



Reducing Specimen Submission Errors





SWOG Biospecimen Bank
Hannah Brown



Overview of the Biopathology Center (BPC)


- The SWOG Biospecimen Bank is part of the Biopathology Center at The Abigail Wexner Research Institute at Nationwide Children's Hospital
- Our operations are largely grant/contract supported
- We serve as the biorepository for several other major cooperative groups and organizations:
 - Children's Oncology Group (COG)
 - NRG Oncology
 - GOG Foundation
 - SWOG
 - Sarcoma Alliance for Research through Collaboration (SARC)
 - Experimental Therapeutics Clinical Trials Network (ETCTN)

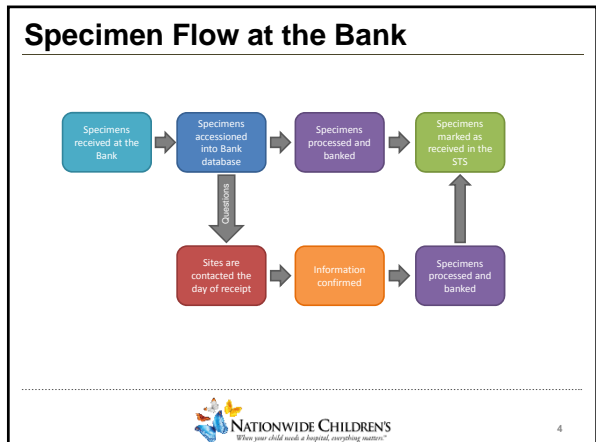




Specimen Receipt

- On an average day, the whole Bank receives 70-110 packages, which may contain upwards of 1,000 specimens!
- We receive several different specimen types:
 - Paraffin materials (FFPE blocks, slides)
 - Fresh blood, bone marrow, and urine
 - Frozen blood products and urine
 - Frozen tissue
- We can receive all specimen types Monday – Friday
 - Shipments of fresh blood, bone marrow, and urine may also be received on Saturday for immediate processing
- Accurate specimen submission is crucial to our day to day operations





Common Specimen Quality Issues

Issue	Prevention
Specimen that should be frozen arrived thawed or with insufficient dry ice	<ul style="list-style-type: none"> Choose an appropriately-sized container (Goldilocks rule!) Add dry ice to the bottom ~1/3, add the specimens, and then add dry ice to the top of the insulated container
Blood / bone marrow is hemolyzed	<ul style="list-style-type: none"> Gently invert tube 8 – 10 times after collection Do not shake or vortex blood to mix with the anticoagulant
Blood / bone marrow is clotted	<ul style="list-style-type: none"> Thoroughly mix the specimen with anticoagulant in the tube immediately after collection Gently invert tube 8 – 10 times after collection
Specimen arrived in a cracked, broken, or leaking container	<ul style="list-style-type: none"> Do not freeze glass tubes – always use plastic collection tubes if submitting frozen specimens Do not overfill cryovials (~1.5 mL liquid can be frozen in a 2-mL cryovial) Package specimens carefully – if it rattles, don't ship it! Get friendly with bubble wrap – it's both a good insulator and specimen protectant Do not ship cracked, broken, or leaking specimens
Incorrect specimen type received (e.g., protocol indicates to send whole blood, and blood arrives processed)	<ul style="list-style-type: none"> Refer to the protocol If the protocol is unclear – email the Bank

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Where your child needs a hospital, everything matters.

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Common Shipment Issues

Issue	Prevention
Missing Paperwork	<ul style="list-style-type: none"> STS packing list is <i>always</i> required Pathology reports are required for all formalin-fixed paraffin-embedded (FFPE) tissue submissions – including blocks, slides, and scrolls
Missing information on specimen label	<ul style="list-style-type: none"> Include all required labeling information on all specimens submitted Refer to protocol for any protocol-specific labeling requirements
STS Packing List does not match specimens	<ul style="list-style-type: none"> All specimen labeling information (identifiers, collection date, etc.) must correspond with the information entered in the STS The number of specimens (e.g., number of tubes, vials, glass slides, etc.) received must match the STS packing list
Insufficient dry ice	<ul style="list-style-type: none"> Include lots of dry ice <i>all year round</i>

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Specimen Labeling Requirements

Label all specimens with the following:

- SWOG patient #
- Patient Initials
- Date of specimen collection
- Specimen type (whole blood, serum, etc.)

Additional labeling for FFPE tissue blocks and slides

- Tissue type: Primary, Metastatic, Normal
- Surgical pathology ID (SPID or Accession #)
- Block Number (from pathology report)

Note: Any missing information will result in the Bank contacting the submitting institution, which can delay specimen processing, and may require a waiver.

