broader scientific community and accelerate discoveries in child health, the ECHO ISPCTN makes clinical data from completed trials available through the de-identified, controlled access NIH data repository. ECHO ISPCTN has already added data from four large-scale clinical trials and will continue to make data available as future trials are completed.

The ECHO Program Office will monitor progress using, but not limited to, the following approaches:

- Tracking federal partnership activity and collaborations with NIH Institutes, Centers, and Offices (ICOs) to understand the extent of aligned efforts.
- Using NIH system data to monitor usage of ECHO's publicly available data, and to assess the scope and scale of ancillary study requests.
- Documenting how external investigators apply ECHO data and biospecimens to explore new questions that advance maternal and child health.

By measuring engagement in collaborative research and data sharing, we will evaluate how effectively ECHO is catalyzing high-impact, policy-relevant science.

B. Cultivate broad awareness of ECHO

Building strong relationships with end-user interested parties helps to increase ECHO's visibility, demonstrate its value, and strengthen NIH's brand of turning discovery into health. Through two-way communication with federal agencies and member organizations, the Program Office aims to foster a system of champions who advocate for children's health informed by ECHO research. ECHO's partners can help increase awareness of ECHO by communicating the program's findings widely and to critical communities, like those highlighted in *Figure 15*.

Member organizations can serve as a conduit to effectively reach health care providers, investigators, and advocates for children's health issues. Keeping these interested parties informed at various stages of the research process helps ensure that accurate messages are communicated from a trusted source. From social media platforms and newsletters to events and web content, a variety of interested parties' channels can ensure that information reaches—and resonates—with a wider audience.

We will use several methods to gauge advancement toward this objective, including:

- Using engagement trackers and public engagement records to monitor outreach activities with interested party organizations and participation in relevant events.
- Leveraging social media analytics to evaluate reach and resonance of messages across platforms and audiences.
- Tracking dissemination of ECHO content through interested party channels and media mentions to assess visibility at both national and community levels.



Solution-oriented Research

Figure 15. ECHO Storytellers

Science has the greatest impact when research findings inform programs, practices, and policies. The Program Office is strengthening this translation by developing The ECHO Storyteller Local Champion Training Program, which enhances communication between ECHO investigators and local and state representatives To highlight how ECHO research benefits their communities. The Program Office also supports virtual spaces for peer learning and collaboration, helping researchers share strategies, explore engagement opportunities, and frame research questions that address end-user needs and can be more readily translated into actionable solutions.



By grounding our outreach in audience data and strategic communications, we aim to strengthen ECHO's presence, promote accurate messaging, and enhance trust in our work. By strengthening these connections and monitoring their outcomes, we aim to broaden awareness, deepen relationships, and foster champions who can help amplify ECHO's mission.

C. Translate ECHO science to action

Translating science to action reflects the ECHO Program's commitment to the mission to enhance the health of children for generations to come. Therefore, the Program Office invests critical resources to help bridge the gap between cutting-edge research and solutions to advance the development of children in the United States and beyond. Many end-user organizations—such as professional or member societies in the medical, research, and child advocacy communities—have a vested interest in this aspect of ECHO's work. The ECHO Program Office prioritizes engaging these end users to serve as consultants, partners, and champions for ECHO. The Program Office has identified primary interest groups that are central to increasing the reach of ECHO. By focusing on key target audiences, the Program Office aims to increase awareness, build strategic partnerships, and inspire support to amplify ECHO's impact.

- **Primary audiences:**
    - Professional and advocacy organizations
    - Federal partners, including NIH leadership, relevant trans-NIH working groups, NIH Institute, Center, and Office (ICO) representatives and communications directors, and other government offices
    - ECHO grantees, investigators, and research teams
    - Congress

The Program Office identified primary interest groups as those that can help extend its reach to a wider range of secondary audiences.

- **Secondary audiences:**
    - Journalists
    - Health care providers
    - Non-ECHO investigators
    - Public (parents, rural residents, underserved populations, and individuals affected by health conditions that fall under ECHO's outcome areas)

Some of the ways we will assess progress toward this objective include:

- Using engagement trackers to monitor participation in meetings with membership and advocacy organizations, as well as interactions with federal partners and NIH communications leaders.

- Analyzing social media analytics to assess reach, engagement, and trends in end user interest.
- Tracking citations of ECHO research in programmatic, policy, and practice documents to evaluate how ECHO findings inform the work of end users.

