

Interprofessional Lung Cancer Tumor Board

The role of the oncology nurse navigator in improving adherence to national guidelines and streamlining patient care

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BACKGROUND: Lung cancer traditionally has a high morbidity and mortality rate because of late diagnosis. Use of a tumor board has been noted as one way to improve patient care and quality of life.

OBJECTIVES: This article aimed to determine the contributions of an oncology nurse navigator (ONN) related to physician adherence to guidelines and streamlined patient care in an interprofessional lung cancer tumor board.

METHODS: Retrospective chart review was performed for 18 months prior to and following implementation of the lung cancer tumor board.

FINDINGS: After implementation of the lung cancer tumor board and the creation of clinical pathways by the ONN, diagnosis of early-stage non-small cell lung cancer and the use of diagnostic workups increased.

KEYWORDS

lung cancer; interprofessional tumor board; oncology nurse navigator

DIGITAL OBJECT IDENTIFIER

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MORE PEOPLE DIE EACH YEAR FROM LUNG CANCER than from colon, breast, and prostate cancers combined (American Cancer Society [ACS], 2018). Among smokers, the risk for developing lung cancer is higher than for nonsmokers, but the lifetime lung cancer risk for a man is about 1 in 15 and about 1 in 17 for a woman (ACS, 2018). Black men have a 20% higher chance of developing lung cancer than White men, whereas the rate of lung cancer development is about 10% lower in Black women than in White women. The average age of lung cancer diagnosis is 70 years, and very few individuals are diagnosed aged younger than 45 years (ACS, 2018). When lung cancer is diagnosed and treated in its early stages, survival outcomes improve significantly. For example, the five-year survival rate for individuals with stage IA1 non-small cell lung cancer is 92%, compared to less than 1% for stage IVB disease (ACS, 2017). This study aimed to determine if the use of interprofessional tumor boards, national guidelines, and an oncology nurse navigator could help to improve patient outcomes and quality of care.

Interprofessional Tumor Boards

The primary purposes of a tumor board, which involves experts from various specialties, are to assist with the diagnostic workup of patients, discuss treatment options, and guide patient care (Taddei, 2013). Such interprofessional tumor boards have the potential to improve patient outcomes and quality of life (Fischel & Dillman, 2009), and they often provide input that results in improved treatment plans (Ung, Campbell, Duplan, Ball, & David, 2016).

In particular, many challenges exist in the diagnosis and treatment of lung cancer. The diagnosis of lung cancer is often delayed, with the lack of uniform treatment guidelines among specialties being a significant contributing factor (Vinas, Ben Hassan, Jabot, Monnet, & Chouaid, 2016). The literature shows that monitoring pulmonary nodules or suspicious lung findings leads to diagnosis at an earlier stage. Radiologic monitoring can assist

the interprofessional team in diagnosis and treatment planning, decreasing the number of procedures a patient needs to undergo (Alsamarai et al., 2013; Quint et al., 2013).

Lung cancer tumor boards play an important role in the diagnosis and treatment of early-stage lung cancers (Kehl et al., 2015). The use of an interprofessional team to stage lung cancer offers the integration of expert input and evidence-based guidelines into treatment plans. Tumor boards allow a patient's case to be looked at as a whole picture by the entire team instead of as various parts, addressed individually by specialists. A case is often presented before many of the physicians involved have seen the patient. Discussing the patient's health history, comorbidities, and concerns and wishes early on is significant; this allows the treatment plan to be tailored to the patient. For example, a patient with multiple comorbidities who is not a surgical candidate will need a treatment plan that deviates from guideline-recommended best practices.

