Lung cancer screening in the Philippines: the need for guidelines based on the local context and the imperative for improved access to screening

Patricia N. Suanes,[a] Nicole Rose I. Alberto,[a] Isabelle Rose I. Alberto,[a] Nishwant Swami,[b,c] Michelle Ann B. Eala,[a,d] Enrico D. Tangco,[e] and Edward Christopher Dee[f,*]

[a]College of Medicine, University of the Philippines, Manila, Philippines
[b]University of Massachusetts Medical School, Worcester, MA, USA
[c]Harvard T.H. Chan School of Public Health, Boston, MA, USA
[d]Department of Radiation Oncology, University of California Los Angeles, Los Angeles, CA, USA
[e]Department of Radiation Oncology, The Medical City, Pasig City, Philippines
[f]Department of Radiation Oncology, Memorial Sloan Kettering Cancer Center, New York, NY, USA

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Cancer is the second leading cause of mortality in the Philippines, a lower-middle-income country (LMIC) in Southeast Asia with a population of more than 110 million people. Lung cancer tops the list for cancer-attributable mortality in the nation.[1] Of the world's 1.3 billion people who smoke, eighty percent come from LMICs such as the Philippines. Almost a quarter of Filipinos aged 15 years and older smoke tobacco, placing millions of people at significant risk for developing lung cancer.[2] Despite the burden of disease attributable to lung cancer and the prevalence of risk factors such as smoking, no context-specific national screening guidelines and nationwide screening programs currently exist in the Philippines.

The use of low-dose computed tomography (LDCT) for lung cancer screening in heavy smokers is the current recommendation in wealthier countries across North America and Europe and has been proven to significantly reduce mortality in this population; currently, screening never-smokers is not recommended by the United States Preventive Services Task Force (USPSTF).[3] Although some data support the recommendation to omit screening in never-smokers, these studies are based on data with limited race/ethnicity heterogeneity, calling into question the generalizability of these findings to Asian and Asian diaspora populations.[4]

Recent studies from Asia have also shown how lung cancer in never-smokers is significantly affected by environmental risk factors such as exposure to secondhand smoke and high air pollution levels,[5] while occupational exposures and comorbid lung diseases may also play a role.[6] A growing body of evidence suggests that genetic predisposition may also contribute to the epidemiology of lung adenocarcinoma in Asian women who are non-smokers.[7] This has pushed screening studies in Asian countries to reassess their LDCT selection criteria and utilize risk stratification in screening for lung cancer in never-smokers who would not be eligible for screening under current USPSTF guidelines.[8] For example, in Japan, Kakinuma et al. found, using retrospective data of over 12,000 patients who underwent LDCT screening—49% of which were non-smokers—that over two thirds of lung cancer diagnoses would be missed if only smokers with at least a 30-pack-year history were screened.[9] Work from the United States with a focus on members of the Asian diaspora found that among women who never smoked, most Asian American subgroups experienced increased incidence of lung cancer compared with never-smoking non-Hispanic White women.[10] Studies from China suggest that indoor air pollution associated with certain cooking practices plays a significant role in the epidemiology of lung cancer amongst non-smoking Asian women.[11] These data support the need for consideration of tailored screening guidelines that also incorporate risk factors beyond smoking. It must also be noted that these studies draw primarily from data from patients from East Asia or East Asian diaspora populations; therefore, dedicated research focusing on Filipino patients would be most helpful to further develop screening guidelines specific to the Philippines.[12]

The local environmental context is critical to consider. In the Philippines, the annual average air quality index overshoots the WHO-recommended safe level by 120%; this context should prompt medical centers and government health institutions to exercise caution in adopting screening guidelines from countries with different levels of pollution.[13] Evidence suggests that high levels of indoor air pollution in certain Philippine settings are likely contributory to disease epidemiology, and should influence local lung cancer screening guidelines, in addition to preventive public health efforts.[14] It is therefore critical for the Philippines and other countries to employ guidelines

Abbreviations: LMIC, lower-middle-income country; LDCT, low-dose computed tomography

*Corresponding author.
E-mail addresses: pnsuanes@up.edu.ph (P.N. Suanes), nialberto@up.edu.ph (N.R.I. Alberto), iialberto@up.edu.ph (I.R.I. Alberto), nishwant.swami@umassmed.edu (N. Swami), eala.michelle@gmail.com (M.A.B. Eala), edtangco@themedicalcity.com (E.D. Tangco), deee1@mskcc.org (E.C. Dee).

that are consistent with the local context and define which populations may benefit from LDCT-based screening, such as individuals exposed to elevated levels of air pollution.

In addition, although a small number of government facilities provide free LDCT-based lung cancer screening,[15] given the burden of lung cancer in countries like the Philippines, it is imperative for healthcare systems to develop mechanisms that result in increased funding, focused resource allocation, and strengthened diagnostic capacity. These developments would be beneficial in improving access to LDCT screening programs in LMICs wherein the healthcare system relies heavily on out-of-pocket expenditure and private providers. While certain risk prediction models, screening intervals, and implementation strategies have been defined for resource-limited settings, the effectiveness, affordability, and feasibility of lung cancer screening should be assessed and optimized for unique local conditions, considering country-specific epidemiology, ambient air pollution levels and other local risk factors, and healthcare system readiness. The development of national guidelines designed specifically for the Philippine context and based on local data from Filipino patients may galvanize improved access to LDCT-based screening, provided that they can be adequately covered by the country's health insurance scheme.

Efforts to improve national lung cancer screening must be multidisciplinary and should involve key stakeholders in addition to the healthcare system. Public-private partnerships for the implementation of new procurement and pricing schemes for LDCT should aim to improve cost-effectiveness and promote accessibility for individuals in geographically isolated and resource-limited areas.[8] In addition, it is critical that legislation is designed to protect the interests of public health rather than those of industry. In the Philippines, the recently passed "Vape Bill" lowered the minimum age required to purchase tobacco and e-cigarettes from 21 to 18 years, underscoring the power of the tobacco industry to influence public health policy, with implications for the epidemiology of lung disease.[16] Furthermore, local research is needed to clarify not only the epidemiologic but also the molecular makeup of lung cancer among Filipinos.[17]

Ultimately, efforts to contextualize lung cancer research and screening for Filipinos must be integrated with public health measures that address the disease course from prevention to the survivorship setting. Preventive strategies including health education for students and the general public, smoking cessation counseling, and air pollution control, must be prioritized. Given the burden of lung cancer in the country and in light of legislation promoting access to cancer care, efforts to implement screening guidelines equitably should be made, with a focus on people facing socioeconomic and geographic barriers to care.[18] Moreover, access to screening should be matched by strategies to improve access to care and efforts to reduce the overall costs of treatment once a patient is diagnosed. The benefits of context-specific lung cancer screening may be realized through the careful and evidence-based implementation of care across the cancer spectrum.

Contributors

Conceptualization: PNS.
Writing: PNS, NRIA, IRIA, ECD.
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Supervision: PNS, MABE, ECD, EDT.
All authors have read and agreed to the published version of the manuscript.

Declaration of interests

The authors declare no conflicts of interest.

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