

11. Cancer of the Lung

ICD-9 162

KEY FACTS

- On average 895 cancers of the lung were registered per year.
- Most common cancer in males (excluding skin cancers).
- Higher than expected numbers in the Eastern Board area.
- Lower than expected numbers in the Southern Board area for males and females.
- Higher than expected levels in Belfast and Derry District Council areas for males and females.

On average, over the 1993-95 period, 895 lung cancers were registered each year. Lung cancer accounted for 14% of all cancers in males and 7% of all cancers in females. After non-melanoma skin cancer it was the most common cancer in males and the third most common cancer in females. Almost two thirds (65%) of new cases were diagnosed in males.

The number of cases and age standardised rates have fallen in males and also, but to a much smaller extent, in females. Subsequent years data will be necessary to determine if this is a trend. The death data confirms a fall in rates among males but not amongst females. The number of deaths was about 90% the number of cases, indicating poor survival from the disease.

Table 19 Summary Statistics

Year	MALES			FEMALES		
	1993	1994	1995	1993	1994	1995
INCIDENCE						
Incident Cases	576	624	533	317	314	319
Crude Rate (per 100,000)	72.30	77.83	66.19	37.96	37.38	37.81
Cumulative Risk (0-74) (%)	6.62	7.22	6.08	3.24	3.03	2.96
WASR (per 100,000)	53.98	60.10	48.75	24.08	23.13	22.72
EASR (per 100,000)	81.00	89.26	73.15	34.39	33.15	33.31
% of All Cancers	13.62	14.54	13.13	7.16	7.28	7.43
DATA QUALITY						
Mortality : Incidence Ratio	0.94	0.83	0.92	0.85	0.84	0.85
% Death Certificate Only	4.69	2.72	2.81	5.68	3.82	2.51
% Microscopically Verified	66.32	70.67	66.98	70.35	63.69	64.26
MORTALITY						
Number of Deaths	540	518	490	268	263	269
Crude Rate (per 100,000)	67.78	64.61	60.85	32.09	31.31	31.88
Cumulative Risk (0-74) (%)	6.12	5.78	5.41	2.78	2.20	2.45
WASR (per 100,000)	50.10	48.04	44.31	20.03	17.46	19.18
EASR (per 100,000)	75.84	72.91	67.17	28.68	26.08	28.00
% of All Cancer Deaths	28.70	27.90	26.50	15.37	14.97	16.30

WASR = Rates standardised for age to the World standard population
EASR = Rates standardised for age to the European standard population

Age Profile

Before the age of 40 years lung cancer was rare (<1.5% of cases), after 40 years the rates rose steeply. About 15% of cancers were diagnosed in the very elderly (over 80 years of age) - see Figures 19 and 20.

