

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

### What will it cost to store and access samples at the NSW Health Statewide Biobank?

The NSW Health Statewide Biobank offers a range of service options for researchers to store biospecimens and to access biospecimens stored as part of external collections. Costs vary depending on requirements. To ensure long-term viability of the biobank, all costs are based on a cost recovery model.

A breakdown of the costs are included on pages 2-3, with cost inclusions defined on pages 4-7.

Service models take into account:

- Transitioning legacy collections into the statewide facility
- Management of existing collections
- Collection, processing and management of new collections
- Specimen retrieval.

Other factors that may impact cost include:

- Compatibility of sample format of legacy bio-specimens with instruments
- Requirements for ongoing maintenance of equipment
- Data migration requirements
- Transportation requirements.

### Additional Information

- Sample receipt costs are based on the NSWHSB Standard Sample Acceptance Criteria (see Appendix 1).
- Costings do not include transportation outside of the NSW Health Pathology network. All additional transport costs will be charged at the external contractor's rate.
- Transportation within the NSW Health Pathology network meets best practice standards and is suitable for non-urgent transport.
- NSW Health Statewide Biobank has preferred high quality cryogenic plasticware. Please consult before beginning a prospective collection for advice.
- Costs do not include data entry into external databases.
- NSW Health Statewide Biobank will not accept the storage of whole freezers that are past the end of their useful life (as determined via [Australian Tax Office Guide to Depreciating Assets](#)).
- Once an externally-owned freezer reaches its fully depreciated life with the NSW Health Statewide Biobank, the owner will be notified, and contents will be moved and charged on the Sample / Year (or part thereof) model.
- Back-up freezer storage for contingency and disaster plans can be facilitated for the Whole Freezer Storage / Year (or part thereof) prices. Legacy Collection Transfer fees are not applicable in this case.

***For further information on service models and costs, please contact NSW Health Pathology's Biobank on 02 4920 4139 or [NSWPATH-Biobanking@health.nsw.gov.au](mailto:NSWPATH-Biobanking@health.nsw.gov.au)***

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## NSWHSB-IS-005: Service models and costs

### Pricing

The costs below are indicative pricing only. See pricing descriptions for inclusion details.  
For a formal quote please contact your local NSW Health Pathology Biobank (02 4920 4139).

| Description  | Commercial         | Non-commercial     |
|--|--------------------|--------------------|
| <b>Project Start Up</b>  |                    |                    |
| Project establishment fee (per application)  | \$500.00           | \$100.00           |
| <b><u>Specimen Collection, Handling &amp; Processing</u></b>   |                    |                    |
| Specimen Collection / Donor / Timepoint  |                    |                    |
| <ul style="list-style-type: none"> <li>Collection only (at Biobank or in Pathology (no transport))</li> </ul>  | \$15.00            | \$15.00            |
| <ul style="list-style-type: none"> <li>Collection and transport to NSW Statewide Biobank / Donor / Timepoint</li> </ul>  | \$25.00<br>\$35.00 | \$25.00<br>\$30.00 |
| <ul style="list-style-type: none"> <li>Collection immediate pre-processing at collection site (prior to transport) and transport to the NSW Statewide Biobank / Donor / Timepoint</li> </ul> |                    |                    |
| Specimen Receipt / Donor / Timepoint   | \$19.50            | \$12.50            |
| Sample Processing / Donor / Timepoint ( <b>max. 6 aliquots</b> )   |                    |                    |
| <ul style="list-style-type: none"> <li>Handling only (e.g. controlled rate freezing)</li> </ul>  | \$12.00            | \$7.50             |
| <ul style="list-style-type: none"> <li>Simple processing (e.g. 1 spin &amp; aliquot)</li> </ul>  | \$25.00            | \$15.00            |
| <ul style="list-style-type: none"> <li>Medium processing (e.g. 2 spins &amp; aliquot)</li> </ul>   | \$40.00            | \$25.00            |
| <ul style="list-style-type: none"> <li>Complex processing (e.g. procedures including cell pellet wash steps)</li> </ul>  | \$47.00            | \$30.00            |
| Note: max 6 aliquots; each additional aliquot is \$1.00/aliquot  |                    |                    |
| PBMC Processing using Lymphoprep/SepMate protocol. Options for storage media:  |                    |                    |
| <ul style="list-style-type: none"> <li>PBS, 10% DMSO</li> </ul>  | \$65.00            | \$40.00            |
| <ul style="list-style-type: none"> <li>Fetal Calf Serum, RPMI, 10% DMSO</li> </ul>   | \$74.00            | \$47.00            |
| <ul style="list-style-type: none"> <li>CryoStor (Xeno-free, cGMP grade)</li> </ul>   | \$81.00            | \$52.00            |
| Max 2 aliquots (additional aliquot \$5.00 each)  |                    |                    |
| Blood DNA Extraction and Quality Control / Sample  | \$25.75            | \$16.50            |
| Blood RNA Extraction and Quality Control / Sample  | \$30.50            | \$19.50            |