Overall, obtaining early input from all specialists involved in a patient's treatment helps to make appointments more streamlined. Specialists can also voice concerns or limitations that may hinder the treatment plan, which may affect how the specialty assuming responsibility afterward addresses the next portion of treatment. For example, if the location of suspicious nodules is not accessible by bronchoscopy, the pulmonologist may ask for surgical biopsy with the possibility of lobe resection at the time of surgery if the surgical biopsy shows malignancy; this would be an improvement from the pulmonologist attempting a biopsy via bronchoscopy, then sending the patient to interventional radiology for a percutaneous biopsy that, ultimately, also fails. The patient would then end up with the surgeon for a surgical biopsy and a possible second surgery for resection if the pathology report shows malignancy.

The literature reveals physician availability to be the principal barrier in interprofessional tumor board implementation (Denton & Conron, 2016). To create a successful tumor board, each discipline taking part must commit to having a representative who will be involved in discussing and planning patient care. Arranging meeting dates and times that are convenient for all participants is one important challenge.

Adherence to Guidelines

Interprofessional teams generally allow professionals from different specialties to collaborate. Such collaboration can improve adherence to the evidence-based, specialty-specific national guidelines assembled by various professional organizations and enhance patient care (Denton & Conron, 2016). Many specialties have professional organizations that create best practice guidelines within the discipline. However, sometimes discrepancies exist among the guidelines of various organizations and disciplines; addressing this is important when working with interprofessional teams.

“Interprofessional tumor boards have the potential to improve patient outcomes and quality of life.”

This may explain why studies found varying survival benefits to the use of tumor boards (Coory, Gkolia, Yang, Bowman, & Fong, 2008; Kunos, Olszewski, & Espinal, 2015). For example, a genitourinary tumor board implemented at a university hospital standardized decision-making guidelines (Lamb et al., 2013). Board members noted improvements in the quality and completeness of patient care information presented and the quality of teamwork, as well as in the board members' ability to reach unified decisions. These changes improved patient care, including consistency of care, but could not be directly linked to lowering mortality rates. In addition, a study by Kostaras et al. (2012) explored the use of clinical guidelines by neuro-oncology tumor boards at two tertiary care centers in Alberta, Canada, finding that most physicians reported the guidelines as being beneficial, but some felt they restricted their autonomous practice. A study by Levine, Chawla, Bergeron, and Wasvary (2012) also looked at the use of clinical guidelines, albeit by colorectal tumor boards, finding improved adherence to the guidelines, particularly when the patient's case was discussed prior to surgery.

