



Applicability

This document applies to nursing, diagnostic imaging and medical staff in hospital sites in Grande Prairie, Edmonton, Red Deer, Calgary, Lethbridge and Medicine Hat involved in the collection of needle core biopsies, excisional, or incisional specimens for Lymphoma.

Hospital sites in Edmonton and Calgary: The document applies whether or not the patient is enrolled in the Provincial Lymphoma Diagnostic Pathway for diagnostic assessment. Previous Lymphoma Protocol pathways and documents are replaced by this one.

Hospital sites in Grande Prairie, Edmonton, Red Deer, Calgary, Lethbridge and Medicine Hat:

- For cases following the Lymphoma Diagnostic Pathway: core needle biopsies will now be split by DI staff at the time of collection for Surgical Pathology and for Flow Cytometry Testing.
- No change to lymph node or query lymphoma cases outside of the Lymphoma Diagnostic Pathway – maintain local anatomical pathology collection/handling process.

Collection sites/clinics/programs outside of the above locations should continue to submit samples in formalin only – refer to the Laboratory Test Directory.

Scope and Function

This client resource document was developed to aid collection of adequate tissue samples to ensure optimal, cost-effective and timely diagnostic evaluation of patients with suspected lymphoma.

For Pediatric Samples:

- Prior to the biopsy, call the pediatric pathologist on-call (Stollery or Alberta Children’s Hospital).

Definitions

Lymphoma Diagnostic Pathway

Provincial pathway outlining the journey of the patient from pre-diagnosis to treatment

Lymphoma Protocol

One piece of the pathway involving Diagnostic Imaging, the laboratory and sometimes the OR. This stop on the pathway collects the specimen and provides the diagnosis to the patient.

Requisitions

The instructions below are meant for the **ordering provider**. Please ensure the orders are made either in EPIC (for sites live on EPIC) or with the requisitions listed below to ensure timeliness of procedure.



Step	Action		
1	If	And	Then
	Using EPIC	Sending tissue in formalin and Tissue Transport Medium (TTM)	Order and collect the tests: - Surgical Pathology - Leuk/Loma (for flow cytometry orders, if relevant)
	Not using EPIC		Complete the following 2 forms: -For tissue in formalin: the routine <i>Anatomical Pathology Consultation Request</i> -For tissue in TTM (for flow cytometry, if relevant): ▪ North/Edmonton: the <i>Hematology Specialty Requisition</i> ▪ South/Calgary: <i>Flow Cytometry Requisition</i> These are located on Insite under Laboratory Services .
	Using EPIC	Sending tissue fresh from the OR	Order and collect the test: Surgical Pathology
Not using EPIC	Complete the following form: -the routine <i>Anatomical Pathology Consultation Request</i>		
2	Ensure “ Lymphoma Protocol ” is written on documents and relevant clinical history is provided for the laboratory physician.		
	If	Then	
	Using EPIC	Write Lymphoma Protocol into the comments and provide relevant clinical information, also in the <i>comments</i> section of specimen.	
Not using EPIC	Write Lymphoma protocol in the clinical history, also providing written relevant clinical information.		

Specimen Requirements

Flow Cytometry (FCM):

- While formalin-fixed tissue remains the cornerstone for the diagnosis of lymphoma, **flow cytometry is an extremely useful ancillary modality**, for improved diagnostic certainty and precision, timely diagnosis on urgent cases, and efficient/cost-effective triage of samples.
- Flow cytometry samples are put into TTM.
- Prior to collection, please ensure the TTM is NOT expired and not bright pink (see TTM description below).

Handling of Core Needle Biopsy

- **Needle gauge:** 14 to 18
- **Minimum required number of 1.0 cm cores OR (length of tissue sample) :**
 - **In formalin:** 3 X 1cm cores OR (2.5 cm)
 - **In TTM (flow cytometry):** A single 1cm core OR 0.8 cm
 - **Total tissue required:** 4 X 1 cm cores OR (3.3 cm)



If	Then
The total number of 1 cm-cores is 4 or more or total length is greater than 3,3 cm	Put one core (or at minimum 0.8 cm-long tissue sample) into labeled flow cytometry transport medium tube (TTM). Check that the TTM has NOT expired and ensure you leave at least 2.5 cm for formalin fixation. Put the remainder of the cores into a labelled formalin container.
The total number of 1 cm-cores is 3 or less or total length is less than 3,3 cm	Put the entire specimen into a labeled formalin container. Flow cytometry will not be performed.

