



GLOBAL LUNG CANCER  
COALITION

# Starting the Conversation: Making the Case for a National Lung Cancer Screening Programme

[Country]

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## Introduction and how to use this document

'*Starting the Conversation*' provides a flexible, easy-to-use package of carefully researched information and evidence for people and organisations at an early stage of working to develop a national lung cancer screening programme. The materials are designed to support you in discussions around developing a national lung cancer screening programme in your country. They bring together the key arguments and figures for national lung cancer screening programmes to screen people at high-risk for lung cancer in order to diagnose and treat early when the disease is potentially curable.

This package is provided as a word document for you to draw on and adapt to develop your own materials to meet local needs in arguing the case for a national lung cancer screening programme in your country. You can customise the information to the situation to your country by inserting local figures where indicated [shown in blue type in square brackets] or use the figures provided if local data are not available. The *Further Resources* section provides links to additional materials on lung cancer screening.

## The case for a national lung cancer screening programme in [country]

A national lung cancer screening programme is a key measure to reduce the huge burden that lung cancer currently imposes on the individuals affected, their families, the healthcare system and the country as a whole.

### What is lung cancer screening?

Lung cancer screening uses a non-invasive scan of the lungs (low-dose computed tomography [LDCT]) to detect lung cancer at an early stage in apparently healthy people who are at high risk for the disease (smokers and ex-smokers).

- The aim of screening for lung cancer is to diagnose and treat early when the disease is potentially curable

### Why should lung cancer be a high priority for screening?

Lung cancer is common, deadly and costly ...

Lung cancer is the [second] most commonly diagnosed cancer in [country]

Lung cancer is the second most commonly diagnosed cancer globally, with an estimated 2.2 million new cases each year; it accounts for 11.4% of all cancers diagnosed each year (Sung 2021).

- Lung cancer is the most commonly diagnosed cancer in men in 36 countries across the world while in women it ranks third for incidence after breast and colorectal cancer (Sung 2021)
- In many countries, the number of people being diagnosed with lung cancer is showing an increasing trend, particularly in women, with the number increasing each year (Sung 2021). This increase is predicted to continue to increase over the next few years due to population growth and ageing

[For countries adding national figures]

The number of people diagnosed with lung cancer cases in [year] was [number of cases]: [number of cases] in men and [number of cases] in women. This is [xx]% of all cancers diagnosed each year in [country].

The incidence of lung cancer is about [number of cases per 100 000 people] per 100 000 people.

## Lung cancer kills more people than any other cancer in [country]

Lung cancer is by far the leading cause of cancer death in [country] and worldwide (accounting for 18.0% of all cancer deaths globally) (Sung 2021).

- Lung cancer causes more deaths than breast and colorectal cancers combined – cancers for which many countries already have population-based screening programmes (Sung 2021; IARC 2020; Bray 2018; Field 2016)

[For countries adding national figures]

Latest figures show that [number of lung cancer deaths each year] people die from lung cancer each year in [country]. This is [xx]% of all cancer-related deaths in [country].

## Lung cancer has worse survival than most other cancers

The five-year survival rate from lung cancer for all stages is only 10-20% in most countries, which means that fewer than one in five people survive for five years or longer after being diagnosed (Sung 2021). This is among the lowest survival rates for all types of cancer (Cancer Research UK 2019).

- The poor survival is largely due to most people with lung cancer being diagnosed at a late stage. Around three-quarters of patients with lung cancer present at a late stage at which treatment is used to relieve symptoms and pain (palliative) rather than curative, according to UK figures (Field 2016)

[For countries adding national figures]

The five-year survival rate for lung cancer is only [xx]%, meaning that [xx]% of people survive for five years after diagnosis. This is among the lowest for all types of cancer.

[xx]% of people with lung cancer are diagnosed at Stage IV (advanced disease when cancer has spread from the lungs to other parts of the body).

## Lung cancer is associated with higher costs than other cancers

An EU study showed lung cancer was associated with the highest economic costs of any cancer, based on direct healthcare costs to healthcare systems and costs to the individuals affected including lost earnings and informal care. Figures showed that lung cancer accounted for 15% of overall cancer costs, followed by breast cancer (12%), colorectal cancer (10%) and prostate cancer (7%) (Luengo-Fernandez 2013).

- This reflects the relatively high incidence of lung cancer and the high mortality (Field 2016)

[For countries adding national figures]

The cost of lung cancer to the health care system in [country] has been estimated at [cost] per patient per year. Lung cancer accounts for [xx]% of overall cancer costs.

## COVID-19 has reduced lung cancer referral rates and early diagnosis

COVID-19 has dramatically reduced lung cancer referral rates and reduced early diagnosis from incidental findings, driving an urgent need for organised efforts to detect lung cancer earlier.

- The World Health Organization found that 55% of countries reported disruption to cancer treatment and diagnosis services during the initial peak of the pandemic (WHO 2020). In the UK, some services reported up to a 75% reduction in the number of people being urgently referred with suspected lung cancer during the peak of the pandemic (UK Lung Cancer Coalition 2020)
- Redeployment of staff and resources to the care of patients with COVID-19 may have had a disproportionate impact on treatment for lung cancer

## How screening for lung cancer can help ...

### Diagnosing lung cancer at an earlier stage improves survival

Lung cancer screening with LDCT saves lives by detecting the disease at an early stage when it is potentially curable.

