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THE CONTRIBUTION OF CIGARETTE SMOKING TO MORTALITY AND HOSPITAL USE IN QUEENSLAND

Introduction

In terms of death, smoking is overwhelmingly the largest preventable health hazard in Australia (Commonwealth Department of Community Services and Health, 1994).

The analysis undertaken in this circular uses aetiological fractions to quantify the effects of cigarette smoking on the hospital use and mortality of Queensland residents (see Appendix 1 for definition and application of aetiological fractions).

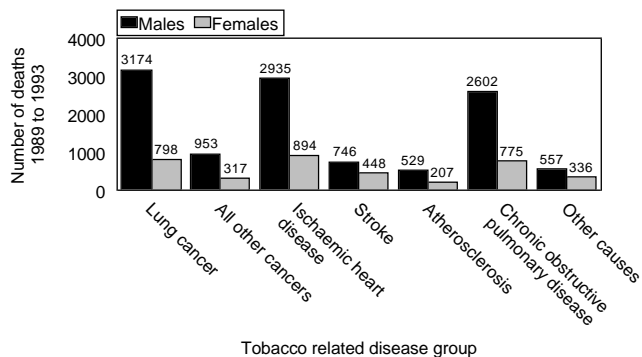
Key findings

- ◆ Of the 99,409 registered deaths for Queenslanders between 1989 and 1993, 15,271 or 15% were estimated to be directly attributable to cigarette smoking.
- ◆ Of these deaths directly attributable to cigarette smoking, 75% were males.
- ◆ It is estimated that 8% of all deaths in the zero to four year age group were directly attributable to cigarette smoking by mothers during pregnancy.
- ◆ Seventy-three per cent of all deaths estimated to be directly attributable to cigarette smoking were from lung cancer, ischaemic heart disease, and chronic obstructive pulmonary disease.
- ◆ Between 1989 and 1993, it is estimated that there were more than 78,000 potential years life lost to the age of 70 years that were directly attributable to cigarette smoking.
- ◆ In the 1993/94 financial year, it is estimated that \$86.6 million was spent on hospitalisation for conditions that were directly attributable to cigarette smoking.

Mortality estimates attributable to cigarette smoking by disease groups, Queensland 1989-1993

Seventy-three per cent of all deaths estimated to be directly attributable to cigarette smoking were from lung cancer, ischaemic heart disease, and chronic obstructive pulmonary disease.

Figure 1: Estimated number of deaths in Queensland directly attributable to cigarette smoking (1989 to 1993)

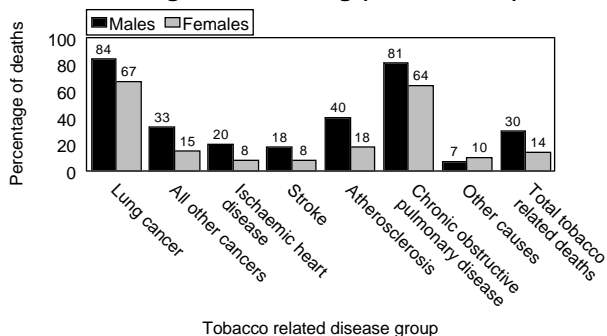


Source: Health Information Centre, 1996

Estimated percentage of deaths by disease group and sex for cigarette smoking-related conditions attributable to cigarette smoking, Queensland 1989-93

Of the major causes of death related to cigarette smoking, lung cancer (80%) and chronic obstructive pulmonary disease (77%) had the highest proportion of deaths directly attributable to cigarette smoking (Figure 2).

Figure 2: Estimated percentage of cigarette smoking-related deaths in Queensland directly attributable to cigarette smoking (1989 to 1993)



Source: Health Information Centre, 1996

Lung cancer

Of the 4,969 deaths from lung cancer between 1989 and 1993, it is estimated that 3,972 deaths (80%) were directly attributable to cigarette smoking (Figure 1). Lung cancer was estimated to account for 26% of cigarette smoking-related deaths. Of the total estimated number of deaths from lung cancer directly attributable to smoking, 80% were males (see Appendix 2).