Figure 19 Age Distribution of New Cases 1993-95, Cancer of the Lung

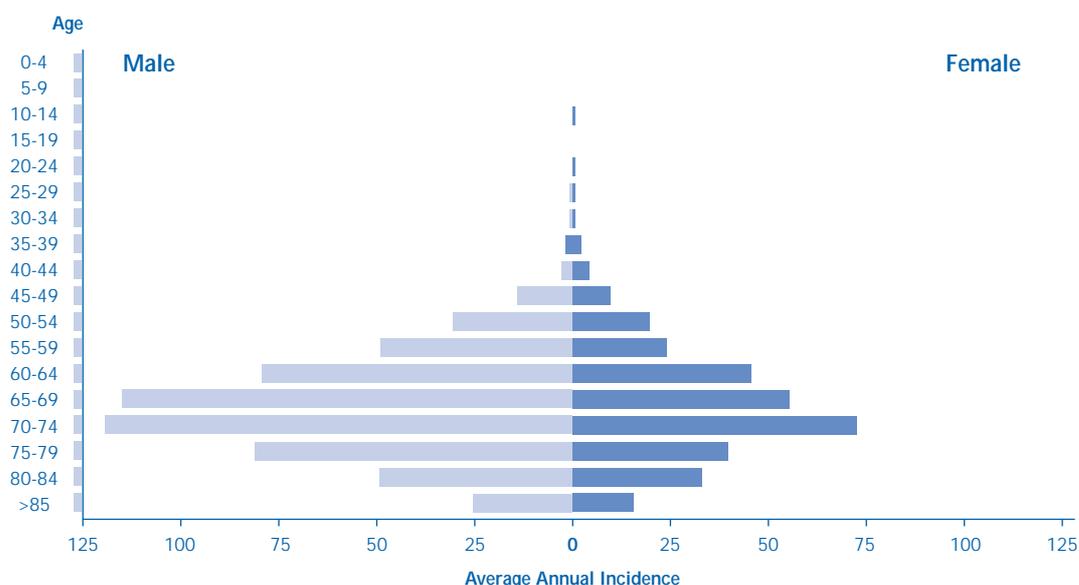
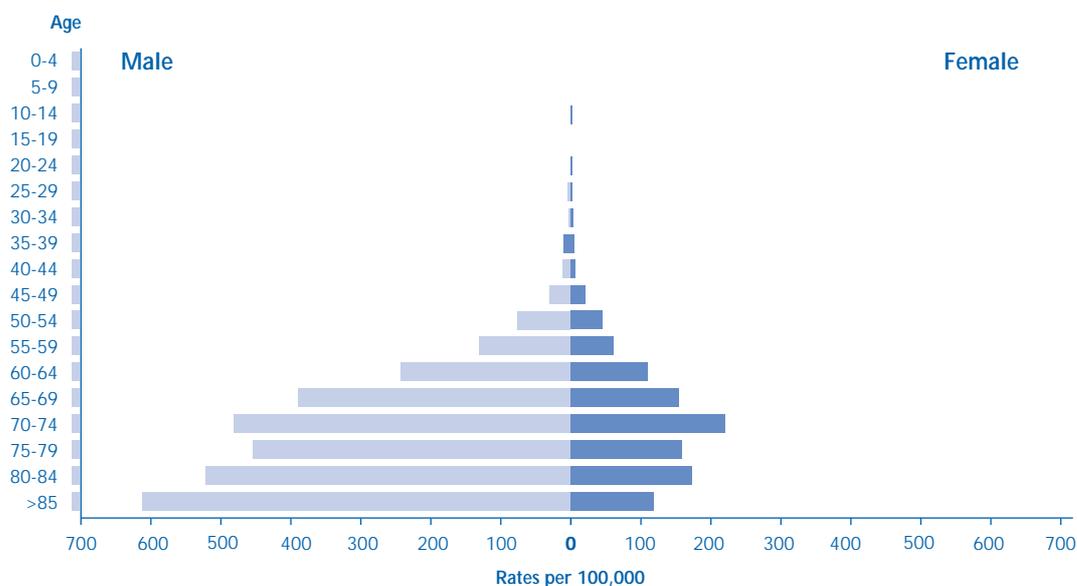


Figure 20 Average Annual Age Specific Rates (per 100,000) 1993-95, Cancer of the Lung



Morphology

About one third of cases did not have a Microscopic Verification (34% females, 32% males). Of those with a histological verification, squamous cell tumours were the most commonly diagnosed accounting for 23% of male tumours and 13% of female cancers. Small cell tumours were microscopically confirmed in 6% of male cases, 7% of female cases and oat cell in about 4% of male cases and 5% of female cases. Carcinoid tumours accounted for 1.5% of female lung tumours but was rarely diagnosed in males - see Table 20.

Table 20 Morphologies of Cancer of the Lung in Northern Ireland 1993-95

	Male	Female
Squamous Cell Carcinoma	23.0%	13.0%
Adenocarcinoma	7.7%	12.5%
Small Cell Carcinoma	6.0%	7.0%
Oat Cell Carcinoma	4.0%	5.0%
Carcinoid	0.2%	1.5%
Other carcinomas	15.0%	14.0%
Malignant tumour, NOS*	11.0%	12.0%
Not verified	32.0%	34.0%

*NOS = not otherwise specified

Geographical Distribution of Disease

Variation across Health Boards/District Councils in the observed number of cases due to differences in the age structure of the underlying population has been accounted for by using Standardised Incidence Ratios (SIRs) - see Appendix ii. Values above or below 100 indicate an excess/deficit over what would be expected if that area experienced the same level of incidence as Northern Ireland as a whole.

The Eastern Board area had a higher than expected number of lung cancers in males and females while the Southern Board had lower than expected numbers both in males and females. The Northern Board also had a lower level but only in older (>75 years) males and females.

