

Integration of a nurse navigator into the triage process for patients with non-small-cell lung cancer: creating systematic improvements in patient care

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ABSTRACT

Nurse navigation is a developing facet of oncology care. The concept of patient navigation was originally created in 1990 at the Harlem Hospital Center in New York City as a strategy to assist vulnerable and socially disadvantaged populations with timely access to breast cancer care. Since the mid-1990s, navigation programs have expanded to include many patient populations that require specialized management and prompt access to diagnostic and clinical resources. Advanced non-small-cell lung cancer is ideally suited for navigation to facilitate efficient assessment in this fragile patient population and to ensure timely results of molecular tests for first-line therapy with appropriately targeted agents. At the BC Cancer Agency, nurse navigator involvement with thoracic oncology triage has been demonstrated to increase the proportion of patients receiving systemic treatment, to shorten the time to delivery of systemic treatment, and to increase the rate of molecular testing and the number of patients with molecular testing results available at time of initial consultation. Insights gained through the start-up process are briefly discussed, and a framework for implementation at other institutions is outlined.

Key Words Nurse navigators, lung cancer, triage, care pathways, molecular testing

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INTRODUCTION

The involvement of navigators in general oncology care is increasingly common as an essential strategy to help guide patients and families through the complexities of their cancer journey and to improve overall cancer care. Although there is no universally accepted title or definition for the role, patient navigation services are often managed by nurses and are widely recognized as proactive mechanisms that help to ensure continuity of care; alleviation of psychosocial concerns (such as fear, anxiety, and feelings of isolation); facilitation of more timely access to screening programs and clinical and diagnostic services; and reduction in the delays, redundancies, and financial costs associated with fragmented health care services¹⁻³. Nurse navigator (NN) systems have also been successfully implemented to improve the care and management of specific patient groups such as those with HIV, diabetes,

and cardiovascular disease⁴⁻⁷. The modalities of oncology navigation program delivery that best serve the needs of the population and the care providers can be highly variable, and in addition to patient care, some programs also focus on resolving inefficiencies with systems-level processes.

Across Canada, the landscape of oncology navigation programs has increased from two professional programs in 2007 to the presence of professional navigators in every province and in one territory in 2011⁸. Ongoing successes of oncology navigation programs coupled with strategic initiatives focused on implementation will continue to foster the expansion of oncology navigation programs across Canada.

METHODS

In response to identified gaps in referrals to medical oncology and delivery of systemic therapy and to delays in initiation of appropriate treatment, oncologists at the BC

Cancer Agency (BCCA) employed a NN to help streamline the triage activities for newly referred patients with thoracic malignancies at the Vancouver Cancer Centre^{9,10}. The vision for the BCCA NN position was developed using the Oncology Nursing Society's oncology nurse navigator core competencies¹¹. The Oncology Nursing Society framework describes fundamental concepts relating to the professional role, education, coordination of care, and communication competencies involved in the establishment and growth of NN programs.

In conjunction with oncologists and the admitting department, the BCCA NN is responsible for ensuring that additional stage-appropriate investigations—including radiologic, diagnostic, and molecular tests—are ordered at the time that patients are triaged, thus efficiently using the time between referral and oncology consultation. The NN initiates and maintains contact with the patient, family members, and care providers as required before the first consultation appointment; communicates the plan for additional testing and appointments; and conducts a brief symptom assessment and evaluation of other unique key issues (for example, language barriers, transportation resources, referral to ancillary services, and logistics support). This early attention to and consideration of critical details improves triage planning, communication, the quality of care, and interactions with patients and families during triage; it also improves the efficiency of the initial consultations with the oncology care team.

With the approval of our research ethics board, we conducted the NN program as a 1-year pilot study with quality assurance and timeline endpoints. Data points included first reported symptom date (per the consultation note), first radiology test date, date first seen by a specialist, dates of referral to BCCA and to medical oncology, medical oncology consultation date, referral to radiation oncology, radiation oncology consultation date, *EGFR* test request date, *EGFR* result date, first systemic therapy date, and first radiotherapy date.

RESULTS

The comparison of data pre- and post-NN implementation noted that the number of medical oncology consultations remained the same, but the proportion of patients receiving systemic therapy increased, suggesting better patient selection and triage. With respect to treatment, patients were able to start systemic therapy a median of 10 calendar days sooner. Rates of molecular testing increased to 91% from 62%, while the proportion of patients with targetable mutations remained the same¹². In addition, after NN implementation, molecular testing results were more often available at the time of the initial medical oncology consultation (37% vs. 6% before implementation), thereby reducing the number of repeat visits for the follow-up of outstanding tests and enabling appropriate medical therapy to be initiated more rapidly.

