

## LUNG CANCER MANAGEMENT TEAM

### Overview

The Disease Management Team at the Lung Cancer Evaluation Center (LCEC) provides comprehensive programs to diagnose and treat patients with lung cancer. As lung cancer is the leading cause of cancer death in the U.S., Stony Brook has invested considerable resources in early detection, risk assessment by markers, non-invasive staging, and combined modality therapeutic approaches. This provides more accurate staging before surgery and allows promising new advances, such as neoadjuvant chemotherapy prior to resection.

### Highlights

● **Some of the state-of-the-art technology used at the LCEC** includes radiofrequency ablation; image-guided radiotherapy; PET/CT fusion imaging scanning; interventional bronchoscopy; stenting; trans-bronchial needle aspiration for nonsurgical diagnosis and staging with onsite pathology, cautery, laser, and brachytherapy.

● **Thoracic surgery remains the preferred treatment for curative intent**, and procedures performed include pneumonectomy, lobectomy, VATS lobectomy, wedge resection, thoracoscopy, and mediastinoscopy.

● **The mortality associated with procedures performed at Stony Brook has been consistently lower than the reported national average of three to five percent.**

● **Patients can participate in ongoing protocols in every phase of diagnosis and treatment**, including national studies through the Eastern Cooperative Oncology Group and the American College of Surgeons Oncology Group.



#### TEAM MEMBERS

**Pulmonary Medicine:** Daniel Baram, MD, Team Leader and Co-Director, Lung Cancer Evaluation Center

**Surgery:** Thomas V. Bilfinger, MD, Chief, Thoracic Surgery, and Co-Director, Lung Cancer Evaluation Center

**Nursing:** Eileen Zaoutis, RN, LCEC Nurse Coordinator; Sunday Campolo-Athans, NP; April Plank, NP; and Maureen Farell, LCEC Administration

**Medical Hematology/Oncology:** Theodore G. Gabig, MD, and Roger Keresztes, MD

**Pathology:** Philip Kane, MD

**Radiation Oncology:** Bong Kim, MD

**Radiology:** William Moore, MD

## LUNG CANCER SITE-SPECIFIC SUMMARY

Lung cancer accounts for approximately 15% of cancer diagnoses. It is the second most common primary cancer diagnosis in both men and women, and lung cancer accounts for the most cancer-related deaths for each. According to the American Cancer Society's 2008 incidence and mortality rate estimates, although lung cancer diagnosis rates have been declining in men since 1984, rates in women rose from 1984 through 2004 in the United States, and are currently at a plateau.

Cigarette smoking is recognized as the most significant risk factor for lung cancer. Other factors include occupational or environmental exposures to secondhand smoke, radon, asbestos, and other chemicals, as well as genetic factors. Recent research has demonstrated that people with variations in particular genes are more likely to become addicted to smoking if they start smoking during adolescence, a time when peer pressure is also a significant factor. In 2007 and 2008, Stony Brook University Medical Center faculty stepped up efforts to prevent teens from smoking with outreach at local health fairs and by providing prevention education in area schools.

Effective screening methods for early detection of lung cancer are currently being studied. To date, there is not yet data to support screening, even in high-risk populations such as smokers. Stony Brook University Medical Center has participated as one of the largest contributors in the multi-institutional International Early Lung Cancer Program (I-ELCAP), which is evaluating the benefit of CT screening for lung cancer.

Stony Brook University Medical Center offers state-of-the-art imaging, specialized bronchoscopic techniques for non-operative staging and diagnosis, established treatment algorithms for abnormalities detected on screening imaging, minimally invasive surgical techniques, and targeted radiation strategies. Our Lung Cancer Evaluation Center is a dedicated center of expertise, where patients with known or suspected lung malignancies have access to all of the specialists involved in a coordinated, multidisciplinary setting.

Lung cancer is classified according to the histologic cell type as small cell and the more frequently encountered non-small cell. Therapy for these two types of cancer differ. Small-cell carcinoma is treated primarily with chemotherapy often combined with radiation therapy. Non-small cell carcinoma is approached with surgical resection as the cornerstone for curative therapy in early stage disease. Radiation and chemotherapy are utilized in later stages.

Multimodality therapy, or combination therapy, is often used for patients who are locally advanced.

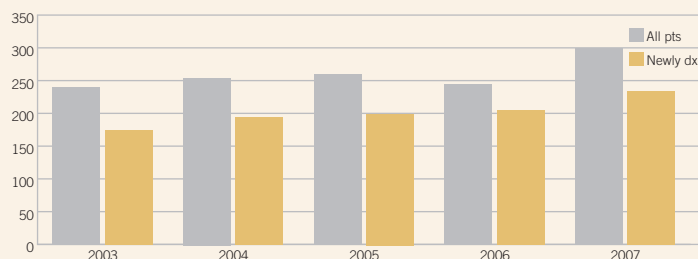
Special expertise has been developed at Stony Brook for treating patients who have early-stage lung cancer but are not surgically treatable due to co-existing medical conditions such as emphysema or heart disease. Ablative therapies such as radiofrequency ablation, cryotherapy, and stereotactic radiation offer these patients new options. These modalities are being actively pursued at Stony Brook with results that are gaining national attention.

