

Welcome to the IPLAN Web-Conference

Lung Cancer: An Overview of the Disease and Prevention



ILLINOIS PUBLIC HEALTH INSTITUTE



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[Lung Cancer]

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Thank you Laurie. Hello everyone, my name is Beth Phelps I am a nurse practitioner and the coordinator of the thoracic oncology program at the SimmonsCooper Cancer Institute in Springfield, IL. I have the pleasure of working with a multidisciplinary panel of physicians to provide advanced cancer care to our patients. As part of our effort to provide the most scientifically advanced care; the physicians participate in clinic trials. Currently, we are participating in numerous research studies including; I-125 radioactive seed implants, vaccine trials, and new protocols for chemotherapy and radiation.

[Lung Cancer: Overview]

- “Lung cancer is the leading cause of cancer death in both men and women, and accounted for approximately 27% of all cancer deaths in Illinois from 1999-2003. Alarmingly, 87% of lung cancer deaths could be prevented by eliminating tobacco abuse.”

(American Cancer Society Illinois Cancer Facts & Figures, 2006)

My job today is to give you an overview of lung cancer. Other speakers will give you more in-depth information about smoking cessation and radon. As you can see; lung cancer is the leading cause of cancer death in both men and women, and accounts for approximately 27% of all cancer deaths in Illinois. In Illinois, efforts have been made to reduce smoking. The State of Illinois is now smoke free in public buildings. National campaigns like the American Lung Association’s Great American Smoke Out are bringing public awareness to the problem.

[Lung Cancer: Incidence]

- New lung cancer diagnosis, Illinois 2006
 - Male 5,030
 - Female 4,050
- Estimated Deaths from lung cancer, Illinois
 - Male 3,990
 - Female 3,090
- More deaths from lung cancer than prostate, breast and colorectal cancers combined

(American Cancer Society Illinois Cancer Facts & Figures, 2006)

In Illinois, it was estimated that we would have over 9,000 new cases of lung cancer in 2006 and 7,000 deaths. There are more deaths from lung cancer than prostate, breast, and colorectal cancers combined.

[Lung Cancer: Women]

- Account for 12% of all new cases
- More deaths from lung cancer than breast, ovarian, and uterine cancers combined.
- Women are more susceptible to tobacco effects. 1.5 times more likely to develop lung cancer than men with similar smoking patterns.

Jemal A, Thomas A, Murray T, Thun M. (2002).
American Cancer Society Facts & Figures (2004).

Lung cancer in women, account for 12% of all cases of lung cancer. There are more deaths from lung cancer in women than in breast, ovarian, and uterine cancers combined.

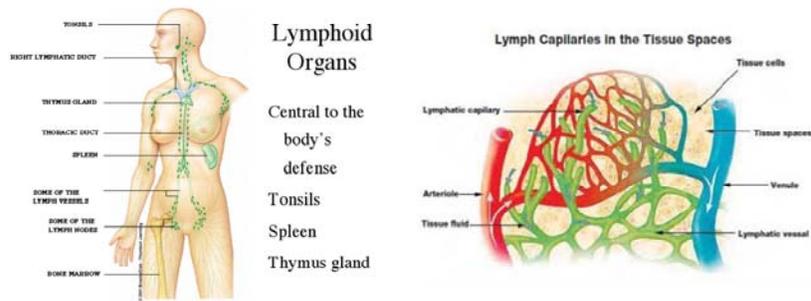
[Lung Cancer: What is it?]

- Cell mutation causes uncontrollable growth and replication
- These rapidly growing cells begin to invade adjacent tissues
- Microscopic cells travel through the lymph system to other areas of lung and body. (Metastatic Disease)

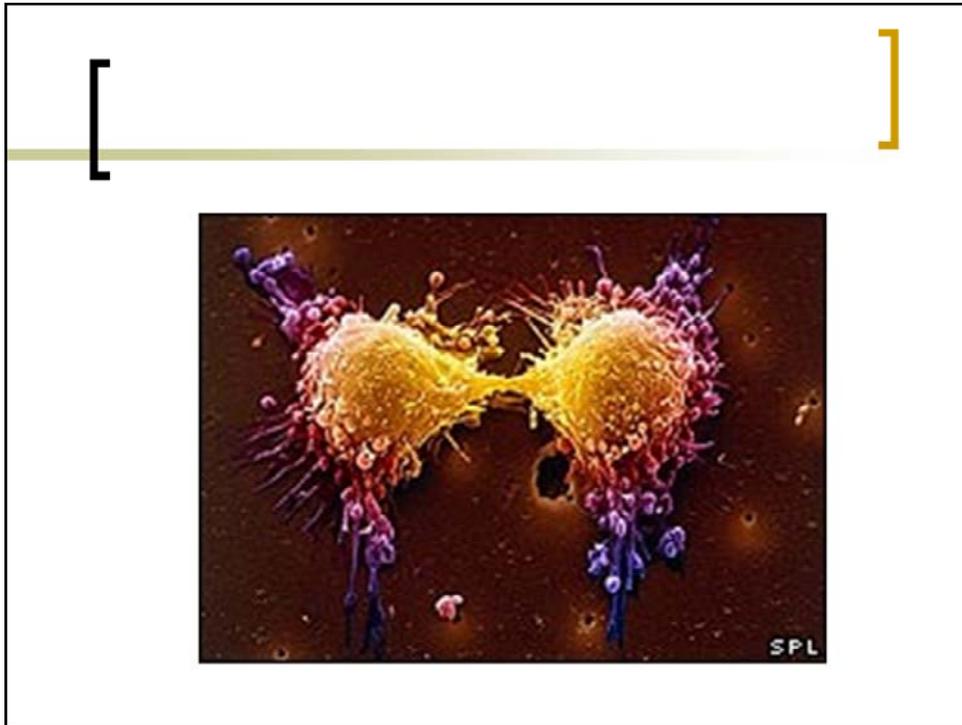
(Site-Specific Cancer Series: Lung Cancer, 2004)

Despite our best efforts; we are still not making a big enough impact in the incidence of new lung cancers. Lung cancer is the result of a mutation to cells. The damaged cells grow and multiply uncontrollably. They invade adjacent tissue causing the lung to work less effectively. As the tumor cells grow and multiply some travel through the lymph system to other areas of the lung and body causing metastatic lung cancer. Once lung cancer is in other organs; it begins to grow and multiply there as well.

[Lymphatic System]



On the right side you see a capillary bed; part of the human circulatory system. Fluid gets picked up by the lymphatic capillaries (the green tubes). The lymphatic system picks up the fluid that leaks out the arterioles (the red tubes) and not picked up by the venous system (the blue tubes). The picture on the left demonstrates how fluids move through the lymphatic system. Fluid is moved through the body and will re-enter the circulatory system through a large vessel in the chest. Lymph nodes (the circular green areas) are positioned throughout the body and act as filters. Any cancer cells that gain access to the lymphatic system can migrate to another location in the body and begin to grow.



Once cancer cells make it to another organ; they begin to grow, divide, and invade tissue in the new location.

[Lung Cancer: Causes]



- Smoking
 - Leading cause of lung cancer
 - 87% of lung cancers related to smoking
 - Risk is related to the amount of exposure

The causes of lung cancer are fairly well known. Smoking causes 87% of all lung cancers. Whether or not someone develops cancer is directly related to the age they started smoking, how much, and how long they smoke. people who never smoke can get lung cancer. There are other causes of lung cancer besides smoking.

[Lung Cancer: Causes]

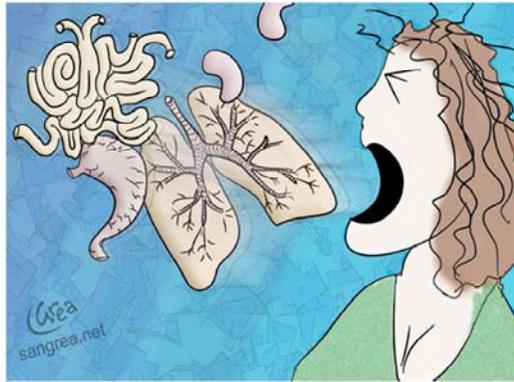
- Radiation Exposure
- Environmental/
Occupational
Exposures
 - Asbestos
 - Radon
 - Passive Smoke



Other causes include: radiation, asbestos, radon, and passive smoke exposures. Radiation comes from various different sources. For example, you get a small amount of radiation every time you get a CXR. Asbestos is not as common today but many of our older patients were exposed to asbestos as children. It was fire retardant and used in schools and homes. Radon is an odorless, tasteless gas that comes from the ground. Passive smoke inhalation has been linked to lung cancer. Working one 8 hour shift in a bar is the equivalent of smoking 1 pack of cigarettes.

[Lung Cancer: Symptoms]

- Cough
- Dyspnea
- Hemoptysis
- Recurrent infections
- Chest pain



Symptoms of lung cancer are vague. Cough, shortness of breath, coughing up blood, recurrent infections, and chest pain are some of the symptoms of lung cancer. Patients often ignore symptoms or take numerous rounds of antibiotics before lesions are found.

