

This primary care pathway was co-developed by primary and specialty care and includes input from multidisciplinary teams. It is intended to be used in conjunction with specialty advice services, when required, to support care within the medical home.

# **EXPANDED DETAILS**

### **Pathway Primer**

- Lymphoma is the 5th most common cancer in Canada. Early diagnosis can allow for cure, but in 2016-17 at least 30% of new lymphoma patients were diagnosed only after admission to hospital 80% of those being urgent admissions. The Lymphoma Diagnosis Program has since been created to minimize diagnostic and treatment delay for patients with suspicious lymphadenopathy.
- The pathway's objectives are to expedite and support patients with highly suspicious presentations that have high likelihood of being a lymphoma diagnosis from the point of suspicion through diagnostic work-up and staging to a consult with a hematologist/oncologist.
- Other problems being addressed are: 1) psychosocial and symptom management support, 2) patient education, 3) reduction in multiple, non-diagnostic biopsy investigations, and, 4) delayed staging investigations.
- Two intake points have been identified. These criteria are high specificity based on clinical consensus and available evidence:
  - Symptomatic presentations in primary care or emergency department For suspicious symptomatic presentations, patients would be referred to the cancer centre and flagged for lymphoma triage nurses to coordinate diagnostic and staging investigations including whole body CT and core needle biopsy instead of excisional biopsy, to organize consults with oncologist/hematologist and to deliver patient support education.
  - Suspicious findings on incidental imaging (Ultrasound and CT) Patients with suspicious findings on ultrasound or CT scan would have their imaging results notified to both ordering provider and the cancer centre, which would get flagged for lymphoma triage nurses to close the loop with the ordering provider and ensure the patient gets a timely referral to the cancer centre and coordination of further diagnostic and staging investigations.
- For the few patients with a negative biopsy, there will be follow-up with primary care including information resources. The operational model for triage and case review for uncertain cases or cases with delayed referrals or diagnostic or staging tests would be a team-based approach that includes rotating hematologist/oncologist and lymphoma triage nursing staff.

# Features of Lymphadenopathy Concerning for Lymphoma

### 1. Clinical Assessment of Lymphadenopathy

- History (Think MIAMI; see <u>section 3</u>)
  - o Age?
  - Duration and progression persistence beyond 2 weeks?
  - Characteristics of concerning lymph nodes mobility, consistency, sensation?
  - Site(s) of lymphadenopathy spreading? abnormalities of surrounding skin/ mucosa?
  - Autoimmune and/or systemic symptoms?
  - Travel history or sick contacts?
  - Culprit medications (\*Allopurinol, Atenolol, Captopril, Carbamazepine, Gold, Hydralazine, Penicillins, Phenytoin, Primidone, Pyrimethamine, Quinidine, Trimethoprim/sulfamethoxazole, Sulindac)?

- Physical Exam
  - Fever
  - Weight loss (unintentional loss of >10% of usual body weight in <6 months)
  - Full-body lymph node exam with further attention to associated lymph node drainage area for areas of concern
  - o Abdominal exam focused on assessment for organomegaly
  - o Skin and joint exam focusing on assessment of autoimmune features

#### 2. Possible Etiology Based on Clinical Assessment

Table 1				
Malignancy	Infection	Autoimmune	Other	
<ul> <li>Enlarging node(s) &gt; 2 weeks</li> <li>Supraclavicular location</li> <li>Fixed or Matted</li> <li>Size: <ul> <li>Fixed or Matted</li> </ul> </li> <li>Size: &gt; 1cm supraclavicular</li> <li>2 cm neck</li> <li>3 cm axilla/groin</li> <li>Increased risk:         <ul> <li>Age &gt; 40 yrs</li> <li>Generalized, non-tender Hepatosplenomegaly</li> <li>Fever, &gt;10 % weight loss</li> <li>Drenching night sweats</li> </ul> </li> </ul>	<ul> <li>Fever, chills</li> <li>Sore throat</li> <li>Nasal congestion</li> <li>Cough</li> <li>Diarrhea</li> <li>Skin lesions</li> <li>Travel, bites, STDs, other exposures</li> <li>Malaise, fatigue</li> </ul>	<ul> <li>Arthritis</li> <li>Morning stiffness</li> <li>Rash</li> <li>Raynaud's</li> <li>Dry eyes/mouth</li> </ul>	<ul> <li>Medications</li> <li>Sarcoidosis (hilar) Granulomatous</li> <li>Reactive</li> <li>Rare conditions</li> <li>Unexplained</li> </ul>	
Action:	Action:	Action:	Action:	
<ul> <li>CBC&amp;diff, Electrolytes, Creatinine, LFTs, LDH</li> <li>CXR PA/Lat</li> <li><u>Refer</u> to Lymphoma Diagnosis Program for CT scan and Core needle biopsy</li> </ul>	<ul> <li>Specific testing according to suspected Infection (see Table 2) such as CBC&amp;diff, Monospot, LFTs, Cultures, Serologies</li> <li>Seek advice from Infectious Disease</li> </ul>	<ul> <li>Specific testing according to suspected disorder, such as CBC&amp;diff, creatinine, LFTs, CRP, ANA, RF, CK, Urine R&amp;M, EMG, Muscle biopsy</li> <li>Seek advice from Rheumatology</li> </ul>	<ul> <li>Observe x1 month if low risk.</li> <li>Hold suspected medications</li> <li>Re-assess other causes &amp; consider biopsy if node persists</li> </ul>	