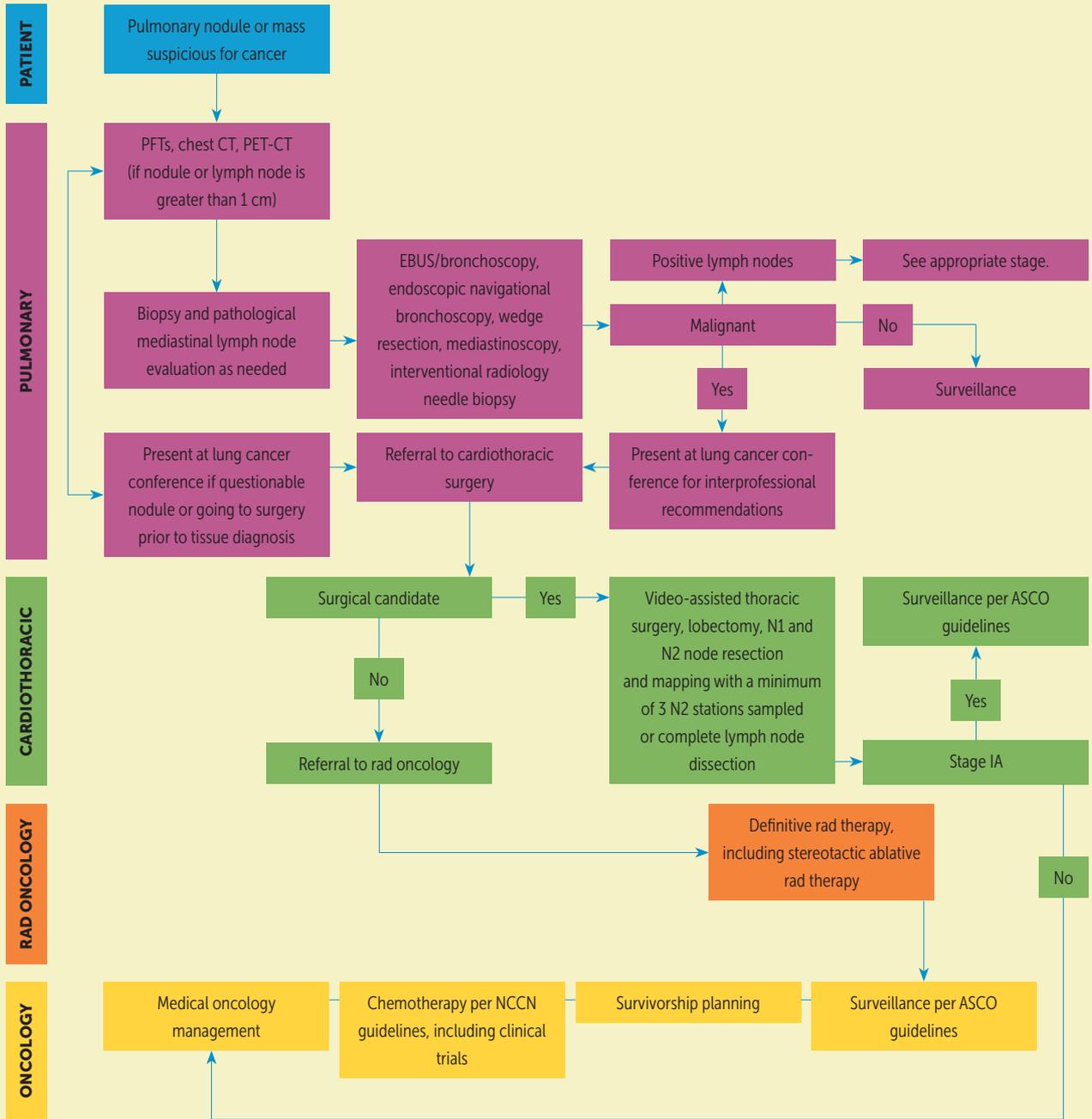
Oncology Nurse Navigators

The Oncology Nursing Society ([ONS], 2015) defines an oncology nurse navigator (ONN) as an RN with specialized clinical knowledge in oncology who assists the patient and his or her family with barriers to care, provides education, facilitates informed decision making, and offers timely care.

ONNs are able to communicate across specialties and function as patient advocates and educators, empowering patients and families through education and providing guidance during the care process (Seek & Hogle, 2007). In addition, the role of nurse navigators in assisting with the coordination of care makes them excellent facilitators of tumor boards (Kunos et al., 2015).

Nurse navigators are able to establish early connections with patients with cancer that allow them to be trustworthy sources of help and guidance. Their constant presence helps to quickly move

FIGURE 1.
ALGORITHM FOR STAGE I NON-SMALL CELL LUNG CANCER



ASCO—American Society of Clinical Oncology; CT—computed tomography; EBUS—endobronchial ultrasound; NCCN—National Comprehensive Cancer Network; PET—positron-emission tomography; PFT—pulmonary function test; rad—radiation

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Note. Adapted algorithm courtesy of PIH Health. Used with permission.

patients through the healthcare system and ensures that guidelines are met (Doerfler-Evans, 2014). Nurse navigation involves a trusting relationship among the patient, his or her family, and the nurse and features the identification of barriers impeding care. The goal of navigation is for the nurse navigator to provide comprehensive patient-specific processes (e.g., addressing patient fears, wishes, comorbidities, and social and financial limitations) to overcome barriers and expedite the patient's movement through the healthcare system (Case, 2011).

