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EARLY LUNG CANCER DETECTION IN URANIUM MINERS WITH ABNORMAL SPUTUM CYTOLOGY

Technical Progress Report
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ABSTRACT

This work, supported by the United States Department of Energy, continues to add data on the health affects of cigarette smoking and radon exposure.

Since the beginning of this contract, 473 sputum samples have been collected from 286 uranium workers who are routinely screened in an effort to identify cell changes that could signal possible progression to lung cancer; seven new lung cancer cases have been identified during this period.

At this time, there are 426 lung cancer cases in the uranium miner tumor registry with diagnostic slides from surgery and/or autopsy; an additional 40 cases have been diagnosed with sputum cytology only.

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The scope of these studies consists of performing routine sputum studies on uranium miners with atypical sputum cytology. This is done in an effort to identify early lung cancers in this high risk population. Also, this study continues to accumulate clinical history (including smoking history, work history, and radon exposure levels), diagnostic microscope slides, and medical records on uranium miners who develop lung cancer.

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In addition, fresh lung cancer tissue specimens have been collected from eight uranium miners and 18 nonminers for Dr. Jonathan Samet's tissue resource bank at the University of New Mexico in Albuquerque (DE-FG04-89ER60852).

It is believed that St. Mary's Hospital is in compliance with the contract in every detail.

It is estimated that 20 percent of the principal investigator's time is devoted to this project; however, the principal investigator does not receive any financial compensation from the contract. The principal investigator will continue to devote a similar amount of time to the contract with no compensation during the remainder of the contract.

This research contributes new cases to our ongoing studies in an effort to prove that sputum cytology can diagnose lung cancer at an early stage and, thus, improve survival. We contend that the National Cancer Institute's studies at Memorial Sloan-Kettering, Johns Hopkins, and Mayo Clinic were too premature to adequately evaluate cytologic interpretations. During the past five years, 60 sputum positive/chest x-ray negative lung cancer cases (miners and nonminers) have been diagnosed at St. Mary's Hospital. Follow-up of these cases is beginning to show improved survival.

Our studies on the uranium miners continue to add valuable information on the health effects of smoking and radon exposure. It is important that these studies continue.