[Lung Cancer: Symptoms]

- Symptoms related to distant metastases
 - Pain
 - Organ-related
- General Symptoms
 - Weight loss
 - Fatigue

Symptoms can be quite severe including weight loss and fatigue. In metastatic disease, symptoms are related to the organ affected. Pain is often a presenting symptom.

[Lung Cancer: Screening]

- No proven effective screening tool to date
- Numerous studies in progress to determine most effective screening for lung cancer
 - Chest X-ray
 - CT scan
 - Sputum analysis

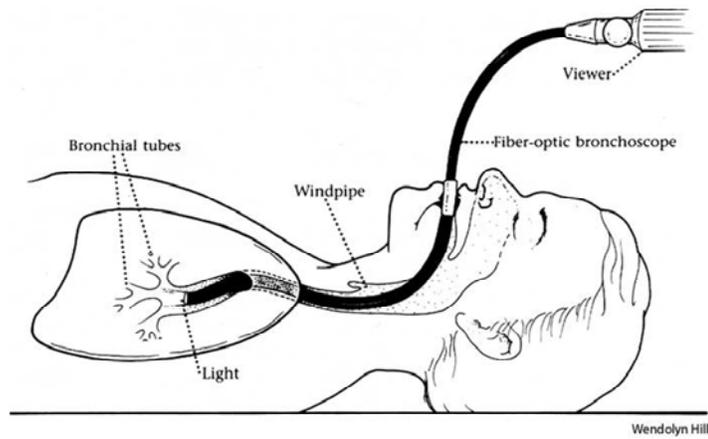
Currently, we have no proven effective screening tools for diagnosing lung cancer. Chest x-rays show a 2 dimensional view of the lungs. Lesions behind the heart or under a rib may not be seen. CT scans show a 3 dimensional view of the lungs. They are able to show smaller lesions but increase a patients radiation exposure. However, not every “spot” on the lung is a cancer. CT scans give us more information but we are still unable to distinguish between cancerous and benign lesions; solely based on a picture.

[Lung Cancer: Diagnosis]

- Chest X-ray
- Bronchoscopy
- CT Scans
- Needle Biopsy
- PET/CT Scans
- Surgical Biopsy

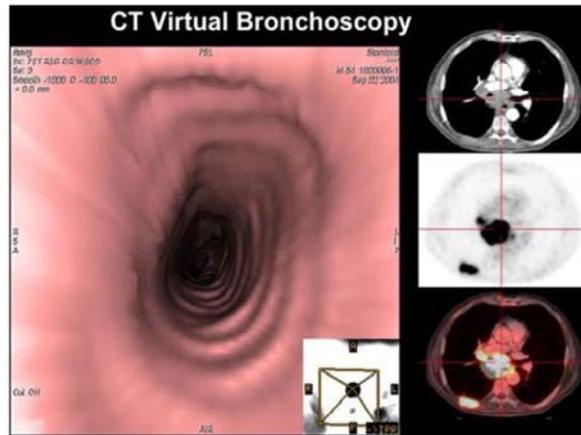
Diagnosis of lung cancer is made using a series of tests. An unusual spot may be found on a person's chest x-ray which prompts further testing. A patient will probably be sent for a CT scan of the chest. CT scans identify the lesion and give a 3-dimension view. If the lesion is still suspicious looking; the patient may be referred to a specialist. Other tests may be ordered such as a bronchoscopy, needle biopsy, or PET scan. A surgical biopsy can even be done of the lesion in question.

[Bronchoscopy]



During a bronchoscopy a physician looks through a special lighted scope to exam your large airways.

[Bronchoscopy]



This is a drawing that is similar to what the doctor sees when they look down the scope at the large airways. Any abnormal findings may be biopsied and sent to the lab to determine if any cancer cells are present in the airways.

[Bronchoscopy]



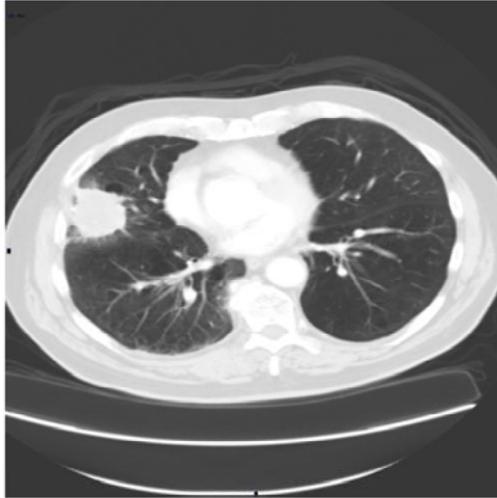
This picture shows a tumor blocking one of the large airways. At this time the physician would biopsy the tumor and try to clear the blockage from the airway.

[PET/CT Scans]



During a PET scan, a special sugar solution is injected into the patient. The picture then “lights” up in areas that are using a lot of sugar. One thing that needs a lot of energy and take up this special sugar solution is cancer cells. They need energy to constantly grow and multiply. Infections like pneumonia can also take up this sugar solution.

[Biopsy]

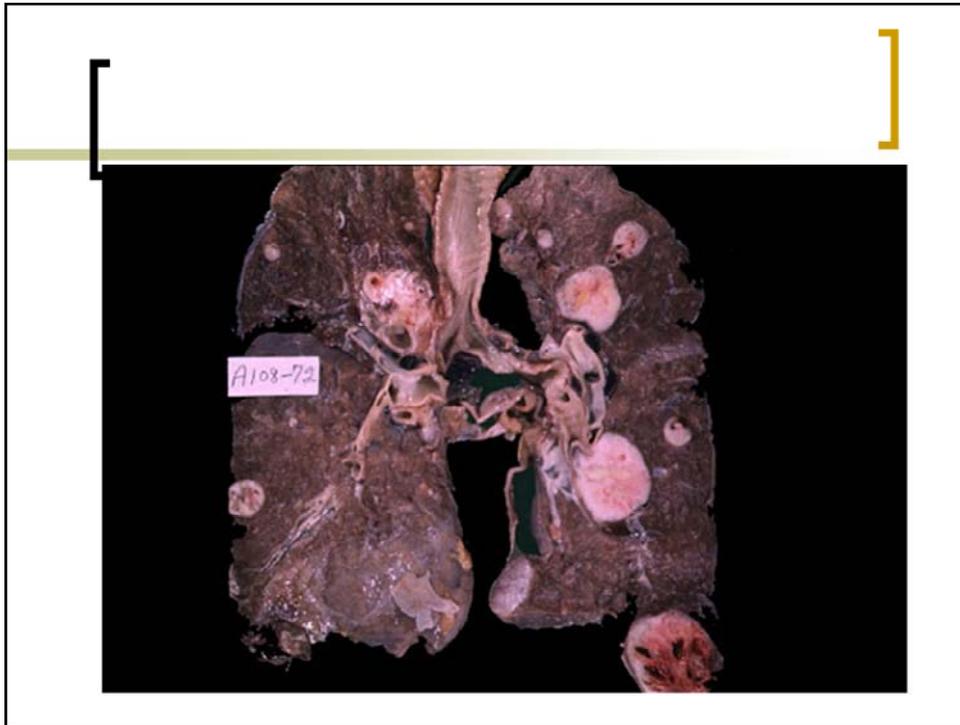


This is a CT scan picture of a lung tumor. You can see it on the left side of the screen which is the patients right lung. A biopsy is a way to get a piece of the tumor and send it to the pathology lab. Only a tissue diagnosis can determine if a lesion is lung cancer or not. Biopsy can be done 3 ways. 1st a pulmonologist or surgeon can do a bronchoscopy and try to stick a needle in the mass through the airway. 2nd a radiologist can try to stick a needle in the mass during a CT scan. 3rd a surgeon can put you to sleep, make 3-4 small incisions, and biopsy the lesion using video equipment. To determine the best way to biopsy a lesion is often discussed by a multidisciplinary group of physicians. Location, size, and the patients health all determine the approach that will be taken.

[Lung Cancer: Metastatic Sites]

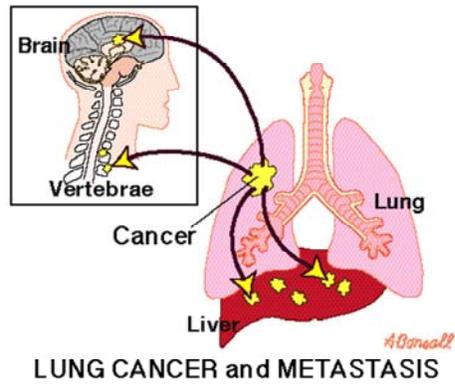
- Lymph Nodes
- Brain
- Bones
- Liver
- Lung/Pleura
- Adrenal Gland

Lung cancer metastasizes to the lymph nodes, brain, bones, liver, lung/pleura, and the adrenal gland most often. Cancer in the lung that invades the lymph nodes and travels to more distant sites of the body is inoperable.



This is a picture of metastatic lung cancer. The lesions are the large round white spots. In this case, the lung cancer spread to the lymph nodes and ended up in multiple spots throughout both lungs.

