



MAHR CANCER CENTER

CANCER PROGRAM ANNUAL REPORT

Cancer Registry Annual Report



CHAIRMAN'S REPORT

The Cancer Committee of Regional Medical Center is proud to present to you the 2003 Cancer Program Annual Report. The Cancer Program at Regional Medical Center and the Mahr Cancer Center continues to strive for excellence in the care and treatment of our cancer patients. This report demonstrates our efforts at early detection as well as state of the art cancer care for those patients in the community diagnosed with the nation's second leading cause of death.

Since the initiation of the Cancer Registry in 1973, approximately 11,300 cases have been accessioned. Cases diagnosed prior to 1986 are maintained in the manual registry if needed. The registry is currently following over 4100 cases on an annual basis with a follow-up rate of 92%. In 1986, the cancer registry joined the Kentucky Cancer Registry Cancer Patient Data Management System (CPDMS). The CPDMS database is a comprehensive microcomputer based system for analyzing information related to the diagnosis and treatment of cancer patients in Kentucky.

The cancer registry is a computerized data center, which provides a broad range of demographic, diagnostic, therapeutic and lifetime follow-up information about cancer patients at Regional Medical Center, Merle M. Mahr Cancer Center, and Trover Clinic. The registry is centrally located at the Mahr Cancer Center. The networked computer system in the registry allows for direct data entry supporting the paperless system. In 1999, access to the Internet was made available to registry staff allowing registrars access to a wealth of up to the minute on-line information. Data from the registry enables the medical staff, as well as other health care professionals, to analyze the results of their efforts. There were over 60 requests for registry data in 2003. A Patient Care Evaluation Study (PCE) and several quality improvement studies were completed. The registry participates in the National Cancer Data Base annual call for data. This participation allows the cancer program to compare treatment and patient outcomes with the nation.

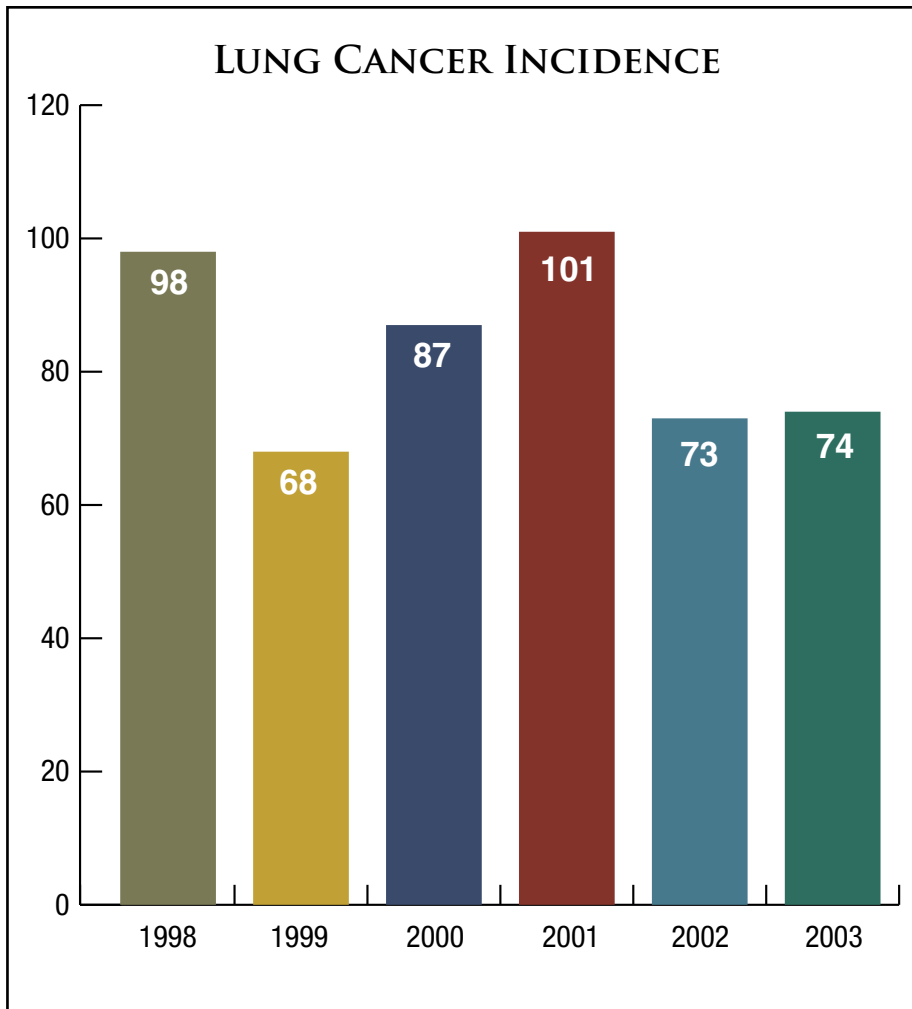
The Cancer Program of Regional Medical Center and Merle M. Mahr Cancer Center includes active participation by the medical staff of Trover Clinic, as well as various departments from the hospital. Cancer care is delivered utilizing a multi-disciplinary holistic team approach to assure quality care to all cancer patients. The cancer program has been accredited as a Community Hospital Comprehensive Cancer Program (COMP) by the American College of Surgeons' Commission on Cancer since 1976. The Cancer Program received full accreditation in 2003.

