THE VALLEY HOSPITAL
THORACIC
SURGERY PROGRAM

THE 2010 REPORT
Dear Colleague,

It gives us great pride to share with you a copy of The Valley Hospital Thoracic Surgery Program: 2010 Report.

This publication provides a complete overview of our services and procedures, as well as a statistical analysis of our program. Of particular note:

- As indicated on page 2, our patient volume continues to grow. We are grateful for your support and confidence in our program.
- We have extended the concept of VATS for lobectomy by reducing the number of operating ports to one. In 2009, 92 percent of all lobectomies for early stage lung cancer were performed using this “Single Port VATS” approach. Please see page 14 for more information on Single Port VATS.
- Patients undergoing any thoracic surgical procedure at Valley are cared for exclusively in our thoracic surgery unit, where nurses are specially trained and experienced in the post-operative management of such patients.
- Our surgeons are Memorial Sloan-Kettering trained and dedicated exclusively to thoracic surgery. This degree of specialization is usually found only at major academic medical centers.
- We are part of many managed care plans and insurance providers. Please call us at 201-634-5722 for more information.

We welcome the opportunity to discuss our program with you. Please feel free to contact us at any time.

Sincerely,

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Thoracic Surgery Patient Volume

Patient volume increased 50% from 2007 to 2009, as shown at left. Thoracic surgery at Valley involves a comprehensive range of procedure types involving the lungs, esophagus, and other mediastinal structures.

2009 marked the third consecutive year that the overall number of thoracic surgery procedures increased at The Valley Hospital.

Median Length of Hospital Stay in 2009

The length of a hospital stay varies according to the type of procedure performed at The Valley Hospital. Our median length of stay for lobectomy and pneumonectomy compare favorably to data from the Agency for Health Care Research and Quality's Health Care Utilization Project (source: Value Dossier on Thoracic Surgery, Ethicon, published 2010).

Our 2009 lengths of stay for open lung cancer resections and video-assisted lobectomy compare favorably to similar data published by The Cleveland Clinic (2009 Miller Family Heart & Vascular Outcomes).

Patients undergoing any thoracic surgical procedure at Valley are cared for exclusively in our thoracic surgery unit, where the nursing staff is specially trained and experienced in the postoperative management of such patients. A four-bed, thoracic surgical stepdown unit is available for patients who undergo more complex procedures.
A diagnosis of lung cancer is frightening and life-altering. More Americans die from lung cancer than breast, prostate and colon cancer combined. In addition, more women die from lung cancer than breast cancer. Although decades ago most patients with lung cancer did not survive longer than one year, today’s tests and treatments are saving the lives of numerous people with lung cancer. We at The Valley Hospital’s Daniel & Gloria Blumenthal Cancer Center dedicate our best efforts and medical knowledge to treating you and returning you to a healthy life. Highlights include:

- Exclusively Memorial Sloan-Kettering-trained thoracic surgeons whose primary focus is lung cancer surgery. (Our thoracic surgeons are not heart surgeons or general surgeons who only occasionally perform lung surgery.)

- Participation in The International Early Lung Cancer Action Program (I-ELCAP), an international consortium of institutions aimed at defining the role of low-dose computed tomography (CT scan) in screening for lung cancer.

- A dedicated Pulmonary Nodule Center which provides state-of-the-art evaluation and management for patients found to have lung nodules on an x-ray or CT scan of uncertain significance.

- The most minimally invasive options for lung cancer diagnosis and staging, including Endobronchial Ultrasound (EBUS).

- The use of the most up-to-date minimally invasive surgical techniques for removing lung cancer, including Single Port VATS. (See page 14.)

- A dedicated lung surgery hospital unit where only patients undergoing lung cancer surgery are cared for after their operations.

- Sophisticated radiation therapy approaches, including Stereotactic Body Radiosurgery for patients with lung cancer who are not candidates for lung cancer removal by surgery.

- The availability of “Personalized Treatment” by routinely subjecting all lung cancers which undergo removal or biopsy at The Valley Hospital to Mutational Analysis, a necessary extra step needed to determine if a specific patient’s tumor will respond to a “targeted” medication.

- The availability of an assortment of Clinical Trials exclusively for lung cancer to provide our patients with the most cutting edge treatment options available.

- A cancer Research Laboratory where dedicated researchers are working on future options for lung cancer patients including the development of a “blood test” for lung cancer.

Through these services, The Lung Cancer Center at The Valley Hospital provides the most up-to-date and comprehensive program for patients with lung cancer, and even for those who are at risk for the disease. Many of our services are based at the outpatient Daniel & Gloria Blumenthal Cancer Center, located at Valley’s Robert & Audrey Luckow Pavilion in Paramus. For more information, please call 201-634-5538.
LUNG CANCER LABORATORY RESEARCH

At The Lung Cancer Center at The Valley Hospital, we strongly believe that further innovations and breakthroughs need to be investigated for this deadly disease. To this end, Valley physicians and full-time scientists are working in the newly constructed Center for Cancer Research and Genomic Medicine, a state-of-the-art cancer research laboratory.

