provide the data. The current guideline suggests standard lobectomy with mediastinal lymph node dissection for early-stage lung cancer.¹⁴ Whether wedge resection, segmentectomy with/without mediastinal lymph node sampling, with/without intraoperation frozen examination should be performed falls in another issue. We agree that standard lobectomy with mediastinal lymph node dissection might be overtreatment for these patients with early-detected, benign histologic lung cancer, but more evidence is needed to standardize the surgical technique.

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See Article page 824.

Commentary: The changing risk paradigm in lung cancer: Are we opening Pandora's box?

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With an estimated 228,000 new cases of lung cancer in 2019 alone, lung cancer continues to be the leading cause of

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CENTRAL MESSAGE

Lung cancer screening guidelines may need to be individualized to populations.

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cancer-related deaths in the United States.¹ The global burden of this disease has shown a similar trend.² Comparable with the United States, lung cancer is the most common malignancy and cause of cancer-related mortality in China, with more than 690,000 lung cancer deaths in 2018.³

The National Lung Screening Trial demonstrated a 20% reduction of lung cancer mortality with the use of low-dose computed tomography scan (LDCT) among current and former heavy smokers in United States.⁴ Lung cancer screening is being increasingly offered in the United States via dedicated programs in academic and community settings as well as through the Veterans Affairs system.

In 2018, the China lung cancer early detection and treatment expert group established the China National Lung Cancer Screening Guideline, with multidisciplinary representation.⁵ The group recommended annual lung cancer screening with LDCT for high-risk individuals aged 50 to 74 years with a 20 pack-year smoking history and who currently smoke or have quit within the past 5 years.⁵ The Chinese health care system has implemented a series of policies for a greater nationwide availability of LDCT. These include establishment of free, government-sponsored screening programs and lowering the out-of-pocket price of LDCT screenings to less than US\$60.⁶

Typically, in China, LDCT has been offered to high-risk individuals, as identified by primary care doctors or through surveys by hospitals or coordinators of a demonstration project. Recent screening studies depict a unique lung cancer risk profile in China. Interestingly, female patients and nonsmokers have a lung cancer detection rate that is comparable with or even greater than male patients and smokers.^{7,8} Zhang and colleagues⁹ report similar results from their study of lung cancer screening with LDCT performed in 6 different hospitals in China. In their retrospective review, the lung cancer detection rate was greater in female patients (2.5% vs 1.3%) and nonsmokers (2.2% vs 1.4%).

Such studies raise the highly concerning possibility that risk stratification based on trials conducted in a Western population could potentially result in significant underdiagnosis in the Chinese population. Conversely, with approximately 4 million Americans of Chinese descent, the US Preventive Services Task Force may need to consider data from Chinese studies to modify existing guidelines.

There is also mounting evidence to suggest that lung cancer in nonsmokers and the younger population has a

favorable prognosis with significantly better response to treatment.¹⁰ These data and the findings from the screening study by Zhang and colleagues warrant discussion about developing a tailored approach to lung cancer screening in this traditionally lower risk population. Any expansion of screening is likely to require substantial resource use; however, less-aggressive tumor biology may allow screening at longer intervals. In addition, with the possible advent of screening methods via analysis of sputum or blood, the cost of screening may be lowered in the near future.

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