[Lung Cancer: Metastases]



This picture demonstrates the locations to which lung cancer may metastasize.

[Lung Cancer: Types]

Non Small Cell Lung Cancer
(NSCLC)

Small Cell Lung Cancer
(SCLC)

There are two types of lung cancer: non small cell lung cancer and small cell lung cancer

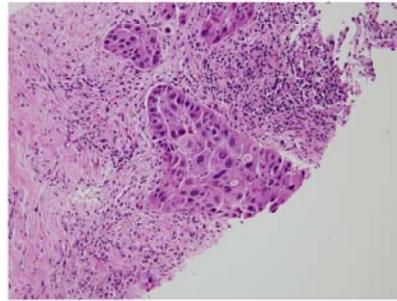
[Non Small Cell Lung Cancer]

- 80% of all lung cancers are NSCLC
- Survival is improved when found at an early stage
- Three distinct types of NSCLC
- Treatments are the same

We are going to talk about NSCLC first. Non-small cell lung cancer is found in 80% of all lung cancers. Survival improves when the lung cancer is found early. There are three types of NSCLC but treatment the same for each.

[NSCLC: Types]

- Adenocarcinoma
- Squamous Cell Carcinoma
- Large Cell Carcinoma



The three types of NSCLC are adenocarcinoma, squamous cell carcinoma, and large cell carcinoma.

[NSCLC: TNM Staging]

- Stages are 1-4; with 4 being the worst
- Stage is determined by looking at 3 separate components
 - T= Tumor size
 - N= Lymph node involvement
 - M= Absence or presence of metastases

Staging for NSCLC is determined based on the TNM staging system. Stages are 1-4; with 4 being the worst. The stage is determined by looking at each of the 3 separate components.

NSCLC: Treatment

<u>Stage</u>	<u>Description</u>	<u>Treatment Options</u>
Stage I	Single Tumor	Surgery
Stage II	Spread to the lymph nodes of the lung	Surgery
Stage IIIa	Spread to lymph nodes in the tracheal area, chest wall or diaphragm	Chemotherapy followed by radiation or surgery
Stage IIIb	Spread to lymph nodes of opposite lung or in the neck	Combination of chemotherapy and radiation
Stage IV	Tumor had spread beyond the chest	Chemotherapy and/or palliative care

Treatments vary based on what stage the patient is at the time of diagnosis. Stage 1 and 2 receive surgery. Stage III-IV receive chemotherapy and/ or radiation. Once the lung cancer spreads beyond the lymph nodes in the lung; there is no proven survival benefit to patients who undergo surgery. If you look at the table above, you will notice the stages listed down the left side. Single tumors or cancer cells that have only spread to local lymph nodes both are surgically removed. (Stage I or II). Tumors that have traveled to other locations in the lung receive chemotherapy followed by radiation and there is a potential for surgery. Again surgery is only done if it will give the patient some benefit such as longer survival. Stages III and IV both receive chemotherapy. Radiation is not given in stage IV unless it is done for palliative reasons such as decreasing pain or the size of the tumor to improve breathing.

[NSCLC: Survival]

<u>Stage</u>	<u>5-year Survival</u>
I	60-80%
II	40-50%
IIIa	25-30%
IIIb	5-10%
IV	<1%

As you can see, survival rates drop significantly for patients diagnosed at later stages.

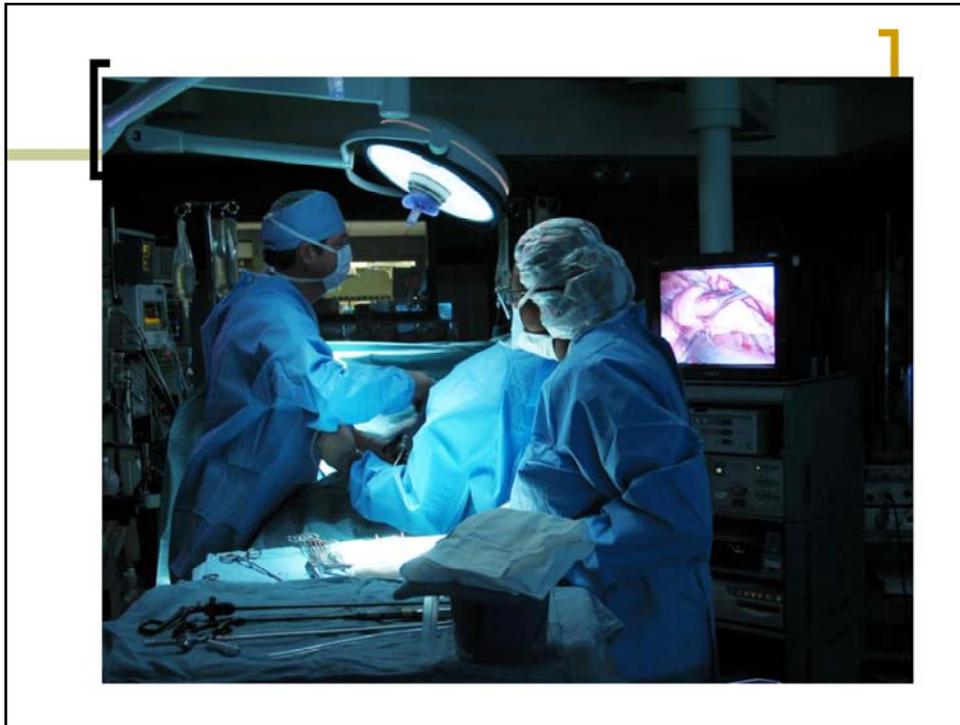
[Surgery]

Surgery is considered the treatment of choice for NSCLC in patients who are eligible for resection. The intent of surgery is to diagnosis a patient with cancer or to remove all visible cancer from the patient.

[Surgery]

- Surgery is done if there is an increased life expectancy after the procedure
- Surgery is not for metastatic lung cancer
- The earlier a cancer is caught the more likely that surgery will be curative

Surgery is done for patients with stage 1 or 2 disease. Surgery does not benefit patients with metastatic lung cancer. If the cancer is caught early during stage I; surgery can be curative.



Many lung cancers can now be removed using video guided instruments. 3-4 small incisions are made under the patients arm; on their side. Doctors are able to remove the tumor and/or part of the lung through these small incisions. Here is picture of one of our surgeons during a one of our surgical cases.

[Advances in Surgery]

- More procedures done using minimally invasive techniques
- Clinical trials are looking at diagnostic protocols
- Surgeons are looking at new techniques to decrease local recurrence rates

<http://www.cancer.gov/nlst>

Minimally invasive procedures meant the patient has smaller incisions after surgery, less pain, and faster recovery times. More and more procedures are able to be done using minimally invasive techniques. The National Lung Cancer Screening Trial was designed to compare different methods of following patients with lung lesions. The comparison of chest x-ray vs. CT scans will have a large impact on how patients are screened and monitored. Insertion of I-125 seed implants have been used in prostate cancer but are fairly new to lung cancer. By inserting radioactive seeds into the chest after the tumor has been removed; physicians hope to decrease local recurrence rates in increase patients survival times. American College of Surgeons Oncology Group is conducting a large clinic trial now to determine their effectiveness.

[Small Cell Lung Cancer (SCLC)]

- Most aggressive type of lung cancer
- Responds to chemotherapy and radiation
- Recurrence rates are high

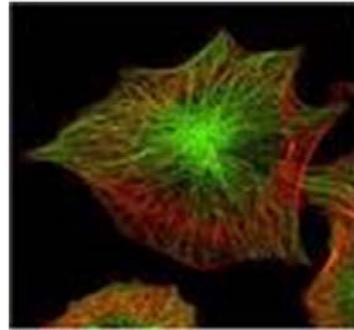
The second type of lung cancer is SCLC. This is the most aggressive type of lung cancer. This is not surgically resected. This type of cancer responds to chemotherapy and radiation. However, recurrence rates are very high.

[SCLC: Types]

Oat Cell

Intermediate

Combined



There are several types of SCLC.

[SCLC: Staging]

- Limited
 - Tumor is in one lung, the mediastinum, and lymph nodes that can be radiated using a single radiation port.
- Extensive
 - Tumor has spread beyond one lung, the mediastinum and local lymph nodes.

Staging is different than for NSCLC. There are only two categories: limited and extensive. If the tumor has spread beyond one side of the lung; survival drops significantly.

[SCLC: Treatment]

- Limited Disease
 - Chemotherapy
 - Concomitant Radiation
 - Prophylactic Cranial Radiation
- Extensive Disease
 - Chemotherapy
 - Palliative Radiation

Treatment is different based on staging. In limited disease, patients undergo chemotherapy, radiation at the same time, and cranial radiation. Metastatic brain cancer is common with small cell lung cancer. Patients with extensive disease have chemotherapy and palliative radiation. Treatment is not aggressive. Most of these people are very sick and can not tolerate an more aggressive treatment.

[SCLC: Chemotherapy]



Chemotherapy is given to patients to treat cancer. Chemotherapy is designed to either kill or slow the growth of abnormal cells.