Oncology Conferences are held weekly at Regional Medical Center. There were 42 patient focused tumor board conferences held in 2003. A total of 154 cases were presented of which 98% were prospective. The conferences are multi-disciplinary and attended by members of the medical staff, residents, medical students, case management, and other ancillary personnel. A pathologist discusses pathologic slides. Radiographic studies are reviewed and discussed by a radiologist. There is open forum for discussion among physicians regarding TNM staging and optimal treatment for each individual case presented. There were 15 didactic conferences held covering a wide range of topics. The Cancer Committee meets on a quarterly basis.

In conclusion, I would like to thank all of the health care professionals at Regional Medical Center, Trover Clinic and the Merle M. Mahr Cancer Center. Their dedication, empathy and compassion are the basis for the quality care that is provided by our program. If any further data or graphics are required, please feel free to contact Stacy Littlepage, CTR at the Cancer Registry at (270) 825-5820 or by e-mail at slittlep@trover.org.

Mohan K. Rao, MD, FACS
Cancer Committee Chairman

Stacy Littlepage, CTR
Certified Cancer Registrar



Prevalence, Risk Factors and Prevention of Lung Cancer

Lung cancer represents a major public health problem in Kentucky. Kentucky leads the country in the percentage of adults who are smokers and, consequently, in the incidence of lung cancer. Lung cancer is the most common cancer in Kentucky comprising 18.5% of cancer cases in Kentucky and 18.7% at the Regional Medical Center. The rate for the United States is significantly lower, with lung cancer accounting for 14% of all newly diagnosed cancers in 2000. One in twelve male smokers and one in eighteen female smokers in the U.S. will develop lung cancer during their lifetimes. In 1997, the overall lung cancer incidence rate in Kentucky was 53% higher than that of the United States, 85.3 cases per 100,000 individuals compared with the estimated national rate of 55.6 cases per 100,000 from the rest of the country. Lung cancer is responsible for 28% of all cancer deaths, claiming more lives each year than any other tumor type. More than 4,000 people die of lung cancer each year in Kentucky alone and more than 30,000 people nationally. From 1993 to 1997 Kentucky had the highest lung cancer mortality rate in the nation, being 43% higher than the national average.

Ironically, lung cancer is one of the most preventable cancers since its major risk factor, cigarette smoking, has been clearly identified. Smoking causes as many as 90% of all lung cancers and 1 in 10 smokers can expect to be diagnosed with the disease at some point in their lives. Lung cancer mortality rates are 23 times higher for continuing male smokers and 11 times higher for continuing female smokers than for the

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2004 CANCER COMMITTEE

Mohan Rao, MD - Chairman
General Surgery

William A. Logan, MD – ACoS Liaison
Otolaryngology – Head & Neck Surgery

Donald Miller, MD, PhD – Medical Director
Medical Oncologist
Director of James Graham Brown
Cancer Center
University of Louisville

Neil Kluger, MD
Hematology Oncology

Haitham Al-Okk, MD
Hematology Oncology

Satish Shah, MD
Radiation Oncology

Gerald Dysert, MD
Obstetrics & Gynecology

Justin Sedlak, MD
Pathology

Joseph Roe, MD
Surgery

Harry Debandi, MD
Urology

Rodney Taylor, MD
Urology

Craig Lundquist, MD
Diagnostic Radiology

Richard Bauer, MD
Pathology

Jack Hamman, MD
Thoracic Surgery

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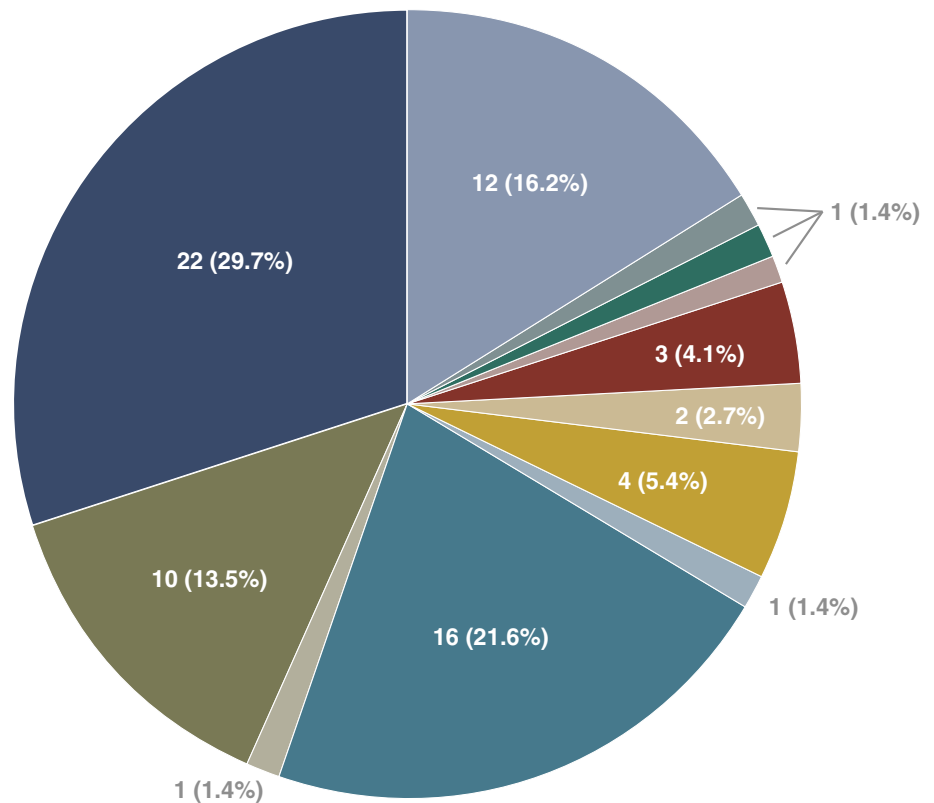