A study by Hunnibell et al. (2012) evaluated the role of an advanced practice nurse acting as an ONN in the Connecticut Veterans Affairs Healthcare System. The ONN worked directly with patients with lesions suspicious for lung cancer or with known lung cancer to help expedite the diagnosis and treatment processes. ONNs have been used in the cancer staging process, in the facilitation of interprofessional lung cancer tumor boards, and in the minimization of time from diagnosis to treatment (Doerfler-Evans, 2014; Hunnibell et al., 2012; Kunos et al., 2015; Seek & Hogle, 2007; Zibrik, Laskin, & Ho, 2016b). When an ONN (also referred to in the literature as a cancer care coordinator) is used, a decrease of 19–25 days in time from diagnosis to treatment has been observed (Alsamarai et al., 2013; Kunos et al., 2015; Zibrik, Laskin, & Ho, 2016a).

Methods

The current study was a retrospective chart review of an interprofessional lung cancer tumor board performed for 18 months preimplementation (January 2013 to May 2014) and 18 months postimplementation (June 2014 to December 2015). The purpose of this study was to determine (a) the impact of the lung cancer tumor board on physician adherence to guidelines and the streamlining of patient care and (b) the contributions of an ONN to this board.

The study setting was a 500-bed community hospital serving three counties in southern California. Study approval was received from the facility's research oversight committee. Because this was a quantitative retrospective study, institutional review board approval and informed consent from study participants were not required.

Study Data

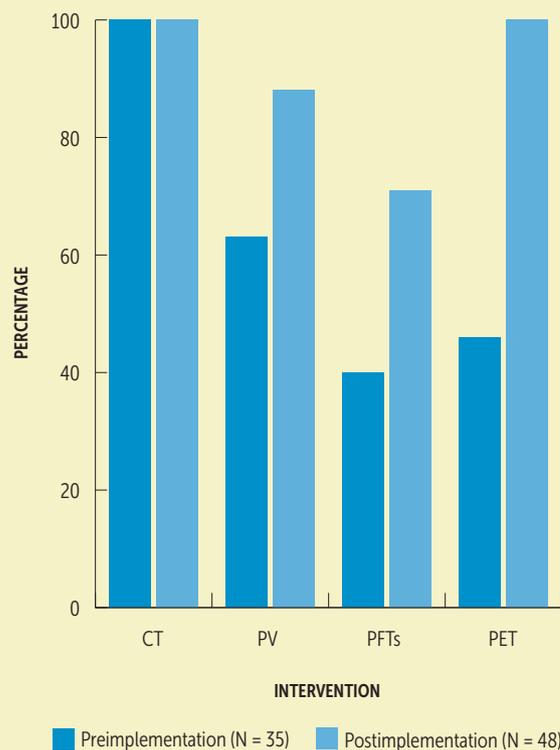
Data for this study were obtained through a cancer registry database; these data helped to identify all patients with stage I or II non-small cell lung cancer. A retrospective chart review was conducted for these patients 18 months prior to the implementation of the tumor board (preimplementation or baseline group); the same process was replicated for all patients with stage I and II non-small lung cancer identified in the 18 months following the implementation of the interprofessional lung cancer tumor board (postimplementation or intervention group). Chart review provided information regarding whether

these patients had received the following assessments prior to treatment:

- Assessment by a pulmonologist
- Pulmonary function tests
- Chest computed tomography (CT)
- Positron-emission tomography (PET)

These assessments should be part of each patient's staging workup, according to practice pathways adapted from the National Comprehensive Cancer Network ([NCCN], 2015) guidelines. Adaptation of the NCCN's (2015) guidelines was deemed necessary to establish consistency among specialties within the lung cancer tumor board who each have professional organizational guidelines. Instead of each specialty relying on its own guidelines for patients with cancer, it was determined that the NCCN (2015) guidelines would be used by all specialties, with some minute variations made to create a facility-specific lung cancer clinical practice pathway. This was done by the ONN, who created a one-page algorithm that summarized the NCCN (2015) guidelines for