[SCLC: Chemotherapy]

- A combination of chemotherapeutic agents is used
- Goal: improve disease-free interval and length of survival
- Research is ongoing
 - New agents
 - Vaccines
 - Radiation protocols

SCLC patients are given a combination of chemotherapeutic agents. The goal is to lengthen survival and keep the patient disease free for as long as possible. New research into treatment is ongoing. New agents are being developed that target specific proteins found in cancers. Vaccines are currently being studied that bolster the patients own immune system to recognize cancer cells and destroy them. Much the way the measles or chicken pox vaccine works.

[SCLC: Survival]

- Limited Disease:
 - Median survival 18-20 months
 - 5-year survival 10%
- Extensive Disease:
 - Median survival 10-12 months
 - 5-year survival 1-2%

Survival rates in SCLC are worse than in NSCLC. In patients with extensive disease, 5-year survival is only 1-2%

[Radiation]

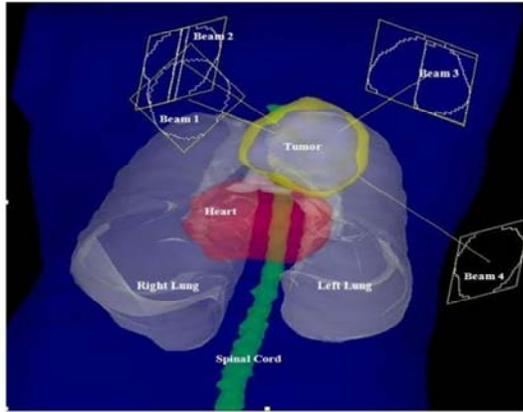


Figure 1. 3D conformal radiation treatment planning. Multiple fields of radiation are shaped to treat a lung tumor. The use of multiple beams (Beams 1-4) also allows normal tissues such as the heart, spinal cord and normal lung to be spared from high radiation doses.

New advances in radiation allow doctors to more accurately target tumors and spare healthy tissue. In this picture, you can see how different beams of radiation come together to target the tumor.

[Radiation: Intensity-Modulated]

- “Intensity-modulated radiation therapy (IMRT) is an advanced mode of high-precision radiotherapy that utilizes computer-controlled x-ray accelerators to deliver precise radiation doses to a malignant tumor or specific areas within the tumor.”

<http://www.radiologyinfo.org/en/info.cfm?pg=imrt>

For example, new advances in IMRT have allowed the tumor to be targeted more directly while sparing nearby healthy tissue.

[Lung Cancer: The Future]



The future of lung cancer treatment is very bright.

[Advances]

- Public awareness of the link between smoking and lung cancer has increased
- Therapy has moved away from one size fits all
- People with lung cancer are living longer

We have made strides in the past 10 years. We are saving patients today that would have died 10 years ago. Chemotherapy is moving in a new direction. We are learning about the genetics of lung cancer and working on building targeted therapies. Some day patients will have a battery of tests done on their cancer; chemotherapy, radiation, and other treatments will be chosen based on what each patient needs specifically. Several targeted agents are already on the market and research is making advances every day in this arena. Bottom line. People with lung cancer are living longer today than they were 10 years ago.

[The End]



Thank you for taking the time to listen today. I hope you enjoy of the rest of the presenters. Julie is going to start her presentation at this time.

Thank you for taking the time to listen today. I hope you enjoy of the rest of the presenters. Questions will be answered at the end of the conference by all of the speakers. At this time I'm going to turn things over to Julie and let her get started with her presentation.

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Targeting Interventions to Populations with Tobacco-use Disparities

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Thank you, I'm Julie Doetsch, Tobacco Program Manager at the Illinois Department of Public Health. I've been with the Department for over nine years. Eight of those years I've spent with the Illinois Tobacco Free Communities program in some capacity; first as the evaluation coordinator, then working with the Division of Chronic Disease as the Data Manager, and now as the Tobacco Program Manager.

One of the projects the tobacco program has undertaken is to look at the data regarding smoking prevalence rates and health consequences to identify populations with higher smoking rates. This information is critical to our understanding of the groups that may benefit most from prevention and cessation services.

Why? Smoking and lung cancer

- Definition of populations with tobacco-related disparities:
 - “Differences in patterns, prevention, and treatment of tobacco use;
 - differences in the risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups...;
 - and related differences in capacity and infrastructure, access to resources, and environmental tobacco smoke exposure.”

(Source: CDC. Best Practices for Comprehensive Tobacco Control Programs – 2007. Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; October 2007.)

It is widely known that smoking is a major risk factor for lung cancer. This presentation is not to provide information about that relationship. Instead the information I will cover is intended to describe groups with higher smoking prevalence rates so that scarce resources can be used more efficiently to reach these groups with intervention services. If cessation services are provided to populations with higher smoking prevalence rates then, over time, this will contribute to reducing lung cancer morbidity and mortality rates.

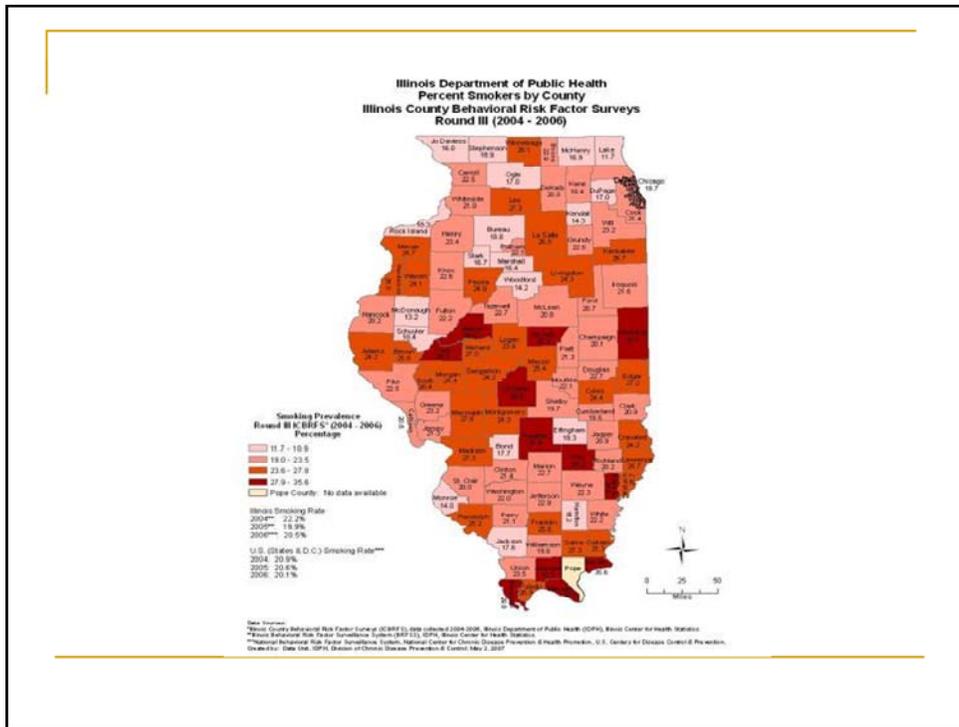
To target intervention services to those who need them, it is important to look for sub-groups that are more likely than other groups to use tobacco. To identify populations with tobacco-use disparities we have to look for differences in the patterns, prevention and treatment of tobacco use; and differences in the risk, incidence, morbidity, mortality, and burden of tobacco-related illness that exist among specific population groups. For the purpose of this presentation, I'll focus specifically on geographic areas and sub-populations in Illinois with higher smoking prevalence rates. In these areas, and to these people the delivery of smoking cessation services would be especially useful.

Where are populations with tobacco use disparities?

- Everywhere!



Before joining the tobacco program, I was the IPLAN data analyst. In that role I would sometimes hear statements such as “Our population is 99.8% white, we don’t have any disparate populations.” Since joining the tobacco program, I have sometimes heard this statement repeated as staff in local health departments attempt to identify tobacco-use disparate groups. Defining a disparity in terms of race/ethnicity is certainly one way to identify who may be at risk. However, in a largely homogenous population, that can be a difficult task. Instead, tobacco use disparities can be much more broadly defined. The key is identifying what groups are likely to have higher rates of tobacco use and finding them within your community.



This map depicts the most recent county-level Behavioral Risk Factor Surveillance System smoking prevalence data. Although the text may not be easy to read, from the ranges in darker red depicted in the map you can see that the highest smoking rates are clustered in the rural areas of the state. So, based on geography this map identifies areas in the state where cessation services can be targeted. However, within each county it would be useful to be able to more specifically target cessation services to those who need them.

Who? Populations with tobacco use disparities in Illinois

- Males
- Age:
 - 18 to 24 year olds
 - 25 to 34 year olds
 - 35 to 44 year olds
- Lower educational attainment:
 - Some high school no degree
 - GED
- Lower income
- Homosexuals and bisexuals
- Pregnant women with no or late access to prenatal care
- Middle East immigrants
- Native Hawaiian/Pacific Islanders
- People residing in rural areas



Existing research data clearly demonstrates that there are significant differences in smoking among various sub-populations in Illinois. The Illinois Department of Public Health contracted with researchers at the University of Illinois at Chicago to have them identify populations with tobacco use disparities. These researchers used data from a variety of sources, including the Behavioral Risk Factor Surveillance System, Pregnancy Risk Assessment Monitoring System, Adult Tobacco Survey and a variety of national-level survey data, to identify differences in patterns of smoking and trends in tobacco use for a variety of Illinois sub-populations.

