



Cost Estimates and Budget Planning

Comprehensive Cost Framework for Biospecimen Access, Data Management, and Return of Value to Participants

All of Us Biobank

In 2017, the *All of Us* Research Program established the *All of Us* Biobank at Mayo Clinic in Rochester, Minnesota. Mayo Clinic developed dedicated processes and facility space to support the program's needs. The Biobank receives blood, urine, and saliva samples collected from participants and manages the processing, storage, and distribution of these biospecimens for research use. These biospecimens serve as a centralized resource that supports a wide range of scientific inquiries, accelerates medical discovery, and advances public health.

Cost Considerations for X01 Applicants

This X01 announcement does not provide funds for any costs related to the proposed research project. Applicants are responsible for providing their own funding to cover all costs associated with conducting the proposed research under the auspices of *All of Us* partnered research studies. All proposed activities related to 1) biospecimen handling and distribution; 2) data collection, curation, management, and sharing through the All of Us Researcher Workbench and 3) returning value to *All of Us* participants must be funded by the X01 awardee. The following list of cost considerations is intended to guide X01 applicants in planning resource allocation and funding for their proposed project. Final costs associated with the execution of each proposed study activity will be determined in close coordination with *All of Us* staff and communicated to successful applicants to support separate applications for funding.

Biospecimen Related Cost Estimates

X01 applicants approved by *All of Us* to access biospecimens will provide funds for the handling and distribution of biospecimens, as well as the costs incurred related to data processing required for the study.

The table below outlines two common biospecimen requests and an estimated cost per sample. Please note that these estimates may change, as methods used in the lab are continually being optimized and costs may change over time.



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Additionally, particular handling requests, such as special tubes, special labeling, and specific plating format (e.g., for randomization), will cause cost variability. The *All of Us* Biobank offers flexible aliquoting services to accommodate a wide range of tube types, plate formats, labeling options, and no-label configurations.

Typical Biospecimen Requests	Cost Estimate
Pull sample (DNA, plasma, or serum), aliquot (tube to tube), label aliquot tube, and packaging	\$14.00 per tube
Pull sample (DNA, plasma, or serum), aliquot (tube to 96 well plate), and packaging	\$9.00 per tube

In addition to the costs listed in the table above, X01 applicants should also factor in shipping expenses. International Air Transport Association (IATA) trained staff at the *All of Us* Biobank will prepare samples for global shipment using multiple courier services, including FedEx, UPS, USPS, Markin, and World Courier. Although FedEx is Mayo Clinic's preferred partner, courier selection may vary based on specific logistical needs. Samples will be shipped at frozen temperatures, with both domestic and international shipments supported. Shipping manifests are provided upon shipment of specimens.

Data Management Cost Estimates

Newly generated assay data from approved *All of Us* biospecimens must be returned to *All of Us* Data and Research Center (DRC). X01 awardees will return curated, release-ready biospecimen assay data to the *All of Us* Researcher Workbench to support broad researcher use and maximize scientific impact through publications and other outputs. Along with returning assay data, awardees will be required to create or support researcher-facing materials, such as support articles, featured Researcher Workbench workspaces, data dictionaries, approved code, and when appropriate, generate publications.



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The DRC offers additional services for data management such as:

- Operational data management and storage
- Study consultation (analysis, cohort selection)
- Data harmonization and release of study data to the Researcher Workbench
- Development of research support materials and communications to researchers

The estimates below represent a combination of these data management services that can be made available for small study types, such as those with a few thousand participants, to larger studies, such as those using all *AoU* participant genomics data. In addition, awardees should budget for cloud computing costs required to analyze X01-generated data in the *All of Us* Researcher Workbench. For more information, see [What to Know About Costs](#).

Data Management by Study Scale	Cost Estimate
Small <i>Exploratory, pilot-scale studies</i>	\$5,000-\$60,000
Medium <i>Targeted, medium cohort, biospecimen sequencing or data-generating analyses</i>	\$60,000-\$100,000
Large <i>Comprehensive, large cohort, multiple assays, full-scale, complex analyses</i>	\$100,000-\$450,000 +

While these cost estimates provide a framework of the cost associated with services, the final cost will be determined by the study scope, requirements and activities.



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Return of Value Cost Estimates

The *All of Us* Research Program seeks to promote and maintain long-term trust and engagement with participants as partners in research. Partnered research study investigators are expected to propose a return of value (ROV) plan including creation of materials, engagement and outreach techniques, or communications strategies to ensure *All of Us* participants receive meaningful information that engages them in the program. The ROV plans will be finalized and implemented in close coordination with *All of Us* program staff.

Examples of ROV may include, but are not limited to:

- Sharing highlights of study accomplishments with participants
- Broad dissemination of educational materials
- Reporting of aggregate results
- Lay audience presentations, listening sessions, and/or participant convenings

To assist X01 applicants with budget planning for returning value to *All of Us* participants, the table below outlines common ROV strategies and associated cost estimates. These strategies, and others not included here, are not mutually exclusive and may be used in combination to engage participants in research.

ROV-related Activity	Cost Estimate
Share study-related content with participants (e.g., study highlights, summary of findings, educational materials) through the <i>All of Us</i> Participant Portal	\$7,500 - \$19,000
Share study-related content with participants through an <i>All of Us</i> webpage	\$7,500 - \$12,600
Share study-related content with participants through email and SMS	\$7,800-\$10,500



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Share study-related content with participants through email and SMS	\$7,800-\$10,500
Share study-related developed web content with participants through email and SMS	\$15,000-\$18,500
Share study-related content with participants through an article in the <i>All of Us</i> Newsletter, using the existing template or creating a new template	\$4,300-\$10,500
Host a small listening session with participants using the existing <i>All of Us</i> participant convening channels	\$110/per participant
Host a large virtual educational meeting with participants using the existing <i>All of Us</i> participant convening infrastructure	\$60,000-\$80,000