general population. Smoking has other various health risks as well; approximately half of all continuing smokers die prematurely from smoking. Additionally, approximately 17% of lung cancer in nonsmokers is caused by second hand smoke.

Lung cancer mortality rates generally follow the prevalence of smoking in a population with an approximate 20-year delay. Fortunately, smoking rates have decreased in the U.S. over the past several decades. Overall smoking incidence has decreased from 42% in 1965 to 22.5% in 2001. This 46% decrease in smoking has resulted in a corresponding decrease in lung cancer incidence (102/100,000 to 76/100,000) and mortality (91/100,000 to 75/100,000) in American males. In Kentucky, however, the outlook is not so bright. In 2002, 32.6% of all Kentuckians were active smokers (34.8% of men and 30.5% of women). This smoking rate has remained constant since the early 1990's. This is reflected in the fact that lung cancer incidence (100/100,000) and death rate (83/100,000) in Kentucky has also been constant.

The smoking rate is higher among adults without a high school education (32%) than it is in college graduates (11%); higher in men (25.2%) than women (20.0%); and is inversely related to age (28.5% for those aged 18-24 and 9.3% for those aged >65 years). These striking differences are reflected in the incidence of lung cancer and the lung cancer death rates in

2003 LUNG CANCER CASES HISTOLOGY



Adenocarcinoma, NOS	12 (16.2%)	Large Cell Carcinoma, NOS	4 (5.4%)
Adenoid Cystic Carcinoma	1 (1.4%)	Mucinous Adenocarcinoma	1 (1.4%)
Basaloid Squamous Cell Ca	1 (1.4%)	Non small cell carcinoma	16 (21.6%)
Bronchiolo-Alveolar Adeno	1 (1.4%)	Small cell carcinoma- Int.	1 (1.4%)
Carcinoma, NOS	3 (4.1%)	Small cell carcinoma, NOS	10 (13.5%)
Combined Small Cell	2 (2.7%)	Squamous cell carcinoma	22 (29.7%)

PREVENTION

these populations. Unfortunately, 47.0% of Kentuckians with less than high school education are smokers as are 47.3% of individuals with an income between \$15,000 and 25,000. Amazingly 60.5% of men and 49.0% of women in Kentucky are current or former smokers.

Although they are responsible for only a small proportion of lung cancer, there are several risk factors other than smoking. These include occupational exposure to arsenic, organic solvents, radon and asbestos; radiation exposure from occupational, medical and environmental sources; air pollution and tuberculosis.

Progress in the treatment of lung cancer has been disappointing. The overall five-year survival for lung cancer patients (at all stages) is 14%. Almost half of all lung cancer cases are diagnosed after the disease has spread to other organs (distant stage). In this late stage; the five-year survival rate is only 2%. The five-year survival rate for individuals with lung cancer confined to the chest cavity (regional disease) is only 20%. In contrast, the five-year survival rate for breast cancer at this stage is 77% and for colorectal cancer it is 65%. On the other hand, the overall survival rate for lung cancers detected before the disease has spread is almost 50%. Unfortunately only 15% of cases are detected that early. Surgical resection remains the mainstay of treatment for most types of lung cancer and only about one third of patients presenting with lung cancer are surgical candidates.

Because the symptoms often do not appear until late in the development of the disease, lung cancer is frequently diagnosed at an advanced stage. Although there is no effective method of early detection, several important trials are investigating the utility of spiral CT and proteomic analysis to detect lung cancer at an early stage at which surgery would give a higher cure rate. There are several promising reports that suggest that one or both of these approaches may have a significant impact within the next few years.

Treatment

A multiple modality treatment approach of surgery, radiation and chemotherapy is being offered to all patients at the Mahr Cancer Center. For early Stage I and II non-small lung cancer, surgery remains the treatment of choice. For inoperable cases, radiation has been used with a curative intent. For locally advanced Stage III-A and B disease, chemotherapy plus radiation therapy treatment is being used with promising results. A new approach of preoperative chemotherapy and radiation followed by surgery in selective cases is under investigation. Superior sulcus tumors are being treated most of the time with preoperative radiation followed by surgery. The role of chemotherapy in this setting can provide promising results and is being evaluated at our institution.

