

Policy Brief

Advancing Lung Cancer Screening in the Middle East and Africa: **A Call for National Programmes**

October 2024



The Lung Ambition Alliance Middle East and Africa Chapter (LAA MEA)

is advocating for proactive interventions to improve lung cancer patient outcomes, with a focus on early disease detection through the [implementation of screening programmes](#).

We encourage **multi-stakeholder involvement**, the development of **public education and awareness initiatives**, adherence to **evidence-based guidelines**, and the integration of **innovative technologies** across healthcare services, including the latest diagnostics and medical therapies. These technologies include [software solutions](#) and [Artificial Intelligence \(AI\)](#) platforms that could help to facilitate, expand and accelerate national screening programmes for lung cancer in the MEA region.

LAA MEA is led by a [Steering Committee](#) composed of distinguished lung cancer experts, who are focused on advancing the overarching priorities and policy objectives of the global [Lung Cancer Policy Network \(LCPN\)](#) in the MEA region. **A priority for the LAA MEA Chapter is identifying how best to advance the LCPN's recommended framework for the implementation of early screening programmes in MEA countries.**

INTRODUCTION

Since 1987, lung cancer has been the leading cause of cancer-related deaths globally, with [2.21 million new cases](#) and [1.8 million deaths](#) being reported annually worldwide, resulting in significant economic and social impacts.

In the Middle East and Africa (MEA) region, the burden of lung cancer is increasingly concerning, marked by rising rates of incidence, prevalence and mortality. Due to [a lack of early detection and deficiencies in systematic approaches](#), the majority of lung cancer cases in MEA countries get diagnosed at advanced stages of the disease, when the prognosis is poor. **As a result, fatality rates are alarmingly high across the MEA region, typically in the 90% range.**



90%
Fatality Rate

Across the Middle East, lung cancer is **the second leading cause of cancer deaths** with over 10,000 deaths per year.



Statistics from the [World Health Organization's IARC database](#) and [studies conducted in MEA countries](#) underscore this alarming trend:

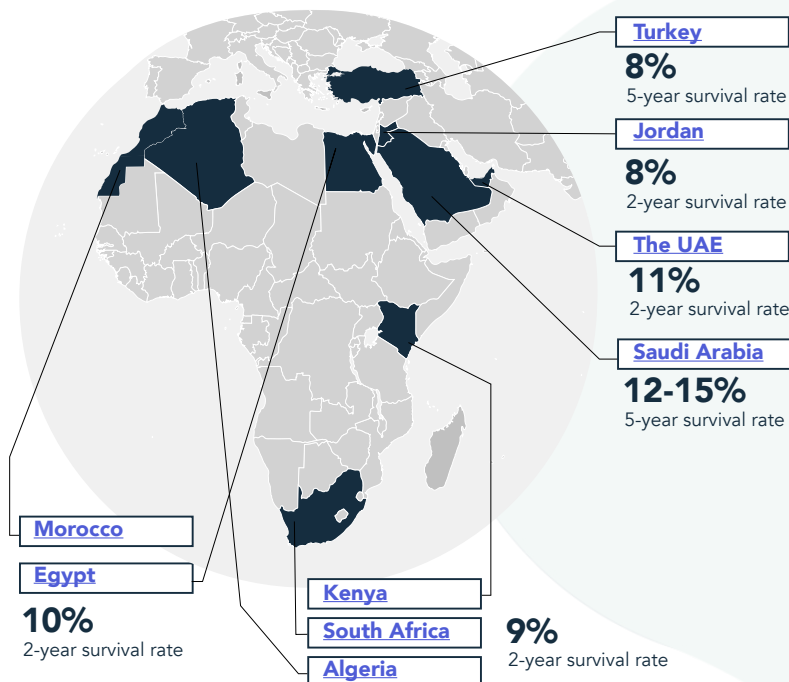
An Increasing Burden

Growing impact on both genders



- An [August 2024 study](#) published in the journal *Cancer* projects **that cancer deaths in men globally will increase 93% by 2050**. Lung cancer will remain the leading type for both cases and deaths in men, with both increasing by more than 87% by 2050.
- A [June 2024 study](#) that included lung cancer patients in the Middle East and Africa found that **women had a higher EGFR mutation rate compared to men (64% vs 36%)**, and that patients with EGFR were more likely to be **nonsmokers**. Mutations in EGFR (epidermal growth factor receptor), a protein in human cells, can drive lung cancer to grow and spread.