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

### **Tissue Receipt, Consolidation & Processing**

|   |         |         |
|---|---------|---------|
| Bulk Receipt of Block or Slide / Block or Slide | \$1.00  | \$0.70  |
| Bulk Tissue Consolidation / Block or Slide      | \$1.00  | \$0.70  |
| Tissue Processing and Embedding / Block         | \$7.50  | \$5.00  |
| Microtomy / Slide or Scroll                     | \$7.50  | \$5.00  |
| Cryosectioning / Section                        | \$30.00 | \$20.00 |
| H&E Staining / Slide                            | \$10.00 | \$7.00  |
| Special Staining / Slide                        | \$30.00 | \$20.00 |

### **Slide Scanning**

|                                 |        |        |
|---------------------------------|--------|--------|
| Whole Slide Imaging (per image) | \$4.35 | \$2.90 |
|---------------------------------|--------|--------|

### **Receipt & Consolidation of Bulk Frozen Samples**

|  |            |            |
|--|------------|------------|
| Receipt of Legacy Collection (per transfer)  | \$3,900.00 | \$2,500.00 |
| Bulk Receipt of Frozen Samples / cryovial  | \$1.50     | \$1.00     |
| Consolidation of Bulk Frozen Samples / cryovial  | \$1.50     | \$1.00     |
| Receipt of bulk frozen samples in cryostorage boxes with supplied electronic inventory / box | \$30.50    | \$19.50    |

### **Storage and Retrieval**

|  |           |            |
|--|-----------|------------|
| Freezer Storage / Sample / Year (or part thereof)                            | \$0.80    | \$0.50     |
| LN2 Storage / Sample / Year (or part thereof)                                | \$1.60    | \$1.00     |
| Retrieval + Despatch Freezer / Batch   | \$160.00  | \$100.00   |
| Retrieval + Despatch LN2 / Batch   | \$160.00  | \$100.00   |
| Retrieval + Despatch Room Temp / Batch                                       | \$80.00   | \$50.00    |
| Whole Freezer Storage / Year (or part thereof)                               | \$4000.00 | \$2,500.00 |
| Slide Storage (room temp) / Box (100, includes box) / Year (or part thereof) | \$55.00   | \$35.00    |
| Slide Storage (room temp) / provide own box / Year (or part thereof)         | \$7.80    | \$5.00     |
| Guthrie Card Storage (per card) / Year (or part thereof)                     | \$0.05    | \$0.01     |

**Requirements outside those listed here will be determined on a case-by-case basis.**

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

### Description of inclusions in pricing

| Description   | Inclusions   |
|---|--|
| <b>Project Start-up</b>                               |  |
| Site project establishment fee                        | Protocol and project review (including ethics and laboratory manual review), discussions with lab managers and logistical/transport coordination, agreement and billing system setup. Ongoing administration including reporting.  |
| <b>Specimen Collection, Handling &amp; Processing</b> |  |
| Specimen collection                                   | <p>Collection: Specimen (blood/urine) collection by NSW Health Pathology phlebotomists and staff (standard containers/tubes/swabs only; speciality blood tubes/containers are <u>not</u> included).<br/>The location of NSW Health Pathology Collection centres can be found at: <a href="https://www.pathology.health.nsw.gov.au/dealerlocator/locator.aspx?typeid=">https://www.pathology.health.nsw.gov.au/dealerlocator/locator.aspx?typeid=</a></p> <p>Specimen transport to the NSW Statewide Biobank is <u>non-urgent</u> transport from NSW Health Pathology Collection Centres to the NSW Statewide Biobank.</p> <p>Collection and immediate pre-processing at collection site (prior to transport): Specimen collection as above plus routine processing (e.g. single centrifugation, aliquoting and refrigeration/freezing) prior to transport to NSWHSB.</p>   |
| Specimen receipt                                      | Receipt of samples (per donor). Cost is based on standard sample acceptance criteria (see appendix 1), troubleshooting and sample tracking. Maximum number of tubes/vials/containers/samples per donor is 10. Additional biospecimens will be charged at \$1.00 each.  |
| Sample Processing                                     | <p>Processing per standard operating procedure (SOP). All processing includes a maximum of 6 aliquots. Additional aliquots will be charged at \$1.00 per aliquot.</p> <ul style="list-style-type: none"> <li>• <u>Handling only</u>: e.g. controlled rate freezing</li> <li>• <u>Simple processing</u>: e.g. sample fractionation with single spin and aliquoting.</li> <li>• <u>Medium processing</u>: e.g. sample fractionation with double spins and aliquoting and/or use of reagent(s); any time-critical processing</li> <li>• <u>Complex processing</u>: e.g. procedures requiring more than liquid handling, such as manual manipulation of material, for example: cell pellet wash steps.</li> </ul> <p>The prices above do not include: kit costs or specialised reagents.</p> <p>Some processing (e.g. large number of samples, time-critical processing, complex processing) may require additional temporary staff which will be costed at approximately \$42/hr plus 12% on costs.</p> |