Since most lung cancers are found at an advanced stage, treatment of symptoms and complications become an important aspect in our cancer program. It is possible to extend survival and improve quality of life. This takes on many facets. Our therapeutic bronchoscopy program has grown, making Stony Brook University Medical Center regional leader, able to offer all aspects of complex airway management for patients who develop tracheobronchial obstruction or bleeding including laser therapy, airway stents, and endobronchial brachytherapy. Another treatable case of shortness of

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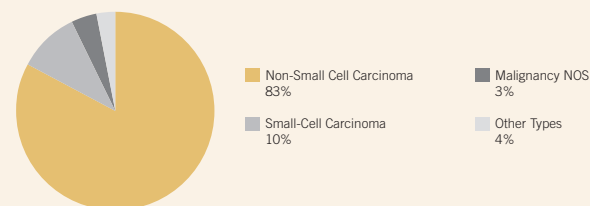
**PATIENT VOLUME**  
**Lung Cancer**

5-year trend in patients diagnosed with lung cancer seen at SBUMC 2003-2007



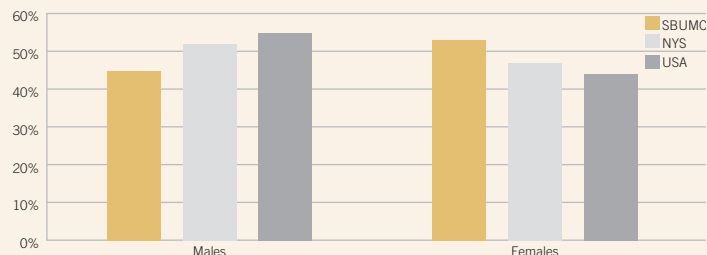
**HISTOLOGY**  
**Lung Cancer**

1,002 cases at SBUMC 2003-2007



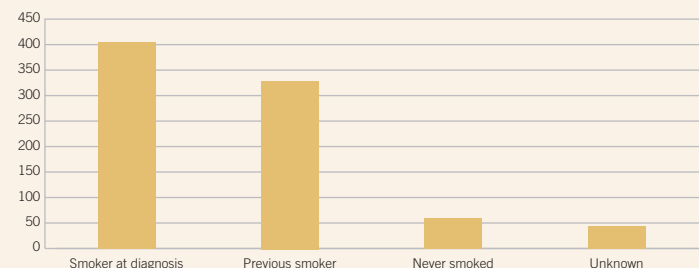
**GENDER INCIDENCE**  
**Non-Small Cell Lung Cancer**

840 patients at SBUMC 2003-2007 vs. NCDB Benchmark Data on 6,520 in New York State and 111,109 in the USA



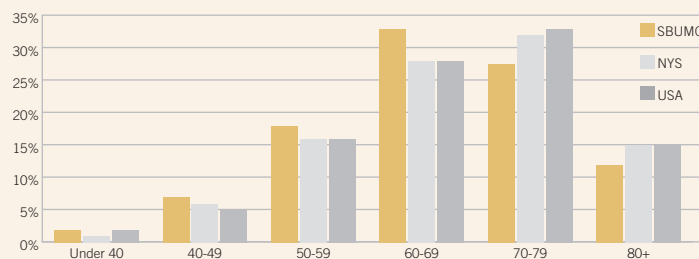
**SMOKING HISTORY**  
**Non-Small Cell Lung Cancer**

840 patients at SBUMC 2003-2007



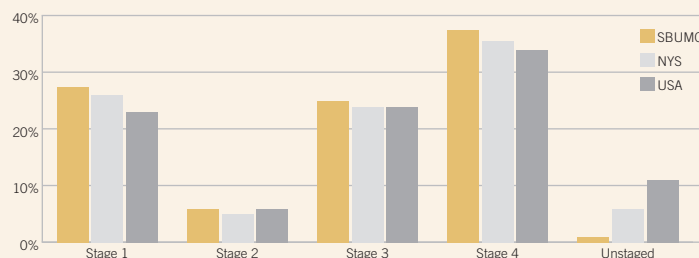
**AGE AT DIAGNOSIS**  
**Non-Small Cell Lung Cancer**

840 analytic cases at SBUMC 2003-2007 vs. NCDB Benchmark Data on 6,520 in New York State and 111,109 in the USA