Survival Rates Across MEA



While the cost of lung cancer in the MEA region is not well-documented, **global estimates indicate that it has the highest economic burden of any cancer worldwide, totaling \$3.9 trillion**. In addition to the direct costs on the healthcare system, lung cancer leads to substantial indirect losses, including decreased workforce productivity, reduced household incomes and substantial costs to affected individuals and their families. The problem is further exacerbated by financial and infrastructural barriers in low and middle-income countries (LMICs) and disparities in service provision between the private and public healthcare sectors.

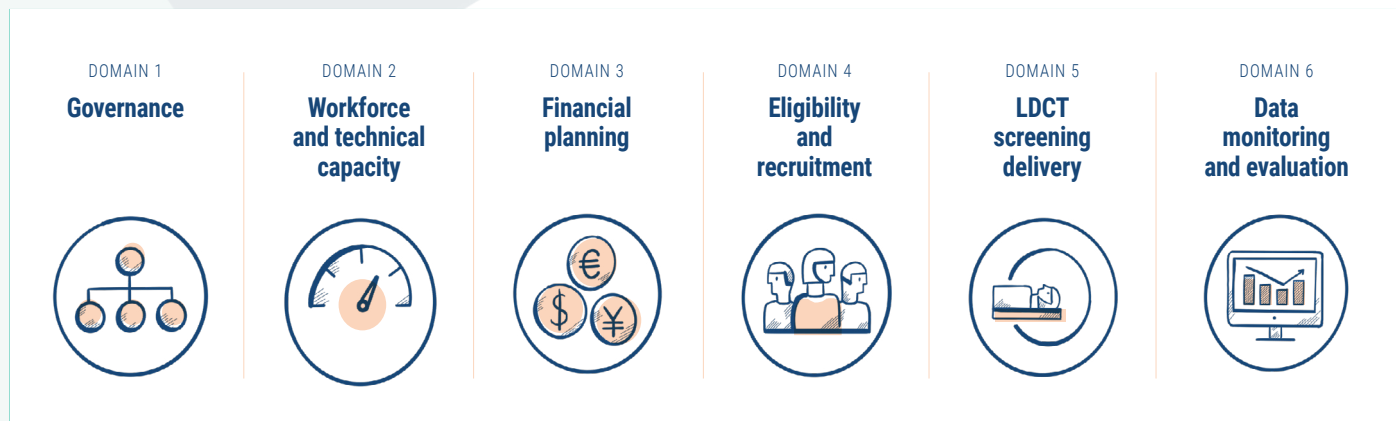
In **Turkey**, lung cancer causes almost **30% of all cancer deaths** with over 38,000 deaths per year.



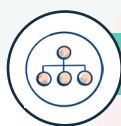
All of these factors underscore an urgent need for decisive action and national policy interventions towards earlier detection of lung cancer, both to improve patient outcomes and survival rates in the region, and also to alleviate increasing costs to healthcare systems and to society as a whole. As awareness of these challenges grows, momentum is building towards creating and strengthening policy frameworks that can facilitate the rollout of targeted lung cancer screening programmes in the region.

POLICY FRAMEWORK & KEY DOMAINS

To successfully develop and implement national lung cancer screening programmes, it is critical for policymakers to have a comprehensive health system overview and **utilise globally acknowledged resources such as the policy framework developed by the [LCPN](#)**. This framework is divided into key “domains,” or policy priority areas.



Based on input and guidance from LAA MEA Chapter Steering Committee members, the following priority areas of the LCPN framework have been identified for the MEA region, and select examples of countries’ best practice are highlighted in this document:



Evaluate the Policy Context for Programme Governance

A solid understanding of the **existing guidelines, policies, and plans** around cancer control and management at both the national and international levels is a crucial initial step in developing a successful screening programme for lung cancer. Looking at the MEA region, there are many important national leaders in this regard.



The UAE conducts rigorous assessment and periodic updates of their National Cancer Control Plan (NCCP). Following the successful launch of the [Abu Dhabi Department of Health’s lung cancer screening programme](#) for the Emirate in 2018, recent discussions within the national cancer committee have led to specific recommendations to integrate lung cancer screening into the overarching NCCP, and experts are currently working on finalizing the UAE national guidelines on lung cancer screening.