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

|   |   |
|---|---|
| PBMC Processing   | <p>PBMC isolation using a modified SepMate/Lymphoprep protocol as follows:<br/>           Dilution (PBS)<br/>           Density Gradient Separation using Lymphoprep<br/>           2 X Cell Pellet washes with PBS<br/>           Cryopreservation with a selection of:</p> <ul style="list-style-type: none"> <li>• PBS, 10% DMSO</li> <li>• RPMI, 10% DMSO, Heat-Inactivated Fetal Calf Serum</li> <li>• CryoStor (xeno-free cryoprotectant, cGMP grade)</li> </ul> <p>Controlled-rate freezing.<br/>           Storage (2 aliquots)</p> <p>Additional aliquots will be charged at \$5.00 per aliquot.</p> |
| Blood DNA Extraction and Quality Control                                | <p>Extractions performed as a batch procedure.<br/>           Batch sizes: 16, 32, 64, 96<br/>           Input specimen type: Whole Blood, Buffy Coat<br/>           Input volume: Up to 350uL.<br/>           Output Volume: 50-200uL.<br/>           Elution buffer: 10mM Tris-HCl, pH 8.5 or as per request.</p> <p>QC includes:<br/>           DNA quantification (fluorescent dye based) on all specimens.<br/>           1X representative DIN per 8 specimens.</p> <p>1 aliquot included.<br/>           Additional dilutions charged per aliquot</p>  |
| Blood RNA Extraction and Quality Control                                | <p>Extractions performed as a batch procedure.<br/>           Batch sizes: 16, 32, 64, 96<br/>           Input specimen type: Whole Blood, Buffy Coat, Plasma/Serum<br/>           Input volume: Up to 350uL.<br/>           Output Volume: 50-200uL.<br/>           Elution buffer: RNase free water, or as per request.</p> <p>QC includes:<br/>           RNA quantification (fluorescent dye based) on all specimens.<br/>           1X representative RIN per 8 specimens.</p> <p>1 aliquot included.<br/>           Additional dilutions charged per aliquot</p>  |
| <b>Receipt and Consolidation of Bulk Room Temperature Samples</b>       |   |
| Bulk Receipt of Samples at Room Temperature / Sample (e.g. Block/Slide) | <p>Receipt of more than 10 room temperature samples per shipment. Cost is per sample (e.g. slide/block). Samples must have barcodes or printed labels (hand written labels will be costed separately).<br/>           Smaller numbers of room temperature samples are costed per donor (see Specimen Receipt / Donor / Timepoint).</p>  |

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

|  |   |
|--|---|
| Consolidation of Samples at Room temperature / Sample (e.g. FFPE Block or Slide) | Accessioning and consolidation of room temperature samples (e.g. FFPE block or slide). Electronic inventory provided by client.   |
| <b>Tissue Processing</b>   |   |
| Tissue Processing and Embedding / Block  | The process to prepare and embed tissue into a paraffin block. Cost per block.  |
| Microtomy / Slide or Scroll  | Cutting thin sections of tissue from the block. Cost per standard slide or scroll. Special slides are not included.   |
| Cryosectioning / Section   | Cutting of frozen tissue sections. Cost per section and includes standard slides. Special slides are not included.  |
| H&E Staining / Slide   | Hematoxylin and eosin stain includes staining of tissue as part of slide preparation. H&E is the most commonly used stain (low cost consumable).  |
| Special Staining / Slide   | Includes staining of tissue as part of slide preparation with a non-routine stain.  |
| <b>Slide Scanning</b>  |   |
| Whole Slide Imaging (per image)  | Imaging of clean, good quality slides. Cost per image. Additional costs apply if slides are poor quality (e.g. dirty, broken cover slips etc).  |
| <b>Receipt and Consolidation of Bulk Frozen Samples</b>                          |   |
| Receipt of Legacy Collection   | Receipt of existing collections (per transfer) for storage. The collection must have an electronic inventory. Cost includes inventory verification per box only (not per sample). See consolidation of frozen samples below if sample verification is required.           |
| Receipt of Bulk Frozen Samples / container (e.g. cryovial)                       | Receipt of more than 10 frozen samples per shipment. Containers must have barcodes or printed labels (hand written labels will be costed separately). Cost is per cryovial. Smaller numbers of cryovials are costed per donor (see Specimen Receipt / Donor / Timepoint). |
| Consolidation of Bulk Frozen Samples / cryovial                                  | Accessioning and consolidation of frozen samples. Electronic inventory provided by client.  |
| <b>Storage and Retrieval</b>   |   |
| Freezer Storage / Year or part thereof   | Cost of storage in a -20 or -80°C freezer (per sample, per year or part thereof) For cryovials up to 2mL.   |
| LN2 Storage / Year or part thereof   | Cost of storage in vapour phase liquid nitrogen freezer (per sample, per year or part thereof). For cryovials up to 2mL   |