The Center for Cancer Research and Genomic Medicine, consists of a newly constructed, state-of-the-art cancer research laboratory (below) where lung cancer research is performed.

Laboratory research performed at The Lung Cancer Center focuses on the genetic changes that occur in lung cancer patients as a result of their tumors, and how to detect these changes. Valley investigators have been able to detect specific genetic changes in blood samples from lung cancer patients, which change back to normal after the lung cancer is removed. The ultimate goal of this research is the development of a “blood test” for lung cancer.

It is well accepted that all lung cancers are not alike, and some are clearly more aggressive than others. Knowing which lung cancers are aggressive and which are slow-growing and potentially not harmful is another question which Valley researchers have asked. Our researchers are identifying changes in the genetic makeup that characterize aggressive cancers, versus slow-growing ones.

In order to support this research, a lung cancer Tissue Bank has been up and running at Valley for several years, and contains over 400 specimens. This Tissue Bank stores donated lung cancer tissue and blood samples from lung cancer patients who want to participate in our research efforts. Patients are enthusiastic about the opportunity to actually make a contribution toward solving many of the riddles associated with lung cancer management, and potentially affect the lives of future lung cancer patients in a positive way.

Research Scientist David Chang, Ph.D.
Most patients with lung cancer do not have symptoms. In fact, even patients with advanced, incurable lung cancer may be asymptomatic. Therefore, waiting for lung cancer symptoms to occur will not result in the discovery of the disease in its early, curable stage. As a result, screening aimed at detecting early, curable lung cancer needs to be investigated. To this end, The Valley Hospital is the only hospital in New Jersey that is a member of The International Early Lung Cancer Action Program (I-ELCAP), a multinational research group investigating the use of low dose (radiation dose approximates that of a mammogram) computed tomography (CT) as a screening test for the early detection of lung cancer. The goal of I-ELCAP is to identify lung cancer in patients at the earliest possible stage when treatment is the most effective and the cancer is highly curable.

I-ELCAP results have shown that annual, low-dose CT scan screenings are cost effective and can find at least 80% of lung cancers at stage I. When lung cancers are found at this earliest stage and are immediately removed, the research shows a remarkable 10-year survival rate of 92%.

I-ELCAP screenings are offered by the Daniel & Gloria Blumenthal Cancer Center to patients over age 40 who have any of the following risk factors:

- personal history of smoking,
- family history of lung cancer,
- exposure to second-hand smoke, or occupational exposure to asbestos, radon, and other environmental carcinogens.

The screening consists of a low-dose spiral CT scan without contrast. There is a $300 out-of-pocket cost per patient.

To make an appointment for an I-ELCAP lung cancer screening, call 201-634-5538. In addition to the potential to detect lung cancer earlier, patients in this program are contributing to the research efforts aimed at determining if this technique is beneficial.
The discovery of pulmonary nodules, which are small abnormalities in the lungs seen on x-rays or CT scans, is becoming very commonplace due to the increased use of CT scans to test for many types of medical conditions throughout the body. Although the vast majority of pulmonary nodules represent totally harmless areas of inflammation or scarring in the lungs, lung cancer in its earliest stages can also appear as a small nodule. Determining which nodules are potentially dangerous (malignant) therefore becomes important when evaluating a patient with a pulmonary nodule.

The Lung Cancer Center at The Valley Hospital recognizes this problem, and has responded by establishing The Pulmonary Nodule Center, a dedicated program aimed at determining which pulmonary nodules require further investigation for malignancy and which can be ignored. Patients with indeterminate pulmonary nodules found on an x-ray study or on a CT Scan may obtain an opinion and any needed services regarding the management of their nodules based on standardized algorithms and state-of-the-art diagnostics.

The images above show CT scans from two different patients with pulmonary nodules. The arrow on the left points to a benign (noncancerous) nodule, while the arrow on the right shows a small lung cancer. The Pulmonary Nodule Center offers the expertise and technology needed to determine which nodules are malignant (cancerous).
Routine use of “thin slice” CT scanning for the evaluation of pulmonary nodules. CT scans become more accurate when more “cuts” or “slices” are used. At Valley, CT slices of the lungs are routinely set at 1.25 millimeters, providing more images (usually four times as many images compared to standard CT) for the radiologist to evaluate when imaging a pulmonary nodule. The performance of scans in this fashion, however, does NOT result in more radiation for the patient and is completed during one breath-hold by the patient.

When pulmonary nodules grow in size, suspicion for cancer is increased. Our Center uses state-of-the-art computer software which analyzes pulmonary nodule growth in three-dimensions. This is called Volumetric Analysis and may be the most accurate way to detect nodule growth compared to standard, 2-dimensional scanning techniques. Once again, no additional radiation or scanning is needed to perform this novel type of analysis.