FIGURE 2. INTERVENTION IMPROVEMENT PRE- AND POSTIMPLEMENTATION OF LUNG CANCER TUMOR BOARD



CT—computed tomography; PET—positron-emission tomography; PFTs—pulmonary function tests; PV—pulmonologist visit

each stage of non-small cell lung cancer. Once completed, these algorithms were discussed at length, and changes were made by members of the lung cancer tumor board, who ultimately agreed that the algorithms would become the standard of care and standard for accountability (see Figure 1).

Preimplementation Protocol

Prior to the implementation of the lung cancer tumor board, a pulmonologist, cardiothoracic surgeon, interventional radiologist, radiation oncologist, or oncologist could assume care of a patient with lung cancer at any point during his or her staging workup. Inconsistency existed in the referral process for patients with suspicious lesions or lung cancer diagnoses. In addition, there was no standardized use of guidelines, no consistency in which staging examinations were ordered, and no quality assurance that patients were completing all procedures prior to beginning treatment; this often resulted in delays in patients’ treatment. The inconsistency in which guidelines were used made tracking adherence difficult and resulted in varied patient care, which was dependent on the specialist overseeing the care of a given patient.

Postimplementation Protocol

With the formation of the facility’s lung cancer screening program, which preceded the creation of the lung cancer tumor board, the ONN identified the need for consistent care from workup through diagnosis to provide timely treatment. The ONN assumed the role of adapting the NCCN’s (2015) guidelines into facility-specific standardized practice pathways for stage I, II, IIIA, IIIB, and IV non-small cell lung cancers. These pathways became standards of care for all patients with lung cancer treated at the facility and ensured that all patients could move through and navigate the system efficiently; specialist and physician accountability was also a product of these pathways.

The first action listed on all five pathways created was to identify patients with suspected lung cancer, then schedule those patients for a comprehensive workup under the direction of a pulmonologist, who would order all required examinations and make specialist referrals.

The patient’s case would then be discussed at the inter-professional lung cancer tumor board to ensure that staging workups met the criteria for all disciplines involved. Issues requiring management included acquiring adequate tissue for molecular studies, identifying techniques for tissue biopsy, and ensuring that all patients had CT scans within four weeks of surgery. The immediate goal was to have all staging tests completed prior to patients seeing thoracic surgeons, radiation oncologists, and/or medical oncologists. The long-term goals were to determine if the time between diagnosis and start of treatment could be decreased and to ensure that all patients with lung cancer received the highest quality of care available and experienced improved quality of life.

Among members of the lung cancer tumor board, the ONN served as the point of contact for physicians who wanted to present a patient’s case at the interprofessional lung cancer tumor board. Radiologists would notify the ONN of potentially suspicious lesions among outpatients and inpatients, and the ONN would then contact the ordering provider to expedite the next step of care, preventing a delay because of misplaced or unread scans.

At each weekly meeting of the lung cancer tumor board, the ONN, as a co-leader of the lung cancer tumor board, would present information obtained from working with patients and their families. The ONN would then follow up with each specialty physician or his or her office afterward, which helped to ensure that each physician’s responsibilities were being met, as discussed during the lung cancer tumor board, and that each patient was moving through the healthcare system with minimal delays. Patients stayed on the tumor board list until their diagnostic workup was complete and they began treatment. A brief weekly update was given on each of these patients to keep each specialty involved accountable and to make sure patients were not lost to follow-up.

The principal barrier to implementation of the lung cancer tumor board was identifying a time when all specialty providers could be present. This issue was consistent with the literature (Denton & Conron, 2016) and was addressed with full physician commitment to the program (each specialty had at least one person present for weekly discussions). The lung cancer tumor board began meeting after office hours, at 5 pm, twice monthly on dates when the thoracic surgeon had not scheduled surgeries. As the case load increased and physicians found the lung cancer tumor board to be useful to their practice, the meetings became weekly.

