# Lung cancer care in Indonesia

## How effective policy can transform outcomes

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Lung cancer is a global health emergency.

It is the leading cause of cancer deaths and—together with tracheal and bronchus cancer—is estimated to cost the global economy \$3.9 trillion between 2020 and 2050.<sup>12</sup> There were over 2.4 million new cases in 2022, and that number is expected to grow to 4.4 million by 2050.<sup>3</sup> The disease has a profound impact on people and their loved ones; a diagnosis can cause intense emotional distress and have knock-on effects, including on people's ability to engage in education and work.<sup>45</sup> Urgent policy action and investment are needed to address the rising toll of the disease.

Indonesia's population is over 281 million.<sup>6</sup>

In 2022, more than 38,000 people were diagnosed with lung cancer—this equates to more than 100 new diagnoses every day.<sup>7</sup>

Lung cancer is the leading cause of cancer-related death; more than 660 people die from it every week.8

The number of people with lung cancer in Indonesia is predicted to increase by 64% by 2040.9\*

\*The source combines data for trachea, bronchus, and lung cancer. However, this profile concerns lung cancer only, so, for brevity, it does not mention trachea and bronchus cancer.



This report was developed by the International Association for the Study of Lung Cancer (IASLC) Global Policy and Partnerships Committee in collaboration with The Health Policy Partnership, an independent health policy and research consultancy. The content was informed by input from various IASLC members, who contributed their time voluntarily. The report is intended for informational and policy purposes only and should not be considered medical advice. Readers are encouraged to consult qualified health care professionals for medical guidance.

### Indonesia's policy and care landscape



National cancer control plan (NCCP)



Earlier detection of cancer is one of the key aims of the NCCP (2024–34).<sup>10</sup> Progress has been made by the Indonesian government in promoting the earlier detection of diseases through an annual health screening program (introduced in 2025), which includes checks for cancer.<sup>11</sup> However, steps need to be taken to reduce lung cancer incidence.<sup>12</sup>

Lung cancer mentioned in NCCP



It is one of the Indonesian government's five cancers of focus.<sup>10</sup>

National cancer registry



There are 14 different cancer registries in Indonesia, but they only cover 14% of people diagnosed with cancer.<sup>13</sup> There is no population-wide lung cancer registry.

Defined care pathway and/ or guidelines for lung cancer



Although the Kementerian Kesehatan Republik Indonesia (Ministry of Health) have published clinical practice guidelines for management, there do not appear to be specific national care pathways for lung cancer.<sup>14</sup>

### Strategies for prioritizing lung cancer in Indonesia



### **Risk reduction**



Tobacco smoking is the biggest risk factor for lung cancer globally, but there are other risk factors of increasing concern, including family history, occupational exposure, air pollution, and radon. 15 Enacting policies that mitigate these risks is vital to reducing the incidence of lung cancer.

Indonesia has one of the world's highest rates of active tobacco use: over 25% of the population actively use it (69 million people). This includes 3 million children aged 10–18 and 230,000 children under 10.<sup>13</sup>

There has been a significant increase in active tobacco use among men, from 59% in 2000 to over 71% in 2022. 16 17

People in Indonesia spend a large proportion of their money on tobacco, with cigarettes making up over 12% of their total spending.<sup>18</sup>

Over 20% of lung cancer deaths in men are due to exposure to risk factors in the workplace.<sup>19</sup>\* People at high risk include those in the mining industry, firefighters, and workers exposed to asbestos and heavy metals.<sup>12</sup>

In 2021, over 13% of the population used cooking fuels that cause household air pollution, which is a risk factor for lung cancer.<sup>20 21</sup>

<sup>\*</sup>The source combines data for trachea, bronchus, and lung cancer. However, this profile concerns lung cancer only, so, for brevity, it does not mention trachea and bronchus cancer.



### National policies/strategies for risk reduction

#### Tobacco control



Indonesia is the only country in the Asia-Pacific region that is not a signatory of the World Health Organization's (WHO's) Framework Convention on Tobacco Control (FCTC).<sup>20</sup>

In 2013, the health minister introduced the tobacco control roadmap, which included measures such as limits on tobacco advertising, age restrictions on sales, and more health warnings on packaging.<sup>20</sup> However, some of the measures are yet to be enforced.