For small cell lung cancer - limited stage, combined chemotherapy and radiation remains the treatment of choice. For extensive stage, chemotherapy remains the primary treatment modality with radiation being used in selected cases for bulky tumor mass sites or for palliative intent only.

3-D treatment planning is used for radiation delivery on most of our patients. Beyond routine chemotherapy, a novel chemotherapy such as Iressa that blocks activity of the growth factor receptor is being used for our selective cases. Selective ECOG

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William Crump, MD
Family Practice Residency Faculty

Bonnie Brasher, RN, BSN
Director of Oncology Services

Diana Jackson, RN, BSN, OCN
Clinical Leader Medical Onc. Services Mahr Center

Tonya Daugherty, (R) (T) (CT)
Clinical Leader Radiation Oncology Mahr Center

Kevin Evitts, RN, BSN
Inpatient Oncology Services

Jenifer Miller, RN, OCN
Clinical Trial Data Manager

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Hospice

Sheila Baker, RD
Food & Nutrition

Rev. Bill McCann
Chaplain

Rev. Bob King
Volunteer Chaplain

Olivia Baker
ACS Cancer Control Specialist

Melanie Culbertson, RHIT
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Joan Lang, MBA
Regional Coordinator, KY Cancer Program

Teresa Ford, CTR
Cancer Registry

Stacy Littlepage, CTR
Cancer Registry





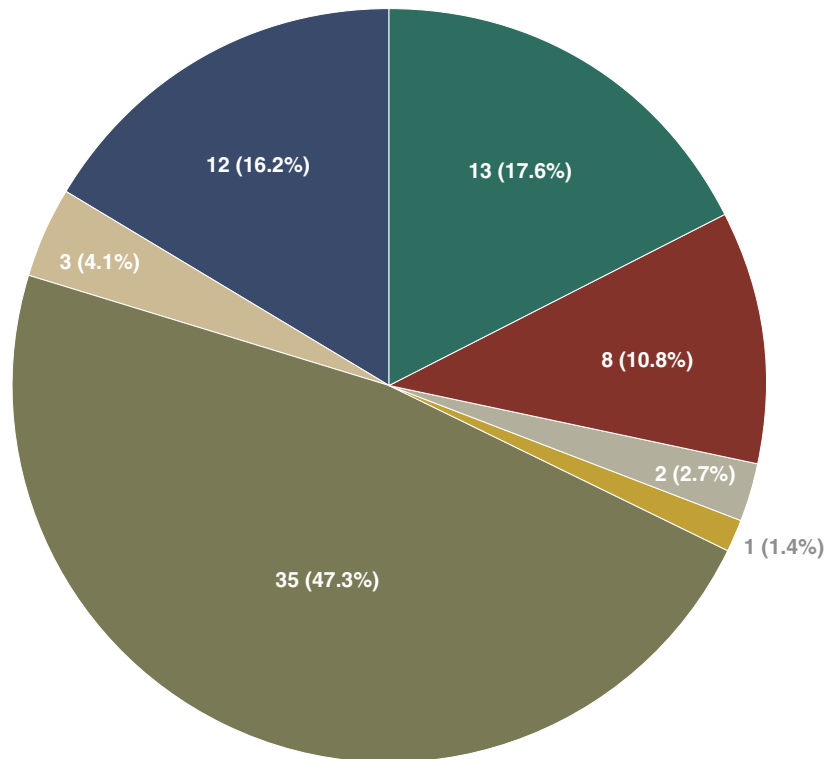
and NTSU protocol participation has been offered for the latest treatment modalities. Affiliation with Brown Cancer Center at the University of Louisville will allow us to participate in novel approaches of molecular and oncogene manipulation for lung cancer. IMRT with respiratory gating radiation treatment approach will be offered in our institution in the very near future as well as tomotherapy radiation treatment is an option available at Brown Cancer Center with our affiliated partner.

With the surgeon, radiation oncologist and medical oncologist working together along with other ancillary services such as Hospice care, supportive care, spirituality and nutrition as well as music therapy provided at the Mahr Cancer Center brings the best, affordable and latest care to our patients. Our results compare very favorably to the national trends. Clearly the development and implementation of early detection methods as well as utilization of effective smoking cessation approach can have a huge impact on this illness.