- When diagnosed at its earliest stage, almost 60 in 100 (57%) people with lung cancer will survive their disease for five years or more, compared with only five in 100 people (3%) when diagnosed at the latest stage, according to figures for England (CRUK 2021)

Randomised clinical trials of regular screening of high-risk individuals with LDCT have demonstrated its effectiveness in detecting lung cancer at an early stage and in reducing lung cancer mortality (de Koning 2020; NSLT 2019).

- A recent large clinical trial of LDCT screening, the NELSON trial, showed a 24% reduction in lung cancer mortality in men and a 33% reduction in women at 10 years of follow-up compared to no screening (de Koning 2020)
- More than two-thirds (68%) of lung cancers detected in people screened in the NELSON trial were found at an early stage (de Koning 2020)
- The number of people needed to screen with LDCT to prevent one death from lung cancer is around 255 (Tammemägi 2013), which is considerably lower than for other cancer screening programmes. For mammography, the number needed to screen to

prevent one breast cancer death is 645-1724 in each age decade from 40 to 79 years (Canadian Task Force 2019). The number needed to screen to prevent one colorectal cancer death is 850 for flexible sigmoidoscopy (Fitzpatrick-Lewis 2015)

### Smoking history identifies who to screen for lung cancer

Tobacco smoking is, by far, the single biggest risk factor for lung cancer making it simple to identify people who should be screened for the disease.

- Almost 90% of lung cancers in men and 70-80% in women are related to cigarette smoking, according to global figures (Walser 2008)
- Smokers have up to a 30-fold higher risk of developing lung cancer than non-smokers (Walser 2008; CDC 2020)
- People who quit smoking have a lower risk of lung cancer than if they had continued to smoke, but their risk is higher than for people who have never smoked (CDC 2020)

[For countries adding national figures]

[xx]% of lung cancers in [country] are related to cigarette smoking.

### Screening high-risk individuals for lung cancer is cost-effective

Screening high-risk individuals for lung cancer with LDCT is cost-effective based on widely used measures of cost-effectiveness used in healthcare.

- The cost per quality-adjusted life year (QALY) (an estimate that combines years of life with quality of life after a particular health intervention) is within the range considered to be acceptable value for money for public health interventions
- Integrating smoking cessation interventions alongside LDCT screening significantly improves cost-effectiveness, potentially preventing an additional 12 lung cancer cases per 1000 smokers screened (Evans 2020)

## Lung cancer meets the World Health Organization (WHO) criteria for screening programmes to improve public health

The WHO has identified criteria for screening programmes to improve public health. Lung cancer meets these criteria:

- **The disease should be an important health problem.** Lung cancer is the commonest cancer and the leading cause of cancer death in [country]. Most people with lung cancer are currently diagnosed at an advanced stage of the disease, which cannot be cured and is associated with very poor survival
- **There should be a recognisable latent or early symptomatic stage.** Symptoms of lung cancer do not usually appear until the disease is already at a late stage, but LDCT scans of the lungs can detect small abnormal areas in the lungs (nodules) that can be further investigated to see if they are early lung cancer
- **The natural history of the disease should be adequately understood.** Many cases of lung cancer progress relatively slowly over several years, potentially offering opportunities for early detection. The high risk of lung cancer in smokers and ex-smokers enables clear identification of people most likely to benefit from lung cancer screening

### Screening test

- **There should be a suitable test or examination.** LDCT of the chest is the recognised diagnostic test for early diagnosis of lung cancer. It uses X-rays to generate multiple cross-sectional images of the lungs using much less ionizing radiation than a conventional CT scan. Large clinical trials have shown that LDCT of the chest significantly reduces the risk of dying from lung cancer (National Lung Screening Trial Research Team 2011; De Koning 2020)
- **The test should be acceptable to the population.** A LDCT scan is quick, painless and non-invasive. Individuals lie on their back on the flatbed of a CT scanner which takes multiple images of their lungs. Using LDCT minimises radiation exposure compared to a standard CT scan (Swedish 2021; Manchester University NHS Trust 2021; Centers for Medicare & Medicaid Services 2021)

### Treatment

- **There should be an accepted treatment for patients with recognised disease.** Evidence-based treatments are available for early lung cancer and are associated with much better survival rates than treatment of advanced lung cancer



## Screening programme

- **There should be an agreed policy on who to treat.** Large clinical trials and existing lung cancer screening trials have shown that use of protocols provides clear guidance on people who require further investigation and treatment based on scan results
- **Facilities for diagnosis and treatment should be available.** Healthcare systems already have services in place for the diagnosis and treatment of lung cancer
- **The cost of case finding (including diagnosis and treatment of patients diagnosed) should be economically balanced in relation to possible expenditure on medical care as a whole.** Screening high-risk individuals for lung cancer with LDCT is cost-effective with the cost per QALY within the range considered to be acceptable value for money for public health interventions
- **Case finding should be a continuous process and not a 'once and for all' project.** The aim would be to roll out a lung cancer screening programme on an ongoing basis rather than a one-off programme

(WHO 2020)

The purpose of screening is to identify people at higher risk for a health problem or condition or with early disease so that treatment can be offered to reduce the incidence and mortality within the population (WHO 2020).

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## Further resources on lung cancer screening

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<http://www.lungcancercoalition.org/screening-resource.html>

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