ECHO Cohort Biospecimens Policy

I. Introduction and Purpose

This document provides the overarching policy for biospecimens that the ECHO Cohort Consortium (Consortium) collects, stores, and uses. This policy directs 1) the standardized collection, processing, and storage of biospecimens; 2) the use of biospecimens, including access to biospecimens and the management of biospecimens during use; 3) the management of data generated by assay of biospecimens and transfer to the ECHO Cohort Data Platform; and 4) the preservation and use of ECHO biospecimen reserves, all according to processes that the Consortium establishes.

II. Scope

This ECHO Cohort Biospecimens Policy (Biospecimens Policy) applies to all Consortium components, investigators, site teams, writing teams, committees, subgroups, and task forces involved in any aspect of the lifecycle of biospecimens collected from ECHO's research participants in accordance with the ECHO Cohort Data and Biospecimen Collection Protocol (ECHO Cohort Protocol).

III. Definitions

Refer to the ECHO Glossary for full list of ECHO terminology.

IV. Policy

A. ECHO Biospecimens Collection, Processing, and Storage

This policy requires the ECHO Cohort Study Sites (Study Sites) to collect biospecimens in a standardized manner by following all Consortium-approved procedures. Study Sites must send all biospecimens collected under the ECHO Cohort Protocol to the ECHO Biorepository (Biorepository), operated by the ECHO Laboratory Core (Laboratory Core), unless the NIH ECHO Program Office provides special permission to keep the specimens on site. For biospecimens shipped from Study Sites to the Laboratory Core, Study Sites must label the biospecimens without including any personally identifiable information on the labels or packaging. Study Sites must enter biospecimen data into the Bio-Track system hosted by the ECHO Data Analysis Center (Data Analysis Center). The Laboratory Core and Data Analysis Center must work together to integrate data systems for biospecimen management and ensure that records are accurate.

1. Types of Biospecimens

The Consortium collaboratively decides what types of biospecimens that the ECHO Protocol specifies for Study Sites to collect. The Consortium may revise the Protocol based on the emergence of new research questions or priorities.

2. **Participant Sensitivities**

   Collection procedures must be sensitive to 1) the amount of the biospecimens that is acceptable and feasible for participants to donate at different life stages; 2) cultural considerations of study participants; and 3) minimization of invasive procedures.

3. **Biospecimen Quality and Volume**

   The Study Sites, Laboratory Core, and Data Analysis Center must develop and implement standard operating and quality-control procedures that minimize the likelihood of biospecimen mislabeling, loss, and contamination during handling. Study Sites must follow the standardized biospecimen collection and processing procedures in the ECHO Cohort Protocol and Manual of Operating Procedures.

   Study Sites should attempt to collect the requisite volume or quantity of biospecimens as specified in the ECHO Cohort Protocol. Study Sites must document collections, including attempted collections, and any deviations from approved procedures in Bio-Track.

B. ECHO Biospecimen Use

This Biospecimens policy ensures that investigators use ECHO Cohort biospecimens in accordance with 45 CFR 46 for the protection of human research subjects and HIPAA (45 CFR 160 and 164) for the protection of individually identifiable health information. Key considerations for the use of ECHO Cohort biospecimens are their potential contribution to advancing the scientific priorities of the Consortium including impact, feasibility, and return.

- **Impact**

  The Consortium emphasizes solution-oriented research to maximize the potential impact of its research, including the use of biospecimens.

- **Priorities**

  The Consortium periodically sets scientific priorities to help guide its selection of analyses involving ECHO Cohort biospecimens.

- **Feasibility**

  Following the Consortium's Analysis Pipeline Process (Analysis Pipeline Process) and Ancillary Studies Process, the Data Analysis Center and Laboratory Core provide a feasibility assessment for those proposed analyses that indicate a need to use ECHO Cohort biospecimens.

1. **Use of Biospecimens in Analyses**

   a. **Proposing Use of Biospecimens**

   Investigators from inside and outside the Consortium can propose to use ECHO Cohort biospecimens.