Donald M. Miller, MD, Ph.D.
Medical Oncologist

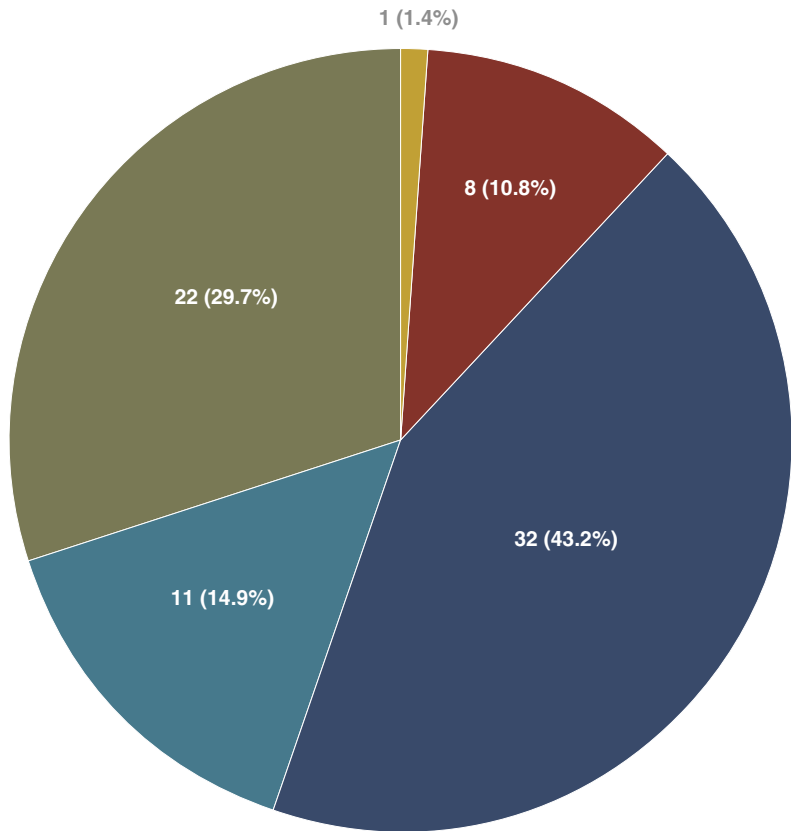
Satish J. Shah, MD
Radiation Oncology

2003 LUNG CANCER CASES BY THERAPY



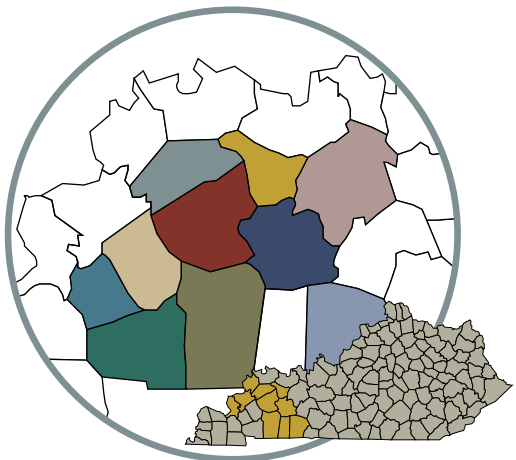
No Definitive Rx	13 (17.6%)	Radiation Only	35 (47.3%)
Surgery	8 (10.8%)	Surgery/Radiation	3 (4.1%)
Chemotherapy only	2 (2.7%)	Chemo/Radiation	12 (16.2%)
Surgery/Chemo	1 (1.4%)		

TUMOR GRADE 2003 LUNG CANCER CASES



Well differentiated	1 (1.4%)
Moderately differentiated	8 (10.8%)
Poorly differentiated	32 (43.2%)
Undifferentiated	11 (14.9%)
Unknown or N/A	22 (29.7%)

2003 LUNG CANCER CASES COUNTY AT DIAGNOSIS

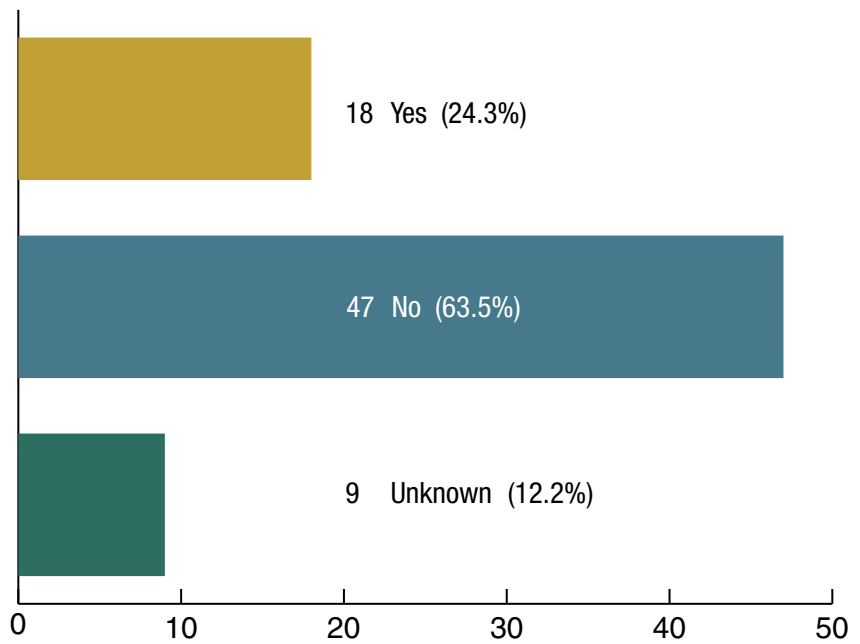


Caldwell	4 (5.4%)
Christian	2 (2.7%)
Hopkins	47 (63.5%)
Logan	1 (1.4%)
Lyon	1 (1.4%)
McLean	3 (4.1%)
Muhlenberg	10 (13.5%)
Ohio	1 (1.4%)
Trigg	1 (1.4%)
Webster	4 (5.4%)

