



Non-small Cell Lung Cancer Study 2014

Lahey Center for Oncology
and Hematology at Parkland
Medical Center

ACOS COC Standard 4.6

December 2014

Components of Site Specific Study

- ACOS Commission on Cancer Standard 4.6
 - Site specific study involving all cases from site
 - Review of a single treatment for a specific cancer site to determine if the first course of therapy is concordant with evidence-based national treatment guidelines
- Lung Cancer Study with Focus on Non-Small Cell Lung Cancer
 - Scope of the Problem
 - Recording known Risk Factors smoking and smoking cessation counselling
 - 2013 Summary of Non-Small Cell Lung Cancer
 - To confirm whether evidence based medicine and guidelines were followed in treating patients with advanced non small cell lung cancer (NSCLC).

Lung Cancer Overview

- Lung Cancer is the third most common type of cancer
- There are three main types of lung cancer

Common Types of Cancer	Estimated New Cases 2014	Estimated Deaths 2014
1. Prostate Cancer	233,000	29,480
2. Breast Cancer (Female)	232,670	40,000
3. Lung and Bronchus Cancer	224,210	159,260
4. Colon and Rectum Cancer	136,830	50,310
5. Melanoma of the Skin	76,100	9,710
6. Bladder Cancer	74,690	15,580
7. Non-Hodgkin Lymphoma	70,800	18,990
8. Kidney and Renal Pelvis Cancer	63,920	13,860
9. Thyroid Cancer	62,980	1,890
10. Endometrial Cancer	52,630	8,590

- **Non-Small Cell Lung Cancer**

- This is the most common type of lung cancer. About 85% of lung cancers are non-small cell lung cancers. Squamous cell carcinoma, adenocarcinoma, and large cell carcinoma are all subtypes of non-small cell lung cancer.

- **Small Cell Lung Cancer**

- Small cell lung cancer is also called oat cell cancer. About 10%-15% of lung cancers are small cell lung cancers. This type of lung cancer tends to spread quickly.


- **Lung Carcinoid Tumor**

- Fewer than 5% of lung cancers are lung carcinoid tumors. They are also sometimes called lung neuroendocrine tumors. Most of these tumors grow slowly and rarely spread.

Lung Cancer Epidemiology

Cancer Statistics for 2008		
Cancer Type	Incidence	Deaths
Colon	108,070	49,960
Breast	184,450	40,930
Prostate	186,320	28,660
Total	478,840	119,550
Lung	215,020	161,840

Estimated Deaths

	Males		Females				
Lung & bronchus	90,810	31%		Lung & bronchus	71,030	26%	
Prostate	28,660	10%		Breast	40,480	15%	
Colon & rectum	24,260	8%		Colon & rectum	25,700	9%	
Pancreas	17,500	6%		Pancreas	16,790	6%	
Liver & intrahepatic bile duct	12,570	4%		Ovary	15,520	6%	
Leukemia	12,460	4%		Non-Hodgkin lymphoma	9,370	3%	
Esophagus	11,250	4%		Leukemia	9,250	3%	
Urinary bladder	9,950	3%		Uterine corpus	7,470	3%	
Non-Hodgkin lymphoma	9,790	3%		Liver & intrahepatic bile duct	5,840	2%	
Kidney & renal pelvis	8,100	3%		Brain & other nervous system	5,650	2%	
All Sites	294,120	100%		All Sites	271,530	100%	

- **Number of New Cases and Deaths per 100,000:**

- The number of new cases of lung and bronchus cancer was 60.1 per 100,000 men and women per year.
- The number of deaths was 48.4 per 100,000 men and women per year.
- These rates are age-adjusted and based on 2007-2011 cases and deaths.

- **Lifetime Risk of Developing Cancer:**

- Approximately 6.8 percent of men and women will be diagnosed with lung and bronchus cancer at some point during their lifetime, based on 2009-2011 data.

