2016 Public Reporting of Outcomes: Lung Cancer Screening

Lung cancer is the number one cancer killer in the United States. With over 156,000 deaths per year, lung cancer kills more people than breast, colon, and prostate cancer combined. If you’re a smoker or a former smoker you may worry about your risk of getting lung cancer or dying from it. Lung cancer can be highly curable when found early. In the past, the early stages of lung cancer have been hard to detect.

Leading Causes of Lung Cancer
Cigarette smoking is the number one cause of lung cancer and is linked to about 80-90% of lung cancers. Lung cancer also can be caused by using other types of tobacco (such as pipes or cigars), breathing secondhand smoke, being exposed to substances such as asbestos or radon at home or work, and having a family history of lung cancer. People who smoke cigarettes are 15 to 30 times more likely to be diagnosed with lung cancer or die from lung cancer than people who do not smoke.

A 2011 major study of heavy smokers, called the National Lung Screening Trial, compared screening for lung cancer using lung CT scans and chest x-rays. The study showed that using lung CT scan for screening lowered the risk of dying from lung cancer by 20% among current and former heavy smokers. This is the first study to show that lung cancer screening may save lives.

The Top 5 Cancers diagnosed at Covenant Medical Center (CMC) in 2015 were: #1 Breast, #2 Lung, #3 Prostate, #4 Colon, and #5 Melanoma – Skin. CMC diagnosed 102 people with lung cancer in 2015.
Staging is the process of finding out how much cancer exists and where it is located in a person’s body when first diagnosed. Only about 18% of lung cancers in Iowa are diagnosed at the localized stage, before it spreads to surrounding tissues or distant organs. Iowans diagnosed with lung cancer at the localized stage had a five-year relative survival rate of 53% for the period 2004-2010. Lung cancer in the state is most often diagnosed at an advanced stage (55% of cases, 2006-2011), which negatively impacts the length of survival.

In 2013, the United States Preventative Services Task Force (USPSTF) recommended annual screening for lung cancer with low-dose computed tomography (CT) in adults ages 55 to 80 years who have a 30 pack-year smoking history (i.e., 1 pack a day for 30 years or 2 packs a day for 15 years) and currently smoke or have quit within the past 15 years. Screening should be discontinued once a person has not smoked for 15 years or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery.

**Frequently Asked Questions About Lung Cancer Screening**

**Q - What is the goal of lung cancer screening?**

**A -** The goal of lung cancer screening is to save lives. If no screening is done, lung cancer is usually not found until a person develops symptoms. By the time you have symptoms, the cancer is more advanced and much harder to treat.

**Q - Who should get a low-dose CT lung screening exam?**

**A -** Low-dose CT lung screening is recommended for the following groups of people who are at high risk for lung cancer. Those who have symptoms of a lung condition at the time of screening, such as a new cough or shortness of breath, are not eligible.

People ages 55 to 77 who have smoked at least an average of 1 pack a day for 30 years. This includes people who still smoke or have quit within the past 15 years.

**Q - Why does it matter if I have symptoms?**

**A -** Certain symptoms can be a sign that you have a condition in your lungs that should be evaluated and treated, if necessary, by your health care provider. These symptoms include fever, chest pain, a new or changing cough, shortness of breath that you have never felt before, coughing up blood, or unexplained weight loss. Having any of these symptoms can greatly affect the results of lung screening and may actually delay the treatment you might need.

**Q - Do I need to have a low-dose CT lung screening exam every year?**

**A -** It is recommended you receive a yearly low-dose CT lung screening until the age of 77 if you are identified as high risk for lung cancer. Please contact your health care provider to obtain an order.
**Q - How is the exam performed?**

**A** - The low-dose CT lung screening is one of the easiest screening exams you can have. No medications are given, and no needles are used. You can eat before and after the exam. You do not even need to get changed as long as the clothing on your chest does not contain metal. However, you must be able to hold your breath for at least 6 seconds while the chest scan is being taken.

**Q - Are there any risks to low-dose CT lung screening?**

**A** - There are several risks and limitations of low-dose CT lung screening. We want to make sure that we have done a good job explaining these to you, so please let us know if you have any questions. Your health care provider who ordered the screening may want to talk with you more about this.

- **Radiation exposure:** low-dose CT lung screening uses radiation to create images of your lung. Radiation can increase a person’s risk of cancer. By using special techniques, the amount of radiation in low-dose CT lung screening is small—about the same amount a person would receive from a screening mammogram. Further, your doctor has determined that the benefits of the screening outweigh the risks of being exposed to the small amount of radiation from this exam.
- **False negatives:** No test, including low-dose CT lung screening, is perfect. It is possible that you may have a medical condition, including lung cancer, which is not found during your exam. This is called a false negative.
- **False positives/additional testing:** Low-dose CT lung screening very often finds something in the lung that could be cancer but in fact is not. This is called a false positive. False positive tests often cause anxiety. In order to make sure these findings are not cancer, you may need to have more tests. These tests will be performed only if you give us permission. Occasionally, patients need a procedure, such as a biopsy, that can have potential side effects.
- **Findings not related to lung cancer:** Your low-dose CT lung screening exam also captures images of areas of your body next to your lungs. In a small percentage of cases (5%–10%), the CT scan will show an abnormal finding in one of these areas, such as your kidneys, adrenal glands, liver or thyroid. This finding may not be serious; however, you may need to be examined further. Your health care provider who ordered your exam can help determine what, if any, additional testing you may need.

**Q - What can I expect from the results?**

**A** – About 1 out of 4 low-dose CT lung screening exams will find something in the lung that may require additional imaging or evaluation. Most of the time, these findings are lung nodules. Lung nodules are very small collections of tissue in the lung. These nodules are very common, and the vast majorities—more than 97%—are not cancer (benign). Most are normal lymph nodes or small areas of scarring from past infections. Less commonly, lung nodules are cancer. If a small lung nodule is found to be cancer, the cancer can be cured more than 90% of the time. That is why we are screening you.
To distinguish the large number of benign (noncancerous) nodules from the few nodules that are in fact cancer, we may need to get more images before your next yearly screening exam. If the nodule has suspicious features (for example, it is large, has an odd shape or grows over time), we will refer you to a specialist for further testing.

**Covenant Medical Center Outcomes**
While there is much debate about the low-dose CT Screening, in the city of Waterloo there is a disproportionate high level of lung cancer being diagnosed when compared to other areas of the state. We equate this to several factors: high radon levels, socioeconomic reasons with high smoking populations in the lower income brackets, agricultural chemicals and histoplasmosis. Covenant Medical Center began a low-dose CT Program in 2015. Since beginning 2015, 83 patients have been screened. While the numbers being screened are very low, we have found 3 lung cancers in less than one hundred participants screened. These results are higher than the national average.

**Patient Outcomes Included:**
- 3 Lung Cancer diagnosed (two Stage I and one Stage II)
- 12 coronary calcification
- 79 recommendations for a 1 year follow up
- 26 recommendations for a 6 month follow up
- 13 recommendations for a 3 month follow up
- 2 PET Scans and 1 MRI were recommended

**References:**
1. [http://idph.iowa.gov/Portals/1/Files/MedicaidManagedCare/quitline_iowa.pdf](http://idph.iowa.gov/Portals/1/Files/MedicaidManagedCare/quitline_iowa.pdf)
2. [https://uiowa.edu/iowacancermaps2/lung-cancer-%E2%80%94-incidence](https://uiowa.edu/iowacancermaps2/lung-cancer-%E2%80%94-incidence)