We cannot assume any information!




Labeling Templates

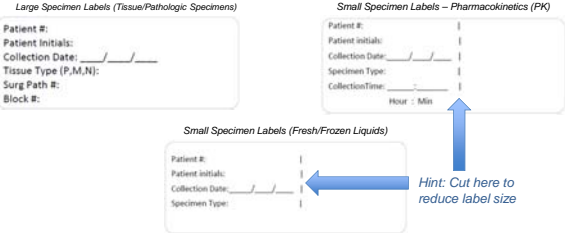

- Specimen Labels, Avery 5160
- Every specimen submitted must be labeled!

Large Specimen Labels (Tissue/Pathologic Specimens)

Small Specimen Labels – Pharmacokinetics (PK)


Small Specimen Labels (Fresh/Frozen Liquids)

Hint: Cut here to reduce label size


Preparing the shipment...

- Verify that **all specimen labels** include **all required information** listed in the protocol (if applicable), or include all requirements on the SWOG Biospecimen Resources webpage (see Helpful Sites)
- Verify that the information on **STS packing list matches the specimens**
 - Double check specimen label information (e.g., collection dates)
 - Ensure that the number of specimens matches the number on the STS packing list (e.g., if sending 2 10-mL tubes of blood, quantity = 2, not 20)
- Confirm that all **required paperwork** is included
 - STS Packing List
 - Redacted Pathology Report (FFPE tissue only)
 - Do not remove surgical pathology ID (SPID), block number, collection date, diagnosis, results, gross description, or other information about the specimen
 - Additional guidelines will be posted to the SWOG website
 - Confirm that the registration number is included on all paperwork



Shipping Considerations


- Batching specimen shipments – unless otherwise stated in the protocol, frozen specimens or FFPE tissues (blocks, slides, or scrolls) may be batched. As a general guideline, do not include more than 5 patients in one shipment.
 - Package each patient's specimens separately
 - If there are multiple time points per patient, then include fewer than 5 patients in the shipment.
- Pack specimens according to the season
 - Frozen Specimens: ALWAYS include plenty of dry ice to prevent specimens from thawing
 - Warmer months (around April – September):
 - Ambient specimens: Include a cold pack (not frozen!), unless otherwise stated in the protocol and/or kit instructions (e.g., cfDNA Streck tubes)
 - Colder months (around October – March):
 - Ambient specimens: Insulate well (e.g., bubble wrap) to prevent specimens from freezing
- Specimens shipped **FedEx Priority Overnight** arrive to the Bank at the beginning of the day – other carriers or shipping methods may delay receipt.



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When Errors are Received at the Bank


- 484 cases received had errors that were unable to be resolved on the same day of receipt
- What happens when errors are present in the submission?
 - Call and e-mail for follow up
 - Template e-mail subject:
SWOG Biospecimen Bank - [STUDY] - ACTION REQUIRED **secure**
 - If a timely response is not received, the case will remain "pending" and become part of that statistic
 - May delay processing of the sample
 - May also delay the shipment being marked as usable in the SpecTrack System
 - RAVE Query



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Block Returns

- Submitting Slides vs. Submitting Blocks
 - If the block can only be submitted on a short term basis and the study does not have a set end date, check to see if the study allows for slides to be submitted instead.
 - The SWOG Biospecimen Bank does not pay for the return of specimens
 - Institution's FedEx account number must be provided
- Request permission
 - Dr. James Rae (jimmyrae@med.umich.edu)
 - Is the return for patient care, or because the pathology department is requesting a return of materials?
- Complete the Specimen Return Request form
 - Can be obtained by reaching out to BPCBank@nationwidechildrens.org
 - Specimens can only be returned to the submitting institution
 - Please ensure all provided identifiers for the specimen match our records (registration number, surgical pathology ID, collection date, block number, etc.)
 - Please include documentation of permission to return when submitting completed request form.



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Helpful Sites

SWOG Biospecimen Processing and Submission Procedures

- General SWOG specimen submission guidelines, links to labeling templates, and more!
- <https://www.swog.org/clinical-trials/biospecimen-resources/biospecimen-processing-and-submission-procedures>

BPC Kit Management

- Order biospecimen collection kits (when provided, refer to protocol) – select SWOG sponsor group
- Users must be registered
- <https://ricapps.nationwidechildrens.org/KitManagement>



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Contact Information

Solid Tissue, Myeloma & Lymphoma Division

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Questions?



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