

## Timely Diagnosis of Lung Cancer: Guidance for Family Physicians and Other Primary Care Providers

### Introduction

Lung cancer is the most commonly diagnosed cancer in men and women in Nova Scotia.<sup>1</sup> At just 14%, Nova Scotia also has the lowest five-year survival rate for lung cancer in Canada.<sup>1</sup> Family physicians and other primary care providers have an important

role in ensuring that lung cancer is detected and treated as early as possible.

Qualitative and quantitative evidence shows avoidable delays in diagnosing lung cancer in Nova Scotia. Patients may present with worrisome or non-specific symptoms to their family physician, other

primary care provider or emergency department, or a lung nodule or mass may be found incidentally. Because many investigations are required to confirm a lung cancer diagnosis and stage, a coordinated approach to care with regular communication with patients is essential.

### Background

The “Guidelines for the Diagnosis and Referral of Suspected Lung Cancer” outline the most appropriate tests and referrals for the investigation of suspected lung cancer in Nova Scotia. These guidelines were developed by a multidisciplinary working group of health care providers and public advisors from across the province based on current evidence, best practice and the Nova Scotia context. Unless otherwise specified, the recommendations were based on working group consensus.

The goal of these guidelines is to streamline and expedite the complex work-up for suspected lung cancer and improve the diagnostic process for patients. An algorithm detailing the initial diagnostic process is included as an insert in this publication.

This publication focuses on the guideline recommendations for use by family physicians, nurse practitioners and primary care collaborative teams. The full document also includes recommendations for radiologists and other specialists. The link to the complete guidelines can be found on page 5.

### Key points:

- ▶ Although lung cancer is strongly associated with smoking, 10-15% of lung cancers occur in people who have never smoked.<sup>2</sup>
- ▶ Clear and ongoing communication with patients during the diagnostic process can help to reduce anxiety.
- ▶ Where possible, tests should be arranged locally to minimize patient travel.
- ▶ All investigation requisitions should include the reason for referral and level of suspicion for lung cancer.
- ▶ Chest X-ray should be ordered as the first investigation for suspected lung cancer.
- ▶ A negative chest X-ray does not exclude lung cancer, especially if the patient has risk factors for lung cancer or ongoing symptoms (e.g. hemoptysis).
- ▶ Creatinine levels are required before a non-emergent enhanced CT chest can be performed. This should be ordered at the same time as the CT chest referral is submitted.
- ▶ Tobacco cessation can improve disease and treatment-related outcomes, even after a cancer diagnosis.<sup>3,4</sup> All patients with suspected lung cancer should be asked about tobacco use, advised to quit and referred to evidence-based cessation support where appropriate. (<https://tobaccofree.novascotia.ca>)

## The Role of Family Physicians and Other Primary Care Providers

Family physicians or other primary care providers may be the first health care providers who see patients with signs or symptoms of suspected lung cancer. For this reason, family physicians and other primary care providers should be familiar with the risk factors for lung cancer, while recognizing that lung cancer can also occur in patients without apparent risk factors. For example, about 10 to 15% of patients with lung cancer have never smoked.<sup>2</sup> In addition, while risk peaks for patients in their eighth decade, patients younger than 50 years old can still develop lung cancer.

It is also important to recognize the signs and symptoms of lung cancer. Some patients will present with symptoms severe enough to warrant immediate referral to their local emergency department; however, most patients will probably require a chest X-ray as the first investigation. Refer to the insert, Initial Presentation Algorithm, for indications for referral to emergency department or chest X-ray.

For unexplained signs and symptoms, family physicians and other primary care providers should have a high index of suspicion with a low threshold for

investigation of suspected lung cancer when ordering chest X-rays.<sup>6</sup> A normal chest X-ray should not be relied upon to exclude lung cancer, especially if the patient has risk factors. Persisting symptoms should be investigated further, even in the instance of a negative chest X-ray.

Although most signs and symptoms will also require CT chest, a chest X-ray may identify an acute treatable illness, such as pneumonia or pulmonary edema. The results of the chest X-ray also help determine the CT protocol and urgency. Family physicians and other primary care providers should emphasize the level of urgency for obtaining the chest X-ray to the patient.