In 2022, however, an analysis found that, where available, tobacco cessation services in health clinics are reimbursed.<sup>22</sup>

The same analysis indicated that many public places are still not smoke-free.<sup>22</sup> The Non-communicable Disease Plan (2020–24), recognized that the enforcement of non-smoking zones had not been a priority, and aimed to implement them in public places in 80% of districts.<sup>20</sup>

Additionally, in 2022, tobacco excise tax was increased by 12% to reduce tobacco production and smoking prevalence.<sup>23</sup>

In 2024, stricter tobacco control laws were introduced by the government, including bans on the sale of single cigarettes, and stricter regulations on health warnings on packaging and advertising.<sup>24</sup>

### E-cigarettes/ vaping



A 2024 law stipulates that e-cigarette packaging must include health warnings that emphasize nicotine addiction and the potential harm of inhaling vaporized substances.<sup>24</sup> Only people over the age of 21 can purchase e-cigarettes.<sup>24</sup>

### Occupational exposure



Indonesia's occupational safety law protects workers by mandating the use of personal protective equipment. The law does not specifically mention lung cancer, and implementation falls short. There are reports of companies in the mining and construction sectors failing to comply.<sup>25</sup>

#### Air pollution



In 2023, Jakarta was the most polluted city in the world. The municipal government has tightened regulations on industrial emissions; however, national policies to combat pollution are insufficient.<sup>26</sup> <sup>27</sup>

In 2007, to curb household air pollution (not specifically related to lung cancer), the Indonesian government launched the Zero Kero Program, which reduced kerosene use in the home by 92% by providing subsidies to support a transition to liquefied petroleum gas.<sup>28</sup>

### Educational or public awareness campaigns



One of the NCCP's aims is to increase awareness of cancer and its risk factors.<sup>10</sup> A regional campaign in the Betoambari district alerted the public to the dangers of tobacco use and the risk of developing lung cancer (among other diseases). The campaign distributed anti-tobacco posters, billboards, brochures, and leaflets. After introduction, the prevalence of tobacco use in the district decreased.<sup>29</sup>





Diagnosing lung cancer early is crucial to improving survival rates.

The five-year survival rate could be over 80% if the disease is diagnosed earlier (stage I); however, diagnosis currently occurs at a late stage (III and IV) in around 70% of cases, when the five-year survival rate falls to as low as 7–18% (for stage IV disease specifically).<sup>30-33</sup>

In Indonesia, 70–80% of people with lung cancer are diagnosed in the late stages of disease, when the opportunity for early (potentially curative) intervention has passed.<sup>13 20</sup>

Data suggest that diagnoses may be underreported, as lung cancer mortality rates are consistently higher than reported incidence rates.<sup>20</sup>



"Most people with lung cancer in Indonesia are misdiagnosed with lung infections or other respiratory diseases."

> Professor Dr Noorwati Sutandyo PhD, Dharmais National Cancer Center, Jakarta, Indonesia

### Strategies to improve earlier detection



Clinical awareness campaigns



The organization Thorax Indonesia aims to educate clinicians and raise awareness about lung cancer (among other respiratory diseases) through events and training.<sup>34</sup>

Public awareness campaigns



In February 2025, during a World Cancer Day event, the deputy minister for health urged the public to access earlier detection services for cancer (including lung cancer) through a free health screening program.<sup>35</sup>

National screening program



In February 2025, the government launched a nationwide health screening program for diseases including lung cancer; the program is free, and people may access it annually (on their birthday). The scale of implementation and uptake is not yet clear.

The government is also distributing low-dose computed tomography (LDCT) scanners to all cities in Indonesia.<sup>37</sup>



Lung cancer care covers a range of elements, from treatment to palliative care.

There are a number of chemotherapies, radiotherapies, and immunotherapies available, and the identification of specific biomarkers can be used to guide treatment choice.<sup>38 39</sup> Palliative care can be used to support people through treatment, and with pain and symptom management.<sup>40</sup>

Indonesia has public funding for health care through the national health insurance program (Jaminan Kesehatan Nasional, JKN).<sup>41</sup>

Reimbursement through the JKN is predominately based on the cost of the medicine, with procurement made in each province via a bidding system with a fixed price threshold set by the Ministry of Health.<sup>42</sup>

### Strategies to enhance lung cancer care



Biomarker testing and/or next-generation sequencing



Comprehensive biomarker testing for lung cancer is not covered by the JKN.<sup>43</sup> Even for tests that are covered, biopsies may need to be sent to Jakarta (due to lack of equipment locally); this can cause month-long waits for results.<sup>44</sup> <sup>45</sup>

In 2025, the government announced plans to provide 514 immunohistochemistry laboratories, with next-generation sequencing technology being developed at the provincial level to facilitate faster and more accurate diagnosis.<sup>37</sup>

Oncology centers that provide specialized lung cancer care



Although oncology centers exist, there are only three national referral hospitals for lung cancer, and they are all in Jakarta; other large hospitals offering comprehensive services are typically located in major cities. 13 .44

Multidisciplinary care team



Comprehensive multidisciplinary teams are typically reserved for national referral hospitals. These teams include interventional and internist pulmonologists, thoracic surgeons, oncologists, radiologists, and pathologists.<sup>13</sup>

Outside of large cities, there are challenges to accessing specialists. Approximately 50% of lung cancer specialists are concentrated in Jakarta.<sup>13</sup> Half of the provinces in Indonesia do not have access to a thoracic surgeon.<sup>13</sup>