In **Saudi Arabia**, [national guidelines for lung cancer prevention](#) are issued by the Saudi Lung Cancer Association (SLCA) and the Saudi National Cancer Centre, providing guidance to healthcare professionals on offering screening to individuals at high risk, based on clinical assessment.



In **Egypt**, under the “100 Million Healthy Lives” campaign, health authorities are also aiming to lower cancer mortality and the related financial burden through the [Presidential Initiative for Cancer Early Detection \(PICE\)](#). This initiative is targeting up to four million citizens, focusing on integrated care from initial testing to treatment planning for positive cases, and aims to screen one million patients for lung cancer.

However, despite many countries taking measures to develop and enhance National Cancer Control Plans (NCCPs), lung cancer is not always included or recognised by these frameworks as a national priority.

Effective governance also entails comprehensive engagement with all key stakeholders, coordination with other healthcare services, such as respiratory care, and active consultation with community healthcare professionals.



In **the UAE**, a national cancer control committee involving healthcare professionals, experts in cancer care, and policymakers has been established to ensure alignment with local healthcare needs and capacities, facilitating informed decision-making through active participation in the processes under the Ministry of Health and Prevention.



In **Jordan**, various scientific societies have similarly engaged in raising awareness among doctors through periodic briefings on lung cancer screening.



Implement Standardised Data Monitoring and Evaluation

Establishing standardised data collection methods, including centralised Electronic Health Records (EHRs), is vital in implementing effective national lung cancer screening programmes.

Cancer registries also play a critical role in informing policy decision-making and assessing the overall impact of lung cancer – as well as the impact of screening programmes – on people’s health.



Egypt succeeded in creating a national population-based cancer registry that calculates incidence rates for all cancers, through a coordinated initiative between the Ministries of Communications and Information Technology, Health and Population, and Higher Education and Scientific Research. The programme now includes [hospital-based registries](#) that provide a comprehensive cancer database for researchers and policymakers. This robust electronic system has led to better resource allocation and enhanced coordination and evaluation across Egypt’s nationwide efforts for better cancer management. Integrated data across the spectrum from screening to treatment planning is showcased in Egypt’s Presidential Initiative for Cancer Early Detection.



Since its establishment in 2014, the **UAE’s** population-based national cancer registry has been pivotal in capturing and analysing cancer data, providing critical insights into local epidemiological trends and how, as a result, cancer services should be configured.



Define Eligibility and Recruitment Criteria for Lung Cancer Screening

Public health education campaigns, anchored in informed and inclusive approaches, can encourage uptake of lung cancer screening services and ensure that all high-risk populations are adequately covered. These campaigns should be tailored to local demographics and risk factors, such as populations affected by high air pollution and tobacco usage (including cigarettes and shisha), while also considering the [increasing incidence of lung cancer among women](#) and non-smokers. According to a recent [study in the journal Nature](#), **lung cancer in people who have never smoked (LCINS) is the fifth leading cause of cancer-related deaths globally in 2023, with a higher incidence in women.**

Current guidelines for lung cancer screening target individuals at the highest risk, particularly those who smoke, as smoking is the primary risk factor for lung cancer. However, smoking status alone is insufficient to identify all high-risk individuals. Therefore, **risk prediction models now include additional factors such as family history of cancer or respiratory illness, occupational exposures, race, and ethnicity.** This broader approach helps identify high-risk individuals who might be missed by considering only age and smoking status. High-risk groups also include those with conditions like emphysema, pulmonary fibrosis, and known exposure to inhaled carcinogens.



In **Turkey**, lung cancer screening guidelines align with international recommendations, but are adapted to local contexts. Screening is generally recommended for high-risk individuals, primarily those aged 50 to 75 years who have a significant history of tobacco use, typically defined as 20 years of smoking a pack of cigarettes a day or more. Turkish guidelines also consider additional factors such as family history of lung cancer and exposure to occupational carcinogens. Although a national screening programme for lung cancer [has not yet been established](#), the Turkish Ministry of Health and various medical societies have endorsed these broader criteria to better target individuals who are at the highest risk and would benefit most from early detection.