   To propose biospecimen use with ECHO funding, ECHO investigators must begin with an analysis concept according to the Consortium's Analysis Pipeline Process and ECHO Cohort Publications Policy. To propose biospecimen use with non-ECHO funding

(ancillary studies), investigators inside and outside of ECHO must follow the Ancillary Studies Process according to the ECHO Cohort Ancillary Studies Policy.

b. Review of Biospecimen Use

The ECHO Cohort Steering Committee, or group they appoint, reviews proposals to use biospecimens funded by ECHO or for ancillary studies (non-ECHO funded) by considering potential scientific impact, alignment with ECHO's scientific priorities, and technical feasibility.

The Laboratory Core and Data Analysis Center, in cooperation with the Steering Committee or group it appoints, must ensure the feasibility and quality of biospecimen assays and the quality of resulting biospecimen assay data. In evaluating use of biospecimens, the Laboratory Core and Data Analysis Center should consider the balance of scientific value, availability of biospecimens, and cost of both storage and assays.

The Laboratory Core, Data Analysis Center, and Consortium investigators should work cooperatively to identify opportunities to maximize data generated from assays of ECHO's biospecimens.

For ancillary studies, the review group appointed by the Steering Committee must make recommendations to the Steering Committee for issuing Letters of Collaboration. Letters of Collaboration from the ECHO Cohort Consortium for proposed ancillary studies do not constitute final approval of biospecimen use.

c. Approval of Biospecimen Use

ECHO-funded Biospecimen Use: The Steering Committee can grant penultimate approval of biospecimen use at the Analysis Proposal stage of the Analysis Pipeline Process. Ultimately, the NIH ECHO Program Office (Program Office) makes the final decisions to fund assays to support analysis proposals using ECHO funds.

Biospecimen Use in Ancillary Studies: In most cases, the Steering Committee should decide to provide final approval of biospecimens used for ancillary studies (non-ECHO funded) at the Analysis Proposal stage of the Analysis Pipeline Process. However, if a major issue arises that causes the Steering Committee to consider rejecting biospecimen use at the Analysis Proposal stage, the Steering Committee must consult with the Program Office for guidance on whether to decide to reject the Analysis Proposal.

d. Restrictions for Biospecimen Use

Investigators cannot request or reserve biospecimens that Study Sites have yet to collect under the ECHO Cohort Protocol.

2. Metadata for Biospecimen Tracking and Use

To facilitate biospecimen use, reduce wasted effort, and minimize over-promising, the Data Analysis Center must ensure that biospecimen data records are up to date in the ECHO Cohort Data Platform and in compliance with biospecimen use limits, as documented in

participant's consent. To help clarify biospecimen availability, the Laboratory Core and Data Analysis Center must track and report biospecimens requested for Steering Committee-approved analysis proposals and denote for Consortium tracking the use of which biospecimens may support Analysis Proposals or funding applications for ancillary studies that are pending.

3. Management of Biospecimens During Use

For all biospecimens retrieved from the Biorepository, the Laboratory Core must ensure that samples are properly labeled, handled, and used by means to prevent biospecimen loss and participant identification before, during, and after analysis. Prior to performing assays, laboratories, including the ECHO Laboratory Core, must document quality assurance measures such as assay validation, reference materials, appropriate sample blanks, limits of detection, and other quality control measures. When shipping biospecimens, the labeling and packaging should be free of any personally identifiable information.

ECHO Laboratory Core determines if Material Transfer Agreements are necessary to transfer biospecimens from the Biorepository to any contracted outside laboratories. If the Laboratory Core determines an outside laboratory must return residual biospecimens after assay completion, the Laboratory Core, Data Analysis Center, and any contracted outside laboratories must follow the processes the Consortium establishes to handle the residual biospecimens. For biospecimens shipped from any contracted outside laboratories to the Laboratory Core, the contracted outside laboratories must label the biospecimens without including any personally identifiable information on the labels or packaging.

C. Management of Data Generated by Assay of Biospecimens

1. Data Security Plan and Other Agreements

Prior to receiving biospecimens, users of ECHO biospecimens must indicate how they plan to return data resulting from assays and derived data from analyses in their Material Transfer Agreements and Data Transfer Agreements. Therefore, users of ECHO biospecimens and data must submit a Data Security Plan when applying for access to these resources. Users must also sign a Data and Biospecimen Use Agreement before gaining access to biospecimens or limited identifiable data. To protect personally identifiable information, users of ECHO biospecimens must keep identifying information separate and exclude individual identifiers from data they report to the Data Analysis Center. Each year, users of ECHO biospecimens must provide a status report on their management of data and biospecimens to NIH, according to NIH ECHO Program Office requests.

