

NLHEP

*Strives to Catch
Lung Disease in the
Early Stages*

Take-Home Notes

- The Lung Health Study marked the beginning of a nationwide project to educate health care providers about the significance of spirometry in predicting disease.
- The study showed for the first time that the course of disease could be altered through smoking cessation.
- Dr. Petty believes pharmaceutical companies will develop new medications aimed specifically at treating the kind of inflammation that leads to airflow obstruction in COPD patients.
- Additional information about the NLHEP can be found at www.nlhep.org.

In 1846, British physician John Hutchinson of London had a novel idea. Why not invent a device that could effectively measure a person's capacity for breath — one's very "vital capacity" or "capacity for life" — and sell it to the insurance industry as a predictor of whom was most likely to die? That device was the first spirometer; and while the insurance industry in Britain never did adopt it for the purpose intended, it has been used ever since to measure lung function and predict the course of pulmonary disease.

As the years have gone by, it has also become apparent that Hutchinson's original idea for the device was not far off base. The Lung Health Study not only demonstrated a link between

chronic obstructive pulmonary disease (COPD) and spirometric measurements, it clearly showed that reduced airflow and lung volume are powerful predictors of early mortality from all causes.^{1,2} It also indicated that early identification of these parameters, coupled with appropriate interventions such as smoking cessation, can significantly slow the rate of lung function decline and the disease process.

The Lung Health Study was conducted over a five-year period from the late 1980s to the early 1990s among 5,887 smokers in 10 cities in the United States and Canada. The study marked the beginning of a nationwide project to educate health care providers about the significance of spirome-



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The case for early identification

Dr. Petty was asked by the National Heart, Lung, and Blood Institute to initiate the NLHEP in the mid-1990s to take the information gained in the Lung Health Study to health professionals nationwide. The NLHEP is currently collaborating with three government agencies and eight professional associations, including the American Association for Respiratory Care, to advance its goals (see the accompanying sidebar for the complete list of NLHEP-supporting organizations). In fact, the AARC was the first professional group to sign on with the program. "Based on the strength of the data from the Lung Health Study, we felt strongly that the AARC should take a proactive role in promoting greater use of spirometric measurement in primary care settings," says AARC Executive Director Sam Giordano, MBA, RRT, FAARC. "Respiratory therapists have direct access to primary care physicians seeing pulmonary patients in hospitals and are in a prime position to advise them on the benefits of incorporating spirometry into their office-based practices."

try in predicting disease. The National Lung Health Education Program (NLHEP) has authored a spirometry statement that will be published jointly in *CHEST* and *RESPIRATORY CARE* journals this spring.

NLHEP Chair Thomas L. Petty, MD, professor of medicine at the University of Colorado School of Medicine located at HealthONE in Denver, says, "This spirometry statement calls for all primary care practitioners to have spirometers in their offices." The ultimate goal of the program is to make spirometry as common in the physician's office as the blood pressure cuff is today.

The NLHEP urges respiratory therapists to educate the primary care physicians they work with in the hospital about the benefits of making spirometry a part of routine check-ups for their patients. Louise Nett, RN, RRT, FAARC, research associate working with the NLHEP, believes RTs are in a position to make a major impact. "I'd like to see every respiratory therapy department in the country get interested in early detection and start working on a small scale within their hospitals with their primary care doctors to have an educational day for them on spirometry and smoking cessation."

NLHEP-Supporting Organizations

The National Lung Health Education Program is being conducted through a collaboration of government and professional organizations.

Professional Societies

American Association for Respiratory Care
American Association of Cardiovascular and Pulmonary Rehabilitation
American College of Allergy, Asthma, and Immunology
American College of Chest Physicians
American College of Physicians and American Society of Internal Medicine
American Thoracic Society
American Osteopathic Association
Society of General Internal Medicine

Governmental Agencies

National Cancer Institute
National Heart, Lung, and Blood Institute
National Institute for Occupational Safety and Health

impact the progression of that obstruction. "If you look at the patients in the study who successfully quit smoking over five years, there was actually an improvement in lung function at first and then, over five years, a very slight decline," says Dr. Petty. "But in the continued smokers there was a much steeper decline, so the study showed for the first time that you could alter the course of the disease through smoking cessation."

The same can likely be said about other diseases related to smoking — lung cancer chief among them — but Dr. Petty and the NLHEP are focusing on COPD for their initial effort, in part to simplify the message to primary care physicians, but also to zero in on a high-risk population that can benefit immensely from early intervention. While smoking cessation is the major focus, he believes pharmaceutical companies will rise to the occasion

as well by developing new medications aimed specifically at treating the kind of inflammation that leads to airflow obstruction in COPD patients, which differs from that in asthma and thus cannot be treated effectively with existing anti-inflammatory drugs. "This calls for a search for other drugs that will alter the rate of decline because the rate of decline is very predictive of premature mortality. You can almost plot how many years you're going to

live," says Dr. Petty. The best case scenario would be that people whose obstruction is caught early through routine spirometry, who quit smoking with the help of aggressive smoking cessation programs, and who receive new anti-inflammatory medications designed especially for COPD would never develop the full-blown disease.