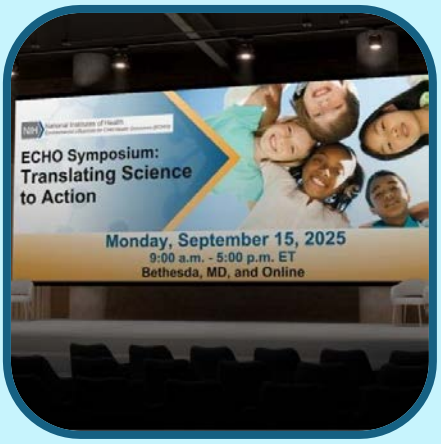
By sharing ECHO research findings to bridge the gap with end users, we create valuable opportunities for these partners to use ECHO findings in their work and incorporate them into clinical practice guidelines, policies, or programs that ultimately galvanize action to enhance children's health for generations to come.



Solution-Oriented Research

Figure 16. ECHO "Science to Action" Symposium

The ECHO Program Office now hosts an annual symposium to help translate science into action. The purpose of the symposium is to bridge the gap between cutting-edge research and end users who can shape health-focused programs, policies, and practices. This engagement strategy operates at two critical junctures; one that advances the dissemination of ECHO research into the hands of end users; and another that establishes connections that spur new high-impact science by identifying knowledge gaps where ECHO can make meaningful contributions. Symposium attendees include investigators, research participants, academic societies, non-governmental organizations, and local, state, and federal partners.



Conclusion

This strategic plan reflects both continuity and evolution in the strategies of the ECHO Program Office to advance child health research. By maintaining our commitment to organizational effectiveness and high-impact research while expanding our reach as a national resource, we build on the strong foundation we established over the first 10 years of ECHO's existence. The shift from establishing ECHO as a national pediatric research resource to expanding its reach positions the program to deliver greater return on public investment and, ultimately, greater impact for children and families. Through sustained focus on its three goals, the ECHO Program Office will strengthen its service as hub for child health research able to inform the programs, policies, and practices that enhance the health of children for generations to come.

Appendix A. Strategic Planning Process

Purpose and Structure of the Strategic Plan

The purpose of the ECHO Program Office Strategic Plan is to guide the efforts of the Program Office from 2026 through 2030 as it expands ECHO's role as a national research resource. The strategic plan emphasizes three overarching goals for the ECHO Program Office representing sustained efforts it will pursue for at least five years. Each goal has objectives involving more focused efforts lasting three to five years. Each objective is accompanied by specific success measures, allowing ECHO to monitor its progress and guide improvements.

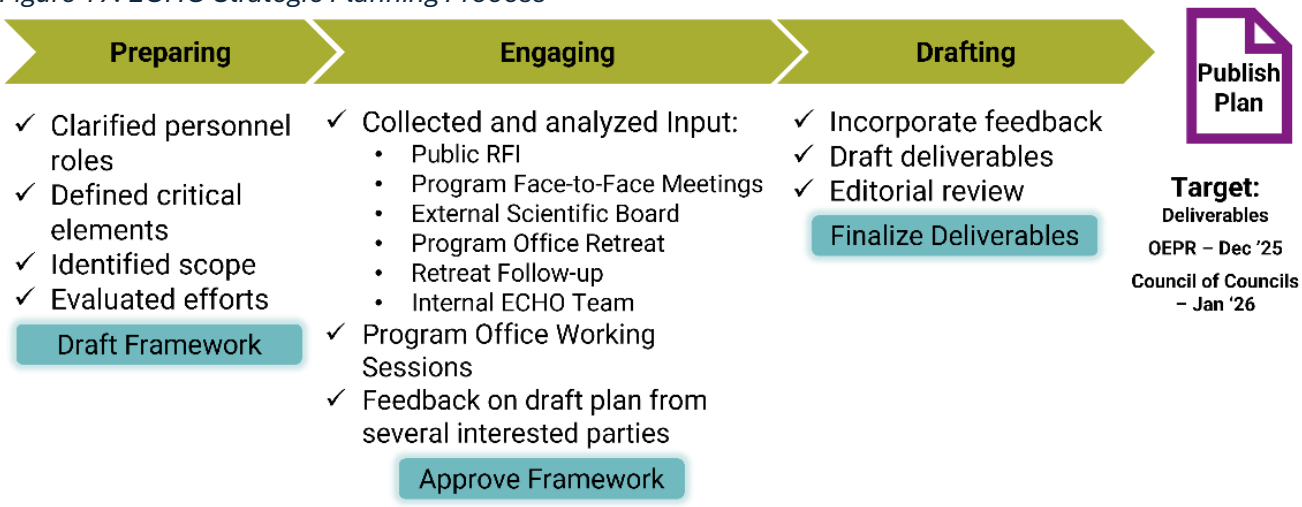
While the Program Office does not set scientific objectives or research priorities, the plan is informed by five broad observational research priorities for the ECHO Cohort Consortium and four intervention research priorities for the ECHO ISPCTN that investigators developed through collaborative, investigator-driven processes.