Located in The Blumenthal Cancer Center is Positron Emission Tomography (PET Scanning). PET scanning is a noninvasive test which also may be helpful in distinguishing malignant from benign nodules.

The CT scan on the left shows a conventional image of a small lung cancer (arrow). Specialized computer software at The Pulmonary Nodule Center has the ability to create a three dimensional image of the nodule (right), which allows very precise measurements of growth. Nodules which grow in size are more suspicious for malignancy (cancer).

The arrow in the CT scan on the left shows a lung cancer in the left lung. PET scanning, as shown on the right, shows the cancer as a black spot on the image. PET scanning, as available at The Pulmonary Nodule Center, can be useful to distinguish malignant from benign nodules in the lungs.

Should a biopsy of a suspicious nodule be needed, minimally invasive biopsy approaches are utilized, including Transthoracic Needle Biopsy, Endobronchial Ultrasound Guided Biopsy, and Video Assisted (VATS) Biopsy.

To obtain an opinion about a pulmonary nodule form one of our doctors at The Pulmonary Nodule Center, please call us at 201-634-5538.
Although x-ray studies and scans may suggest that a patient has lung cancer, the actual diagnosis of lung cancer can only be made using a biopsy (tissue samples) reviewed by a pathologist. At The Lung Cancer Center at The Valley Hospital, biopsy samples may be gathered through a variety of minimally invasive procedures including the following:

- **Bronchoscopy:** A procedure in which our doctors insert a flexible, lighted tube called a bronchoscope through the nose down into the lungs. If the mass or abnormal area can be accessed by the bronchoscope then a small piece can be obtained as a biopsy. This procedure is usually performed with sedation.

- **Transthoracic Needle Biopsy:** Our interventional radiologists are specially trained to perform this type of biopsy. With the patient in the CT scanner (called CT guidance), the interventional radiologist identifies the abnormality on the scan and inserts a needle into it through the skin under local anesthesia. Cells are then sucked out of the needle and evaluated by the pathologist. Patients go home on the same day as the biopsy and the results are usually available in 48 hours. Our doctors can even obtain adequate biopsies using this technique on nodules smaller than the size of a dime.

- **Endobronchial Ultrasound (EBUS) Guided Biopsy:** A type of bronchoscopy that uses a flexible bronchoscope with a tiny ultrasound device on the tip. The ultrasound guides the physician to see through the airway walls to locate enlarged lymph nodes or masses. A thin needle can be passed through the scope to obtain a biopsy sample. For more information on EBUS, see the next page.

- **VATS (Video-Assisted Thoracic Surgery) Biopsy:** A surgical procedure where one or two small incisions are made on the side of the chest allowing the surgeon to insert a camera and long instruments to locate and take a sample of or actually remove the mass or abnormal area in the lung.

*Shown above: Image during a Transthoracic Needle Biopsy of a small lung nodule about the size of a pea. The arrow shows the nodule with the biopsy needle entering it.*
In addition to noninvasive studies such as CT scans and PET scans, the lymph nodes in the center of the chest may need to be biopsied (sampled) to determine if the cancer has spread to this area. This is because, in many instances, the noninvasive CT and PET scans are not completely accurate in determining if spread to the lymph nodes has occurred. In many institutions, lymph nodes are biopsied using a procedure called Mediastinoscopy, where an incision is made in the neck area to expose the lymph nodes for biopsy.

At the Lung Cancer Center at The Valley Hospital, however, these same lymph node biopsies can be performed using an incision-free approach called Endobronchial Ultrasound (EBUS). EBUS allows our doctors to see lymph nodes and sample them using a small scope which is passed through the mouth – not requiring any incisions whatsoever.

At The Lung Cancer Center, the use of EBUS to perform lymph node biopsies has replaced the use of the more invasive Mediastinoscopy procedure in about 90% of patients. Even very small lymph nodes less than one centimeter (about half an inch) are able to be sampled using EBUS at Valley. EBUS is also very useful in diagnosing conditions in the chest other than lung cancer including lymphoma, metastases from other malignancies, and benign inflammatory conditions such as called sarcoidosis.
**Lung cancer staging.** Once the diagnosis of lung cancer is confirmed through biopsy, the next important step in creating an appropriate treatment plan is to determine the stage of the lung cancer. Staging involves determining how far the cancer has spread, if at all. As with most types of solid, malignant tumors, lung cancers are assigned one of four stages, and the appropriate treatment depends on the stage. It is important to know that adequate staging is necessary prior to treatment:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Characteristics</th>
<th>Treatment</th>
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<tbody>
<tr>
<td>Stage I</td>
<td>Tumors that are small (less than about an inch) and do not have lymph node involvement</td>
<td>Surgical removal</td>
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<tr>
<td>Stage II</td>
<td>Tumors that have spread to local lymph nodes in the lung or larger tumors involving the chest wall without lymph node involvement</td>
<td>Surgical removal, followed by chemotherapy</td>
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<tr>
<td>Stage III</td>
<td>Tumors that are “locally advanced” in multiple lymph nodes in the chest, but do not appear to have spread (metastasized) to other organs</td>
<td>Chemotherapy and radiation, and sometimes surgical removal</td>
</tr>
<tr>
<td>Stage IV</td>
<td>Tumors that have spread to other organs outside the chest</td>
<td>Chemotherapy, sometimes “targeted” therapy</td>
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As the table above demonstrates, treatment of lung cancer depends on the stage of disease, underlining the need for adequate staging prior to treatment. The above table is relevant for patients with the most common type of lung cancer, called non-small cell lung cancer. If biopsy results show an uncommon type of lung cancer called small cell lung cancer, treatment may differ, and it is less likely that your doctor will recommend removal using surgery.
The pie chart at left shows our outcomes at The Valley Hospital using EBUS for patients whose lymph nodes in the chest need to be biopsied (sampled). The most likely reason is for a patient with lung cancer, although other diseases, both benign (noncancerous) and malignant (noncancerous) are also diagnosed.