Dr. Petty believes the cost implications should help drive the process. He notes that Medicare currently pays about \$2 billion a year for home oxygen for COPD patients, saying, "Wouldn't it be better if we found these patients up front, stopped the disease from progressing, and never got to the oxygen, rehab, and ventilator stage?" Managed care organizations, which tend to focus more on the short-term health issues of their enrollees than on their long-term problems because people change plans so often, would also do well to sit up and take notice. "If the entire managed care industry would participate, they would all benefit," says Dr. Petty. As the fourth most common cause of death in the United States today, COPD



Louise Nett and Tom Petty

is not something that any managed care organization can avoid.

Ensuring accuracy

The NLHEP believes the key to achieving these goals is to put one of the new, inexpensive hand-held spirometers into every primary care physician's office in the country because that's the health care setting most typically visited by people

that most spirometers do require a 3 percent or greater precision for blow tests, and getting repeatable numbers is key. "Calibration for some devices is also important," he notes.

Nett agrees that RTs hold the key to making the office-based spirometry strategy work. "We think the respiratory therapists can play a big role through their daily communications within the hospital and talking to pri-

spirometers into physicians' offices, Dr. Petty and Louise Nett both see a major role for therapists down the line as more and more people at high risk for developing COPD are identified early in the disease process. Smoking cessation is not an option for these patients. Dr. Petty explains, "These are the people who absolutely have to quit smoking ... it's no longer an intellectual decision to quit, it's an emotional decision to survive." As the only allied health practitioners specializing in pulmonary diseases, RTs are well positioned to offer the aggressive smoking cessation programs that these people will require.

Nett believes RTs already do a good job of educating their patients one on one about the need to quit smoking and thinks they could easily translate that success to group or individualized programs aimed at those who have been identified through routine spirometry to be at high risk for developing COPD and other major causes of early mortality. She believes the key is to incorporate smoking cessation into the overall medical treatment program. "It must be integrated into their total health care management program. Therapists are doing a good job of that now — probably better than smoking cessation counselors who aren't part of the health management team," she says. Nett encourages all RTs to avail themselves of the clinical practice guidelines recently revised by the Agency for Healthcare Research and Quality (formerly the Agency for Health Care Policy and Research).

"RTs are perfectly positioned to demonstrate value for these
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with early airflow obstruction. "The average smoker who goes to the doctor for a check-up doesn't go to a pulmonologist," says Dr. Petty. "He comes to a primary care physician."

Of course, getting the devices into physicians' offices is just one part of the process. The other is ensuring that physician office staff have the skills necessary to obtain accurate readings. The NLHEP is in the process of creating an instruction booklet and video for physicians, but Dr. Petty emphasizes that one-on-one education from a respiratory therapist is really the best way to ensure accurate results from spirometry. "We would prefer to have hands-on training by RTs, and this may be the final solution," he explains. Although the new devices are easy to use — "since you can't blow out more air than is in your lungs, you can't measure a falsely high vital capacity" — Dr. Petty points out

mary care doctors and convincing them that spirometry is important and showing them how to work the instruments and interpret the results."

Dr. Petty further emphasizes that office-based spirometry is in no way intended to replace diagnostic spirometry. "We have no intention of competing with established pulmonary function laboratories that measure many other things. We just want to extend pulmonary function testing to the front lines, because people who can benefit from early identification are not seeing pulmonologists now and would never have their lung function measured otherwise... you can't treat a disease until you diagnose it."

Smoking is not an option

What else can RTs do to help the NLHEP meet its objectives? While the primary push is to get

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patients in three important areas," says Giordano. "First, in diagnoses of consumers with COPD; second, to provide the best treatment available for their disease; and, finally, to manage in such a way as to reduce the number of acute exacerbations, therefore reducing costs while improving quality of care."

A critical link

Convincing primary care physicians to make spirometry as routine in their offices as blood pressure and cholesterol checks are today certainly won't be an easy process. Indeed, the one organization that has yet to sign on to the NLHEP initiative is the American Academy of Family Practice, which Dr. Petty says has cited a "lack of evidence" that spirometry produces the kind of results the NLHEP and other organizations claim. This reticence only leads to a stronger conviction on the part of Dr. Petty and his NLHEP colleagues that respiratory therapists, through their access to these physicians on the hospital floors, are a critical link in the information chain that must be established to bring these physicians into the fold. He says, "There are 200,000 primary care practitioners in the United States. So that's where spirometers need to be." ■

EDITOR'S NOTE

For additional information about the NLHEP, visit its web site at www.nlhep.org.

REFERENCES

1. National Lung Health Education Program. (1997). Strategies in preserving lung health and preventing COPD and associated diseases. *Chest*, 113(2 Suppl.), 123S-163S.
2. National Lung Health Education

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