2. Data Checks and Transfer of Biospecimen Assay Data to the ECHO Cohort Data Platform

The Laboratory Core, outside contracted laboratory, or ancillary study investigators (Users) are responsible for submitting all requisite data resulting from use of biospecimens directly to the Data Analysis Center's ECHO Cohort Data Platform, as all data transfer agreements with ECHO should specify. The user must complete all assay data quality checks and transfer all biospecimen assay data (including metadata) to the Data Analysis Center in the requisite format within 60 days of assay completion, unless the Data Analysis Center specifies a

longer time allowance in writing. Users must retain local copies of assay data until the Data Analysis Center has verified and checked transmitted datasets and confirmed in writing with the user that transfer of the data are complete. If the Laboratory Core generates the data, the Laboratory Core must provide the final data, including a file checksum for verification, to the Data Analysis Center within 60 days of assay completion. The Data Analysis Center must then make the data available on the ECHO Cohort Data Platform after completing data cleaning. Except for the Data Analysis Centers previously approved, periodic mass data returns, the Data Analysis Center does not return biospecimen assay results directly to ECHO investigators, ancillary study investigators, or any other parties. All aspects of the ECHO Cohort Data Sharing and Use Policy apply to biospecimen assay data on the ECHO Cohort Data Platform.

3. **Data and Residual Biospecimen Management at Project Conclusion**

   At the conclusion of the assay or ancillary study project, users and outside contracted laboratories must coordinate with the NIH ECHO Program Office, Data Analysis Center, and Laboratory Core to specify residual biospecimen management in the Material Transfer Agreements and Data Transfer Agreements. Destruction of ECHO biospecimen assay data (after completing transfer of all requisite data to the Data Analysis Center) and/or ECHO residual biospecimens (not returned to the Laboratory Core) after project conclusion requires explicit and written approval from the NIH ECHO Program Office.

D. ECHO Biospecimen Reserve

ECHO seeks to maximize scientific and public health impact by balancing the timely use of biospecimens to generate data for analyses with conservation of valuable biospecimens for future science questions.

The Laboratory Core and Data Analysis Center must monitor the depletion of biospecimens in the Biorepository and report to the Steering Committee on the status of used and remaining biospecimens quarterly, at a minimum., to determine when approaching the minimum reserve volume for study participants.

For any analysis proposal that requests the use of ECHO biospecimens, the Data Analysis Center must check the remaining number of aliquots or sample volumes.

The Program Office is responsible for reviewing Biorepository status reports, requisite requests, and justifications to use the final aliquots or volumes of biospecimens for proposals. The Program Office is also responsible for deciding whether to approve well-justified use of final biospecimen aliquots or volumes.

V. Review and Revision

Review of ECHO Cohort Consortium policies occurs at least every three years; however, as processes change or circumstances evolve, this may warrant additional review and revision of this policy and associated documents.

VI. Supporting Documents

None

VII. References

A. HHS Regulation 45 CFR 46
B. HIPAA Privacy Rule (45 CFR 160 and 164)

VIII. Attachments

None

IX. History of Change

Version Number	Effective Date	Section Affected	Summary of Changes
4.1	24Sep2026	IV.B.1.b.	Changed terminology for ancillary studies to switch from use of Letters of Support to Letters of Collaboration.
4.0	25Jun2025	IV	Updated Section IV.B (ECHO Biospecimen Use) and IV.C (ECHO Biospecimen Reserve). Also included small editorial revisions throughout.
3.0	01Sep2023	Entire policy	Revised policy to support ECHO Cycle 2.
2.0	08Jul2019	Entire policy	Included ECHO affiliates, extended timeframe to share TYPE A specimens towards two approved analysis proposals, removed referenced to existing biospecimen meta-database, and clarified language throughout the document.
1.0	08Nov2017	N/A	New Policy

Approval Page

Name/Title	Approval Date
NIH ECHO Program Office	25Jun2025