In addition to lymph node biopsies, our doctors at The Lung Cancer Center are also performing EBUS to biopsy lung nodules, or masses in patients that are difficult to biopsy using other techniques. Abnormalities which are best sampled using EBUS are located near the center of the chest, which tend to be out of reach for Transthoracic Needle Biopsy, as described above.

Shown above: CT scan images from two patients with lung nodules successfully biopsied (sampled) with EBUS. The arrows point to the nodules which were both diagnosed as lung cancer by EBUS. These nodules are located near the center of the chest, making Transthoracic Needle Biopsy more difficult, and EBUS was the biopsy technique of choice.
After appropriate staging, if patients are found to have non-small cell lung cancer localized to the chest (stage II, II and some III), removal of the cancer using surgery is the preferred treatment, simply because removing the cancer offers the best chance for long-term cure. Operations for lung cancer removal involve two parts, both performed at the same time through the same incisions. First, the portion of lung containing the tumor needs to be removed (called lobectomy), and second, the lymph nodes near the tumor need to be removed (called lymph node dissection), because lung cancers can easily spread to the lymph nodes. There are no side effects of lymph node removal for lung cancer that are sometimes seen when lymph nodes are removed from other parts of the body for other diseases.

The figure at left demonstrates the different types of procedures (resections) that can be used to remove lung cancers. Whenever possible, the lobe of the lung containing the tumor should be removed (lobectomy), as opposed to removing only part of the lobe (wedge resection or segmentectomy) because recurrence rates are lowest after lobectomy. Wedge resection or segmentectomy may be appropriate, however, for some patients with other lung diseases, such as severe emphysema, because these patients may not tolerate removal of the whole lobe. Some tumors may be very large, necessitating the removal of entire lung (pneumonectomy).
During a traditional thoracotomy for lung cancer, a six to eight inch incision is made on the side of the chest and a retractor placed to spread the ribs apart so the surgeon can work. In addition to the incision, a small incision (half an inch) is made to place a drain (called a chest tube) which is removed in the early postoperative period in the hospital.

In recent years at some institutions, a less invasive technique similar to laparoscopy for abdominal surgery has been developed, called Video Assisted Thoracic Surgery (VATS). VATS involves the placement of several (usually three to four) small incisions (called ports) on the chest instead of a large incision. No rib spreading is needed and a telescopic camera is inserted so that the surgeon can perform the operation while looking at a video monitor using long, thin instruments specially designed to fit through the ports. Advantages of VATS include:

- Less postoperative pain
- Faster return to normal activities
- Less postoperative complications
- Easier to administer postoperative chemotherapy, if needed
- Less time in the hospital
- Reduced costs
At The Lung Cancer Center at Valley, we have extended the idea of VATS for lobectomy by reducing the number of operating ports to one (called **Single Port VATS**). During Single Port VATS, the telescope is inserted into the half inch chest tube site, and the entire procedure is performed through the single one and a half inch port through which the lobe is removed from the chest. Once again, no rib spreading is needed, but the number of incisions made by the surgeon is less than that needed for VATS. Single Port VATS is clearly the most minimally invasive way to perform lung cancer surgery today. **Even lung cancer operations performed robotically require more incisions (usually four to five), making them more invasive than Single Port VATS.**

In VATS, the surgeon makes three to four small incisions (ports), and uses a telescope to see inside the chest, without any retractors or rib spreading. One of the ports (arrow) needs to be large enough (about one and a half inches) to fit the lobe of the lung containing the tumor when it is removed from the chest.

In Single Port VATS, surgeons at The Valley Hospital perform the entire lobectomy and lymph node dissection through a single incision (port), while the telescope is inserted through the chest tube site. This is the most minimally invasive way to perform lung cancer surgery described to date.
Throughout the United States, only about one quarter (25%) of lobectomies for early stage lung cancer are performed using VATS. The rest are done by surgeons performing thoracotomy, as described previously. In 2009 at The Lung Cancer Center at Valley, 92% of all lobectomies for early stage lung cancer were performed using the Single Port VATS technique.