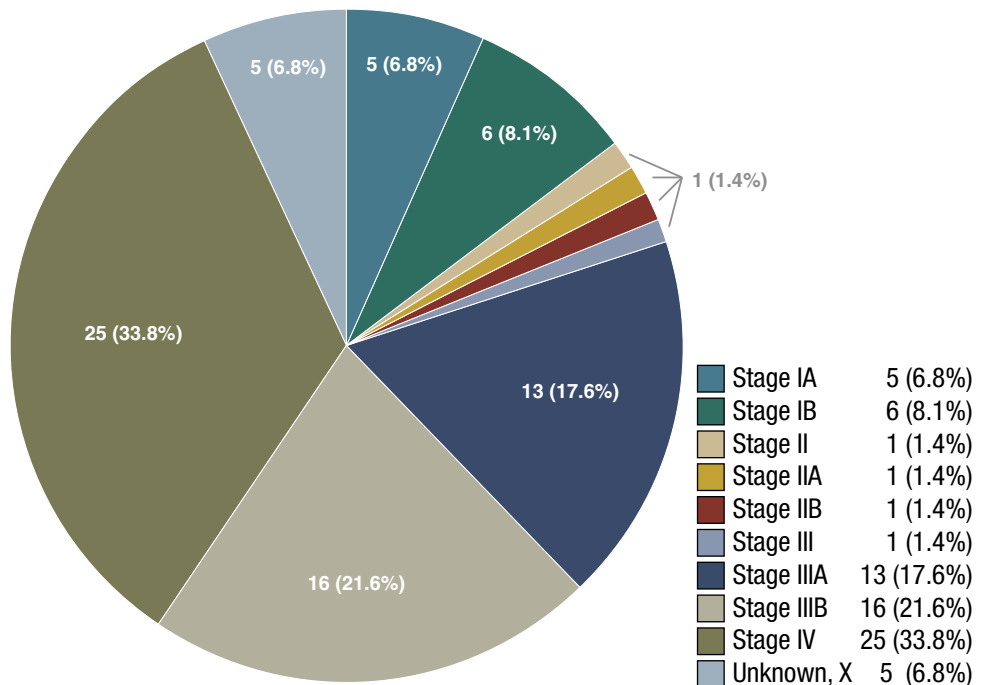




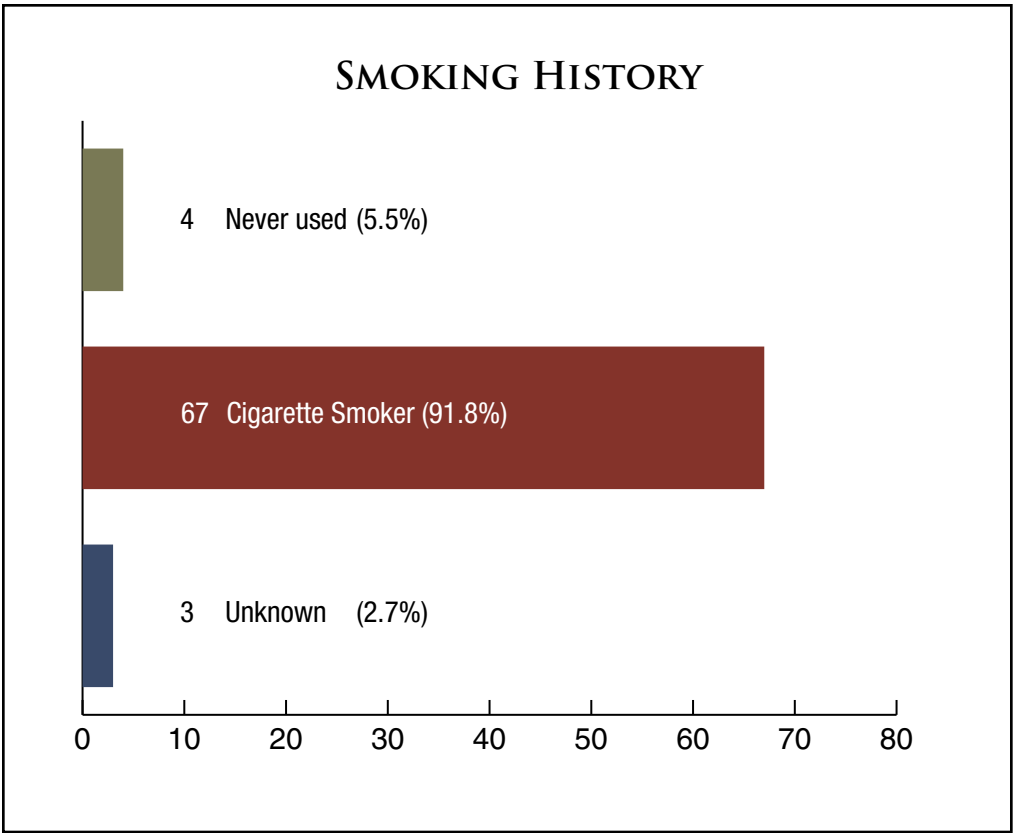
FAMILY HISTORY OF LUNG CANCER



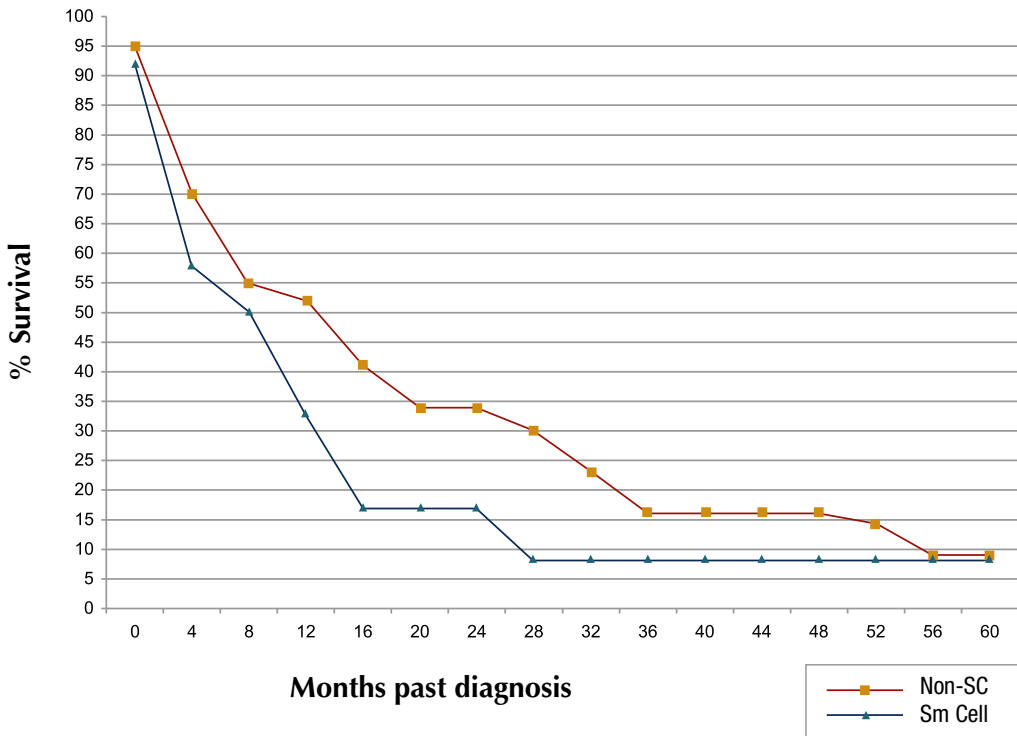
2003 LUNG CANCER CASES BY AJCC STAGE



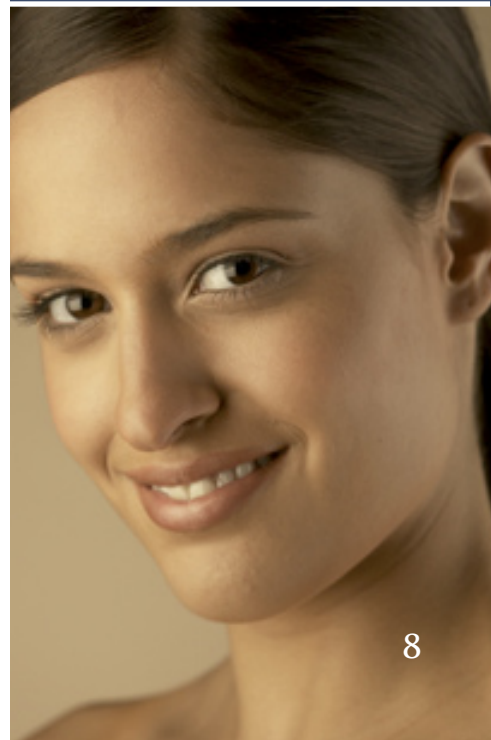
SMOKING HISTORY



1999 NSC vs. SC LUNG CANCER % SURVIVAL BY HISTOLOGIC TYPE ALL STAGES



Caution: data may be unstable due to small sample size



2003 CASE FREQUENCY REPORT

Site	Count	Percent	State Percent
Lung – NSC	61	15.4%	15.0%
Breast- Female & Male	58	14.7%	16.0%
Colon	38	9.6%	9.1%
Prostate	37	9.4%	10.4%
Rectum	19	4.8%	4.1%
Bladder	15	3.8%	3.0%
Non-Hodgkin's Lymphoma	15	3.8%	3.3%
Lung – SC	13	3.3%	3.5%
Malignant Melanoma	11	2.8%	4.6%
Kidney	11	2.8%	3.0%
Unknown Primary	9	2.3%	2.1%
Larynx	8	2.0%	1.2%
Cervix	7	1.8%	0.9%
Plasma Cell Tumors	7	1.8%	0.9%
Endometrium (corpus uteri)	6	1.5%	2.5%
Thyroid	6	1.5%	1.5%
Esophagus	5	1.3%	1.0%
Stomach	5	1.3%	1.1%
Pancreas	5	1.3%	2.0%
Floor of Mouth	4	1.0%	0.2%
Small intestine	4	1.0%	0.3%
Liver	4	1.0%	0.7%
Other female genital organs	4	1.0%	0.9%
Myeloid leukemias	4	1.0%	0.9%
Myeloproliferative & Myelodysplasia	4	1.0%	1.1%
Lip	3	0.8%	0.3%
Tongue	3	0.8%	0.5%
Gallbladder	3	0.8%	0.5%
Ovary	3	0.8%	1.2%
Brain	3	0.8%	1.1%
