



# lung cancer

## 6 Screening for lung cancer with chest X-rays

### Why is this important?

Lung cancer is the leading cause of cancer death in Australia. When we talk of lung cancer we include malignancies of the trachea, bronchus and lung. These cancers caused 7038 Australian deaths in 2001, which equated to 19 per cent of all cancer deaths.[1] Lung cancer has a poor prognosis, with only 12 per cent of patients still alive five years after diagnosis.

Since 1991 there has been a 22 per cent drop in the male death rate from lung cancer, but among women the death rate has increased by nearly nine per cent. It comes as no surprise to learn that the most important risk factor for lung cancer is tobacco use. Smoking is estimated to cause up to 95 per cent of new lung cancer cases, hence the increasing number of women with lung cancer, due to their increased tendency to smoke.[2] Despite progress being made in tobacco control, there will continue to be a high

death toll from lung cancer among current and former smokers for many years to come.

There are four different types of lung cancer. The most aggressive types usually spread to other organs before they can be detected on chest X-ray. Work is underway in Australia to consider the potential of lung cancer screening by helical computed tomography (a newer, more sensitive diagnostic tool) among high-risk groups, but reliable evidence is currently not available to recommend its use for this purpose.

### Best available evidence

There have been numerous trials of chest X-ray screening for lung cancer. However, current evidence does not support annual chest X-ray screening. When compared with 'less frequent' chest X-ray screening, 'more frequent' screening is at best ineffective and at worst harmful.[3]

## Evidence does not support annual chest X-ray screening of current or former smokers to detect lung cancer.

### Current practice

Chest X-rays are ordered at the rate of one for every 100 general practitioner encounters, making them the most frequent imaging test ordered by GPs.[4] Over 1.5 million chest X-rays are reimbursed through Medicare every year, with about equal numbers performed on females and males, and most among people aged 65–74 years.

One study has found that only 1.2 per cent of chest X-rays are ordered for tobacco abuse, while twice that number are ordered as part of a general check-up.[5] On that basis it is reasonable to conclude that the extent of overuse is relatively modest. On the other hand, published data from an earlier survey of GPs tells a different story. A national survey of more than 800 GPs was conducted in 1996 to determine the level of chest X-ray screening for lung cancer among heavy smokers.[6] One in five believed that an annual chest X-ray was an

effective screening test. Twenty-two per cent of those surveyed reported that they recommend an annual chest X-ray as a screening test for asymptomatic heavy smokers.

### Implications

- Research from the mid-1990s tells us that more than one in five GPs believed it was appropriate to refer patients known to be heavy smokers for annual chest X-rays.
- If these beliefs prevail and translate into practice, many hundreds of thousands of chest X-rays would be performed with no evidence of benefit and some evidence that they may increase the risk of premature death.
- The cost to the health care system of such unnecessary 'screening' would be in the order of tens of millions of dollars annually.

### References

- 1 Australian Bureau of Statistics (2002) Causes of death, Australia, 2001. Cat. no. 3303.0. ABS, Canberra
- 2 NCCI Working Group on Lung Cancer Screening (2003) Lung cancer screening by helical computed tomography. National Cancer Control Initiative, Melbourne
- 3 Manser RL, Irving LB, Stone C, Byrnes G, Abramson M, Campbell D (2003) Screening for lung cancer (Cochrane Review). In: The Cochrane Library, Issue 2, 2003. Oxford: Update Software
- 4 Britt H, Miller G, Knox S, Charles J, Valenti L, Henderson J et al (2002) General practice activity in Australia 2001–02. AIHW cat. no. GEP 10. Australian Institute of Health and Welfare, Canberra
- 5 Britt H, Miller GC, Knox S (2001) Imaging orders by general practitioners in Australia 1999–00. AIHW cat. no. GEP 7. Australian Institute of Health and Welfare, Canberra
- 6 Sladden MJ, Ward JE (1999) Do Australian family physicians screen smokers for lung cancer? *Chest* 115: 725–728