In 2009 at The Lung Cancer Center at The Valley Hospital, 92% of all lobectomies for early stage lung cancer were performed using the Single Port VATS approach, which corresponds to 68% of all lung cancer resections. For more advanced stage lung cancers, more complex procedures are needed (called extended resections).

At The Valley Hospital, complex resections are also routinely performed, as shown at right.
Following lung cancer surgery, all patients are cared for in our dedicated thoracic surgery hospital unit at The Valley Hospital. This highly specialized unit, which opened in 2008, has dedicated thoracic surgery nurses and a high nurse-to-patient ratio to ensure that our patients receive the best care possible in the postoperative period. The minimally invasive nature of Single Port VATS combined with our ability to deliver highly specialized postoperative care has resulted in our patients spending less time hospitalized following surgery for lung cancer.

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<th>Median Length of Stay in 2009</th>
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<tr>
<td>Thoracotomy and lung cancer resection</td>
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<tr>
<td>Single Port VATS Lobectomy</td>
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<tr>
<td>VATS wedge resection</td>
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For appropriate patients, a thoracic procedure performed minimally invasively with the VATS (Video Assisted Thoracic Surgery) technique can mean a shorter length of stay as shown here.

Valley’s length of stay for VATS lobectomy (approximately three days) compares favorably to The Cleveland Clinic where the length of stay is approximately four days. (2009 Miller Family Heart & Vascular Outcomes)

The benefits of the minimally invasive nature of Single Port VATS lobectomy and a dedicated inpatient lung surgery hospital unit are reflected in the short hospital stay for our lung cancer patients at The Valley Hospital. In 2009, the number of days patients spent in the hospital (called Length of Stay) after Single Port VATS lobectomy is only three days at The Valley Hospital, two days less than the national average for lobectomy for lung cancer.
Some diseases in the chest and lung require radiation for treatment. The more focused these treatments are, the better a patient tolerates their therapy. **Tomotherapy** is the most advanced radiation technology available. It obtains a CT scan before each daily radiation treatment to ensure the most accurate targeting of tumors.

In addition, its advanced computer system allows for very precise, focused treatments called **Stereotactic Body Radiation Therapy** (SBRT). This system also utilizes **respiratory gating**, which allows for tracking a tumor’s motion while the patient breathes to ensure the most accurate delivery of treatment. In some patients with small tumors in their lung this has allowed doctors to achieve very high cure rates in as little as four treatments.
Traditional chemotherapy for lung cancer represents the use of medications, usually given intravenously (by injection) which tend to be relatively non-specific in their ability to destroy cancer cells in the body. Given this non-specific nature of chemotherapy, many “innocent bystander” cells in the body which are not cancerous are also destroyed, which is responsible for the toxicity (side effects) of traditional chemotherapy. New drugs (called targeted therapies) are being discovered which act much more specifically on cancer cells, sparing more of the normal cells, resulting in less toxicity.

Despite these breakthroughs, only a minority of patients’ tumors will respond favorably to the new targeted therapies, but when they do respond, the results can be dramatic. Personalized medicine describes the process of identifying which patients will respond to which medications, so that drugs are not used “blindly” in patients where they won’t work.

The Epidermal Growth Factor Receptor (called EGFR) is a molecule on the surface of many cells in the body, both malignant (cancerous) and benign (non-cancerous). Activation of EGFR on cells in the body can cause cells to behave in a malignant fashion, and promote tumor growth. Some cancer cells will lose their ability to regulate how much EGFR is on their surface, which may be caused by a mutation (abnormality) in the cells’ genes (cellular blueprint). Identification of EGFR mutations in lung cancer becomes important because a new class of drugs, called EGFR inhibitors, have become available as effective treatments in some lung cancer patients.

At The Lung Cancer Center at The Valley Hospital, identification of EGFR mutations (called Mutational Analysis) is performed routinely in all surgical specimens from lung cancer patients to determine if they will respond to EGFR inhibitors. In addition, for patients who don’t undergo surgical removal of their tumors, all available biopsy specimens undergo Mutational Analysis as well. It is important to understand that the most useful information about EGFR is obtained using Mutational Analysis, as opposed to simple EGFR staining, which many other institutions may substitute because it is easier to perform.

In addition to EGFR, Lung Cancer Center pathologists also perform other molecular tests on patients’ tumors, including Kras Mutational Analysis (an indicator of lung cancer aggressiveness) and ERCC1 expression (and indicator of sensitivity to chemotherapy). Personalized medicine and targeted therapies represent the future of cancer treatment, because they will clearly enhance both the quality of life and longevity for cancer patients.
The Valley Hospital and the Blumenthal Cancer Center are in agreement with the National Comprehensive Cancer Network (NCCN) in their philosophy that all patients with cancer should have access to, and be encouraged to participate in clinical trials. Many of these trials are conducted in collaboration with other notable research groups, such as the National Cancer Institute (NCI), Southwest Oncology Group (SWOG) and the American College of Surgeons Oncology Group (ACOSOG).