To facilitate the new triage process, pre-initiation meetings were held with the admitting department supervisors and clerks to detail the partnership and the process. Before the NN, all tests were ordered after the first consultation and were booked by the health unit clerks;

moving the timing forward required collaboration with the admitting department to facilitate the processing of radiology, laboratory, and pathology tests. Overall, resource utilization and treatment delivery were better, ultimately leading to better patient care.

DISCUSSION

A recent Canadian survey noted that biomarker testing is most commonly ordered by medical oncologists and that biomarker test results are available at initial consultation for fewer than two thirds of patients¹³. In most provinces, *EGFR* and *ALK* testing are provided in stage IIIB and IV non-small-cell lung cancer (NSCLC) only, although some sites use reflex testing for all disease stages. In British Columbia, *EGFR* and *ALK* testing are both provided as a standard of care for patients with stages IIIB and IV nonsquamous NSCLC only when requested, usually by the medical oncologist.

Provision of targeted therapies for biomarker-positive disease varies across the country. Western and central provinces offer the full complement of coverage for *EGFR*- and *ALK*-targeted drugs; in some eastern provinces, certain drugs are not available under the provincial pharmaceutical strategy. However, this field is rapidly changing, and some degree of biologic testing will undoubtedly become the standard of care (if it is not already), and our referral and triaging processes have to prepare for that practice.

One of the parallel projects associated with defining the NN role at the BCCA was the development of triage pathways to formally describe the processes and activities associated with NN-assisted triage of thoracic malignancies, thus facilitating provincial implementation of the process.

The BCCA NSCLC triage pathway highlighted here represents a simplified, easily accessible, and practical implementation of decision-making for triage activities (Figure 1). Following the prompts, the pathway user is guided toward an understanding of the completeness of the referral and the additional diagnostic and biomarker testing that could be initiated at triage to help reduce wait times for patients (Table 1). The contents and format of the NSCLC triage pathway have been developed and reviewed with a multidisciplinary team and are felt to provide an accessible and reasonably comprehensive summary of the key decision points and additional investigations required for new-referral NSCLC patients. Additional pathways have been developed for navigation in small-cell lung cancer, thymic malignancies, and mesothelioma. In situations in which the available information does not lead to a definitive triage endpoint, the NN is prompted to seek input from an oncologist.

The benefits of using a reasonably simplified generic approach to triage pathways by a NN are numerous. The use of accessible language within the pathway provides a user-friendly experience, and members of the health care team with a basic foundation in oncology can easily extrapolate key information provided with the referral to guide a triage assessment and plan. Moreover, with additional biomarker testing for NSCLC being on the horizon, the pathway can not only easily incorporate and identify potential candidates for upfront testing, but can also potentially provide a mechanism to enact earlier screening for participation in clinical trials.