**STAGE AT DIAGNOSIS**  
**Non-Small Cell Lung Cancer**

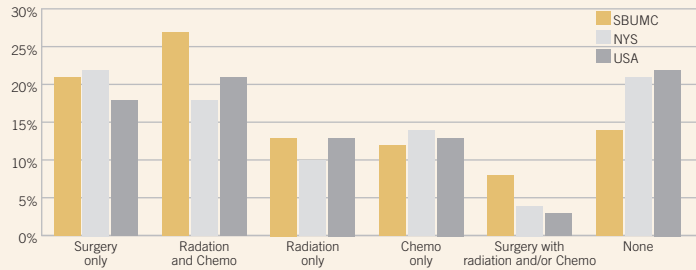
840 analytic cases at SBUMC 2003-2007 vs. NCDB Benchmark Data on 6,520 in New York State and 111,109 in the USA



**TREATMENT**

**Non-Small Cell Lung Cancer**

840 patients at SBUMC 2003-2007 vs. NCDB Benchmark Data on 6,520 in New York State and 111,109 in the USA



**5-YEAR SURVIVAL**

**Non-Small Cell Lung Cancer by Stage Group**

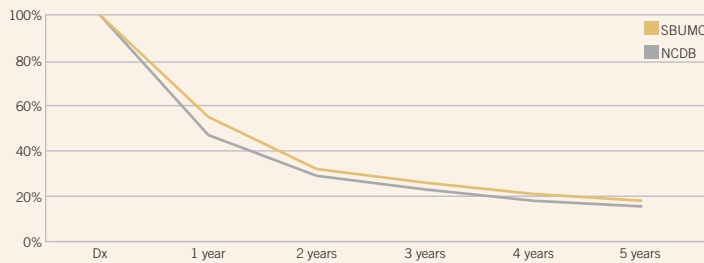
Comparing observed survival on 470 cases at SBUMC vs. 333,657 cases in the NCDB 1998-2000

1998 thru 2000	Stage 1	Stage 2	Stage 3	Stage 4
<b>SBUMC</b> n=470	41.2% n=65	25.77% n=97	13.35% n=131	4.2% n=177
<b>NCDB</b> n=333,567	42.5% n=49,273	23.4% n=18,549	8.4% n=59,050	2.0% n=75,987

**5-YEAR SURVIVAL**

**Non-Small Cell Lung Cancer ALL STAGES**

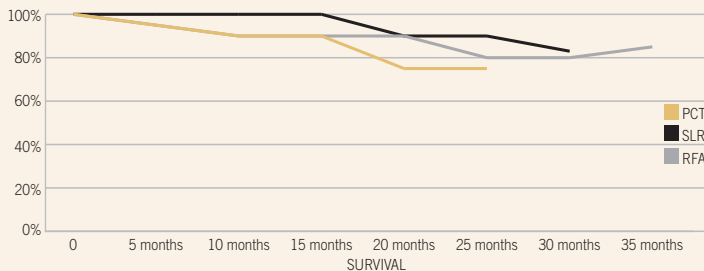
Comparing observed survival on patients diagnosed 1998-2000 for 351 cases at SBUMC vs. 203,560 NCDB cases nationwide



**OUTCOMES OF SPECIFIC TREATMENT MODALITIES**

**Lung Cancer**

Comparing sublobar resection (SLR) to radiofrequency ablation (RFA) and pulmonary cryotherapy (PCT) at SBUMC



breath in lung cancer patients is accumulation of pleural fluid around the lung; this can be treated with outpatient drainage. Airway and pleural therapies can dramatically improve breathing and minimize the number of days spent in the hospital.

An outcomes-focused study of lung cancer at Stony Brook University Medical Center from 2003 to 2007 showed 1,002 new patient encounters with an initial diagnosis and treatment. Eighty-three percent, or 840, were diagnosed with non-small cell lung cancer (NSCLC), 10% with small-cell carcinoma, and 7% with other histologic type malignancies. For the non-small cell lung cancer patient cohort, gender, age, and stage group at diagnosis and treatment were compared to National Cancer Data Base data for New York State and all states. Stony Brook patients were shown to be more frequently female and younger than demonstrated by the state and national benchmarks. Staging was in line with national data. Treatment trends reflect the multidisciplinary services available at Stony Brook. Five-year survival rates are daunting nationwide. Stony Brook exceeded the 15% national outcomes benchmark data, and compared favorably for every stage.

New and exciting advances in diagnosis, staging, and treatment of lung cancer make it more important than ever that patients be evaluated by dedicated specialists to ensure they are receiving the most up-to-date and best therapies available. Stony Brook offers a multidisciplinary approach to make this possible.

Summary prepared by Vencine Kelly, CTR, Cancer Registry, with Daniel Baram, MD, and Thomas Bilfinger, MD, Lung Cancer Evaluation Center.

**SURVIVAL OF SURGICALLY RESECTED LUNG CANCER BY STAGE**

**Lung Cancer**

Percent survival at stages as of July 2008 SBUMC