**Prevention:**


*Out of pocket screening cost of $300 for a low dose CT of the chest for patients who are over 40 years of age, have smoked 5 packs of cigarettes in their lifetime, or have a family history of lung cancer, or a history of second hand smoke exposure.

**Early Stage:**

G.S.K. MAGE-A3 Study- Vaccine Study “A Double Blind, Randomized, Placebo Controlled Phase 3 Study to Assess the Efficacy of recMAGE-A3 + AS15 Antigen Specific Cancer Immunotherapeutic as Adjuvant Therapy in Patients with Resectable MAGE-A3 positive Non-Small Cell Lung Cancer.”

*Patients will have tissue sent for MAGE A3 testing at the time of initial surgery to test for protocol eligibility.

**Advanced:**

**ECOG E1505**

“A Phase 3 Randomized Trial of Adjuvant Chemotherapy with or without Bevacizumab for Patients with Completely Resected Stage IB (> 4cm) to 3A Non-Small Cell Lung Cancer.

*Patients are randomized to receive Bevacizumab or not, with their post-operative chemotherapy.

**ACORN AC01L08**

“A Multi-Center Randomized Phase 2b Study of Cetuximab in Combination with Platinum-Based Chemotherapy as First Line Treatment of Patients with Recurrent or Advanced Non-Small Cell Lung Cancer”

**CALGB 170601**

“A Phase III Double Blind Trial of Oral Duloxetine for Treatment of Pain Associated with Chemotherapy - Induced Peripheral Neuropathy (CIPN).”

*This is a protocol for patients who get nerve pain in their hands and feet from some chemotherapy associated with Lung Cancer.

The Specimen Banking Protocol is available to all individuals having surgery for the excision of cancer. Tissue discarded in the operating room, and blood from patients, is frozen for use in future research on cancer or other diseases.

Research is currently being done at Valley on many cancers including lung cancer.

Call 201-634-5792 for more information.
Richard Luzzi of Closter is alive and back to work at his printing company in Long Island City after his lung cancer, once thought to be inoperable, was removed at The Valley Hospital.

Richard’s thoracic surgeon, Robert J. Korst, M.D., medical director of The Valley Hospital Daniel and Gloria Blumenthal Cancer Center, used single-port video-assisted thoracic surgery (VATS) to remove a plum-sized tumor from the lower lobe of Richard’s left lung. Because minimally invasive VATS requires only a small “keyhole” incision called a port and not a large chest incision, Richard experienced little discomfort and was back to work part-time after just several weeks of recovery.

**Single Port VATS**

Beset by chronic emphysema for eight years, Richard, 66, underwent a series of diagnostic tests which revealed a squamous cell carcinoma.

Because of Richard’s medical history and emphysema, his doctors at another northern New Jersey hospital thought tumor removal surgery and radiation therapy were out of the question. They recommended chemotherapy. But Richard was encouraged by his family to seek a second opinion with Valley radiation oncologist Chad DeYoung, M.D., and Valley medical oncologist Robert F. Tassan, M.D., at the Blumenthal Cancer Center. He was then referred to Dr. Korst.

During the surgery, Dr. Korst inserted his surgical instruments into one single one-and-one-half-inch port made under Richard’s left arm. A half-inch hole was made to accommodate a very thin camera during the procedure, followed by a chest drain after the completion of surgery. Dr. Korst removed the lobe of the lung containing the tumor through the single port.

“Single-port VATS will most likely become the gold standard for treating lung cancer,” says Dr. Korst. “It requires fewer incisions than even robotic approaches to lung removal because the daVinci robot has four arms, requiring at least four ports. Research has shown that patients who undergo VATS also tolerate chemotherapy better than patients who do not.”

**A Smooth Recovery**

Richard says he was amazed at how uncomplicated his recovery was. “This was my first time at Valley, and the entire staff was exceptional in treating me with their personal touch,” says Richard. “My family and friends can’t believe how good I look and how I have recuperated so smoothly.”
Mediastinal programs initiated at Valley include:

The Hyperhidrosis Center  201-634-5606

Hyperhidrosis, or excessive sweating, is a very common condition, especially among younger individuals in the second or third decade of life. When hyperhidrosis is generalized, medical management is the mainstay of therapy. However, when localized to specific areas, including the palms of the hands, the axillae, or the face/head, sweating can be effectively eradicated by the performance of thoracoscopic sympathectomy. During this procedure, two tiny (3 millimeter) incisions are made in each armpit and the intrathoracic sympathetic chain is divided at the appropriate level to relieve symptoms. Patients are discharged on the same day of surgery.

