Letter to the editor

Flaws and weaknesses in estimating the budget impact of lung cancer screening in Spain

Defectos y debilidades en la estimación del impacto presupuestario de la detección del cáncer de pulmón en España

To the Editor:

We strongly object to the estimates of lung cancer screening costs in Spain published recently by Hernández-Yumar et al.[1] Their conclusion contrasts with previous economic assessments of lung cancer screening programs conducted in Spain and other countries[2] as well as with the real world evidence from existing lung cancer screening programs and pilot projects.[3]

The study contains inaccuracies and flawed assumptions. It assumes the entire Spanish population within a specific age range will have to be invited rather than focusing exclusively on high-risk current or former smokers. Additionally, the analysis relies on data from over ten years ago, including lung cancer incidence rates and tobacco consumption, which may no longer reflect current epidemiological trends. For example, Spain has experienced a dramatic decline in tobacco use, from 23.95% in 2011 to 16.64% in 2023, based on the latest data. The former leads to an overestimation of the high-risk population and, consequently, screening costs. Furthermore, the analysis doubles down on questionable assumptions made previously,[4] including the unjustified need to purchase all computerized tomography (CT) scanners dedicated to screening which has not proven necessary elsewhere,[2] but also the number of CT performed per day and read by a trained radiologist per shift. It includes only a 5-year time frame which is insufficient to capture all relevant health outcomes and costs, especially in the context of cancer screening with benefits accruing over time, and cites outdated clinical guidelines for diagnosis, treatment, and follow-up of the disease. The article also lacks a description of the modeling choices and validation strategies used and refers to public taxes instead of actual costs. These limitations are also reflected in the stage shift distribution attributable to screening, which is underestimated compared to data from national and pilot programs, where approximately 70% of detected lung cancers were early-stage tumors.[3] For example, in the United Kingdom, 75% of detected lung cancers were stage I/II tumors and cost per quality-adjusted life year based on real world data has been reported less than €10,000.

Lastly, applying a budget impact analysis, the authors also ignore the impact of screening on health outcomes. Evidence supports a reduction in lung cancer-related mortality through low-dose CT screening in high-risk populations.[3] Long-term follow-up studies, including Spanish centers, demonstrate impressive survival benefits which make it the most cost-effective cancer screening strategy. A recent study from Catalonia reveals that cost savings due to screening compensate for a substantial part of program costs.[5] Indeed, lung cancer screening is characterized by a compelling benefit-to-harm ratio, playing a crucial role as a public health intervention to reduce cancer mortality.[3] Arguably, real world data, cost-effectiveness and cost-utility analyses are better approaches to this important health policy debate than flawed budget estimates.

Spain is already lagging behind in its efforts to implement lung cancer screening, despite European Union wide recommendations, and existing pilots in our country are underfunded. Publishing flawed estimates of cost can only make matters worse.

Authorship contributions

All authors have contributed equally to the conceptualization, writing, and approval of the final version of the manuscript.

Funding

None.

Conflicts of interests

L.M. Seijo reports a role as scientific advisor for Sabartech, Serum, Astra Zeneca, Roche, MSD, and Median technologies; and paid honoraria as a speaker from Astra Zeneca, GSK, Roche, Menarini, and Chiesi. J.C. Trujillo reports a role as scientific advisor for Astra Zeneca, Roche, MSD, DGM Vascular and paid honoraria as a speaker from Astra Zeneca, Roche, MSD, Medtronic and Johnson&Johnson. O. Estrada reports research paid from Novartis, Boehringer Ingelheim and Masimo. A. Rosell reports honoraria for lecture paid from Olympus Medical, Intuitive Surgical and Broncus Medical, support for attending meeting paid from Intuitive Surgical, grants from the Hospital Germans Trias Foundation and the Ramon Pla i Armengol Foundation, and being member of the International Association for the Study of Lung Cancer. N. Robledinos-Antón is an employee of Johnson&Johnson. F. López-Seguí and J.A. Vicente-Gómez report no conflicts of interest.

References

1. Hernández-Yumar A, Valcárcel-Nazco C, Cantero-Muñoz P, et al. Budget impact analysis of implementing a lung cancer screening in high-risk population in Spain. Gac Sanit. 2025;39 (Suppl 1):102515.
2. Amicizia D, Piazza MF, Marchini F, et al. Systematic review of lung cancer screening: advancements and strategies for implementation. Healthcare (Basel). 2023;11:2085.
3. Yip R, Mulshine JL, Oudkerk M, et al. Current evidence of low-dose CT screening benefit. Eur J Cancer. 2025;225:115570.
4. García Pérez L, Cantero Muñoz P, Hernández Yumar A, et al. Evaluación del programa de cribado de cáncer de pulmón. Madrid: Ministerio de Sanidad; 2023.
5. Rosell A, Baeza S, Mouriño R, et al. A cost minimization analysis of the implementation of the international lung screening trial in Catalonia (Spain). BMC Health Serv Res. 2025;25:1001.

https://doi.org/10.1016/j.gaceta.2025.102528
0213-9111/© 2025 SESPAS. Published by Elsevier España, S.L.U. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).

Antoni Rosell[a], Oriol Estrada[b], Francesc López-Seguí[c], José Ángel Vicente-Gómez[d], Natalia Robledinos-Antón[e], Luis M. Seijo[f,g], Juan Carlos Trujillo[g,h,*]

[a] *Barcelona Respiratory Network, Thorax Institute, Germans Trias i Pujol University Hospital, Autonomous University of Barcelona, Germans Trias i Pujol Research Institute, Badalona, Barcelona, Spain*
[b] *Healthcare Strategy, Northern Metropolitan Territorial Management, Catalan Institute of Health, Barcelona, Spain*
[c] *Centre for Research in Health Economics, Pompeu Fabra University, Epidemiology and Evaluation Service, Hospital del Mar, Barcelona, Spain*
[d] *Germans Trias i Pujol Hospital, Catalan Institute of Health, Badalona, Barcelona, Spain*
[e] *Health Economics and Market Access Department, Johnson&Johnson, Madrid, Spain*
[f] *Neumology Department, Clínica Universidad de Navarra and CIBERES, Madrid, Spain*
[g] *CASSANDRA (Cancer Screening SmokingCessation & Respiratory Assessment) Project, Spain*
[h] *Thoracic Surgery Department, Hospital de la Santa Creu i Sant Pau and Hospital del Mar, Barcelona, Spain*

* Corresponding author.
E-mail address: jtrujillo@santpau.cat (J.C. Trujillo).