Ischaemic heart disease

Of the 25,962 deaths from ischaemic heart disease between 1989 and 1993, it is estimated that 3,829 deaths (15%) were directly attributable to cigarette smoking

(Figure 1). Ischaemic heart disease was estimated to account for 25% of cigarette smoking-related deaths. Of the total estimated number of deaths from ischaemic heart disease directly attributable to smoking, 77% were males (see Appendix 2).

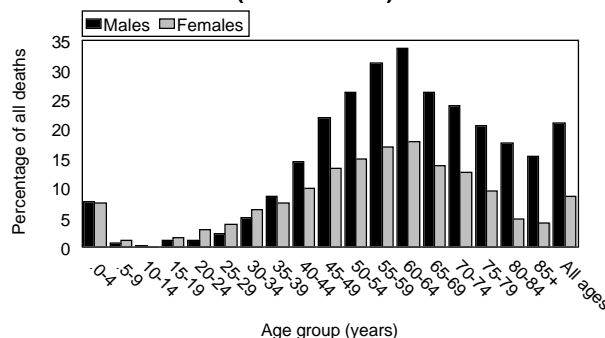
Chronic obstructive pulmonary disease

Of the 4,403 deaths from chronic obstructive pulmonary disease between 1989 and 1993, it is estimated that 3,377 deaths (77%) were directly attributable to cigarette smoking (Figure 1). Chronic obstructive pulmonary disease was estimated to account for 22% of cigarette smoking-related deaths. Of the total estimated number of deaths from chronic obstructive pulmonary disease directly attributable to smoking, 77% were males (see Appendix 2).

Mortality estimates directly attributable to smoking by age and sex, Queensland 1989-93

In the zero to four year age group, it is estimated that 8% of all deaths were directly attributable to smoking. The aetiological fractions for low birth weight and prematurity (0.23) and sudden infant death syndrome (0.34) account for all of these deaths. The estimated proportion of cigarette smoking related deaths rose steadily from the 15 to 19 year age group (1% males, 2% females) to peak in the 60 to 64 year age group for both males (34%) and females (18%) (Figure 3).

Figure 3: Estimated percentage of all deaths in Queensland directly attributable to cigarette smoking by age and sex (1989 to 1993)



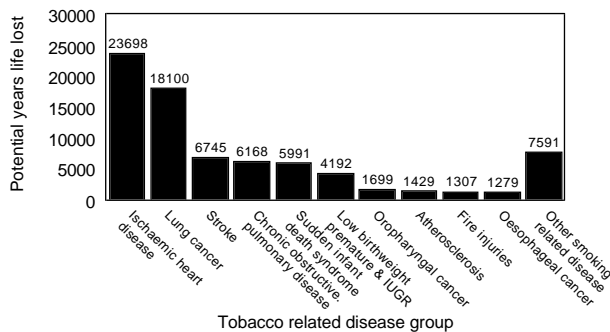
Source: Health Information Centre, 1996

Estimated potential years life lost to age 70 by major causes, directly attributable to smoking, Queensland 1989-93

Between 1989 and 1993, it is estimated that there were more than 78,000 potential years life lost to the age of 70 years that were directly attributable to cigarette smoking (Figure 4). While the largest proportion of potential years

life lost were from ischaemic heart disease (30%), lung cancer (23%), stroke (9%) and chronic obstructive pulmonary disease (8%), a significant proportion were deaths in infants from sudden infant death syndrome (8%) and low birth weight and prematurity (5%) attributable to cigarette smoking by mothers during pregnancy.