Clinical Trial for Locally Advanced Thymoma

Valley is the leading institution of a multi-institutional clinical trial involving the multimodality approach for patients with locally advanced thymoma, a malignant tumor of the mediastinum. Other participating institutions include The Massachusetts General Hospital, the University of Toronto, the University of Alabama, and Methodist Hospital in Houston.
Similar to pulmonary surgery, minimally invasive approaches have revolutionized the management of both benign and malignant esophageal diseases. In the vast majority of cases, patients undergoing surgical procedures for benign esophageal disease spend only one night in the hospital, and are back to work in a matter of days. At The Valley Hospital, patients undergo minimally invasive procedures for benign conditions including laparoscopic myotomy for achalasia, laparoscopic hiatal and paraesophageal hernia repair, and laparoscopic fundoplication for gastroesophageal reflux disease (GERD).

The incidence of carcinoma of the esophagus is rising faster than that of any other malignancy in this country. This is due to the high prevalence of GERD in this country, which may lead to the development of Barrett’s esophagus, a premalignant condition, and the only known risk factor for adenocarcinoma of the esophagus. The best treatment for esophageal carcinoma remains surgical resection, provided the patient is medically able to tolerate the procedure.

Patients with benign diseases of the distal esophagus are best approached laparoscopically. Even large hiatal hernias where the entire stomach is located in the thoracic cavity can be repaired using this minimally invasive approach. Esophageal resections for malignancy are approached using minimally invasive techniques when they are in their earliest stages.
The Valley Hospital Center for Barrett’s Esophagus and GERD - 201-634-5789

Recognizing the significance of this premalignant condition, Valley offers a state-of-the-art, comprehensive program utilizing the latest endoscopic technologies available, including radiofrequency ablation (RFA) and endoscopic mucosal resection (EMR) for patients with Barrett’s esophagus. To date, over 60 patients have been treated with RFA for Barrett’s esophagus. For patients who complete radiofrequency ablation at Valley, Barrett’s esophagus is successfully eradicated in 86% of cases. This compares favorably to the largest radiofrequency ablation trial, which was published in the New England Journal of Medicine and resulted in an eradication rate of 77%.

Esophageal Cancer Research and Clinical Trials

The thoracic surgeons at Valley are using sophisticated laboratory research technologies to investigate the progression of Barrett’s esophagus to esophageal cancer. These projects involve gene expression analysis and electron microscopy.

Valley is conducting a prospective clinical trial evaluating the effectiveness of radiofrequency ablation for Barrett’s esophagus.

During radiofrequency ablation for Barrett’s esophagus, a balloon-tipped catheter coated with electrodes is inserted into the abnormal segment and fired, eradicating the abnormal epithelium.

Completely Laparoscopic, Vagal-sparing Esophagectomy

Although patients with locally advanced disease usually receive preoperative chemotherapy and possibly radiation followed by total esophagectomy with thorough lymph node dissection, many patients with very early cancer are candidates for completely laparoscopic, vagal-sparing esophagectomy, which represents the latest advance in esophageal cancer surgery. In this technique, the innervation to the pylorus is left intact, preserving gastrointestinal motility allowing patients to eat normally after an esophagectomy.
**Integrative Healing Services**

Valley offers services that have been proven by national research to be effective in reducing fatigue, anxiety, and stress; enhancing relaxation; and creating a sense of well-being. The connection between mind and body in healing and overall well-being is strongly valued at the Blumenthal Cancer Center.

Services and instructional classes include yoga, T’ai Chi Chih, visualization/guided imagery, massage, acupuncture, counseling, nutritional guidance, support groups and smoking cessation.

**Smoking Cessation Program**

The major risk factor for lung cancer is smoking. But nicotine is highly addictive, and it can be difficult to quit smoking on your own. Quitting can reduce your risk of developing lung cancer over time with it going down by one-half to one-third after 10 years of being smoke-free.

The Smoking Cessation Program at the Daniel & Gloria Blumenthal Cancer Center gives patients the support and treatment needed to free themselves from smoking. Our counselors have been specifically trained by the New Jersey Department of Health and Senior Services as tobacco treatment specialists. Individual and group counseling programs are available. Call 201-447-8612 for more information.

**The Cancer Resource Center...**

centralizes support and information to help individuals navigate the many aspects of living with cancer.

**The Boutique for Integrative Healing...**

provides products for cancer patients such as skin care, shampoos, wigs, hats, turbans, and scarves. For more information, call 201-634-5325.

**Valley Health Pharmacy...**

fills prescriptions and features over-the-counter products and gift items. For more information, call 201-634-5799.

**“Look Good...Feel Better”...**

is a free program that teaches beauty techniques to women with cancer in active treatment to help them combat the appearance-related side effects of cancer treatment. Call 1-800-ACS-2345 for information on when the program will be offered next at the Blumenthal Cancer Center.

**The Pain Management Center...**

provides treatment to help individuals with acute and chronic debilitating pain. Call 201-634-5318 for information.

