Detection of Earlier Stage Lung Cancers through the Development of a Multidisciplinary Lung Nodule Center
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Overview
Lung cancer remains the second most commonly diagnosed malignancy and the number one cause of mortality due to cancer. The potential benefits of lung cancer screening cannot be underestimated. Identification of high risk individuals who meet criteria for low dose CT (LDCT) screening is critical to early diagnosis and prompt treatment. As a result of LDCT screening, nodules are often found, and management can be challenging and complex for the clinical team. Using evidenced based strategies, the Lung Program Executive Committee (LPEC) developed a designated Lung Nodule Center (LNC) within the cancer program.

The approach to the creation of this center was multi-faceted and included the development, integration and promotion of evidenced based guidelines and algorithms for management of high risk lung nodules. The LPEC created a multidisciplinary care conference which included pulmonologists, thoracic surgeons, radiation/medical oncologists, pathologists, radiologists, nurses, and tumor registrars who prospectively discuss cases. The patients are subsequently evaluated the same day in the center by the pulmonologists and thoracic surgeons. This model includes a dedicated nurse navigator who collaborates with the physicians and office staff to streamline appointments, and supports the care conference and patient visits. This model includes on-site access to tobacco cessation counseling, pulmonary function tests, and fast tracking for cardiac clearance to expedite the turn-around times for scheduling pulmonary interventions and/or surgery for patients. The LPEC developed customized LNC patient education materials, a patient satisfaction survey and a quality metric dashboard for tracking outcomes and a referral recognition program. The implementation of this model resulted in earlier clinical interventions for patients with earlier stages of lung cancer; adoption of evidence based algorithms for patient management; positive patient satisfaction scores, and reduced turn-around times for abnormal nodule findings to patient evaluation and subsequent pulmonary procedures/thoracic surgery.

Key Program Elements
- Specialty trained Nurse Navigators to schedule appointments, monitor follow up care, expedite the process, provide patient education, and alleviate any barriers to receiving care
- Dedicated Nurse Navigators who work closely with the Lung Screening Program to identify high risk nodules
- High tech lung evaluation by a multidisciplinary team
- Physician experts who closely monitor lung nodules
- Identification of lung cancer at its earliest stage
- Access to smoking cessation counseling with a Certified Tobacco Treatment Specialist
- Access to expedited cardiac clearance for patients requiring procedures or surgery
- Pulmonary Function Testing
- Tobacco Cessation w/ Carbon Monoxide Breathalyzer Testing
- Development of electronic referrals for Primary Care Physicians to the Lung Nodule Center
- Multidisciplinary team discussion on the same day as the patient visit
  - Standards/Guidelines:
    - Lung RADS
    - Fleischner Society Guidelines
    - NCCN®
  - Physician Referral Recognition Program to the Lung Nodule Center

Program Outcomes

2015 to 2017 Analytic Lung Cancer Cases by Stage

![Graphic depicting lung cancer cases by stage]

Lung Nodule Center: Diagnosed Malignancies
2017 – 2018 YTD

![Graphic showing diagnosed malignancies]

Lung Nodule Center Volumes: 2017-2018 YTD

![Graphic showing lung nodule center volumes]

*2017 data represents five months. LNC started August 2017.

Conclusion and Future Directions
Creating a leadership infrastructure to guide and develop a lung program of excellence is critical to success. Physician engagement and nurse navigation are pivotal elements for building a multidisciplinary approach to evidence-based management of lung nodules. Development and implementation of a lung nodule center creates opportunity to improve management and coordination of care for patients and measure program outcomes. Tracking measures of quality and capturing timely data are crucial components to assess progress, identify barriers and areas for opportunity for a lung cancer program.

- Tracking of metrics/care coordination is manual and need for EHR integration with lung software are being explored.
- Use of liquid biopsies for patients who may not tolerate surgery
- Optimizing Interventional Pulmonary Equipment
- Expansion of Center Hours as patient volume increases

References

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