

Models developed from the PLCO may help identify at-risk patients for adverse smoking outcomes

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Risk prediction models developed from an ancillary study of the Prostate Lung Colorectal and Ovarian Cancer Screening Trial (PLCO) may be useful in the public health sector for identifying individuals who are at risk for adverse smoking outcomes, such as relapse among former smokers and continued smoking among current smokers, and those who may benefit from relapse prevention and smoking cessation interventions according to a study published October 26 in the *Journal of the National Cancer Institute*.

With a projected 226,160 new cases of [lung cancer](#) and 160,340 lung cancer deaths expected in the U.S. in 2012, researchers are looking at lung cancer screenings as a way to alter peoples' smoking behaviors. Although smoking abstinence is the most effective way to lower lung cancer mortality, both early detection and treatment of the disease may also lower mortality. Both the PLCO and the National Lung Screening Trial (NLST) have gathered data to determine whether screening can lower lung cancer mortality; however, the effects that screening has on smoking behavior is unknown.

To determine the effects of cancer screening on smoking behavior, Kathryn L. Taylor, Ph.D., of the Lombardi Comprehensive Cancer Center at Georgetown University, and colleagues, gathered data from participants who had completed a baseline questionnaire at PLCO trial enrollment and a supplemental questionnaire 4 years after enrollment,

which assessed variables such as family history of cancer, comorbidity, and [tobacco use](#). Multivariable logistic regression models were used to predict smoking status once the supplemental questionnaire was completed.

The researchers found that of the 31,694 former smokers on the baseline questionnaire, 1,042 had relapsed, and of the 6,807 current smokers, 4,439 had continued smoking on the supplemental questionnaire. Both relapse and continued smoking were statistically significantly linked with demographic, medical, and tobacco-related characteristics. "The relapse prediction model had excellent discrimination and calibration and suggested that relapse was more likely among longer-term smokers, recent quitters, smokers of light or ultra-light cigarettes, and pipe or cigar smokers," the researchers write, adding that the success of these models, "suggest important variables that should be considered in the development of effective intervention methods for long-term, heavily dependent [smokers](#) who are likely to be well represented in lung [cancer-screening](#) programs."

Provided by Journal of the National Cancer Institute

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