**Valley Home Care, Valley Hospice, Social Services and Support Groups...**

are available. Please call 201-291-6243 for more information.
Comprehensive Cancer Care
Lung Cancer
Esophageal Cancer
Thymoma & Thymic Malignancies
Mesothelioma
Chest Wall Tumors
Tracheal Tumors
Pancoast Tumors
Mediastinal/Neurogenic Tumors
Malignant Pleural Effusions
Malignant Pericardial Effusion

Benign Lung Diseases
Spontaneous Pneumothorax
Giant Lung Bullae
Empyema
Lung Biopsy
Mediastinal/Bronchogenic Cysts

Airway/Stenting/Mediastinal Procedures
Endobronchial Ultrasound Guided Biopsy
Mediastinoscopy
Benign Tracheal and Subglottic Stenosis
Airway Stenting
Esophageal Stenting

Benign Esophageal Diseases
Barrett’s Esophagus (RFA, EMR)
GERD
Hiatal Hernias
Paraesophageal Hernias
Achalasia
Diaphragmatic Hernia
Benign Esophageal Tumors (leiomyoma)
Zenker’s and other Esophageal Diverticula

Other Thoracic Conditions and Treatments
Hyperhidrosis and Thoracoscopic Sympathectomy
Thoracic Outlet Syndrome
Diaphragmatic Paralysis and Plication
Mediport Insertion

Contacting the Doctors
For more information on the Thoracic Surgery Program at The Valley Hospital, or to make an appointment with Drs. Korst or Lee, please call 201-634-5722.

You may also e-mail Dr. Korst at korsro@valleyhealth.com and Dr. Lee at leebe@valleyhealth.com.
MEET OUR LUNG CANCER TEAM

ROBERT J. KORST, M.D.

Dr. Korst is Director of Thoracic Surgery and Medical Director of the Daniel and Gloria Blumenthal Cancer Center. He received his medical degree from the University of Connecticut School of Medicine in 1989. He completed a general surgery internship at Hartford Hospital, Ct., in 1990. Midway through his residency at the University of Connecticut Integrated Program in General Surgery, Farmington, Ct., Dr. Korst went to the National Institutes of Health’s Heart, Lung, and Blood Institute in 1992 as a research fellow in genetics. He returned to his general surgery residency in 1994, was chief resident from 1995 to 1996, and graduated in 1996. He completed a fellowship in cardiothoracic surgery at the Cornell/New York Hospital/Memorial Sloan-Kettering Cancer Center Thoracic Streamed Program in 1998.

From 1998 to 2002, Dr. Korst was a member of the attending medical staff of Memorial Sloan-Kettering Cancer Center. From 2002 to 2006, he was on the faculty of NewYork-Presbyterian Hospital. Now at Valley, Dr. Korst maintains a faculty position with Cornell University’s Department of Genetic Medicine.

For more information, please contact Robert Korst, M.D., at 201-634-5722 or by e-mail at korsro@valleyhealth.com.

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BENJAMIN LEE, M.D.

Dr. Lee is a thoracic surgeon at The Valley Hospital. He received his medical degree from New York Medical College in 2001. Midway through his residency at the University of California Davis Medical Center in Sacramento, Calif., Dr. Lee went to Memorial Sloan-Kettering Cancer Center in 2004 as a surgical research fellow. He graduated from his residency in 2007, and completed a fellowship in cardiothoracic surgery, thoracic track, at NewYork-Presbyterian Hospital. Over his career, Dr. Lee has conducted research in thoracic surgery, has been published in several medical journals, and presented at major medical conferences.

For more information, please contact Benjamin Lee, M.D., at 201-634-5722 or by e-mail at leeb@valleyhealth.com.
RECENT PUBLICATIONS


ONGOING THORACIC SURGERY RESEARCH PROJECTS

■ Gene expression patterns in peripheral blood mononuclear cells of lung cancer patients.
The goal of the project is to identify a marker for lung cancer based on the genetic makeup of circulating immune cells. The hope is to define a “blood test” for lung cancer.

The goal of this project is to evaluate the gene expression of lung cancers when stratified by factors indicating tumor aggressiveness. This may help identify subsets of tumors which may possess a more indolent clinical course.

■ Molecular characterization of the neoepithelium following radiofrequency ablation of Barrett’s esophagus.
Radiofrequency ablation appears to eliminate the premalignant condition known as Barrett’s esophagus, however, little is known on the molecular level regarding this process. The goal of this project is to evaluate molecular endpoints to determine if radiofrequency ablation reduces the risk of developing esophageal cancer.
Lung cancer is by far the leading cause of cancer death among both men and women. More people die of lung cancer than of colon, breast, and prostate cancers combined.

About 222,520 new cases of lung cancer will be diagnosed in the U.S. in 2010.

In nonsmokers, lung cancer is still the sixth leading cause of cancer death in the U.S.

Lung cancer kills more women in the U.S. than breast cancer. Despite this, lung cancer research receives only a fraction of federal research funding compared to breast cancer.

Lung cancer can be cured in three out of four patients when it is detected in its early stage.

Overall, the chance that a man will develop lung cancer in his lifetime is about 1 in 13; for a woman, the risk is about 1 in 16. For smokers the risk is much higher.