Based on these data, it was determined that groups defined by gender, age, education, income, sexual orientation, pregnancy status, immigration status and race/ethnicity were at higher risk of smoking than the general Illinois population.

Using the demographics listed on this slide, information and interventions can be provided in places where people with these characteristics are likely to gather. For example, colleges and universities provide access to 18 to 24 year olds while those from 25 to 44 can usually be reached in work environments. People with lower educational attainment could be reached in GED classes. Often, but not always, income and educational attainment are linked. So, people with lower income may be employed in the service industry and factories.

One thing to keep in mind is that to effectively deliver tobacco cessation information and services it is important to consider sub-population sizes as well as prevalence rates. Being knowledgeable about the demographic characteristics in your community is key to understanding whether the number of people on these sub-groups is great enough to achieve a reduction in the smoking prevalence rate.

Data available to identify populations with tobacco use disparities

- County Behavioral Risk Factor System
 - <http://app.idph.state.il.us/brfss/>
 - Smoking rates by demographic characteristics
- Adult Tobacco Survey
 - www.idph.state.il.us/TobaccoWebSite/ILATS2007.pdf
- IPLAN Data System
 - <http://app.idph.state.il.us/>
 - Income, educational attainment, rurality, Medicaid
- U.S. Census
 - www.census.gov
- Local data sources



There are several data resources available at the county-level to identify specific populations that may be at risk in your area. The Illinois County Behavioral Risk Factor System provides smoking rates by various demographic characteristics. This is the most direct way to determine smoking among various groups in your area.

The Adult Tobacco Survey is conducted by IDPH on a biennial basis. This survey collects information about stages of change for cessation, frequency of health care providers asking about smoking and advising smokers to quit, and the types of cessation services used by smokers who attempted to quit. This is a state-level survey, but the results can be generally applied to the county-level as an indicator about what's likely to be occurring.

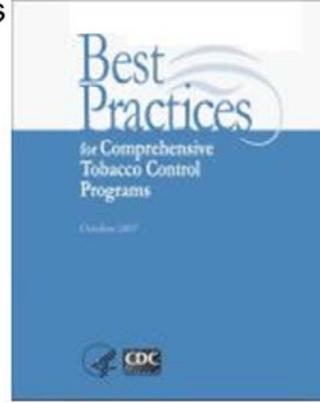
While not providing smoking rate-specific data, the IPLAN data system includes a variety of county-level indicators that are associated with higher smoking prevalence. For example, the IPLAN system provides reports on the percentage of residents by income, educational attainment, rurality, and Medicaid status. These are all ways to determine the size of various sub-populations within your area that are likely to have high smoking rates.

The U.S. Census Bureau provides county-level population estimates for a number of demographic characteristics associated with higher smoking prevalence. The information for a city, county or zip code can be found by typing the requested information in the "Population Finder" search fields. When the report is returned, selecting "People" on the left hand tool bar will provide a list of additional queries that can be run for the identified area.

Finally, in addition to the data collected within your own agency, the partners you convene as part of the IPLAN process can be a great resource for information unique to your area.

Recommendations

- CDC Best Practices recommends that a comprehensive tobacco control program include **identifying and eliminating tobacco-related disparities among population groups** by:
 - Preventing smoking initiation
 - Reducing exposure to secondhand smoke
 - Assisting smokers to quit smoking



Available at: www.cdc.gov/tobacco/tobacco_control_programs/stateandcommunity/best_practices/

In 2007 the Centers for Disease Control and Prevention published the Best Practices for Comprehensive Tobacco Control Programs. This document includes recommendations to provide services to reduce smoking initiation, to help current smokers quit, and to reduce exposure to secondhand smoke. I'll briefly discuss the activities within IDPH that address these Best Practices recommendations.

First, reducing initiation of smoking is one of the goals of the IDPH Illinois Tobacco-Free Communities program. This program funds 95 local health departments and includes a component to conduct evidence-based tobacco use prevention programming. The Tobacco-Free Communities program also funds some health departments to conduct REALITY Illinois. REALITY is a youth-focused, advocacy and education movement to reduce smoking initiation by educating youth about the harms of tobacco use.

Approaches: Reducing exposure to secondhand smoke

- Smoke-free Illinois Act [PA 95-0017]
 - Information available at:
 - www.smoke-free.illinois.gov



The enactment of the Smoke-free Illinois Act in January 2008 protects Illinois residents from the harmful effects of secondhand smoke. This meets the second CDC Best Practices recommendation to reduce exposure to secondhand smoke.

Approaches: Cessation

- Local cessation programs
- Illinois Tobacco Quitline:



Through the Illinois Tobacco-Free Communities program some local health departments provide smoking cessation groups. Other health departments provide nicotine replacement therapy through the “Break the Habit” program that Babs Frederking will discuss later in this webcast. The Illinois Tobacco Quitline is funded by the Illinois Department of Public Health and run by the American Lung Association of Illinois. Quitline services will be described by Lynda Preckwinkle in the next portion of this webcast. The availability of these cessation services meets the third Best Practices recommendation.

In summary, providing cessation services to the general population and targeting those sub-populations within your community that are identified as having higher smoking rates will help reduce the overall smoking prevalence rate. Please remember, you don’t have to do this all yourself. Work with those who work with people in sub-populations to inform them of available services. These services, combined with the other CDC recommendations, will lead to reductions in the morbidity and mortality associated with lung cancer.

Thank you for your time and your attention to this portion of the presentation.

Now, Lynda Preckwinkle of the American Lung Association of Illinois will discuss the Illinois Tobacco Quitline in more detail. Lynda....



Lynda Preckwinkle, *BA, RRT*
Director, ALA Helpline and Tobacco Quitline
American Lung Association of Illinois-Iowa
lynda@lunghelpline.org
217-787-5864 x 261

PLAN TO QUIT...



QUIT TO WIN!!!

The Illinois Department of Public Health funds the Illinois Tobacco Quitline housed at the American Lung Association of Illinois. This partnership was formed in 2001 to provide tobacco cessation services to the citizens of Illinois.

Purpose



The Illinois Tobacco Quitline is here

for one reason . . .

to help people quit tobacco.

The Tobacco Quitline was created for one reason . . . to help people quit tobacco! Quitline staff can help cigarette, cigar and pipe smokers as well as snuff and chew tobacco users.

Why Should Tobacco Dependence be Treated?

- Tobacco causes premature death of almost half a million Americans each year
- 1/3 of all tobacco users in this country will die prematurely from tobacco dependence losing an average of 14 years
- 70% of smokers see a physician each year
- 70% of smokers want to quit

The Cost of Tobacco Dependence in Illinois

- Nearly 17,000 deaths each year are attributable to tobacco use
- \$6.7 billion in added health care costs/year and lost productivity



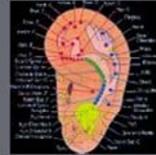
Addictions...

- Stopping smoking is difficult because, in order to quit, a person needs to:
 - Overcome addiction to nicotine
 - Physical Addiction
 - Change the habits of lighting up and inhaling smoke
 - Psychological Addiction



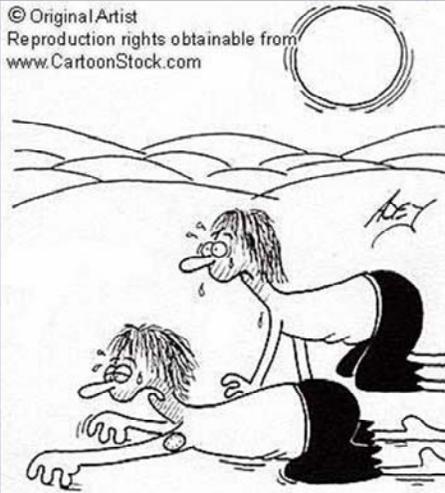
Many Methods of Quitting

- "Cold Turkey"
- "Cutting Back"
- Hypnosis
- Laser Therapy/Auricular Therapy
- Acupuncture
- Nicotine Replacement



- Prescription Medications

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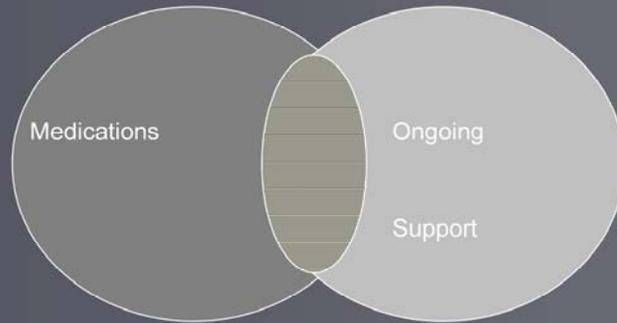
"Gasp! - New nicotine patch...New nicotine patch..."