Figure 4: Estimated potential years life lost to persons age 70 and under for smoking related disease by eleven major causes, Queensland 1989 to 1993

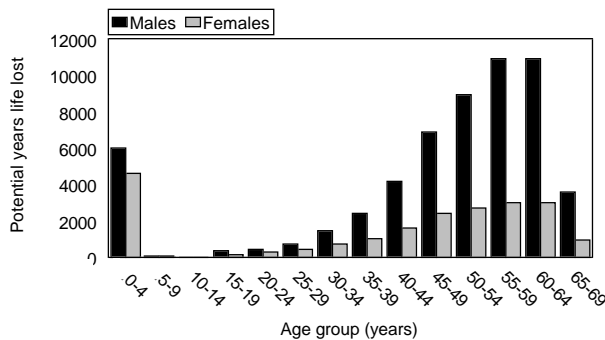


Source: Health Information Centre, 1996

Estimated potential years life lost to age 70 by age and sex directly attributable to smoking, Queensland 1989-1993

Sixty-two per cent of the potential years life lost to age 70 were in the 45 to 64 year age group. However, a significant proportion (13%) were in the zero to four year age group (Figure 5). Of the total potential years life lost, 73% were for males.

Figure 5: Estimated potential years life lost for smoking-related disease to age 70 by age group and sex, Queensland 1989 to 1993

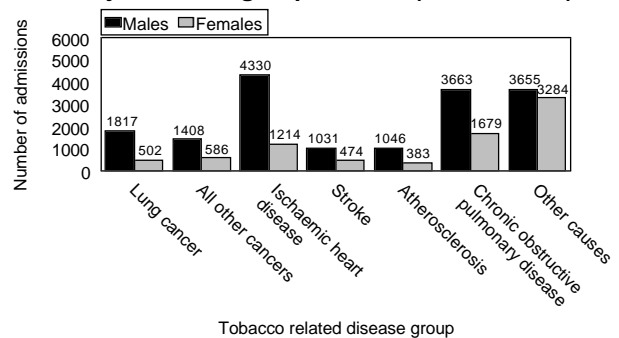


Source: Health Information Centre, 1996

Estimated number of hospital admissions directly attributable to cigarette smoking by major disease group and sex, Queensland financial year 1993/94

In the financial year 1993/94, it is estimated that 25,071 or 3% of all hospital admissions were directly attributable to cigarette smoking. Of the major causes of hospitalisation for conditions directly attributable to cigarette smoking, ischaemic heart disease (22%), chronic obstructive pulmonary disease (21%), and lung cancer (9%) had the highest number of admissions (Figure 6).

Figure 6: Estimated number of hospital admissions in Queensland directly attributable to cigarette smoking by major disease group and sex (1989 to 1993)



Source: Health Information Centre, 1996

Number of occupied bed days, average length of stay and estimated hospitalisation costs directly attributable to cigarette smoking, Queensland financial year 1993/94

Many of the cigarette smoking-related conditions are chronic conditions and as a result, hospital admissions tend to have a longer than average length of stay. It is estimated that the average length of stay for smoking-related conditions was 8 days compared with an overall average length of stay of 4.5 days. Moreover, the estimated cost per admission for smoking-related conditions was considerably higher (\$3,430) than the overall average cost of an admission (\$1,934).

The estimated 202,107 occupied bed days that were directly attributable to cigarette smoking cost Queenslanders \$86.6 million in the financial year 1993/94.

Conclusion

Reducing the number and proportion of Queenslanders smoking would have significant benefits to the overall health of the Queensland community. While ex-smokers are more likely to die or be hospitalised for smoking-related disease than those persons who have never smoked, the risk of suffering from a smoking-related disease is considerably reduced compared with current smokers.

The estimated 150 infant deaths between 1989 and 1993 in Queensland which were directly attributable to mothers smoking show that smoking-related disease affects all ages and is a major contributor to premature death and higher levels of hospitalisation.