### 3. Causes of Lymphadenopathy

ΜΙΑΜΙ

- Malignancy
  - o Lymphoma, metastatic carcinoma/melanoma, Kaposi sarcoma, leukemias
- Infections
  - Bacterial: cutaneous infections or abscess (staphylococcal or streptococcal), tuberculosis, lymphogranuloma venereum, syphilis, brucellosis, cat-scratch disease (Bartonella), chancroid, tularemia, typhoid fever
  - Fungal: coccidioidomycosis, cryptococcosis, histoplasmosis
  - Viral: infectious mononucleosis (Epstein-Barr virus), adenovirus, cytomegalovirus, human immunodeficiency virus, hepatitis, herpes zoster, rubella
  - o Other: helminthic, Lyme disease, rickettsial, scrub typhus, toxoplasmosis
- Autoimmune disorders
  - Rheumatoid arthritis, Systemic lupus erythematosus, Sjögren syndrome, Still disease, Dermatomyositis
- Miscellaneous/unusual conditions
  - Angiofollicular lymph node hyperplasia (Castleman disease), berylliosis, silicosis histiocytosis, Kawasaki disease, Kikuchi lymphadenitis, Kimura disease, sarcoidosis
- latrogenic causes
  - Medications (Allopurinol, Atenolol, Captopril, Carbamazepine, Gold, Hydralazine, Penicillins, Phenytoin, Primidone, Pyrimethamine, Quinidine, Trimethoprim/sulfamethoxazole, Sulindac)
  - Serum sickness

### 4. Presentations Suggesting Causes of Lymphadenopathy and Initial Testing

Table 2			
Symptoms	Suggested Diagnoses	Initial Testing	
Fever, drenching night sweats, weight loss, or nodes located in supraclavicular, popliteal, or iliac region, matted/fixed/large nodes, bruising, splenomegaly	Lymphoma, leukemia, solid tumor metastasis	CBC, nodal biopsy, imaging with ultrasonography or computed tomography (imaging should not delay referral for biopsy)	
Fever, chills, malaise, sore throat, nausea, vomiting, diarrhea; fatigue	Bacterial or viral pharyngitis, influenza, mononucleosis, tuberculosis, hepatitis, rubella	Limited illnesses may not require any additional testing; depending on clinical assessment, consider CBC, monospot test, liver function tests, cultures, and disease- specific serologies as needed	
High-risk sexual behavior	Chancroid, HIV infection, lymphogranuloma venereum, syphilis	HIV-1/HIV-2 immunoassay, rapid plasma reagin, culture of lesions, nucleic acid amplification for chlamydia, migration inhibitory factor test	
Animal Contact: Cats	Cat-scratch disease (Bartonella)	Serology and polymerase chain reaction	
	Toxoplasmosis	Serology	

Animal Contact: Rabbits, Sheep or Cattle (Wool, Hair, Hides, Undercooked Meat)	Brucellosis	Serology and polymerase chain reaction
	Tularemia	Blood culture and serology
Recent Travel or Insect Bites	Diagnosis based on endemic region	Serology and testing as indicated by suspected exposure
Arthralgias, rash, joint stiffness, fever, chills, muscle weakness	Rheumatoid arthritis, Sjögren syndrome, dermatomyositis, systemic lupus erythematosus	Antinuclear antibody, anti- doubled- stranded DNA, erythrocyte sedimentation rate, CBC, rheumatoid factor, creatine kinase, electromyography, or muscle biopsy as indicated

Adapted from: Gaddey, H.L. & Riegel, A.M. (2016). Unexplained Lymphadenopathy: Evaluation and Differential Diagnosis. Am Fam Physician, 94(11), 896-903.