Behavioral Modifications





Effective Strategies



1-866-QUIT-YES



The Illinois Department of Public Health funds the Illinois Tobacco Quitline housed at the American Lung Association of Illinois. This partnership was formed in 2001 to provide tobacco cessation services to the citizens of Illinois.

Resources



- Cessation Guide and Information mailed
- Cessation Program is tailored to the callers needs
- One-on-one counseling in Spanish
- Interpretation services for more than 150+ languages
- Telecommunication Line for the Deaf **1-800-501-1068**
- Line capacity to handle hundreds of calls per day

The Quitline has a full time Spanish speaking interpreter AND the capability to speak to clients in over 150 languages through an interpretation service. A TDD – telecommunication device allows communication with deaf clients. To assure that information is consistent with current medical standards the Quitline operates under the advisement of the American Lung Association of Illinois Medical Advisory Board as well as the American Lung Association National office.

Qualified, Experienced Staff

- Registered Nurses
- Registered Respiratory Therapists
- Certified Tobacco Cessation Counselors
- Medical Advisory Board



The Quitline staff of Registered Nurses, Registered Respiratory Therapists and Smoking Cessation Counselors have years of experience AND are extensively trained in all aspects of tobacco cessation. Staff can interact with clients in any phase of the cessation process.

Hours of Operation

Open Extended Business Hours
7 a.m. to 9 p.m. Monday through Friday

Calls received outside
of these times are
taken by voice mail –
responded to the next
working day



Hours of operation are from 7 a.m. to 7 p.m., Central Time, Monday through Friday. Calls are answered as they are received, if staff are all busy assisting callers, the client has the option to hold or leave a message. Messages are returned the next business day. All messages are tracked to monitor completion.

Services



- Dual Function
 - *Stand Alone* Counseling Cessation Program
 - one-on-one over the phone
 - *Alongside* or in *Follow Up* to other cessation efforts
- Reactive Services: Client phones → Counselor weekly
- Proactive Services: Counselor phones → Client, at scheduled intervals
- Unlimited Services

There is no cost for the counseling services. Clients can choose **Reactive Services OR Proactive Services**.

For **Reactive Services**: clients call in to the Quitline weekly during business hours - these calls are not limited - clients are encouraged to call in more frequently if they feel they need to.

For **Proactive services**: a counselor calls the client on a schedule - if the client wishes to call into the Quitline outside of the schedule for additional support they are encouraged to do so.

How does it work?

- Clients are educated in the newest techniques
- *Individualized* quitting plans are developed and may include:
 - Behavioral Modification Techniques
 - Nicotine Replacement Products
 - Medication Therapy



The Quitline staff are extensively trained to help clients with a quitting plan that will work for them. They explain behavior modification techniques: how to change habits, deal with urges, manage stress, and much more.

Nicotine products and prescription medications are described. Although products are not available from the Quitline, counselors advise clients where over-the-counter nicotine patches, gum, and lozenges are available. When the counselor feels prescription products such as the Zyban or Wellbutrin pill, the nicotine inhaler and/or nasal spray would be helpful, the client is encouraged to talk to their doctor about a prescription.

Packets

Tobacco Cessation Information Packet is provided:

- nicotine replacement
- prescription medication
- behavior modification
- the recovery process
- withdrawal symptoms
- tips for cravings, coping, stress management



Calls are followed by written information designed to reinforce the verbal messages provided by the Quitline counselors. Packets are tailored to the callers specific needs and include information about nicotine replacement products, prescription medications, behavior modification techniques, the recovery process, withdrawal symptoms, tips for dealing with cravings, coping, stress management and much more.

Benefits



Quitline staff offer encouragement and support throughout the quitting process

Quitlines can increase success by up to 56%!



What are the benefits in using the Quitline? Quitline staff never rush a call, they are available to offer the encouragement and support the client needs – throughout the quitting process.

The Surgeon General and the Centers for Disease Control both agree that using the techniques and support of a Tobacco Quitline can substantially increase an individual's success in quitting by up to 56%!

5 Steps to Helping People Quit – The 5 A's

- **ASK** about tobacco use.
- **ADVISE** to quit.
- **ASSESS** willingness to make a quit attempt.
- **ASSIST** in quit attempt.
- **ARRANGE** for follow-up

Free Promotional Tools

...promote through company intranet, use print materials in break rooms, offer enrollment forms through company nurse or during routine health screenings...

- Coasters Tear Off Style Pads
- Brochures (English & Spanish)
- Window Clings
- Posters
- Magnets
- Enrollment Forms
- Power Point Presentation
- Print Ads



The Illinois Tobacco Quitline is committed to providing a quality service to the citizens of Illinois – the Quitline can help in the journey to a life without tobacco - give them a call!

The Illinois Tobacco Quitline



ILLINOIS TOBACCO QUITLINE SERVICES: The Quitline staff offers encouragement and support throughout the quitting process and can help you:

- ④ Develop a clear plan for quitting
- ④ Select the best strategies for you
- ④ Determine the proper dosage of nicotine products
- ④ Work on healthy behaviors to help prevent relapse



Use of QUITLINE services can improve success rates up to 56%!

Telecommunication Line for the Deaf: 1-800-501-1068

**The Quitline's knowledgeable staff
is waiting to serve you**

The Illinois Tobacco Quitline is committed to providing a quality service to the citizens of Illinois – the Quitline can help in the journey to a life without tobacco - give them a call!

Break the Habit



Babs Frederking, RN
Health Educator/Tobacco Coordinator
Washington County Health Dept.
618-327-3644
wchd191@yahoo.com



Break the Habit

- WHAT IS BREAK THE HABIT??????
- In the beginning there was IDPH Office of Health Promotion Division of Chronic Disease Prevention & Control – whew!
- Then there was Tobacco Settlement Funds
- Then there was Illinois Tobacco Free Communities Grants
- And then there was Break the Habit!

Break the Habit

- Washington County Health Department was the first to pilot the Break the Habit Program in 2001-2002.
- The following year 2 other counties jumped on board
- Break the Habit offered state wide for FY 2006 ITFC grantees.
- Counties that now offer break the habit have grown tremendously!

Break the Habit

- HOW THE PROGRAM WORKS
- Individuals are referred
- Individuals are then screened for funding. If approved, agreement is signed
- Now it's on to the ITQ – Illinois Tobacco Quitline
- ITQ makes contact with health department via e-mail

Break the Habit

- HD makes contact with participant for further instructions
- HD notifies pharmacy of new participant
- Educational material is given to participant
- Participants are followed up at 3, 6, & 12 months.
- In a nutshell

Break the Habit

- **SUCCESS RATES**
- This will be brief!!
- From FY 04 to date, 20 – 25% of our participants were tobacco free at the 1 year follow up contact.
- ITQ calls for Washington County FY 04

Break the Habit

- WRAP IT UP!
- Flexible program
- What helps make the program work
- Thank you so much for your time. Please feel free to contact me.

HAVE A WONDERFUL DAY!!!



Improving Life, One Breath at a Time

MISSION: A WORLD FREE OF LUNG DISEASE

RADON: ARE YOU AT RISK?

Angela Tin, M.S.

Director of Environmental Programs
American Lung Association of Illinois
(217) 787-5864
atin@lungil.org



My name is Angela Tin and I am Director of Environmental Programs with the American Lung Association.

I come from an environmental background by having worked with Illinois Environmental Protection Agency.

I worked in both outdoor and indoor pollution programs and radon is certainly an air pollution concern.

RADON: ARE YOU AT RISK?

- ❖ Where do we spend most of our time?
- ❖ What is radon?
- ❖ How do we measure exposure?
- ❖ What is the level of concern?
- ❖ How and why does it come into my home?
- ❖ How does radon affect the lungs?
- ❖ How and where can I sample for radon?
- ❖ What if there is radon in my home?
- ❖ What can local health departments do?

As a public health official and residential home owner, what are the typical questions one may have for Radon?

Where do we spend most of our time?

What is radon?

Where do we measure exposure?

What is the level of concern?

How and why does it come into my home?

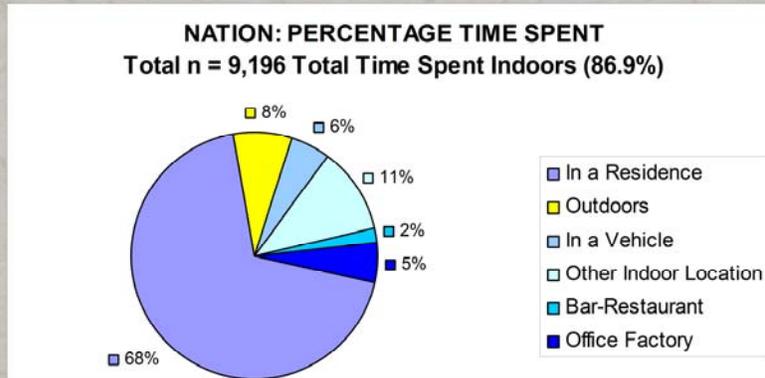
How does radon effect the lungs?

How and where can I sample for radon?

What if there is radon in my home?

What can local health departments do?