Goal-Setting Process

Duration: Approximately 1.5 years*

ECHO's strategic planning process followed a rigorous three-phase approach (see *Figure 17*) to ensure a thoughtful, informed, and actionable plan that authentically reflects the needs and aspirations of the ECHO community.

Figure 17. ECHO Strategic Planning Process



Phase 1: Planning and Preparation Timeline: January 2024–April 2024

The ECHO Program Office began by clarifying personnel roles, defining the scope of work, and identifying key strategic elements that would anchor our planning efforts. This phase included a comprehensive review of the 2020-2024 strategic plan to assess what worked well and where strategies needed improvement or evolution. We evaluated our organizational capacity to move forward and examined how our previous three goals—establishing ECHO as a national research resource, sustaining a well-functioning program office, and supporting a robust research enterprise—had been achieved and

what remained to be accomplished. These early insights informed the initial framework for the new plan and set the foundation for deeper stakeholder engagement.

Phase 2: Interested Party Engagement Timeline: April 2024–May 2025

This phase was particularly instrumental in shaping our goals and represented the most extensive consultation in ECHO's strategic planning history. ECHO shared a draft framework for the strategic plan through a public Request for Information (RFI) released April 5, 2024, inviting broad input from the research community and other interested parties. We then hosted a series of intensive engagement activities, including Program Face-to-Face Meetings in April 2024, External Scientific Board consultations in June 2024, a full-day Program Office Retreat in August 2024 with structured follow-up sessions, Internal ECHO Team discussions, and dedicated Program Office Working Sessions focused on translating input into actionable strategies.

The bulk of our goal-setting emerged from candid staff feedback about our successes, challenges, opportunities, and threats—what we often refer to as our "SCOT analysis." We systematically mapped this feedback to our previous three goals, identifying achievements to celebrate, ongoing needs requiring sustained attention, and emerging areas demanding new strategic directions. These diverse engagements helped refine the framework to better align with partner needs, emerging challenges in child health research, and evolving program goals that reflected both scientific advances and operational realities.

Phase 3: Drafting and Refinement Timeline: May 2025–January 2026

The strategic planning team incorporated feedback from parties internal and external to NIH as they drafted the strategic plan. The team finalized the strategic plan for NIH approval and developed materials to present to the Council of Councils.

The result is a set of goals that authentically reflects the collective wisdom of the ECHO community—from investigators and staff to external partners and scientific advisors—and positions us for sustained impact in the 2026-2030 period and beyond. This strategic plan offers a sound framework to help ECHO chart a path forward, assess its progress over time, and adapt its trajectory toward continued success in transforming children's health outcomes.

*This process extended over a longer timeline than anticipated. The duration was influenced by competing programmatic activities, evolving public health goals, shifts in the research landscape, and the need to ensure meaningful engagement with a diverse interested party community. Ultimately this extended timeline strengthened the plan by allowing us to incorporate emerging insights and respond to a changing environment.

Appendix B. Key Measures of Success

ECHO Program Office success relies on the cooperation of our staff, awardees, investigators, and research staff to meet the goals described in this strategic plan. The following table highlights the key success measures highlighted in this plan that the Program Office to determine and enhance the extent of ECHO's success.

Goal/Objective	Success Measures
Goal 1: Enhance Organizational Effectiveness	
Promote a mission-driven organization	**Engagement Trackers** • Team building activities **Staff Surveys** • Annual staff questionnaire
Refine operational resources	**Engagement Trackers** • Skill building activities, trainings **Staff Surveys** • Pulse surveys
Strengthen interpersonal cohesion	**Engagement Trackers** • Team building activities • 1:1 Meetings with ECHO leadership **Staff Surveys** • Annual staff questionnaire
Goal 2: Enable High-impact Research	
Empower investigators with research awards	**Engagement Trackers** • NIH ICO collaborations **NIH Systems Data** • Portfolio analysis, publication bibliometrics • Research Performance Progress Reports
Implement practices for innovative research	**NIH Systems Data** • Research Performance Progress Reports **Staff Surveys** • Annual staff questionnaire • Pulse surveys
Support ECHO research dissemination	**NIH Systems Data** • Research Performance Progress Reports • Publication bibliometrics
Goal 3: Expand ECHO's Reach	
Promote ECHO as a national research resource	**Engagement Trackers** • Federal partnerships **NIH Systems Data** • Data-use reports of ECHO publicly available data • NIH ICO collaborations
Cultivate national and local awareness of ECHO	**Engagement Trackers** • Meetings with membership-advocacy organizations • Social media analytics • Public engagements
Translate ECHO science to action	**Engagement Trackers** • Meetings with membership-advocacy organizations • Social media analytics **NIH Systems Data** • Publication citations in programs, policies, and practices

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