It is important to include complete patient history and clinical information on requisitions. This information is required to provide radiologists with adequate information to gauge lung cancer risk. For example, history of a recent fever is important to help distinguish pneumonia from lung cancer on a chest X-ray.

Based on the chest X-ray results, patients may need to be referred for CT chest. A radiologist will triage requisitions based on the clinical information provided and determine the CT protocol. Contrast enhanced CT chest requires recent creatinine levels. If one is not available, it can be ordered at the same time as submitting the CT referral. Emergent CTs should not be delayed pending this result. If same day reporting is required, please clearly state this on the requisition along with the afterhours contact information of the referring health care provider. Sputum cytology is rarely indicated.<sup>7</sup>

### The Role of Screening

The Canadian Task Force on Preventive Health Care recommends patients, between the ages of 55 and 74 with at least a 30-pack-year smoking history, discuss CT screening with their physicians. Because of the risks of screening (radiation, incidental findings, high false positive rate, harm related to work up including work up for benign findings), the Task Force acknowledges that some eligible patients will reasonably opt not to undergo

### Required information to be included on chest X-ray and CT chest requisitions:

- ▶ **Indication for Test**  
If follow-up exam, indicate original imaging indication
- ▶ **Symptoms**  
Presence or absence of infection within the previous 6 weeks
- ▶ **Risk Factors for Lung Cancer**  
Smoking history (current smoker, past smoker, never smoker)
- ▶ **Personal History of Malignancy**  
Concurrent or prior; indicate disease-free interval
- ▶ **If Urgent Results Are Required**  
Provide afterhours contact information for referring health care provider
- ▶ **Patient Contact Information**

screening. While young patients and never smokers may also get lung cancer, the benefits of screening low-risk patients does not outweigh the harms. Patients should not be sent for screening if they have any worrisome symptoms such as hemoptysis or significant weight loss.

Currently, there is no organized screening program for lung cancer in Nova Scotia. When patients are screened outside of a formal program there is no assurance regarding radiologist training, reporting standards, technical standards, radiation dose, informed consent or follow up. The Task Force recognizes this and recommends against screening in centres without expertise in early diagnosis and treatment of lung cancer. For more information visit: <https://canadiantaskforce.ca/guidelines/published-guidelines/lung-cancer/>.

### Risk factors for lung cancer:

- ▶ Current or ex-smoker<sup>5,6</sup>
- ▶ COPD<sup>5,6</sup>
- ▶ Age > 50 years<sup>1</sup>
- ▶ Personal history of cancer or family history of lung cancer<sup>5,6</sup>
- ▶ Significant second hand smoke exposure<sup>5,6</sup>
- ▶ Exposure to asbestos or other known carcinogens (e.g. radon, chromium, nickel, radiation exposure)<sup>5,6</sup>
- ▶ Immunocompromised
- ▶ Occupational exposure to dust or microscopic particles (e.g. wood dust, silica)<sup>5,6</sup>
- ▶ Silicosis, tuberculosis<sup>5,6</sup>

## Referrals to Specialists

After an abnormal CT chest result, the investigations required to confirm the diagnosis and staging of lung cancer are complex. Family physicians and other primary care providers who are uncertain as to the most appropriate work-up are encouraged to consult with a respirologist or internist with an interest in lung cancer, or thoracic surgeon. A list of respirologists and internists with an interest in lung cancer in Nova Scotia and their contact information can be found at <http://www.cdha.nshealth.ca/InPractice>.

It is important to note that a biopsy does not have to be ordered before a patient can be seen by a respirologist, internist or thoracic surgeon.

Recognizing access to resources varies across the province, family physicians and other primary care providers may want to work with local respirologists or internists to choose the most appropriate diagnostic procedure(s) and coordinate care locally to minimize patient travel.

It is important to order the necessary blood work at the same time as referral to a specialist to ensure the results are ready for the patient's appointment (refer to the Initial Presentation Algorithm insert).