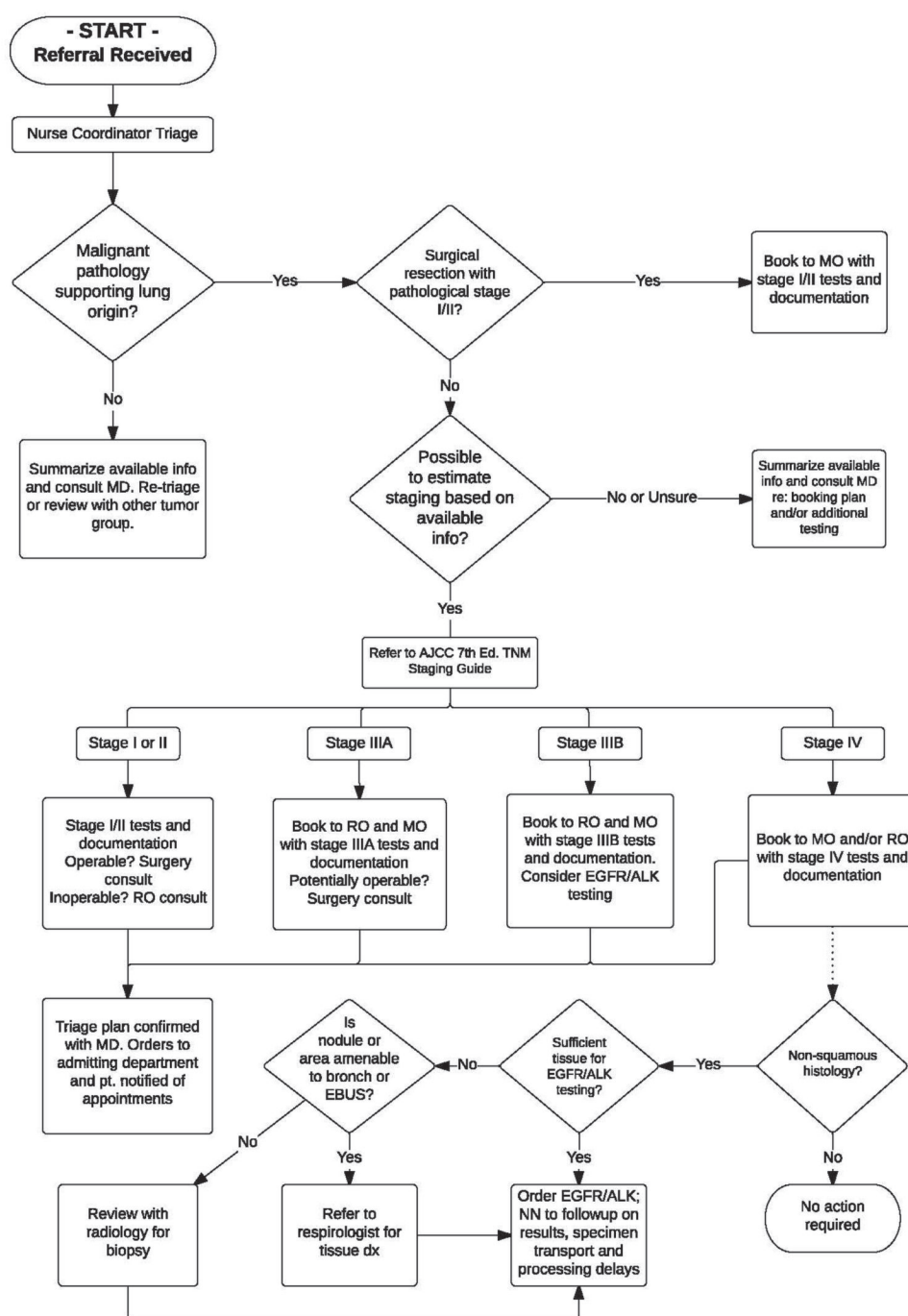


FIGURE 1 Triage pathway for non-small-cell lung cancer. MO = medical oncology; MD = doctor; AJCC = American Joint Committee on Cancer; RO = radiation oncology; pt. = patient; EBUS = endobronchial ultrasonography; NN = nurse navigator.

Assessment by a NN as an integral part of the triage pathway provides current information to oncologists that can affect decisions for further upfront investigations. In addition, communication with patients to discuss upcoming testing and booking plans helps empower patients to feel participatory and informed about their care. It also ensures that the time between referral and consultation is being used efficiently.

The basic pathway structure and decision-making prompts are potentially amenable to reformatting to accommodate NN triage and to advance the review of new referrals at other cancer centres. Perhaps most importantly, use of a proactive, standardized, and comprehensive evaluation system for new referrals at the time of triage helps to optimize resource allocation. Based on the improvements noted at the BCCA's Vancouver Cancer Centre, a proposal

TABLE I Triage checklist for non-small-cell lung cancer by stage

Investigation	Stage			
	I/II	IIIA	IIIB	IV
Relevant pre-referral consultations, radiology, and pathology	X	X	X	X
Operative report	X ^a	X ^b		
Molecular testing, nonsquamous			X	X
Pulmonary function tests	X	X	X	
Computed tomography				
Brain		X	X	X ^c
Chest	X ^d	X ^d	X ^d	X
Abdomen	X ^d	X ^d	X ^d	
Bone scan				X ^c
Positron-emission tomography	X ^d	X ^d	X ^d	
Medical oncology referral	X	X	X	X ^e
Radiation oncology referral	X ^a	X ^b	X	X ^f
Referral to counselling, social work, nutrition, interpreter services	X ^g	X ^g	X ^g	X ^g

^a Book postoperative patients to medical oncology within 4–6 weeks of surgical resection. Nonsurgical candidates are referred to radiation oncology for consideration of stereotactic body radiation therapy.

^b Stage IIIA resected: Refer all to medical oncology; refer margin-positive and N2 to radiation oncology. Nonsurgical candidates are referred to medical oncology and radiation oncology for possible combined-modality therapy.

^c Only if patient is symptomatic.

^d Or positron-emission tomography.

^e Can be omitted if, after discussion with oncologist, patient is deemed unsuitable for systemic treatment.

^f Urgent for patients with central nervous system metastases, superior vena cava syndrome, central airway obstruction, hemoptysis, bone pain.

^g Based on telephone contact, screen all patients for supportive services.

will be put forth for a provincial NN program to benefit all lung cancer patients in British Columbia.

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CONFLICT OF INTEREST DISCLOSURES

We have read and understood *Current Oncology's* policy on disclosing conflicts of interest, and we declare the following interests: JL has received honoraria from Eli Lilly, Boehringer Ingelheim, and Roche. CH has received honoraria from Astra-Zeneca, Bayer, Boehringer Ingelheim, Bristol–Myers Squibb, Lilly, Pfizer, and Roche; she has also received travel and accommodation expense reimbursement from Boehringer Ingelheim.

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