In **Saudi Arabia**, efforts are ongoing to enhance screening practices and incorporate more comprehensive risk assessment tools to better identify and manage individuals at high risk of lung cancer. At Al Faisal University, a new study is underway to generate local data on the benefits of LDCT (low-dose computed tomography) screening specific to the Saudi population, with the goal of improving patient outcomes and reducing mortality rates in the Kingdom. While screening practices are still evolving, [Saudi guidelines](#) currently focus on high-risk individuals with a substantial smoking history, and also take into account factors such as exposure to indoor air pollutants and occupational risks, given the prevalence of certain industries in the country.



Assess Existing Workforce and Technical Capacity

Evaluating existing health workforce capacities and technical capabilities, with **a focus on enhancing the experience of under-served populations**, is another key area to consider when successfully developing and implementing lung cancer screening programmes.

The gold standard of lung cancer screening is low-dose computed tomography (LDCT, also known as low-dose CT scans), which is recommended by the [World Health Organization](#) (WHO).

Low-dose CT scans use a similar technology to regular CT scans but emit less ionizing radiation, with [evidence](#) suggesting a favorable risk benefit profile for both at-risk groups and non-high risk individuals, with screening offered at varying time intervals depending on their status. Therefore, each country should consider screening protocols and eligibility criteria based on their local circumstances.

However, implementing LDCT screening may not always be immediately feasible for LMICs in the MEA region. Countries including Jordan, Kenya, Egypt, South Africa and Turkey offer compelling examples of tailored strategies to enhance screening efficiency using new technologies. In these contexts, AI can play a crucial role in addressing workforce and technical capacity gaps, making screening more accessible and effective.



The King Hussein Cancer Center (KHCC) in **Jordan** has been conducting pioneering trials, such as a feasibility study on lung cancer screening in the country using LDCT in cooperation with general healthcare facilities who may not specialise in cancer care.



Kenya has successfully integrated AI tools from QURE.AI platform into screening protocols at targeted centres, significantly improving early detection effectiveness and optimising resource utilisation by reducing healthcare professionals' workload.



Egypt's Presidential Initiative for Cancer Early Detection (PICE) employs AI-enhanced Chest X-Rays (CXR) to support the scaling up of lung cancer early detection, further emphasising the country's commitment to advanced and accessible cancer screening programmes.



Turkey is particularly notable for advancing AI in healthcare, with multiple cancer centres already utilising AI and CXR for the early identification of lung cancer cases. Complementing these clinical applications, a landmark collaboration between the [University of Health Sciences Health Technopolis in Istanbul and GE Healthcare](#) is accelerating the utilisation of AI in medical imaging. This initiative brings together a multidisciplinary team to develop AI solutions, particularly focusing on the automatic detection and classification of cancer lesions through imaging.



The UAE has also been exploring AI to expand lung cancer screening by developing pathways for incidental lung nodule detection. This approach increases the efficiency of existing services and provides more opportunities for early lung cancer detection.

Integrating digital solutions, such as AI-enhanced CXR, can bridge logistical and capacity-related challenges in resource constrained settings and also enhance existing health system efficiency, expanding the reach of early detection programmes.



Develop Comprehensive Financial Planning

[Investing in evidence-based care pathways for lung cancer](#) can help **reduce the costs of care at the national level**. These efforts not only improve patients' health outcomes but also contribute to long-term cost-effectiveness by [reducing expenses related to lung cancer management for health systems](#).

A key element in establishing care pathways is the beginning of the process, which is ensuring that lung cancer screening services are **accessible for both men and women of all ages**, and that these services are fully integrated into countries' Universal Health Coverage strategies.



Ongoing cost-effectiveness studies in **Saudi Arabia** and **Turkey** aim to provide valuable insights for sustainable financial planning in developing potential national lung cancer screening programmes. These studies will also help illuminate the economic impact of screening initiatives and are critical in guiding decisions on optimising resource allocation.



By investing in pilot studies and training, countries such as **Morocco** are laying the groundwork for a robust screening infrastructure that enhances diagnostic accuracy and expands patients' access to services.



In **Egypt**, the public insurance sector already covers baseline standardised services including PET-CT scans (Positron Emission Tomography–Computed Tomography), which are used in diagnosing, staging, and monitoring lung cancer patients in public hospitals. However, [only 35% to 40% of lung cancer patients](#) in the country benefit from these services. To ensure cost-effective care pathways that could reduce the number of clinic visits and inpatient admissions in already-crowded cancer care facilities, financial planning initiatives should consider the potential benefits of reinforcing, and potentially expanding, publicly-supported health insurance services in this area.