### Thoracic Surgery

Family physicians and other primary care providers are encouraged to refer any lung cancer patients to thoracic surgery for consult and management of investigations and treatment.

If the patient is an obvious surgical candidate (e.g. in good health, small lesion), the patient should be referred directly to thoracic surgery without delay.

Effective October 2017, the Division of Thoracic Surgery has implemented a central referral and triage process. Thoracic Surgery referrals can be faxed to 902-473-6144 where they will be assigned to the first available surgeon. It is important to include the patient's comorbidities, recent imaging and pulmonary function test results (if available) in the request for consult for appropriate triage of cases.

## The Role of Family Physicians and Other Primary Care Providers during the Diagnostic Process

### During the diagnostic process, family physicians and other primary care providers should:

- ▶ Provide appropriate pain and symptom management during the investigative period.
- ▶ Consider patient's preferences, age, comorbidities (e.g. dementia) and life expectancy when assessing the appropriateness and extent of work-up and investigations.
- ▶ Schedule appointments to assess ongoing needs, review and explain test results, and provide support and supportive care referrals as necessary.
- ▶ Advise patients about the benefits of tobacco cessation and refer them to Tobacco Free Nova Scotia (<https://tobaccofree.novascotia.ca>). Patients can speak with a Nicotine Addictions Specialist by calling 8-1-1.
- ▶ Educate patients about when to seek appropriate medical attention (i.e. family physician, 811, emergency department) for new or worsening symptoms (e.g. bone pain, shortness of breath, neurological symptoms). Worsening symptoms may require contact with a specialist to expedite clinic appointments or treatment.
- ▶ Raise discussion of advance care planning, including personal directives and appropriate involvement of family members in sharing of medical information/decision making.<sup>12</sup> Primary care providers should encourage patients to reflect on their values and what is important to them in terms of their goals of care. This will help guide treatment decision discussions at a later date.<sup>8</sup>

**Thoracic Surgery  
Central Referral  
Fax Number:  
902-473-6144**

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Family physicians and other primary care providers are often well suited to have ongoing conversations with their patients about unmet needs and concerns as they have already established a relationship of trust.

### **Patient Education**

Providing patients with information about the diagnostic tests and procedures ordered can reduce their distress. Not all abnormal chest X-ray findings will result in a lung cancer diagnosis; however, that possibility can cause anxiety for patients. A new resource, “Information for Patients with an Abnormal Lung X-ray” has been developed to help inform patients of the expected next steps after an abnormal chest X-ray. Information on where to find this booklet can be found on page 5.

The Nova Scotia Cancer Care Program has worked with health care providers and lung cancer patients and families to develop the “White Ribbon Lung Cancer Patient Education Kit” (<http://library.nshealth.ca/Cancer/Lung>), an education package for patients recently diagnosed with lung cancer. Patients should receive this kit from a respirologist, internist, thoracic surgeon or cancer patient navigator at the time of a lung cancer diagnosis. Information on where to find this kit can be found on page 5.

### **Cancer Patient Navigators**

Cancer patient navigators are trained oncology nurses that provide cancer patients and their families with support throughout the cancer journey. They are available in Eastern, Western and Northern Zones to provide psychosocial support, patient education and coordination of care.

All cancer patients should be referred to their local cancer patient navigator at the time of diagnosis. Patients who have significant distress during the investigation stage or have logistical challenges in attending investigations or consultations may benefit from early referral before a

diagnosis of cancer is confirmed. Health providers and patients can contact the cancer patient navigators at 1-866-524-1234.

Health providers and patients in Central Zone can also call this toll free number to be directed to support services in their area as appropriate.

## Providing patients with information about the diagnostic tests and procedures ordered can reduce their distress.

### **Communicating with patients and families during the diagnostic process**

Feedback from patients and families emphasizes the importance of:

- ▶ Listening and responding appropriately to concerns and questions.<sup>9</sup>
- ▶ Communicating using language and terms that are easily understood.<sup>7,11</sup>
- ▶ Use the teach-back method to ensure the information given is understood.
- ▶ Raising the possibility of a cancer diagnosis.
- ▶ Explaining the expected next steps including the purpose of tests ordered and expected wait time for results.<sup>10</sup>
- ▶ Emphasizing the importance of keeping appointments.
- ▶ Allowing time for questions and being responsive.<sup>9,10,11</sup>
- ▶ Clarifying who patients should contact if they have any questions or concerns.