Practice change efficacy generated by the lung cancer tumor board was assessed based on three crucial pre- and postimplementation interventions:

TABLE 1.
PERCENTAGE CHANGE BETWEEN PRE- (N = 35)
AND POSTIMPLEMENTATION (N = 48)
OF LUNG CANCER TUMOR BOARD

VARIABLE	PRE (%)	POST (%)	CHANGE (%)
Diagnosis of ES NSCLC	35	48	+ 37
Surgery	74	79	+ 5
SBRT	14	15	+ 1
Lost to follow-up	11	6	- 5

ES NSCLC—early-stage non-small cell lung cancer; pre—preimplementation; post—postimplementation; SBRT—stereotactic body radiation therapy

- Whether the patient saw a pulmonologist
- Whether pulmonary function tests were performed
- Whether all necessary staging examinations were completed (chest CT and/or PET-CT)

These outcomes reflected barriers to best practices and to streamlined lung cancer care, which had been identified by the ONN from the available baseline data.

Results

Overall changes observed between the preimplementation or baseline group (n = 35) and the postimplementation or intervention group (n = 48) represent a positive impact stemming from the creation of the lung cancer tumor board (see Figure 2). From pre- to postimplementation, a 37% increase was noted in the diagnosis of early-stage non-small cell lung cancer. The data were found to be statistically significant (5%, $p = 0.01$) when analyzed using the chi-squared test and Barnard's (1945) test (see Table 1).

All patients underwent a CT scan as part of their diagnostic workup; consequently, no change was seen from pre- to postimplementation. Preimplementation, 22 patients saw a pulmonologist prior to beginning treatment, as compared to 42 patients postimplementation; these results, equivalent to a 26% increase, demonstrated significance (5%, $p = 0.01$) for the chi-squared test and Barnard's (1945) test.

Pulmonary function tests were completed for 14 patients preimplementation and for 34 patients postimplementation, which represents a 31% increase and is significant (5%, $p < 0.01$) with the chi-squared test and Barnard's (1945) test. PET-CT data for all participants with stage II disease were included in this study. Preimplementation, 6 patients had a PET-CT scan prior to the start of treatment, compared to 11 patients postimplementation, which is significant (5%, $p < 0.01$) with Barnard's (1945) test.

Because of the overall increase in early-stage non-small cell lung cancer diagnosed from pre- to postimplementation, there was also an increase observed in use of treatment services. Surgical treatments increased by 5% (74% preimplementation versus 79% postimplementation), and stereotactic body radiation therapy use increased by 1% (14% preimplementation versus 15% postimplementation). A 5% decrease in patients lost to follow-up was also observed (11% preimplementation versus 6% postimplementation).

Discussion

The implementation of an interprofessional lung cancer tumor board increased the number of early-stage non-small cell lung cancer diagnoses (37% increase pre- to postimplementation). The role of the ONN was central to the lung cancer tumor board, particularly in the formulation of clinical practice pathways based on national guidelines (NCCN, 2015). Adherence to these pathways was measured by the number of patients who were assessed by a pulmonologist, underwent pulmonary function tests, and

IMPLICATIONS FOR PRACTICE

- Provide crucial input in interprofessional tumor boards.
- Offer patients clear and salient patient education that is drawn from the plan of care, established during interprofessional tumor board review.
- Realize that an effective plan of care is based on best practices stemming from clinical pathways.

had completed all necessary staging examinations (chest CT and/or PET-CT); all showed positive outcomes postimplementation.

Consistent with much of the literature (Denton & Conron, 2016; Lamb et al., 2013; Taddei, 2013), the current study confirmed that an interprofessional approach to care improves patient outcomes and increases compliance with guidelines. Establishing a lung cancer tumor board provides a forum for interprofessional team discussion about early-stage non-small cell lung cancer. The ONN-driven creation and implementation of facility-specific standardized practice pathways was crucial to improving adherence to national guidelines, standardizing care for all patients with lung cancer at the facility, and improving patient workflow. As a member of the lung cancer tumor board, the ONN helps to improve communication among members of the patient's care team and is a source of information and education for the patient, which helps to better coordinate care.