The Queensland Drug Strategy 1995-1997 contains broad directions to reduce the individual and social costs of excessive and inappropriate drug use in the state. The Strategy endorses a collaborative, coordinated approach by government departments, the non-government sector and community interest groups to develop a sound and comprehensive framework within which to tackle the complex issues surrounding alcohol, tobacco and other drug use and associated problems. (Queensland Ministerial Task Force on Drug Strategy (1995) QDS 1995-1997).

References:

Better Health Outcomes for all Australians: National goals, targets and strategies for better health outcomes into the next century, Commonwealth Department of Community Services and Health, Canberra, 1994.

English DR, Holman CDJ, Milne E, Winter MG, Hulse GK, Codde JP, Bower CI, Corti B, de Klerk N, Knuiman MW, Kurinczuk JJ, Lewin GF, Ryan GA. *The quantification of drug caused morbidity and mortality in Australia, 1995 edition*. Commonwealth Department of Community Services and Health, Canberra, 1995.

APPENDIX 1

The use of aetiological fractions provides a mechanism for estimating the effects of a particular health risk factor on the mortality or hospital use of a given population. An aetiological fraction is the proportion of the disease in a specific population that would be eliminated in the absence of the risk factor.

The fractions used are those published by English et. al. 1995 - *The Quantification of Drug Caused Morbidity and Mortality in Australia, 1995* (Commonwealth Department of Human Services and Health). The fractions were determined by a comprehensive literature review of national and international studies on the contributory effects of cigarette smoking to the incidence of various tobacco-related diseases. The fractions estimate the effects of cigarette smoking for current and ex-cigarette smokers only and exclude the use of pipes or cigars or the effects of passive smoking. Therefore, the results in this publication are likely to be conservative in estimating the overall impact of tobacco use on the mortality and hospital utilisation of Queenslanders.

Some 36 conditions were identified by the study as being significantly affected by cigarette smoking. For each cigarette smoking-related condition, an aetiological fraction is provided by five year age group and sex. For example, it is estimated by the study that 85% of lung cancer in males aged between 35 and 39 years of age is directly attributable to cigarette smoking, while for ischaemic heart disease in females aged 70 years and over, 10% is estimated to be directly attributable to cigarette smoking. The published fractions for Australia have been applied to Queensland mortality and morbidity data.

APPENDIX 2

Queensland mortality 1989 to 1993, major causes of death from cigarette smoking-related disease

	Age standardised death rate per 100,000*	Total estimated no of deaths 1989-93 directly attributable to smoking	Estimated per cent of smoking-related diseases	Per cent of disease group directly attributable to cigarette smoking
Females				
Lung Cancer	10.6	798	21.1	67.3
All other cancers	4.0	317	8.4	15.2
Ischaemic heart disease	11.5	894	23.7	7.7
Stroke	5.6	448	11.9	7.9
Atherosclerosis	2.5	207	5.5	18.4
Chronic obstructive pulmonary disease	9.8	775	20.5	64.1
Other causes	4.4	336	8.9	9.6
Total tobacco related deaths	48.8	3775	100.0	14.4
Males				
Lung Cancer	49.1	3174	27.6	83.8
All other cancers	14.7	953	8.3	33.4
Ischaemic heart disease	45.7	2935	25.5	20.4
Stroke	12.4	746	6.5	18.4
Atherosclerosis	9.1	529	4.6	40.3
Chronic obstructive pulmonary disease	43.8	2602	22.6	81.4
Other causes	9.2	557	4.8	6.8
Total tobacco related deaths	184.1	11496	100.0	30.4
Persons				
Lung cancer	27.9	3972	26.0	79.9
All other cancers	8.8	1270	8.3	25.7
Ischaemic heart disease	26.9	3829	25.1	14.8
Stroke	8.4	1194	7.8	12.3
Atherosclerosis	5.2	736	4.8	30.2
Chronic obstructive pulmonary disease	23.9	3377	22.1	76.7
Other causes	6.3	893	5.8	7.7
Total tobacco related deaths	107.9	15271	100.0	23.8

* Standardised to Australian Population 1991.