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## Conclusion

The investigation of suspected lung cancer is a complicated process and a stressful time for patients. Family physicians and other primary care providers can help improve the diagnostic process by referring patients with signs and symptoms of lung cancer for appropriate investigations close to home where possible, working with respirologists, internists and thoracic surgeons, providing adequate information on all requests for tests and consults, and keeping patients informed of the process.

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## Lung Cancer Resources for Family Physicians and Other Primary Care Providers

### Guidelines for the Diagnosis and Referral of Suspected Lung Cancer in Nova Scotia

[www.cdha.nshealth.ca/nova-scotia-cancer-care-program](http://www.cdha.nshealth.ca/nova-scotia-cancer-care-program)

### Nova Scotia Cancer Patient Navigators

Toll free: 1-866-524-1234

[www.nshealth.ca/content/cancer-patient-navigation](http://www.nshealth.ca/content/cancer-patient-navigation)

### Thoracic Surgery Central Referral

Fax: 902-473-6144

### Tobacco Cessation Information for Health Care Providers

Resources such as brief intervention scripts, cessation aid and pharmacotherapy considerations, a fax referral form to the Tobacco Free Nova Scotia cessation program, and patient resources (brochures and fact sheets). Tobacco Free Nova Scotia:

<https://tobaccofree.novascotia.ca/special-concerns/tobacco-use-and-cancer>

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## Lung Cancer Resources for Patients and Families

### White Ribbon Kit: Information for Lung Cancer Patients and Their Families

An education package developed for patients recently diagnosed with lung cancer and their families. <http://library.nshealth.ca/LungCancer>

To receive copies of the White Ribbon Kit, contact the Nova Scotia Cancer Care Program toll free at 1-866-599-2267 or email [cancercareinfo@nshealth.ca](mailto:cancercareinfo@nshealth.ca).

### Information for Patients with an Abnormal Lung X-ray

A booklet that describes the tests and next steps after an abnormal chest X-ray or CT. <http://www.nshealth.ca/sites/nshealth.ca/files/patientinformation/nscsp0049.pdf>

### Tobacco Cessation

Tobacco Free Nova Scotia offers personalized and non-judgmental support to help people quit and stay quit. All services are free and confidential and include a toll-free Quit Line accessible by calling 8-1-1. Trained counsellors work with clients to develop personal quit plans and offer support when it is needed. SMS/text based motivational messaging, secure chats with a counsellor, online forums, quit packs and website resources are all available at no cost.

Tobacco Free Nova Scotia:

<https://tobaccofree.novascotia.ca/home>

Tobacco Use and Cancer:

<https://tobaccofree.novascotia.ca/special-concerns/tobacco-use-and-cancer>

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Nova Scotia Health Authority's Nova Scotia Cancer Care Program is responsible for cancer programs and services across the province including: cancer prevention and early detection, treatment, follow-up, supportive care, palliative care and end-of-life care. The Nova Scotia Cancer Care Program collaborates with the IWK Health Centre to support the delivery of cancer services to pediatric and young adult patients, and breast health services including screening.