Limitations

This study was conducted in only one facility, had a limited sample size (n = 83), and consisted entirely of retrospective data collected during a limited time period of 18 months. In addition, a lung cancer screening program was initiated simultaneously with the interprofessional lung cancer tumor board, and it is impossible to separate the effect of one on the other. The ONN's responsibilities included managing the screening program and planning the lung cancer tumor board.

Conclusion

This study confirmed that an interprofessional lung cancer tumor board improves the overall quality of care provided to patients with lung cancer. The plan of care discussed and coordinated by the lung cancer tumor board followed practice guidelines, and the ONN was central in creating the facility's standardized guidelines, which became an algorithm from which the lung cancer tumor board worked. Because the current study demonstrated value of the ONN in one facility, further research is recommended to determine if this research can be translated to other settings.

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REFERENCES

Alsamarai, S., Yao, X., Cain, H.C., Chang, B.W., Chao, H.H., Connery, D.M., . . . Rose, M.G. (2013). The effect of a lung cancer care coordination program on timeliness of care. *Clinical Lung Cancer, 14*, 527–534. <https://doi.org/10.1016/j.clcc.2013.04.004>

American Cancer Society. (2017). Non-small cell lung cancer survival rates, by stage. Retrieved from <https://www.cancer.org/cancer/non-small-cell-lung-cancer/detection-diagnosis-staging/survival-rates.html>

American Cancer Society. (2018). *Key statistics for lung cancer*. Retrieved from <http://www.cancer.org/cancer/lungcancer-non-smallcell/detailedguide/non-small-cell-lung-cancer-key-statistics>

Barnard, G.A. (1945). A new test for 2 x 2 tables. *Nature, 156*, 177. <https://doi.org/10.1038/156177a0>

Case, M.A. (2011). Oncology nurse navigator. *Clinical Journal of Oncology Nursing, 15*, 33–40. <https://doi.org/10.1188/11.CJON.33-40>

Coory, M., Gkolia, P., Yang, I.A., Bowman, R.V., & Fong, K.M. (2008). Systematic review of multidisciplinary teams in the management of lung cancer. *Lung Cancer, 60*, 14–21. <https://doi.org/10.1016/j.lungcan.2008.01.008>

Denton, E., & Conron, M. (2016). Improving outcomes in lung cancer: The value of the multidisciplinary health care team. *Journal of Multidisciplinary Healthcare, 9*, 137–144. <https://doi.org/10.2147/JMDH.S76762>

Doerfler-Evans, R.E. (2014). Timely lung cancer diagnosis: Case study of thoracic oncology nurse navigation. *Oncology Times, 36*, 7–8. <https://doi.org/10.1097/01.COT.0000446237.60547.96>

Fischel, R.J., & Dillman, R.O. (2009). Developing an effective lung cancer program in a community hospital setting. *Clinical Lung Cancer, 10*, 239–243. <https://doi.org/10.3816/CLC.2009.n.032>

Hunnibell, L.S., Rose, M.G., Connery, D.M., Grens, C.E., Hampel, J.M., Rosa, M., & Vogel, D.C. (2012). Using nurse navigation to improve timeliness of lung cancer care at a veterans hospital. *Clinical Journal of Oncology Nursing, 16*, 29–36. <https://doi.org/10.1188/12.CJON.29-36>

Kehl, K.L., Landrum, M.B., Kahn, K.L., Gray, S.W., Chen, A.B., & Keating, N.L. (2015). Tumor board participation among physicians caring for patients with lung or colorectal cancer. *Journal of Oncology Practice, 11*, e267–e278. <https://doi.org/10.1200/JOP.2015.003673>