Handling of Incisional or Excisional Biopsy

If	And	Then
The specimen is more than 1.5 cm³ in maximal dimension	The sample will reach the lab during regular working hours and UNDER 45 minutes from collection	Collect tissue specimen in a FRESH STATE in a sterile container with saline.
The specimen is more than 1.5 cm³ in maximal dimension	The sample will reach lab either: -after hours, OR -on weekends or a statutory holiday OR -AFTER 45 minutes from collection	Using a sharp blade, separate small portion of the sample (0.3 cm ³) and put in flow cytometry tissue transport medium (TTM). Check that the TTM has NOT expired. Put remainder of sample in formalin container. Ideally, slices of a maximal thickness of 0.4 cm should be obtained prior to putting solid tissue pieces in formalin.
The specimen is less than 1.5 cm³ (aggregate)	Regardless of time of collection	Put the entire specimen into a labeled formalin container. Ideally, slices of a maximal thickness of 0.4 cm should be obtained prior to putting solid tissue pieces in formalin Flow cytometry will not be performed.

Delivery of Specimens to the Laboratory

Please contact the laboratory at your site for information about operating hours for sample delivery in order to ensure specimens can be transported and handled ASAP.

If	Then
Anatomical Pathology specimen (10% Neutral Buffered Formalin) and will arrive during regular working hours	Deliver ASAP to the Anatomical Pathology lab along with the <i>Anatomical Pathology Consultation Request</i> (not live on EPIC). Hand directly to a pathology staff member.



If	Then
Flow cytometry specimen (TTM) and it will arrive during regular working hours	<p>Deliver ASAP to the Flow Cytometry lab along with the flow cytometry requisition (not live on EPIC):</p> <ul style="list-style-type: none"> ▪ North/Edmonton: the <i>Hematology Specialty Requisition</i> ▪ South/Calgary: <i>Flow Cytometry Requisition</i> <p>Note: In Calgary Zone only: This specimen should be sent to the AP lab and not directly to Flow Cytometry if there is an accompanying formalin specimen</p> <p>Sample may be transported at room temperature provided delivery to laboratory does not exceed 4 hours.</p> <p>IF delivery to the laboratory will exceed 4 hours, samples must be shipped at 4°C</p>
The sample will reach lab after regular working hours, weekends or on a statutory holiday	<p>Specimens are delivered to the laboratory specimen receiving area along with the <i>Anatomical Pathology Consultation Request</i> (not live on EPIC) and the flow cytometry requisition (not live on EPIC):</p> <ul style="list-style-type: none"> ▪ North/Edmonton: the <i>Hematology Specialty Requisition</i> ▪ South/Calgary: <i>Flow Cytometry Requisition</i> <p>If necessary, contact the pathologist on-call or hematopathologist on-call for questions to ensure proper storage and/or timely processing of samples.</p>
The specimen is fresh	<p>Deliver ASAP to the Anatomical Pathology lab along with the <i>Anatomical Pathology Consultation Request</i> (not live on EPIC).</p> <p>Hand directly to a pathology staff member.</p>

Tissue Transport Media (TTM)

- TTM are shipped at 4°C in 5 mL aliquots.
- TTM can be obtained from the laboratory as needed.
- TTM can also be requested for in suite storage provided there is a monitored refrigerator to store the vials:
 - North/Central/Edmonton Zone: [Client Supply Order Form \(albertahealthservices.ca\)](http://albertahealthservices.ca)
 - South/Calgary Zone: [Request for RPMI Tissue Media and BM Media FC3211](#)
- Store TTM at 4°C. **Do Not Freeze.**
- TTM is stable for 4 hours at room temperature; beyond that time it **must** be refrigerated
- Color indicators of TTM:



- Tube on left: orange/peach= normal and can be used
- Tube on right: hot pink= pH has changed, cannot be used, **media should be discarded.**