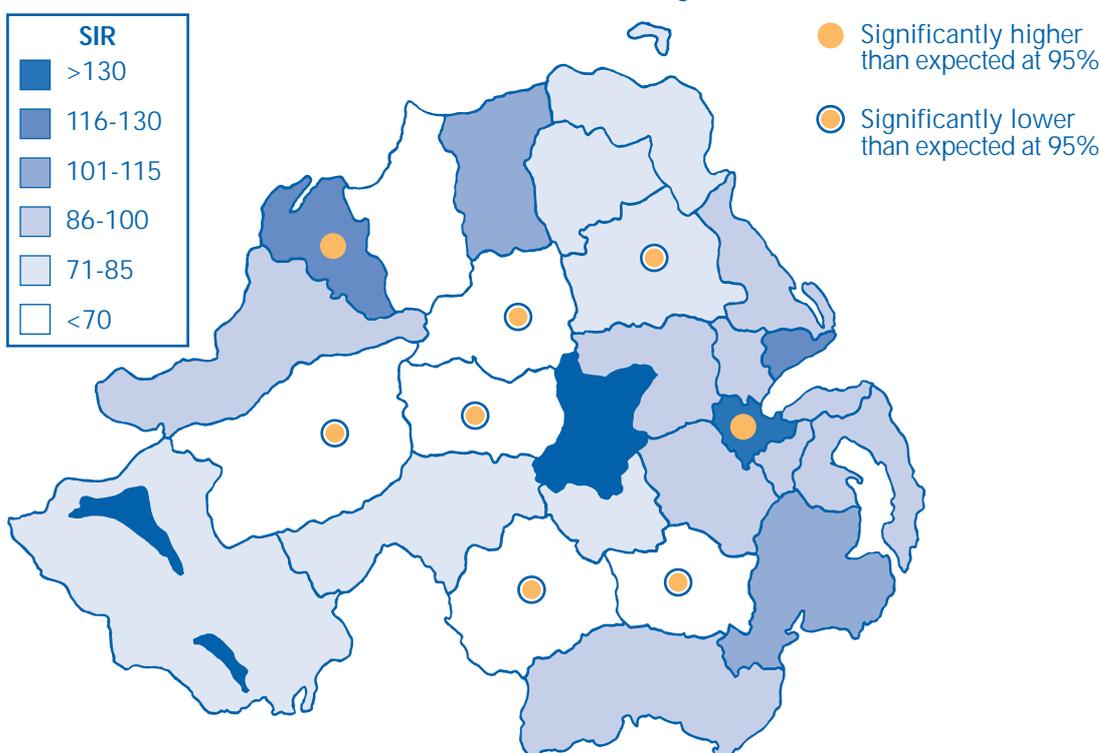
The District Council areas of Belfast and Derry had respectively 40% and 30% higher than expected numbers of lung cancers in both males and females - see Maps 4 and 5.

Lower than expected numbers (all ages) were found for Ballymena, Omagh, Cookstown, Magherafelt, Banbridge and Armagh for males - see Map 4.

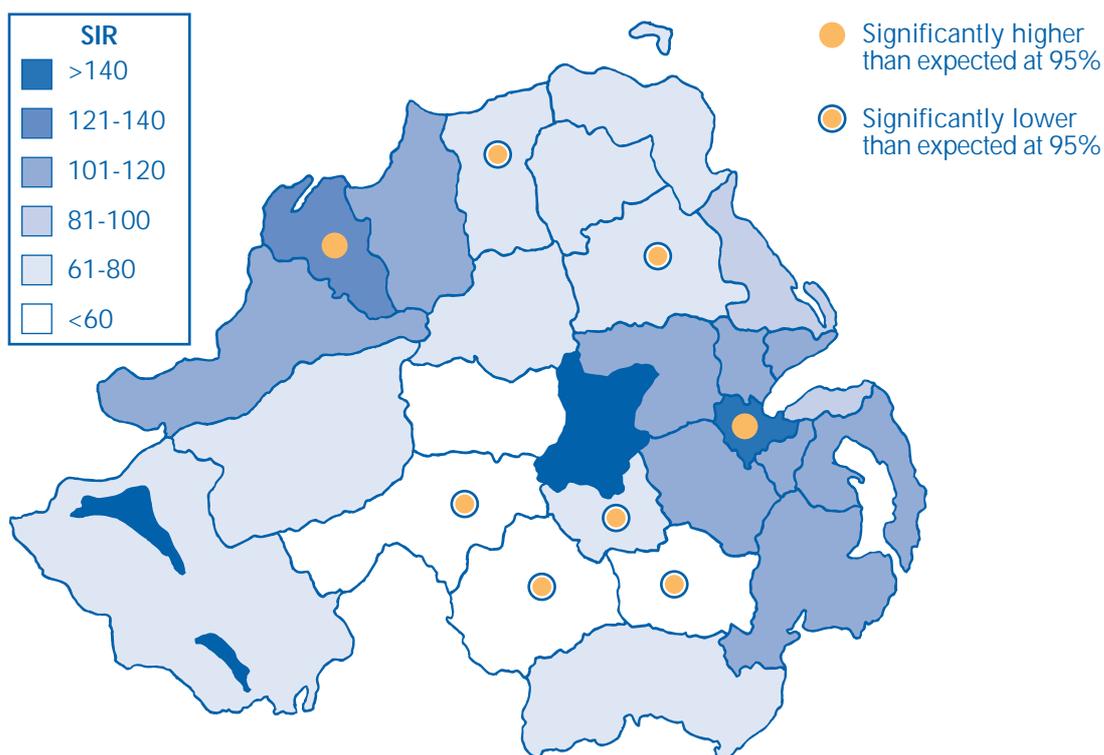
For younger males (<65 years) Ballymena, Ballymoney, Cookstown, Newtownabbey, Armagh, Limavady and Omagh had significantly lower than expected numbers of lung cancer.