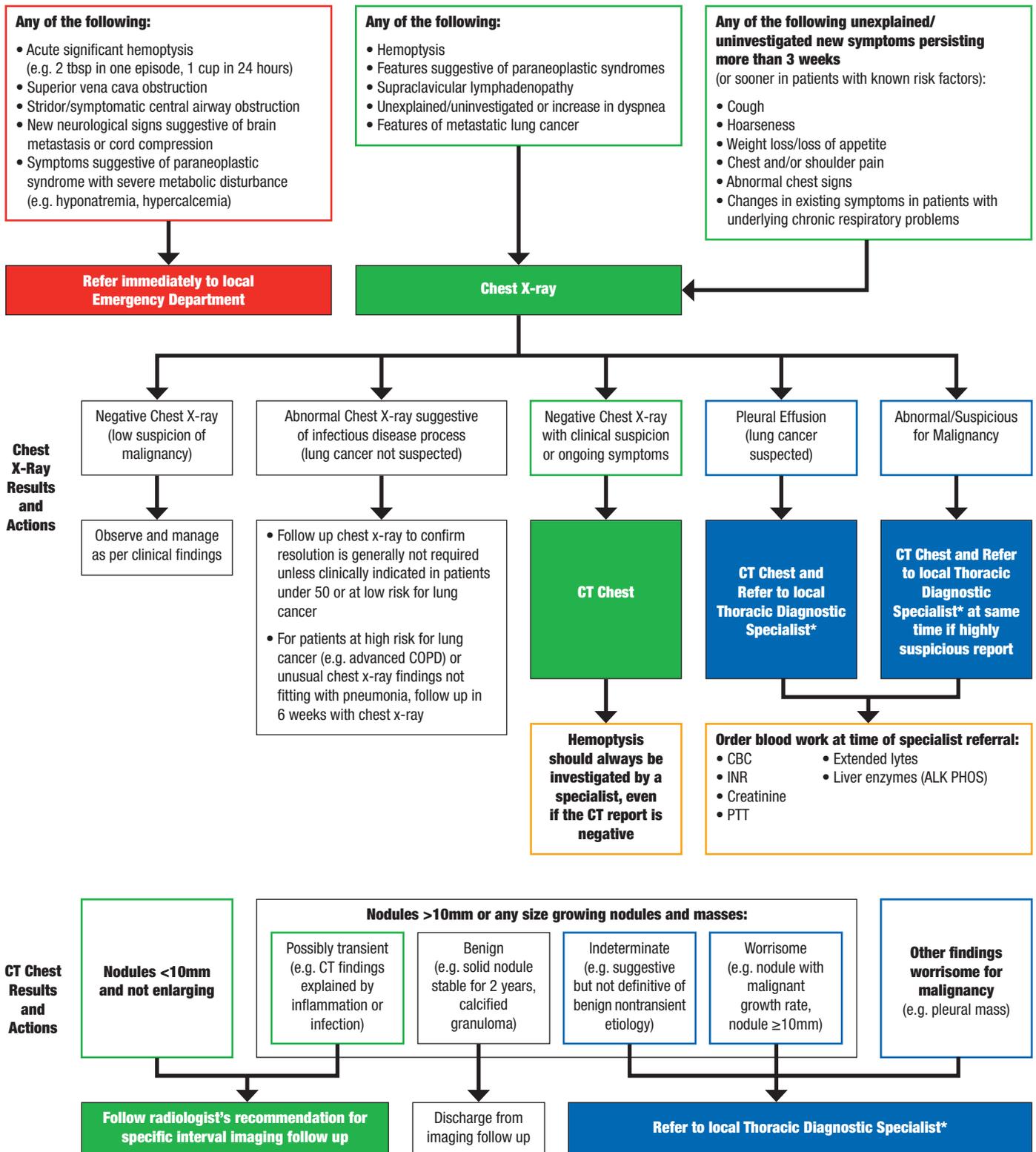
*In Practice* is written specifically for primary care practitioners with information that we hope will make a difference in your cancer practice.

Please contact Christine Smith, Communications Manager, Nova Scotia Cancer Care Program, by phone at 902.473.2932 or by email at [christine.smith@nshealth.ca](mailto:christine.smith@nshealth.ca) with comments or suggestions for future topics.

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# Initial Presentation: Signs and Symptoms Requiring Investigation for Suspected Lung Cancer



**Primary care providers should:**

- Provide the reason for referral and level of suspicion of lung cancer on all imaging requisitions.
- Maintain clear and ongoing communication with patients throughout the diagnostic process including explaining the purpose of tests ordered, expected wait times for results and the importance of keeping appointments.
- Consider patient's preferences, age, comorbidities (e.g. dementia), and life expectancy when assessing the appropriateness and extent of work up investigations.

\*A Thoracic Diagnostic Specialist may be a respirologist, internist or thoracic surgeon.