# BACKGROUND

### About this pathway

- The creation of the Lymphoma Diagnosis Pathway builds on the success of previous pathways including lung, breast and prostate cancer. Building out multiple cancer diagnosis pathways has begun to create end- to-end pathways for cancer patients in Alberta on a provincial scale with the goals of expedited cancer diagnosis and providing better support to patients through that process.
- Initial work on this pathway was started in May 2019 and is being implemented over two years. Patients, providers and administrators from relevant areas were brought together to gather information on current experiences with lymphoma diagnosis, collect data on how the system is performing and review best practice evidence. Provincial principles of care, strategic areas for improvement in Alberta and a provincial measurement and reporting framework were defined.
- Primary Care, diagnostic imaging and lab providers were engaged to co-design pathways with patients, hematologists/oncologists and lymphoma triage nurses. Local implementation teams engaged in work around planning and pathway roll-out, determination of barriers and facilitators, and shared learnings with other sites.
- Performance dashboard reports will be developed and disseminated to provide feedback to clinical teams on pathway performance and outcomes. Sustainability planning will be initiated early with implementation teams to ensure successful transition of pathways to operations at the end of the initiative.

### Authors and conflict of interest declaration

• This pathway was reviewed and revised under the auspices of the Cancer Strategic Clinical Network (CSCN) in 2019 by a multi-disciplinary team led by family physicians and hematologists/oncologists. For more information, contact the CSCN at cancerdiagnosispathways@albertahealthservices.ca.

#### Pathway review process, timelines

• Primary care pathways undergo scheduled review every three years, or earlier, if there is a clinically significant change in knowledge or practice. The next scheduled review is June 2026. However, we welcome feedback at any time. Please email comments to <u>cancerdiagnosispathways@albertahealthservices.ca</u> and/or <u>AlbertaPathways@ahs.ca</u>.

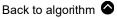
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#### DISCLAIMER

This pathway represents evidence-based best practice but does not override the individual responsibility of healthcare professionals to make decisions appropriate to their patients using their own clinical judgment given their patients' specific clinical conditions, in consultation with patients/alternate decision makers. The pathway is not a substitute for clinical judgment or advice of a qualified healthcare professional. It is expected that all users will seek advice of other appropriately qualified and regulated health care providers with any issues transcending their specific knowledge, scope of regulated practice or professional competence.



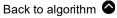
### **PROVIDER RESOURCES**

#### **Advice Options**

AIRWAY COMPROMISE, SUPERIOR VENA CAVA COMPRESSION or SPINAL CORD COMPRESSION. This patient needs to be directed to hospital through <u>RAAPID</u> or the ER. Call RAAPID for on-call hematologist or 911.

Zone	Program	Online Request	Phone Number
Urgent Telephone			
All Zones		N/A	North: 1-800-282-9911 or 780-735-0811 South: 1-800-661-1700 or 403-944-4486
Non-Urgent Telephone			
Edmonton, North	ConnectMD ConnectMD	Online Request	1-844-633-2263
Calgary	Specialist Link Specialist Link Correcting Primary and Speciality Care	Online Request	403-910-2551

In addition to where specified in the clinical pathway algorithm, you can request non-urgent advice at any point when uncertain about medications, next steps in treatment, investigations, or resources available.



# PATIENT RESOURCES

Description	Website
Superficial lymph node	https://myhealth.alberta.ca/Alberta/Pages/superficial-lymph-node-biopsy-care-
biopsy	instructions.aspx

References

Gaddey, H.L. & Riegel, A.M. (2016). Unexplained Lymphadenopathy: Evaluation and Differential Diagnosis. *Am Fam Physician*, 94(11), 896-903.

Mohseni, S.H., Shojaiefard, A., Khorgami, Z., et al. (2014). Peripheral Lymphadenopathy: Approach and Diagnostic Tools. *Iran J Med Sci*, 39(2), 158-170.