MEA LAA CHAPTER RECOMMENDATIONS ACROSS PRIORITY AREAS

PUBLIC AWARENESS

Lead the development of targeted and culturally-appropriate public awareness initiatives to raise awareness of lung cancer risks and the benefits of early detection. At the same time, incorporate integrated referral pathways spanning the continuum of care from education and screening, to diagnosis and treatment across different health systems.

ELIGIBILITY CRITERIA & RECRUITMENT

Understand the local demographics, risk factors and incidence data when elaborating eligibility criteria for lung cancer screening. Also, consider non-traditional groups such as non-smokers, immigrants and refugees, people with disabilities, those with low socioeconomic status, as well as varying age groups when defining eligibility criteria.

DATA MONITORING

Establish centralised EHRs and cancer registries to both monitor the existing burden of lung cancer and evaluate the success of new education, screening and care initiatives.

WORKFORCE & TECHNICAL CAPACITIES

Invest in the incorporation of AI and digital technology to alleviate pressures in resource-constrained countries and expand program reach, while striving to explore the feasibility of LDCT implementation and enhancing the education of the healthcare workforce on lung cancer screening practices.

GOVERNANCE

Prioritise lung cancer at the national level, through the development of lung cancer task forces, led by Ministries of Health as part of NCCPs, with active inclusion of civil society organizations and patient representatives to ensure their voices is taken in consideration in the policy-making process.

FINANCIAL PLANNING

Evaluate the long-term cost effectiveness of lung cancer screening programmes to aid decision making and to support the case for increased national investment in lung cancer education, early screening, and care initiatives, ensuring that investments are directed toward the most cost-effective interventions, thereby optimizing resource allocation and enhancing health outcomes.

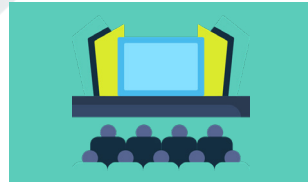
CALL TO ACTION FOR KEY STAKEHOLDERS

We encourage LAA MEA Chapter members and their allies to **proactively use and share this policy brief in ongoing advocacy with key stakeholders**. Please feel free to use this document as an educational resource to raise awareness of the urgent need for lung cancer screening programmes.

Examples of when you can use this document include:



One-to-one interactions with stakeholders



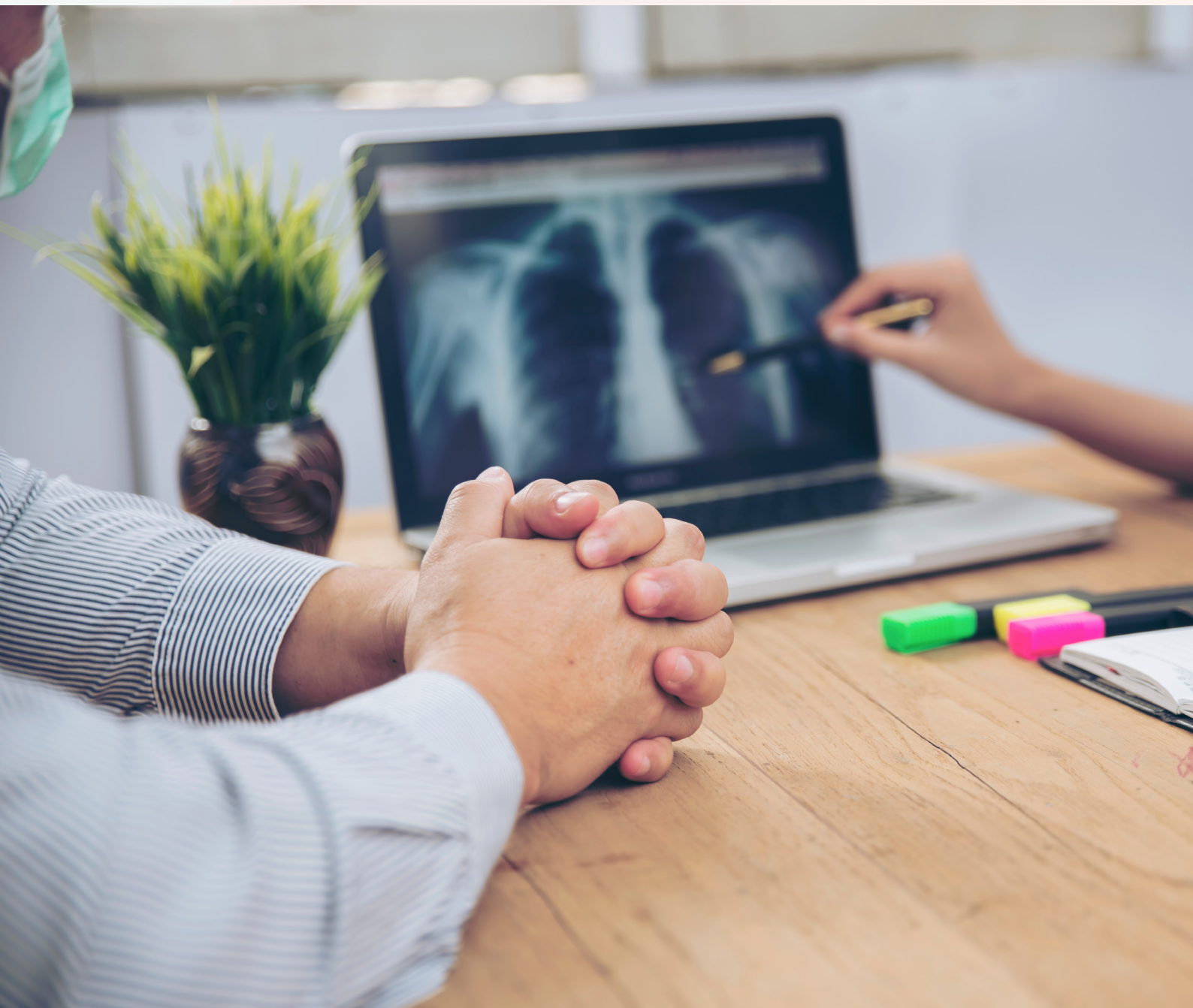
Scientific conferences



Policymaking forums



Interviews with the media



In alignment with the recommended framework of the LCPN for developing national lung cancer screening programmes, below are **specific issues that can be raised and discussed** with different stakeholders. In all stakeholder interactions, it is vital to have the active **inclusion of civil society organizations and patient representatives** to ensure their voices are taken into consideration in the policy-making process.

HEALTH AUTHORITIES	<ul style="list-style-type: none">• Prioritise the establishment of national strategies for lung cancer early detection and intervention including education and awareness initiatives to improve population outcomes.• Understand current cancer care pathways and assess the need for further investment in workforce capacity, digital innovation, and lung cancer services.• Assure coverage and access of all vulnerable population segments to screening and care services, with a focus on those most at risk.
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PRIVATE SECTOR	<ul style="list-style-type: none">• Mobilise resources to support efforts to address evidence-generation gaps, community campaigns and awareness initiatives targeting at-risk populations including those in rural and remote areas as well as youth.• Support health authorities facilitate key evaluations such as cost effectiveness analyses and health system assessments.• Collaborate with health authorities to inform the design and development of future clinical trials and the integration of AI technology.
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ACADEMIA	<ul style="list-style-type: none">• Provide evidence-based recommendations to inform national lung cancer screening guidelines.• Conduct research to address gaps in data on lung cancer epidemiology in the MEA region.• Develop and validate new screening methods, diagnostic tools and education programs tailored to the region's specific needs.
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CIVIL SOCIETY	<ul style="list-style-type: none">• Support the LAA MEA Chapter in advocacy to reduce lung cancer mortality, including the implementation of screening programmes in the region.• Promote community outreach and awareness campaigns to encourage early detection and reduce the stigma associated with lung cancer.• Foster cross-sector partnerships, utilise existing networks, and leverage platforms to mobilise essential resources in support of national lung cancer screening programmes and to ensure that patients' voices are heard.
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We are very grateful for the support of the following distinguished members of the Steering Committee of the LAA MEA Chapter in the development of this policy brief:



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FOR FURTHER INFORMATION

If you would like further information or have any questions or suggestions regarding relevant engagement in combating lung cancer in the Middle East and Africa, please contact the [LAA MEA Secretariat](mailto:SecretariatLAAMEA@globalhealthstrategies.com): SecretariatLAAMEA@globalhealthstrategies.com



The Lung Ambition Alliance is a global coalition with the bold ambition to eliminate lung cancer as a cause of death. Its programmes are funded directly and in kind by **AstraZeneca, GLCC and Guardant Health**.