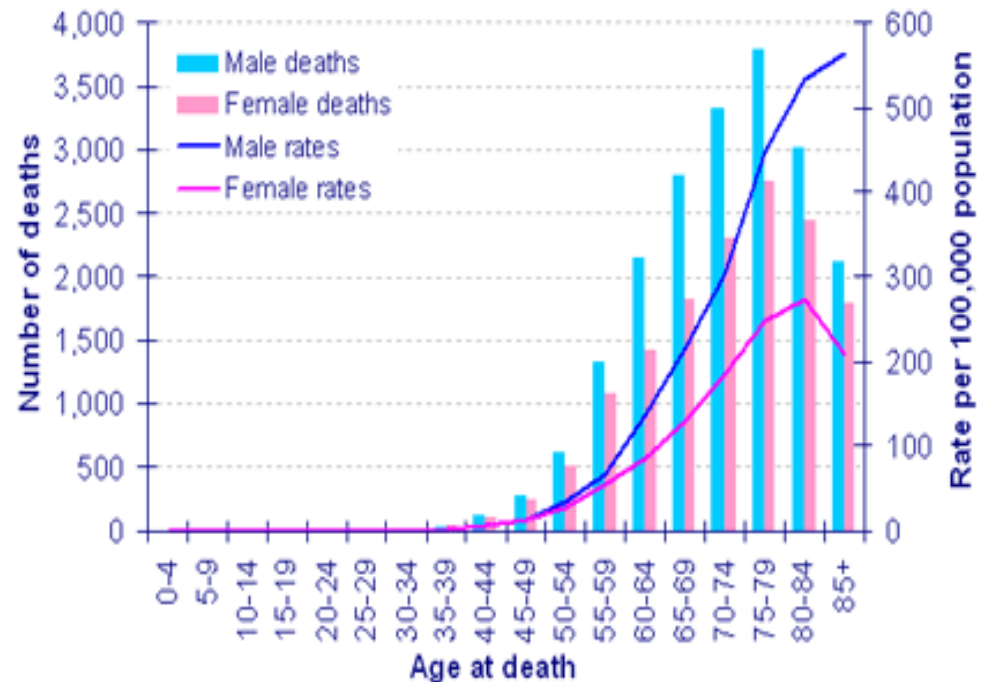
- **Prevalence of this cancer:**

- In 2011, there were an estimated 402,326 people living with lung and bronchus cancer in the United States.

Lung Cancer Age Distribution

- Incidence and mortality rates begin to increase between the ages of 45 and 54 and rise progressively until age 75
- Median age at diagnosis=70.07
- Median age at death=71.07

Figure 2.2: Number of deaths and age-specific mortality rates, lung cancer, by sex, UK, 2006

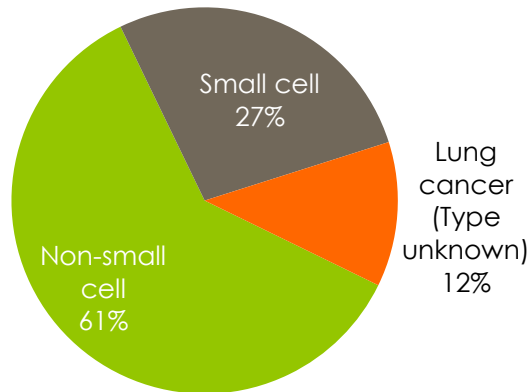


Risk Factors - Duration of smoking

- Persistent smoking is associated with a 16 fold increase in cumulative lung cancer risk.
- Risk doubled if smoking started before age 15.
- 30 pack years smoking increases risk of cancer related mortality by 20-60 fold in men and 14-20 fold in women
- Risk doubles if consumption persists for 40 years.
- Doll and Peto established model which showed a relatively linear relationship between the number of cigarettes /day and exponential increase with duration of smoking.
- Threefold increase in cigarettes smoked /day increased lung cancer risk threefold whereas similar increase in duration increased risk by 100 fold.

