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Royal Australian College of General Practitioners

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Via email: lungcancerscreening@canceraustralia.gov.au

Dear Professor Keefe,

Cancer Australia Lung Cancer Screening Enquiry

The Royal Australian College of General Practitioners (RACGP) thanks Cancer Australia and the Department of Health for the opportunity to respond to the Lung Cancer Screening enquiry.

The RACGP believes that there are a number of issues that need to be resolved before lung cancer screening is implemented in Australia. Lung cancer is a complex disease, with no clear target population for Low-Dose Tomography Screening (LDCT), little guidance on when to further investigate lesions, and overdiagnosis risks with associated harms. There are also difficulties in reaching the high-risk populations, who already face barriers to screening, particularly those in rural and regional areas, and people with severe mental health issues.

We offer the following comments regarding the feasibility for a national lung cancer screening program in Australia for people at high risk of lung cancer.

1. Primary prevention

Primary prevention of lung cancer is still paramount, regardless of whether or not screening is implemented. Although not all cases of lung cancer are due to smoking, smoking still is a significant cause of lung cancer, attributable to approximately 90% of cases in men, and 65% of cases in women.[1] Smoking also causes a wide range of diseases outside of cancer, including respiratory, cardiovascular and endocrine diseases, and can cause harm to other people via second-hand smoke.[2]

Ensuring both prevention of smoking uptake and the cessation of smoking is an important public health investment. By investing in prevention and cessation measures, particularly in high risk and high smoking prevalence communities, it may reduce the need for screening, reduce costs from treating lung cancer and other smoking-related conditions and help save lives.[3]

2. Research

There is a lack of evidence for lung cancer screening within the Australian setting to draw upon.[4] It is uncertain whether the research that has been undertaken overseas is completely replicable within Australia,[5,6] particularly if the research has been undertaken in countries with higher smoking rates, indoor pollution and occupational exposure as further contributing factors.

More broadly, there are concerns about the generalisability of the results and if they are replicable in the real world setting.[6,7]

As such, more evidence is required in order to target screening tests accurately, ensure referral pathways are optimised, potential harms are communicated and managed appropriately and is cost effective[8].

3. Population issues

3.1 Difficulty defining the target population

The target population for who would be eligible for lung cancer screening is not easily defined or accessible. Ideally, screening programs should have a clearly identifiable target population who would benefit most from screening according to research evidence, to target and invite to the program.

For example, evidence suggests that patients with significant co-morbidities would benefit less from a screening intervention than those who do not have co-morbidities. There are also concerns about risks and harms of screening in the elderly.[9] Furthermore, other population groups, such as Aboriginal and Torres Strait Islander communities, low socioeconomic areas, culturally and linguistically diverse populations, and people with severe mental health issues, have their own risk profiles.

Simply targeting the population of ever-smokers to identify who would benefit would be enormous and challenging.[10] Furthermore, many ever-smokers would be ineligible for screening, as they would need to be heavy smokers who are fit enough to undergo lung surgery for early stage lung cancer. This could cause anxiety in those people subsequently deemed ineligible, and encourage low risk people to request screening.

3.2 Engaging hard-to-reach groups

Populations at high risk of lung cancer are less likely to attend clinics,[11] which makes them more difficult to reach for screening. It is important that a screening program provides equitable access for all members of the Australian population.

Rural and remote areas
The technology and resources required for screening (and diagnosis) are not available in many rural and regional areas of Australia. This means that people in these areas would need to travel in order to be screened. This would be a significant barrier to screening, particularly if the patient has a low socioeconomic background, a lack of transport options, or needs to travel a substantial distance. With any screening program, it is important to ensure that rural and remote populations are not unfairly disadvantaged in its implementation.

Aboriginal and Torres Strait Islander population
Approximately 45% of Aboriginal and Torres Strait people are daily smokers and face unique barriers to quitting.[2] As a result, the incidence of lung cancer, including hospitalisation and mortality rates, are higher for Aboriginal and Torres Strait Islander peoples than the rest of the population.[12] A study undertaken of lung cancer in rural and remote Aboriginal and Torres Strait Islander communities identified a lack of transport options and costs involved as two barriers to them accessing care.[12]

People with severe mental illness
According to data from the Australian Bureau of Statistics (ABS), lung cancer was the second leading cause of death for persons of all ages who accessed mental health treatments in 2011.[13] By comparison, amongst the total Australian population, lung cancer was the fourth leading cause of death. The standardised death rate from lung cancer for persons aged 15-74 years who accessed mental health treatments, was more than two and a half times that of the total Australian population of the same age group.[13]

There are a number of compounding issues that mean that people with severe mental illness have a higher level of mortality from cancer, than the rest of the population.[14] Although these patients tend to have a higher rate of smoking, these patients are also likely to experience diagnostic overshadowing and decreased time for preventive activities as a result of multimorbidity. They are also less likely to have routine cancer screening.[14] People with severe mental illness will require a case finding strategy, in order to ensure that they receive equitable access to screening.