Hodgkin's	3	0.8%	0.5%
Gum & Hard Palate	2	0.5%	0.2%
Other digestive tract	2	0.5%	0.3%
Connective & Soft Tissue	2	0.5%	0.5%
Other urinary organs	2	0.5%	0.5%
Lymphocytic Leukemias	2	0.5%	0.9%
Buccal Mucosa	1	0.3%	0.1%
Oropharynx	1	0.3%	0.5%
Hypopharynx	1	0.3%	0.1%
Bone	1	0.3%	0.2%
Testis	1	0.3%	0.4%
Other male genital organs	1	0.3%	0.1%
Other hematopoietic diseases	1	0.3%	0.1%
Total	395		



CASE COUNTS BY YEAR 1998-2003

Site	1998	1999	2000	2001	2002	2003
Lip	1	3	2	1	2	3
Tongue	5	6	2	1	3	3
Salivary glands	3	1	1	0	0	0
Gum & hard palate	1	1	1	3	1	2
Floor of mouth	2	3	2	0	1	4
Buccal mucosa	0	1	1	0	0	1
Oropharynx	3	3	0	0	3	1
Hypopharynx	1	2	3	2	0	1
Other oral cavity	1	0	1	0	0	0
Esophagus	5	5	7	5	5	6
Stomach	3	4	6	3	7	4
Small Intestine	3	1	4	4	1	4
Colon	38	40	34	49	42	38
Rectum/Anus	13	16	13	16	14	19
Liver	4	7	1	3	3	4
Gallbladder	1	4	2	3	3	3
Pancreas	8	11	6	6	4	5
Other digestive tract	0	0	2	2	1	2
Nasal cavities, sinuses, ear	0	0	1	2	0	0
Larynx	9	10	7	4	0	8
Trachea, bronchus, lung-small	22	12	16	20	19	13
Trachea, bronchus, lung-NSC	76	56	71	81	64	61
Other respiratory	1	2	0	0	2	0
Bone	1	0	0	0	1	1
Connective & soft tissue	0	0	0	4	2	2
Malignant melanoma	17	33	24	22	15	11
Other skin	3	2	2	4	3	0
Breast, female & male	64	69	60	72	62	58