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

|   |   |
|---|---|
| Retrieval + Despatch Freezer                                    | Costs to retrieve and package a batch of samples and prepare for transport. Does not include courier fees.  |
| Retrieval + Despatch LN2 / Batch                                | Costs to retrieve and package a batch of samples and prepare for transport. Does not include courier fees.  |
| Retrieval + Despatch Room Temp / Batch                          | Costs to retrieve and package a batch of samples and prepare for transport. Does not include courier fees.  |
| Whole Freezer Storage / Year or part thereof                    | Cost to store an entire freezer (e.g. -80°C) at the NSW Statewide Biobank. Costs include (e.g. electricity; monitoring of alarm/emergency response); costs exclude preventative maintenance and repair. |
| Slide Storage (room temp) (includes box) / Year or part thereof | Cost of yearly storage (per box holding 100 slides) of slides at room temperature. Includes the cost of the storage box.  |
| Slide Storage (room temp) / Year or part thereof                | Cost of yearly storage (per box holding 100 slides) of slides at room temperature. Does <u>not</u> include the cost of the storage box.   |
| Guthrie Card Storage / Year or part thereof                     | Cost of yearly storage of per Guthrie card.   |

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

### Appendix 1: NSW Health Statewide Biobank Standard Sample Acceptance Criteria

#### Documentation Errors and Omissions:

- Information not completed on a request form will be recorded as declared on the accompanying specimen label.
- Information not completed on a specimen label will be recorded as declared on the accompanying request form.
- There will be no further action if there are no additional mismatches.
- Information which has not been declared on either the specimen or the request form will be denoted as "Not documented".
- Mismatches in declared information between specimens and request forms will be recorded in full in the specimen notes, e.g. "Request form ID: 1024, Specimen label ID: 1023. Mismatch."

Documentation errors and omissions will be reported to the study investigator within 7 days of receipt. Action performed will be as per the study investigator's written instruction (e.g. amend data).

#### Received Sample Quality Metrics:

The following data will be recorded for all specimens received by NSWHSB:

- The date/time of collection/phlebotomy, date/time of processing start, and date/time of freezing.
- A visual estimate of the volume received.
- Haemolysis, icterus and lipaemia will be estimated visually on a scale of 1-5 for plasma/serum.
- Other unusual findings (abnormal colours, clots) will be noted only if they are observed.

#### Sample Processing:

The following defects may exclude a specimen from processing:

| Defect/problem  | Action   |
|---|--|
| Specimen is received in an incorrect container.                       | <input type="checkbox"/> Process as normal and record defect.<br><b><i>Received specimen must be able to produce equivalent products. eg. EDTA can be substituted by LiHep but <u>not</u> clotted serum. Otherwise, the received specimen will be discarded.</i></b><br><input type="checkbox"/> Discard specimen and record defect. |
| Specimen when received appears to be at incorrect temperature         | <input type="checkbox"/> Process as normal and record defect.<br><input type="checkbox"/> Discard specimen and record defect.  |
| The transit time is longer than [XX hours] (e.g. 24 hours) or unknown | <input type="checkbox"/> Process as normal and record defect.<br><input type="checkbox"/> Discard specimen and record defect.  |

Data recorded by NSWHSB in relation to these specimens will be reported back to the study investigator within 7 days of receipt.

#### Unsuitable Specimens:

Specimens received in the following states will be discarded and reported back to the study investigator within 7 days of receipt:

- Container is unsealed, broken, or leaking.
- Anti-coagulated whole blood is found to be clotted.
- Saliva sponge specimens observed to be unused or dry.



# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

### Appendix 2: Examples of Costings

#### Scenario 1

Biobank A (Not-for-Profit) would like NSW Health Statewide Biobank to help it collect whole blood from 500 donors and process to store 6 x 0.5mL serum, 2 x 0.5mL DNA post extraction for each donor. The cost for this service would be as follows:

| Line Item   | Number | Cost Per Item | Cost Total      |
|---|--------|---------------|-----------------|
| Blood Collection<br>(at various NSWHP Collection Centres) | 500    | \$15.00       | \$7,500         |
| Transport to NSW Health Statewide Biobank                 | 500    | \$10.00       | \$5,000         |
| Receipt of Blood  | 500    | \$12.50       | \$6,250         |
| Sample Processing<br>(simple processing)                  | 500    | \$15.00       | \$7,500         |
| DNA Extraction  | 500    | \$16.50       | \$8,250         |
| Serum Storage 0.5mL / -80°C / Year                        | 2,000  | \$0.50        | \$1,000         |
| DNA Storage 0.5mL / LN2 / Year                            | 1,000  | \$1.00        | \$1,000         |
| <b>Total Cost</b>   |        |               | <b>\$36,500</b> |

#### Scenario 2

Biobank B (Not-for-Profit) would like NSW Health Statewide Biobank to help it collect whole blood from 500 donors and process to store 6 x 0.5mL serum and 6 x 0.5mL plasma (SOP includes cell pellet and wash steps) for each donor. The cost for this service would be as follows:

| Line Item   | Number | Cost Per Item | Cost Total      |
|---|--------|---------------|-----------------|
| Blood Collection<br>(at various NSWHP Collection Centres) | 500    | \$15.00       | \$7,500         |
| Transport to NSW Health Statewide Biobank                 | 500    | \$10.00       | \$5,000         |
| Receipt of Blood  | 500    | \$12.50       | \$6,250         |
| Sample Processing - Serum<br>(simple processing)          | 500    | \$15.00       | \$7,500         |
| Sample Processing - Plasma<br>(complex processing)        | 500    | \$30.00       | \$15,000        |
| Storage 0.5mL / -80°C / Year                              | 6,000  | \$0.50        | \$3,000         |
| <b>Total Cost</b>   |        |               | <b>\$44,250</b> |

#### Scenario 3

Biobank C (Not-for-Profit) would like to store 30,000 samples in its own two -80°C freezers at the NSW Health Statewide Biobank and remove batches of 100 samples on a monthly cycle. The cost for one year would be as follows:

| Line Item                  | Number | Cost Per Item | Cost Total |
|----------------------------|--------|---------------|------------|
| Legacy Collection Transfer | 1      | \$2,500       | \$2,500    |
| Whole Freezer Storage      | 2      | \$2,500       | \$5,000    |

# NSW Health Statewide Biobank

## NSWHSB-IS-005: Service models and costs

|                           |    |       |                |
|---------------------------|----|-------|----------------|
| Retrieval Freezer / Batch | 12 | \$100 | \$1,200        |
| <b>Total Cost</b>         |    |       | <b>\$8,700</b> |

### Scenario 4

A researcher from Biobank C (Not-for-Profit) would like to store 10,000 samples at -80°C and would like to access them on a fortnightly basis. The cost for one year would be as follows:

| Line Item                  | Number | Cost Per Item | Cost Total      |
|----------------------------|--------|---------------|-----------------|
| Legacy Collection Transfer | 1      | \$2,500       | \$2,500         |
| -80°C Storage / Year       | 10,000 | \$0.50        | \$5,000         |
| Retrieval Costs            | 26     | \$100         | \$2,600         |
| <b>Total Cost</b>          |        |               | <b>\$10,100</b> |

### Scenario 5

Company A (For-profit organisation) would like the NSW Statewide Biobank to collect whole blood for 1000 donors, process and store (at -80°C) 2 x 0.5mL serum, 2 x 0.5mL whole blood samples for each donor. The total cost for one year would be as follows:

| Line Item   | Number | Cost Per Item | Cost Total      |
|---|--------|---------------|-----------------|
| Blood Collection<br>(at various NSWHP Collection Centres) | 1,000  | \$15.00       | \$15,000        |
| Transport to NSW Health Statewide Biobank                 | 1,000  | \$10.00       | \$10,000        |
| Receipt of Blood  | 1,000  | \$19.50       | \$19,500        |
| Sample Processing - simple                                | 1,000  | \$25.00       | \$25,000        |
| Storage 0.5mL / -80°C / Year                              | 4,000  | \$0.80        | \$3,200         |
| <b>Total Cost</b>   |        |               | <b>\$72,700</b> |