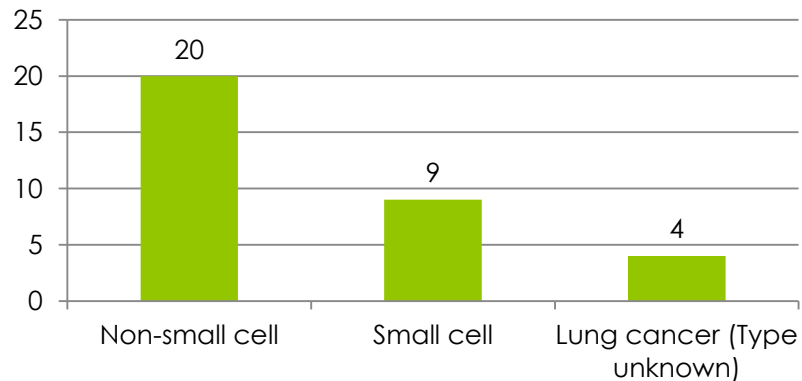
Parkland Lung Cancer Overview

Lung Cancer Patients Diagnosed in 2013 at Parkland Medical Center

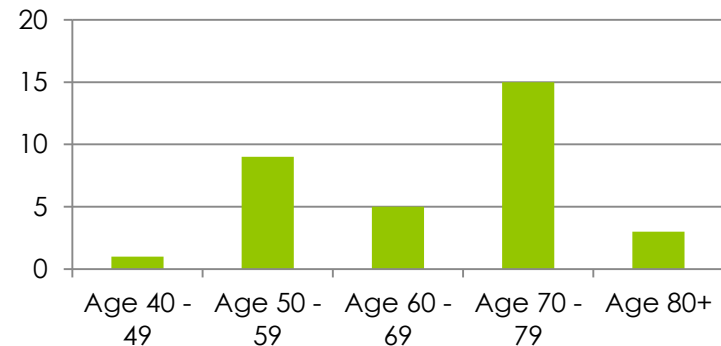


- There were 33 patients diagnosed with Lung Cancer in 2013
- 61% were Non-small cell lung cancer patients
- Average age at diagnosis was 67 years
- 61% of patients were female

Lung Cancer Patients Diagnosed in 2013 at Parkland Medical Center

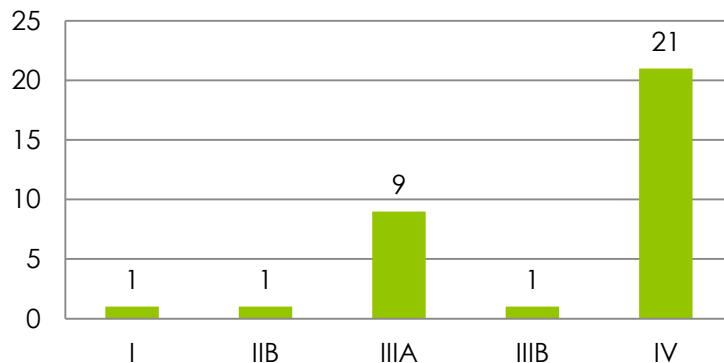


Age Distribution of Lung Cancer Patients

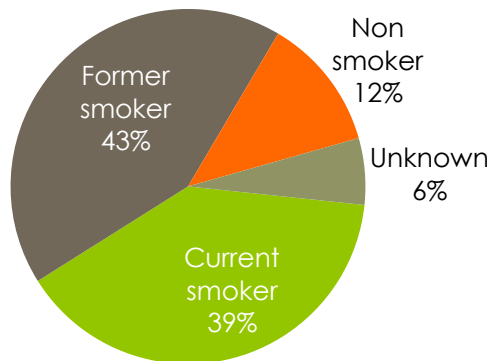


Parkland Lung Cancer Overview

Stage of Lung Cancer Patients at Diagnosis



Smoking Status of Lung Cancer Patients



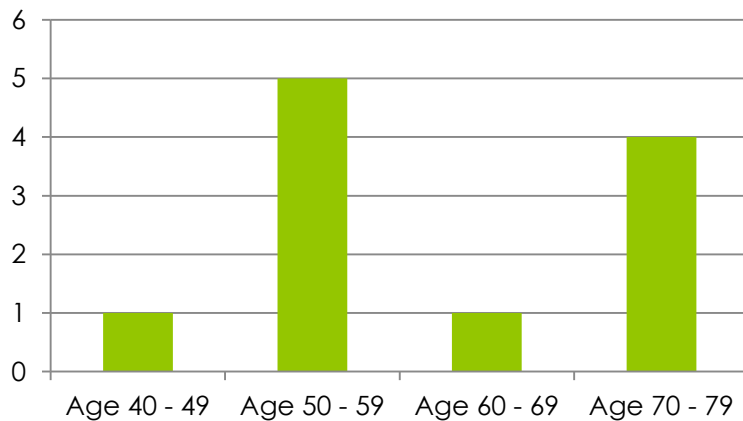
- 64% of patients diagnosed in 2013 were Stage IV
- 43% of patients were for former smokers
- 39% of patients were current smokers at the time of diagnosis
- Smoking cessation counseling was provided for 100% of current smokers