Kostasas, X., Shea-Budgell, M.A., Malcolm, E., Easaw, J.C., Roa, W., & Hagen, N.A. (2012). Is there a role for clinical practice guidelines in multidisciplinary tumor board meetings? A descriptive study of knowledge transfer between research and practice. *Journal of Cancer Education, 27*, 42–45. <https://doi.org/10.1007/s13187-011-0263-6>

Kunos, C.A., Olszewski, S., & Espinal, E. (2015). Impact of nurse navigation on timeliness of diagnostic medical services in patients with newly diagnosed lung cancer. *Journal of Community and Supportive Oncology, 13*, 219–224.

Lamb, B.W., Green, J.S., Benn, J., Brown, K.F., Vincent, C.A., & Sevdalis, N. (2013). Improving decision making in multidisciplinary tumor boards: Prospective longitudinal evaluation of a multicomponent intervention for 1,421 patients. *Journal of the American College of Surgeons, 217*, 412–420. <https://doi.org/10.1016/j.jamcollsurg.2013.04.035>

Levine, R.A., Chawla, B., Bergeron, S., & Wasvary, H. (2012). Multidisciplinary management of colorectal cancer enhances access to multimodal therapy and compliance with National Comprehensive Cancer Network (NCCN) guidelines. *International Journal of Colorectal Disease, 27*, 1531–1538. <https://doi.org/10.1007/s00384-012-1501-z>

National Comprehensive Cancer Network. (2015). *NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®): Non-small cell lung cancer* [v.7.2015]. Retrieved from https://www.nccn.org/professionals/physician_gls/PDF/nscl.pdf

Oncology Nursing Society. (2015). Oncology nurse navigation role and qualifications. *Oncology Nursing Forum, 42*, 447–448. <https://doi.org/10.1188/15.ONF.447-448>

Quint, L.E., Reddy, R.M., Lin, J., Arenberg, D.A., Speers, C., Hayman, J.A., . . . Kalemkerian, G.P. (2013). Imaging in thoracic oncology: Case studies from multidisciplinary thoracic tumor board (part 1 of 2 part series). *Cancer Imaging, 13*, 429–439. <https://doi.org/10.1102/1470-7330.2013.0037>

Seek, A.J., & Hogle, W.P. (2007). Modeling a better way: Navigating the healthcare system for patients with lung cancer. *Clinical Journal of Oncology Nursing, 11*, 81–85. <https://doi.org/10.1188/07.CJON.81-85>

Taddei, T.H. (2013). A multidisciplinary approach: Group dynamics. *Journal of Clinical Gastroenterology, 47*(Suppl.), S27–S29.

Ung, K.A., Campbell, B.A., Duplan, D., Ball, D., & David, S. (2016). Impact of the lung oncology multidisciplinary team meetings on the management of patients with cancer. *Asia-Pacific Journal of Clinical Oncology, 12*, e298–e304. <https://doi.org/10.1111/ajco.12192>

Vinas, F., Ben Hassen, I., Jabot, L., Monnet, I., & Chouaid, C. (2016). Delays for diagnosis and treatment of lung cancers: A systematic review. *Clinical Respiratory Journal, 10*, 267–271. <https://doi.org/10.1111/crj.12217>

Zibrik, K., Laskin, J., & Ho, C. (2016a). Implementation of a lung cancer nurse navigator enhances patient care and delivery of systemic therapy at the British Columbia Cancer Agency, Vancouver. *Journal of Oncology Practice, 12*, e344–e349. <https://doi.org/10.1200/JOP.2015.008813>

Zibrik, K., Laskin, J., & Ho, C. (2016b). Integration of a nurse navigator into the triage process for patients with non-small-cell lung cancer: Creating systematic improvements in patient care. *Current Oncology, 23*, e280–e283. <https://doi.org/10.3747/co.23.2954>

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