Pneumonia Care for Patients in the Hospital

Pneumonia is an infection or inflammation of the lungs. The air sacs or some areas of bronchial tubes in the lungs fill with infection or other secretions. Pneumonia is caused by either bacteria or viruses, but is not usually passed from person to person.

Signs of Pneumonia
- Shortness of breath
- Chest pain with deep breathing
- Fever
- A cough with mucus that is green or rust colored

About Lung Function
Your lungs are 90% air and 10% connective tissue. You have 5 parts or lobes to your lungs, 2 on the left and 3 on the right. They all work together to help you breathe.
As you breathe, air in the alveoli is brought very close together with blood in the connective tissue. Blood from the entire body goes through this tissue where it is exchanged for carbon dioxide. The carbon dioxide in the blood from body waste goes into the air sacs while oxygen from the air sacs goes into the blood. The lungs exhale or breathe out the carbon dioxide. The oxygen rich blood goes to the heart where it is pumped to the rest of the body. You need to have good oxygen levels to keep your whole body working well.

Lungs with Pneumonia

The main function of the lungs is to bring air and blood together so oxygen can be added to the blood and carbon dioxide can be removed. Healthy lungs can do this well. Lungs with pneumonia do not exchange oxygen and carbon dioxide well.

Pneumonia can be caused by bacteria or viruses that enter the lungs and multiply in the small air sacs. The infection can spread quickly within the lobes of the lung. The lungs work hard to clear the bacteria, with mucus, or the liquid your body uses to trap germs. This is the same liquid your body uses to get rid of germs when sneezing or clearing the throat. If the body makes too much mucus, it can make it harder for the person to breathe.

In serious infections, bacteria can enter the bloodstream and make the rest of the body sick.

Ventilators and Pneumonia

If someone is on a ventilator, he or she is at risk for pneumonia. A ventilator is a machine used to help to breathe. It is also called a "respirator" or "vent". The ventilator pushes oxygen into the windpipe or trachea, which then goes to the lungs. When someone is not breathing on their own, they are not able to clear their lungs. This makes it easier for germs to get into the lungs. Medical staff works hard to prevent ventilator pneumonia. For more information, read the handout, Preventing Pneumonia during Ventilator Use.
Testing and Treatment

Treatment for pneumonia depends on the person’s health, and how well the pneumonia responds to medicines.

Testing

- **Blood tests:** Blood tests may be used to check for bacteria that causes pneumonia and to check how well other treatments work to treat the condition.

- **Laboratory Test of Sputum Culture:** A sample of your mucus or liquid in the lungs may be taken to check for bacteria. You may also hear this called a mucus test.

- **Chest x-ray:** A Chest x-ray may be used to see how much of the lungs are infected with pneumonia.

- **Chest CT Scan:** This is a computed tomography (CT) or a special x-ray machine that creates pictures of thin slices or segments of the chest. Your doctor may have you take a medicine called contrast before the test to help certain structures show up on the test. For more information read the handout Chest CT.
  - **Tell the doctor or radiology technologist if you are pregnant or think you may be pregnant.**
  - **Tell the doctor or radiology technologist if you have an allergy to contrast medicines.**

Treatment

- **Medicines:** Antibiotic medicines are used to treat bacterial pneumonia. Antiviral medicines are used to treat viral pneumonia. Medicines may be given through the intravenous tubes (IVs) if the person cannot take them by mouth.
  - Other medicines may be given to reduce the amount of mucus in the lungs, to help with cough or to reduce chest discomfort when breathing. Medicines may also be given to reduce fever.

- **Incentive Spirometry:** To help improve air flow and reduce fluid in the lungs, a device called an Incentive Spirometer may be used. The goal is to push as much air into the tube as possible. This may be done every few hours to promote healthy breathing and to check how well your lungs are working. For more information, read the handout, How to Use an Incentive Spirometer.
- **Coughing**: To help clear mucus out of the lungs, the person, if alert, may be asked to do deep breathing and then cough several times. The goal is to get mucus out of the lungs. Spit any mucus that comes out into a tissue.

Talk to your doctor or others on your health care team if you have questions. You may request more written information from the Library for Health Information at (614) 293-3707 or email: health-info@osu.edu.