Cervix	3	3	7	4	3	7
Endometrium (corpus uteri)	9	6	3	10	6	6
Ovary	8	4	5	3	8	3
Other female genital organs	2	2	4	4	2	4
Prostate	26	51	82	59	51	37
Testis	2	3	2	1	2	1
Other male genital organs	0	1	0	0	3	1
Bladder	21	25	15	29	25	15
Kidney	10	13	13	13	10	11
Other urinary organs	1	0	2	2	1	2
Eye	1	1	0	0	0	0
Brain	4	1	2	3	2	3
Other CNS	0	0	1	0	0	0
Thyroid	9	8	5	3	6	6
Other endocrine	0	0	1	0	0	0
Hodgkin's	3	2	0	8	3	3
Non-Hodgkin's Lymphomas	12	15	26	13	16	15
Plasma cell tumors	5	4	4	7	6	7
Lymphocytic leukemias	2	4	7	7	10	2
Myeloid leukemias	1	1	2	1	4	4
Other leukemias	0	1	0	0	1	0
Myeloprolif. & myelodysplas.	0	0	0	5	11	4
Other hematopoietic diseases	0	0	2	1	0	1
Unknown primary	4	9	11	9	9	9
Total	408	446	463	489	437	395





NEW CANCER CASES 2003 MAJOR SITES

Site	RMC	Kentucky	National
Lung – (SC & NSC)	18.7%	18.5%	12.8%
Breast, female & male	14.7%	16.0%	15.8%
Colorectal	14.4%	13.2%	13.1%
Prostate	9.4%	10.4%	16.6%
Bladder	3.8%	3.0%	4.3%
Non-Hodgkins Lymphoma	3.8%	3.3%	4.6%

**National estimated new cancer sites by American Cancer Society "Facts & Figures"*

**2003 Regional Medical Center and Kentucky figures are actual to date*

**Kentucky information obtained from the Kentucky Cancer Registry*