National Human Activity Pattern Survey: Time Spent Indoors



Source: Ott, Klepeis, and Switzer, *Journal of the Air & Waste Management Association*, 2003

We are concerned about Radon because of where we spend most of our time. Close to 87% of our time is spent indoor – and over half of that is spent at home.

What is Radon?

6	86
Rn	
Radon	
222	

- ✓ Naturally occurring
- ✓ Tasteless
- ✓ Odorless
- ✓ Colorless
- ✓ Radioactive decay of uranium in rock soil and water

Radon is a gas that is found in the soils and rocks where natural deposits of uranium and radium are found.

Radon does not come from manmade landfill or other industrial sources.

Uranium breaks down to radium, which in turn decays into radon gas.

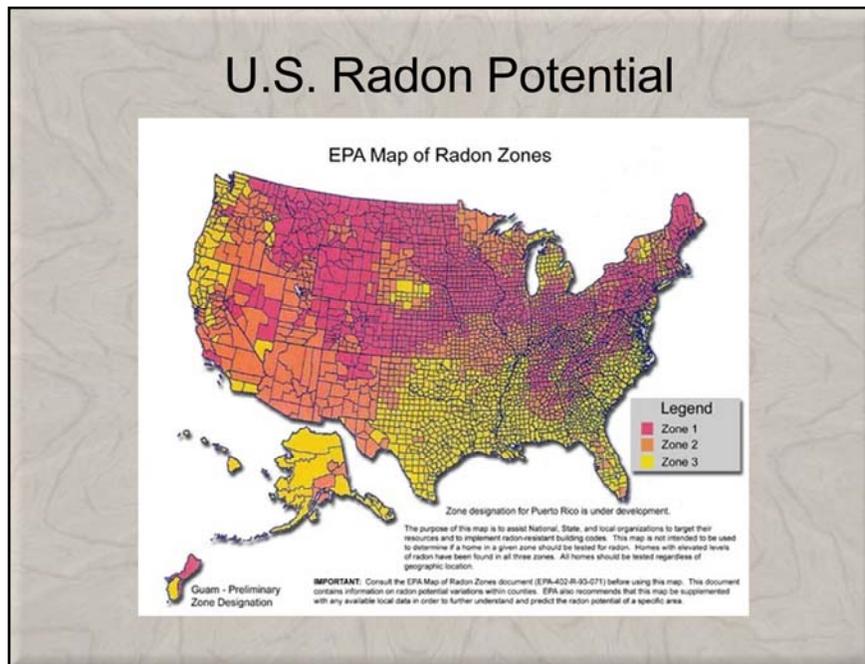
You cannot see, taste or smell radon. There is no way that your body can sense the presence of radon.

Because of this, radon gas can move up through the soil into the atmosphere, where it is easily diluted and presents little concern.

But, if radon enters a building constructed on top of the soil, it can build up and become a health concern

Uranium can be found everywhere in the world, therefore every building has the potential for elevated levels of radon.

It is not a question of, "Is there radon?" but rather, "How much radon is there?"



Since the late 1980's, radon measurements have been taken throughout the United States.

This data has been collected and compared to geological formations to yield the map shown above.

This map was developed to determine what radon reduction methods should be incorporated into the construction of new homes and buildings.

However, it also serves as a tool for focusing public awareness efforts on radon.

The zone classifications predict the likelihood of finding certain ranges of radon concentrations when conducting short-term measurements (as is often done at the time of a real estate transaction).

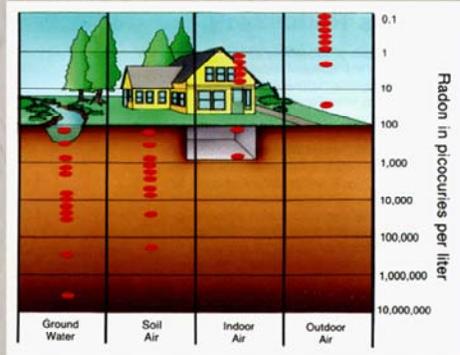
Key:

- Zone 1 red : Equal to, or greater than, 4.0 pCi/L
- Zone 2 orange: Between 2.0 pCi/L and 4.0 pCi/L
- Zone 3 yellow: Less than 2.0 pCi/L

Additionally, one should realize that significant variations can occur within a county and there is no substitute for testing to verify individual conditions.

Radon Facts

- All homes have some levels of radon
- High levels in every county / every state
- Influenced by nature outside the home
- Controlled by man once inside the home
- Primary exposure through inhalation
- Secondary exposure through water supply



As stated before it's not whether radon is present, the question is more – at what level is radon present.

Radon is found in every county and city in Illinois.

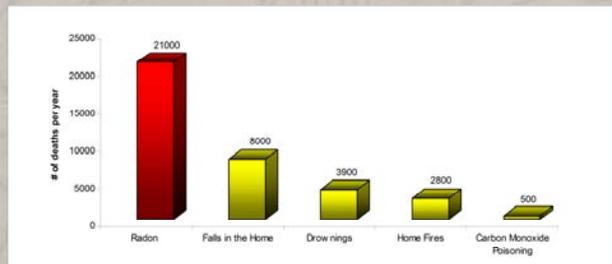
All homes have some level of radon

Although radon is controlled by nature – once inside the home it is controlled by man.

Detrimental radon health effects are transmitted primarily through inhalation and the ultimate effects are to the lungs (both from air and water supply).

How Do We Measure Exposure?

- Radioactive alpha radiation on lung tissue
- Class A human carcinogen
- Greatest source of radiation to public
- Historical miner studies
- More likely to die from radon - accidents, drowning, or fires



Radon decay products are inhaled into the lungs and act directly on lung tissue.

Radon is classified as a Class A human carcinogen – meaning that data has been collected and verified on human subjects (as compared to animal extrapolations)

Radon is the greatest source of radiation exposure – more than medical, consumer, cosmic exposure.

Studies of uranium miners working in Europe and the US have confirmed the health risk of radon exposure.

More likely to die from radon exposure than through accidents, drowning, fires, or from carbon monoxide poisoning

a

What is the Level of Concern?

- EPA estimates 21,000 (or 12%) lung cancer deaths per year attributable to radon
- Average indoor radon concentration 1.3 pCi/L
- EPA action level is 4.0 pCi/L
- USEPA estimates that ¼ of all radon related lung cancers can be averted by lowering radon levels below the 4.0 pCi/L
- More than 40,000 homes in Illinois have been tested in the last two years
- Over 40% of homes above EPA action level

Residential risk factors affirmed by several scientific committees and organizations.

EPA estimates that 12% of lung cancer is from radon

Average concentration indoors at 1.3 pCi/L

At 4.0 pCi/L the lifetime risk is 23:1000 in developing lung cancer

¼ of all radon cancers can be eliminated by effective radon removal

In Illinois all homes (greater than 40,000) that are tested are entered into a database

Over 40% of these tests are above the EPA action level

We estimate about 50% of those that are above the action level have been mitigated.

How is Radon Influenced by Cigarette Smoke?

- Radon binds - dust particles or cigarette smoke
- Indoor smoke increases the amount of dust in a room as much as 600 times
- Health effects - multiplied with cigarette smoke
- Leading cause of cancer in non-smokers



Before we mentioned that 23:1000 people have a life time risk of developing lung cancer from radon.

If we have a smoker living in the home this risk increases to 62:1000 (doubles)

Indoor smoke increases the amount dust which has a direct impact on radon levels being inhaled into the lungs

Radon is the leading cause of cancer in non-smokers.

How Does Radon Enter the Home?

- Natural source
 - Soil and rock
 - Ground water supply
- Man made
 - Utilities and plumbing
 - Foundation cracks
 - Building material



Principles of Physics – gases move from higher to lower concentration – movement dependent upon concentration

Permeability of natural soils and rocks

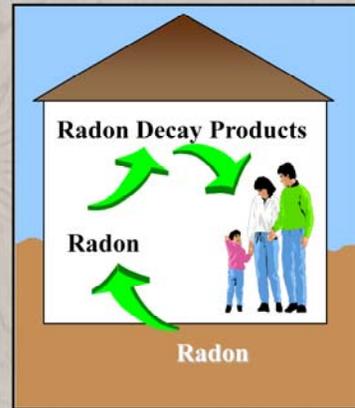
Presence in ground water supply

Man made pathways – utilities, sumps, foundation type, cracks, etc.

Man made materials – such as countertops (but mainly in Europe)

How Does Radon Affect the Lungs?

- Radon decays into radioactive particles known as radon decay products.
- These particles are easily inhaled and deposited in the lungs where they can damage sensitive lung tissue.



Once radon enters a building it is easily dispersed through the air but concentrates in the house.

The radioactive decay process causes the radon to decay into several radioactive elements called **radon decay products**.

Unlike radon, which is a gas, the radon decay products are solid particles.

Radon decay products are easily inhaled and can attach to dust, smoke and lung tissue.