Non-Small Cell Lung Cancer Study

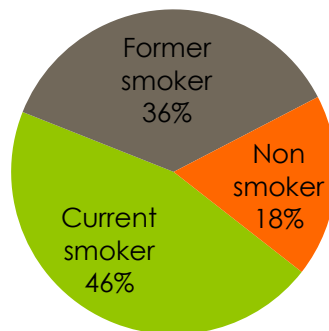
- Based on the review of Parkland's patient population with lung cancer, we decided to review patients diagnosed with stage IV, non-small cell lung cancer
- **Non-small cell lung cancer**
- About 85% to 90% of lung cancers are non-small cell lung cancer.
- **Squamous cell carcinoma:** About 25% to 30% of all lung cancers are squamous cell carcinomas. They are often linked to a history of smoking and tend to be more central and cavitary.
- **Adenocarcinoma:** About 40% of lung cancers are adenocarcinomas. This type of lung cancer occurs mainly in current or former smokers, but it is also the most common type of lung cancer seen in non-smokers. It is more common in women than in men, and it is more likely to occur in younger people than other types of lung cancer. Adenocarcinomas tend to be peripheral.
- People with a type of adenocarcinoma called *adenocarcinoma in situ* (previously called *bronchioloalveolar carcinoma*) tend to have a better outlook (prognosis) than those with other types of lung cancer.
- Source: <http://www.cancer.org/cancer/lungcancer-non-smallcell/detailedguide/non-small-cell-lung-cancer-what-is-non-small-cell-lung-cancer>

Stage IV Non-Small Cell Lung Cancer Study

Age Distribution of Non-Small Cell Lung Cancer Patients 2013



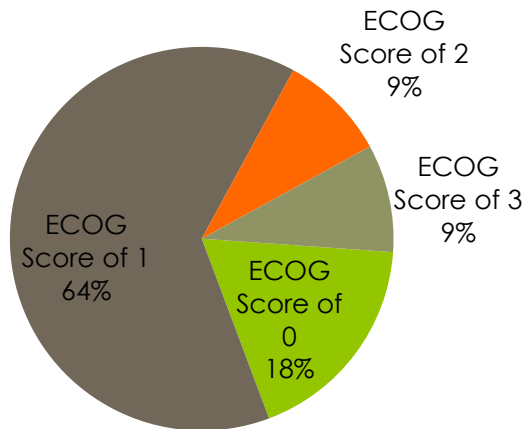
Smoking Status of Stage 4 Non-Small Cell Lung Cancer Patients



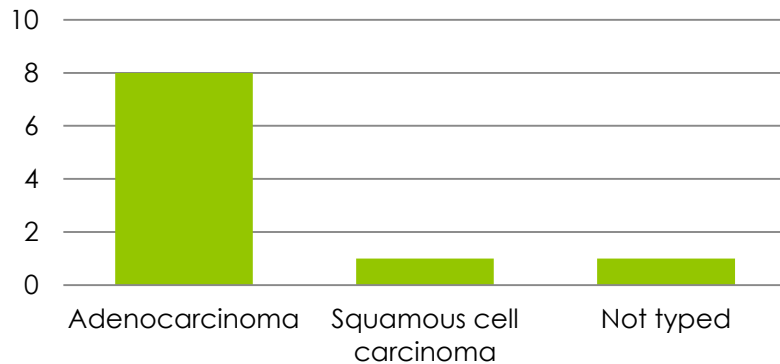
- There were 11 patients diagnosed with stage IV non-small cell lung cancer in 2013
 - Average age at time of diagnosis was 63 years
 - 46% of patients were age 50 – 59 years at diagnosis
 - 64% of patients were male
 - 46% of patients were current smokers at time of diagnosis
 - Smoking cessation counseling was provided for 100% of current smokers

Stage IV Non-Small Cell Lung Cancer Study

ECOG Score for Stage IV Non-Small Cell Lung Cancer Study



Non-Small Cell Stage IV Lung Cancer Patients with ECOG Status of 0, 1, 2



- The recommended guideline for patients diagnosed with stage IV non-small cell lung cancer with an ECOG Score of 0 – 2 is palliative chemotherapy with doublet chemotherapy.
- Out of the 11 patients diagnosed with stage IV non-small cell lung cancer in 2013, 91% (n=10) had an ECOG Score of 0 – 2
- 100% of eligible patients received appropriate palliative chemotherapy
- No patient who had a poorer performance status was offered palliative chemotherapy but were directly admitted into hospice/comfort care.