Amongst females, Ballymena, Armagh, Coleraine, Craigavon, Banbridge and Dungannon had lower than expected numbers (all ages) - see Map 5. This pattern is similar to that reported for lung cancer deaths (ref: 1) and is largely explicable by variations in smoking habits.

Map 4. All Age Male Standardised Incidence Ratios (SIRs) by District Council 1993-95, Cancer of the Lung



Map 5. All Age Female Standardised Incidence Ratios (SIRs) by District Council 1993-95, Cancer of the Lung



Data Quality

Data quality improved over the period 1993-95. About 65% of cases had a Microscopic Verification of disease and about 3% were notified from Death Certificate Only (DCO). The equivalent figures for England were 65% Microscopically Verified and 10% Death Certificate Only respectively, indicating comparable levels of microscopic verification and a better case capture process in Northern Ireland.

Comparison with other Countries

Table 21 provides comparative figures for the number of cases and European Age Standardised Rates for the year 1995.

Table 21 Comparative Numbers and Rates for Britain and Ireland 1995, Cancer of the Lung

Country	Males		Females	
	Cases	EASR (per 100,000)	Cases	EASR (per 100,000)
Scotland	2754	104.70	1822	50.50
England & Wales	22400	78.20	12400	33.20
Republic of Ireland*	936	60.87	465	24.84
Northern Ireland	533	73.15	319	33.31

*ROI figures exclude Death Certificate Only (DCO) registrations

The Northern Ireland rates for males and females were higher than the Republic of Ireland and lower than Scotland. The level in males was also lower than that for England and Wales.

Comment

Over 90% of all lung cancers are caused by tobacco smoking. Exposure to radon gas must also be considered among the risks for lung cancer. Radon gas is released from the earth particularly in granite areas. This usually escapes to the atmosphere and becomes undetectable. High levels may however, be found in poorly ventilated houses in granite areas.

The geographical distribution of the incidence and mortality and the recent trends that are seen throughout Europe are largely explained by differences in smoking patterns. Because of the delay between exposure and disease presentation, even better correlations are found between rates now and smoking patterns that existed twenty to thirty years ago.

Smoking is more common in lower socio-economic groups. In Northern Ireland there are large pockets of deprivation (a good surrogate indicator for smoking levels in the population) to be found in the cities of Belfast and Londonderry. This may explain much of the geographical pattern seen here. Differences in smoking levels may also explain the geographical pattern seen throughout Europe. In Western Europe smoking is becoming much less popular and the falling smoking prevalence is matched by a corresponding fall in new cases and deaths from lung cancer. In Eastern Europe smoking levels are high and increasing and these countries have been experiencing marked rises in lung cancer.

Certain occupations also carry an increased risk of lung cancer, though it is often difficult to separate the effects from those associated with smoking. Exposure to potential carcinogens at work, e.g. electroplaters, labourers in coke ovens or occupations associated with asbestos, increases the risk of lung cancer. Environmental tobacco smoke exposure (passive smoking) is now known to contribute to lung cancer risk and may explain part of the excess risk of lung cancer found amongst publicans and bar staff.

Cancer of the lung, though rarely curable, has symptoms which can be well managed to enhance quality of life. The survival following diagnosis is generally poor and depends on the stage of the disease and the person's general health.

There is no population screening test for this disease.

For Health Gain

The focus for reducing incidence and deaths from lung cancer must be on prevention.

- Actions to reduce smoking levels include:
 - Reducing the numbers who start to smoke by banning advertising, increasing taxation, reducing availability of tobacco products and enhancing health education.
 - Helping those who smoke to stop.
- Controlling environmental (passive) tobacco smoke will reduce the levels of lung cancer and deaths in Northern Ireland.
- Those with symptoms of persistent cough, pain etc. should be encouraged to seek advice from a doctor, especially if they smoke.
- Participation in clinical trials, which can advise on the best outcomes, should be enhanced.
- The organisation of services should be such as to ensure that those with the disease have as good an outcome as possible.
- The full range of palliative care services should be available for those with established disease.