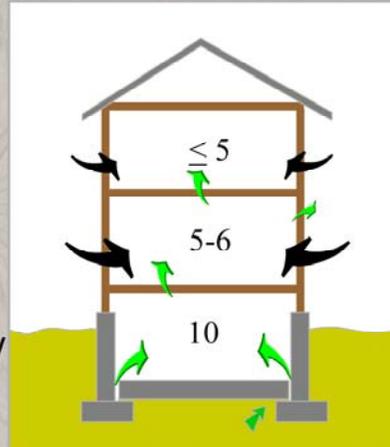
They have very short “half-lives” which means that they will decay relatively quickly after they are formed.

In fact, if they are inhaled, they will decay in the lungs before the lungs have an opportunity to clean themselves (exhale).

It is the radon decay products that actually present the health risk associated with radon gas.

How is Radon Distributed?

- Radon enters from beneath foundation and travels upward.
 - Diluted with outdoor air infiltrating building
- If radon is less than 4 pCi/L in lower level, upper floors are probably less than 4 pCi/L.



The majority of radon enters a structure from its underlying soil.

Once it enters the building it moves upward in the structure where it can be diluted with fresh outdoor air.

This is why radon is typically at its highest concentration in the lower portion of a building.

If radon is found at low concentrations in the lower portion of a building, one can say with reasonable assurance that there are even lower concentrations on upper floors.

This is why most radon testing at the time of sale occurs in the lowest occupiable portion of the home.

How Can I Sample For Radon?

- Most homes/apts should be tested
- At least once every two years
- Foundation footprint
- Illinois – free residential test kits
- Closed house conditions
- Seasonal effects
- Short term - activated charcoal
- Long term - more sensitive
- Water sampling (well)



Most homes and apartments should be tested for radon every two years.

Even multi story apartments have some level of radon

Foundation foot print means that the lowest livable space above each basement type is tested (basement, crawl and slab)

Closed house condition

Seasonal effects as well as differences due to weather conditions

Short and long term kits

In Illinois, individuals performing radon measurements in residences besides their own - must be licensed by the State

What if Radon Is Above the EPA Action Levels?

- Licensing - Illinois Emergency Management Agency
- Licensed measurement professional
- Licensed mitigation professional
- Mitigation standards and requirements
- Equipment /installation costs \$1000 - \$1500
- On-going operating cost of fan
- Side benefit of moisture and odor removal

Hire a licensed mitigation professional – licensed through the Illinois Emergency Management

Professional will sample and determine appropriate radon removal strategy

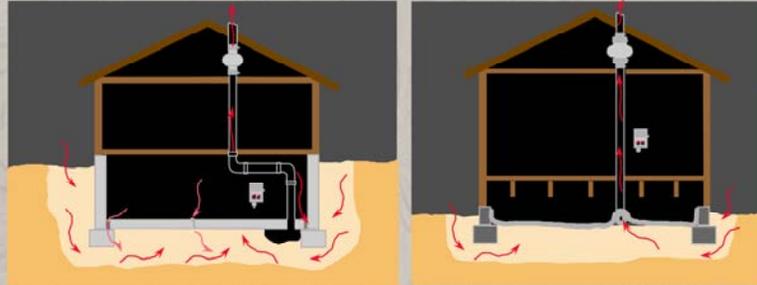
Professional will install adequate equipment to remove radon

Mitigation costs in Illinois range from \$1000 to \$1500

Added on-going cost of operating fan

Side benefit for moisture and odor removal.

What is Radon Mitigation?



Sub slab (sub-membrane) depressurization is a means of removing radon beneath the foundation and venting the gas away from the building. One or more suction pipes are placed through the ground or soil and a fan is attached to facilitate the ventilation process.

How you perform mitigation depends upon the type of foundation.

The basic principle is to collect the radon gas beneath the house and by creating an air-tight vacuum by sealing all openings.

Then you route the gas out of the house by using a blower fan.

These systems can be simple or complex depending upon the design of the building.

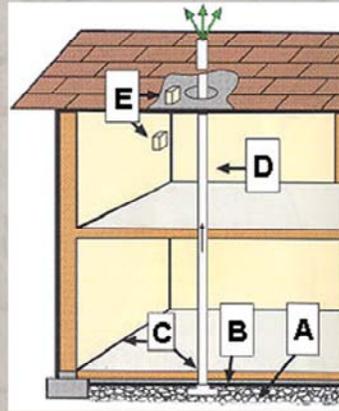
Operating costs of these fans are negligible due to their low power consumption (90 watts per fan).

New Homes Built With Radon Control Systems

Radon Resistant New Construction

- This involves techniques that reduce radon entry as well as make radon removal easier and less costly. These methods vary with different foundations and site requirements, but basic elements are:

- A. Gas Permeable Layer
- B. Plastic Sheetting
- C. Sealing and Caulking
- D. Vent Pipe
- E. Junction Box



If a passive radon mitigation system is installed in a new home it is ultimately more cost effective.

A. shows the Gas Permeable Layer

This layer is placed beneath the slab or flooring system to allow the soil gas to move freely underneath the house. In many cases, the material used is a 4-inch layer of clean gravel.

B. indicates the Plastic Sheetting which is placed on top of the gas permeable layer and under the slab to help prevent the soil gas from entering the home.

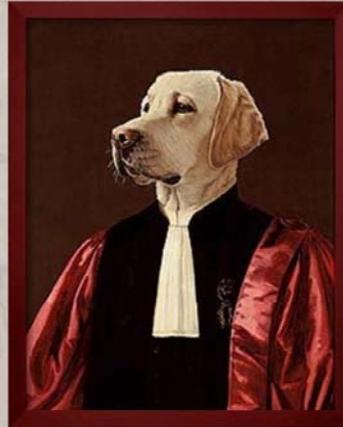
C. shows where Sealing and Caulking is done in the concrete foundation floor to reduce soil gas entry into the home.

D. is the Vent Pipe which is a 3- or 4-inch gas-tight or PVC pipe which runs from the gas permeable layer through the house to the roof to safely vent radon above the house.

E. is the Junction Box for electrical needs in case an venting fan is needed later.

Legislation, Rules, and Regulations

- Radon Industry Licensing Act (420 ILCS 44)
- Radon Awareness Act (420 ILCS 46) (1/1/08)
 - Residential testing disclosure
- Proposed Radon Resistant New Construction Requirements



Licensing Act – requires licensed professionals for sampling and mitigation. Not always true in every state. Results in mis-information for homeowners.

Awareness Act – requires communication between home sellers and buyers for radon information disclosure.

Proposed legislation for newly constructed homes to require passive radon control systems.

What can Local Health Departments Do In Their Communities to Impact Radon?

- Raise awareness regarding health effects
- Provide education - additive effects of tobacco
- Include radon as an element of tobacco programs
- Several LHD's are currently providing test-kits through grant from Illinois EMA
- Participate in radon forums – expanding to awareness of medical community

Raise awareness through public education

Past efforts have been on home owners, realtors and home builders. Change in focus towards medical and public health communities.

LHD's are already working with IEMA by out free radon test kits.

We would like to include radon awareness as a part of tobacco programs because they go together hand in had

We would like to expand program focus from home owner / realtor / home builder / contractor awareness to medial community awareness.

Radon Websites and Resources

- Mike Murphy - USEPA
www.epa.gov/radon
- Pat Daniels – II Emergency Management Agency
www.radon.illinois.gov
- ALA online requests for test kits
www.lung.il.org/environment/radon.cfm
- May 9, 2009 Medical Forum in Schaumburg, IL

Contact persons to speak to about radon.

Free test kits to Illinois residents are available through Illinois EMA or ALA.

Medical forum planned for May 9, 2009 in Schaumburg Ill.

Barbara Sorgatz, B.S.
Lung Cancer Survivor
ringer234@sbcglobal.net



Radon Induced Lung Cancer Survivor

- Diagnosis
- Treatment
- Prognosis
- Life Afterwards



Lynda Preckwinkle, *BA, RRT*
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lynda@lunghelpline.org
217-787-5864 x 261

Resources

www.lungil.org/tobacco/clinics.cfm - Cessation clinics in Illinois

www.quityes.org Illinois Tobacco Quitline Website

www.lungusa.org American Lung Association Website

www.lungcanceralliance.org Lung Cancer Alliance

www.cancer.org American Cancer Society

www.cancer.gov National Cancer Institute

www.thewellnesscommunity.org The Wellness Community

www.pprx.org Partnership for Prescription Assistance

www.chestnet.org American College of Chest Physicians

Additional resources and the links above are all posted on the IPHI website at www.iphionline.org.

Feedback

- Thank you for participating!
- Your feedback is VERY important. Please complete the online evaluation survey:
http://www.surveymonkey.com/s.aspx?sm=TWNrE_2bSAthC4XFCObOUjzw_3d_3d
- If you registered for a group, please ask them to complete the evaluation also.
- We will use this information to plan future sessions and continually improve.



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Question and Answer Session

- Please join us now for a LIVE Q & A Session with the presenters:
 - Dial 1(877) 411-9748
 - Enter the access code: 3467868#
 - Mute your phone (*6 to mute or un-mute).
- If you have a question that is not addressed on the conference call, please email the question to Laurie Call at LLC1185@msn.com.



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