3.3 Barriers due to stigma and attitudes

Patient attitudes and their previous experience may affect whether they will have screening. In the case of lung cancer, negative attitudes towards lung cancer (including fear) and the prior experience of stigma can result in delays in consulting a clinician.[15,16,17]

These beliefs and attitudes would need be addressed to ensure any screening program would be successful.[16] Patient concerns about being blamed for the disease may also contribute to the delay in seeking help and consequently contribute to delays in diagnosis.[17]

3.4 Demand from low-risk population

The screening program would need to discourage screening of patients who do not fit the criteria. This is because harms will continue to increase if lower risk patients were screened, which would cause stress to the patient and their families and also cost the health system.

4. Screening issues

4.1 Uncertainty around Low-Dose Computed Tomography (LDCT) screening and further diagnostic testing

Lung cancer is not a homogenous cancer, and it is extremely difficult to tell from a simple LDCT screen whether the cancer will cause harm to the patient or not. As a result, there is no current consensus about the size and nature of the lesions that will require further diagnostic testing, and further research needs to be undertaken in this area. Given that obtaining a biopsy is an invasive procedure with potential harms to take into consideration, a lack of consensus on what does and doesn't require further investigations can lead to unnecessary complications arising out of false positives. This can also be very stressful for patients and their families.

Trials suggest that LDCT screening reduces mortality from lung cancer in high risk individuals, but whether this is implementable in the Australian setting as a broader screening measure is yet to be determined.[6] It is unclear whether it would be cost-effective but also could be implemented in a way that reduces the risk of harms to the patient as a result of the subsequent investigations. The RACGP *Guidelines for preventive activities in general practice* (9th ed) (the Red book) advises that performing scans outside of the trial environment could be harmful, and that more accurate data is needed in order to identify the appropriate target group before any recommendation is made on LDCT screening for lung cancer.[18]

4.2 Harms and effects of overdiagnosis

Overdiagnosis occurs when real cancer is detected, but it is so slow-growing that it unlikely to cause harm to the patient, or patient dies from other causes. Treating these cancers can lead to harms resulting from the treatment, patient anxiety, and can be an inefficient use of health system resources.[8,19] It can also provide an over-optimistic evaluation of the success of the treatment, because everybody who is overdiagnosed survives (unless treatment kills them). The risk of overdiagnosis means that not all patients will benefit equally from screening.[9]

There are different types of lung cancer. Some can be indolent and slow-growing, and some are aggressive and need to be treated with urgency. One of the concerns with lung cancer screening is that it could increase rates of overdiagnosis (and therefore, an increase in harms as a result of overdiagnosis). The extent to which overdiagnosis occurs in lung cancer screening is uncertain, with one trial finding no evidence of overdiagnosis, whereas another trial found up to 18% of cancers detected by CT were overdiagnosed.[20] This rate may vary depending on the screening population,[8] which is yet to be determined.

5. Implementation issues

5.1 Cost-effectiveness of screening is unknown

The cost-effectiveness of undertaking lung cancer screening in Australia is uncertain.[5,8] Further evidence, including undertaking a pilot, would need to be undertaken first to assess the cost-effectiveness within the Australian setting.

5.2 Accuracy of patient record

Given the target population for lung cancer screening isn't immediately clear, a screening program would rely on whether smoking status (and how much they smoke and for how long) has been recorded in the patient's record. This also relies on the individual clinician's medical record facilitating the collection of all this information. Smoking status is not currently recorded in a population-wide database.[3,11]

5.3 Education requirements

Should lung cancer screening be implemented, a key element as part of the implementation will need to be comprehensive education and support for both the general public and clinicians. This would be particularly the case with lung cancer over other cancers as the target population is unclear.[11]

General public
Education and support for the general public will need to include an explanation of the eligibility criteria and the potential harms of screening (including overdiagnosis).

This information would need to be stigma and guilt-free, and sufficient enough to ensure that patients can make a well-informed, shared decision in consultation with their GP. It would be important to ensure that screening would be a shared decision making process, given the risk of overdiagnosis and potential harms from the process. This information would also need to be accessible in different languages and culturally appropriate.

Clinicians
GPs and other health professionals will need information or guidance on the eligibility criteria of any screening program, along with the benefits and harms of lung cancer screening. They will also require support to reassure worried but ineligible patients.[11]

5.4 Screening quality

It would be important to ensure that providers undertaking lung cancer screening, have the appropriate skills to perform this role.

5.5 Other options

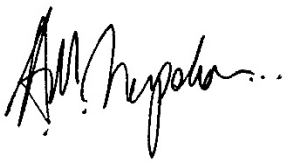
A broader approach could entail a similar model to the UK 'lung check clinics'. These require GP referral, or could be established in general practice, and offer smoking cessation assistance, spirometry and cancer risk assessment.

5.6 Program evaluation

If lung cancer screening is introduced, then evaluation of the program should be based on absolute reduction in deaths from lung cancer (and all-cause deaths to account for fatal complications of lung cancer screening downstream events) and not on (5 year) survival statistics.

The Royal Australian College of General Practitioners (RACGP) thanks Cancer Australia and the Department of Health for the opportunity to respond to the Lung Cancer Screening enquiry. If you have any queries regarding this submission, please contact Mr Stephan Groombridge, Manager, e-Health and Quality Care on (03) 8699 0544 or at stephan.groombridge@racgp.org.au

Yours Sincerely



Dr Harry Nespolon
President

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