Although lung cancer cases can be discussed with specialists at referral hospitals via telemedicine, <sup>13</sup> application is limited; only 66% of the Indonesian population had reliable internet access in 2022.<sup>20</sup>

### **Treatments**



Chemotherapy for lung cancer is covered by the JKN and remains the front-line therapy.<sup>13</sup> However, some immunotherapies are not covered by the JKN, and out-of-pocket costs can be prohibitive.<sup>44</sup> Radiotherapy is also inaccessible; it is estimated that 90% of people with lung cancer in Indonesia cannot access it because large parts of the country do not have the necessary equipment.<sup>20</sup> <sup>46</sup>

Palliative care and/or supportive services



Palliative care (not specific to lung cancer) is a core focus of the NCCP.<sup>10</sup> It is largely available in urban centers, but it is not reliably incorporated across the country.<sup>20</sup> However, there have been efforts by non-governmental organizations to improve palliative care provision (see *Case study*).

Support groups also exist through the Indonesian Cancer Information and Support Center.<sup>12</sup>



### Case study. How the Indonesian Cancer Foundation is prioritizing palliative care

The Indonesian Cancer Foundation (Yayasan Kanker Indonesia, YKI) is a non-profit organization that, as part of its role, conducts palliative care training. From 2015 to 2022, training was delivered to 2,353 people in ten provinces, including caregivers in the community, volunteers, and health care professionals.<sup>47</sup>

The YKI also implemented a palliative care call center and a home care service in Jakarta that provides 24-hour patient consultations with trained nurses and doctors. In 2022, the service provided care for 355 people.<sup>47</sup>



### Living well beyond cancer



**Living well beyond lung cancer is becoming a more pressing issue** as more people are living longer after diagnosis. Living well beyond lung cancer focuses on ensuring a good quality of life and providing holistic care. 48

Lung cancer can cause high levels of psychological distress and financial insecurity for people and their loved ones.<sup>47</sup>

- In a survey, people with lung cancer in Indonesia reported needing to take sick leave for nearly a year; in the first three months of leave, their salaries were reduced by 25%. Some respondents reported losing their jobs due to the demanding treatment regimen.<sup>44 45</sup>
- Often, family members leave the workforce to care for someone with lung cancer, and they may be forced to sell their assets due to financial distress.<sup>49</sup>

The NCCP recognizes the financial strain on people with cancer. One of the plan's key strategic aims is to alleviate this burden by expanding coverage, and funding diagnosis and care. However, the extent to which this has been achieved is not clear.



"Most caregivers are family, and most of them are with the patient 24 hours a day, so they have no time to work. This means they have to sell everything—their land, their car—to support their family member. It is a huge problem."

Dr Dimas Ria Angga Pribadi, Department of Nursing, Muhammadiyah University of Surakarta, Jawa Tengah, Indonesia



- Urgently develop stricter tobacco control measures and expand implementation of those already proposed. National legislation must be strengthened to widen smoking bans in public areas and the government should commit to the WHO's FCTC.
- **Implement measures to reduce outdoor air pollution,** such as creating low- or zero-emission areas in cities and expanding access to affordable clean energy for cooking (such as the Zero Kero Program).
- > Improve the provision of lung cancer services, including palliative and supportive care. Governments need to increase the number of referral hospitals and the corresponding workforce. To support the provision of quality lung cancer care, specific lung cancer care pathways should also be developed (including palliative and supportive care). In addition, to support collaboration between referral hospitals and local hospitals, governments must invest in infrastructure to improve telehealth and internet connections for remote multidisciplinary team meetings.
- **Expand coverage of essential biomarker testing procedures;** the JKN should conduct tendering processes with providers.
- Review reimbursement of essential lung cancer treatments, such as radiotherapy, and mandate that provinces conduct local reviews of available hospital services, with the JKN providing funding to expand necessary provisions.
- Implement anti-discrimination policies in the workplace to prevent caregivers and people with lung cancer from losing financial support. The government must also provide financial assistance to prevent loss of income due to ill health.

### **Appendix. Methodology**

This profile was developed using a structured literature review (using peer-reviewed and grey literature from 2018 to 2025) guided by a key topics list and corresponding search terms. The data presented in each profile were dependent on what was available in the published literature.

The profiles were supplemented with expert interviews in each country. The interviews were 30–60 minutes and were facilitated by a discussion guide that aimed to discover the key challenges for lung cancer risk reduction, earlier detection, and care in each country while also revealing any best-practice initiatives in place to reduce the impact of the disease. Opportunities were also given to respondents to provide written responses to questions rather than participating in an interview, to facilitate participation.

This country profile underwent two rounds of review from the members of the IASLC Global Policy and Partnerships Committee and the experts who contributed to the country profile via interview.

More information can be found in the supplementary material.

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