

**MORTALITY IN THE CAWT REGION:
COMPARISON WITH THE REST OF THE
ISLAND**

1989 – 1998

A REPORT ON ALL-IRELAND MORTALITY DATA

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Published by The Institute of Public
Health
in Ireland.

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ISBN: 0-9540010-7-9

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November 2001

Institute of Public Health in Ireland Publications

Health Information and Research Series

- No 1 Inequalities in Mortality 1989
– 1998. A Report on all-Ireland Mortality Data.
Prepared by Kevin P Balanda and Jane Wilde.
Dublin: The Institute of Public Health in Ireland; 2001.
- No 2 Mortality in the CAWT
Region: Comparison with the rest of the island 1989 – 1998.
A Report on all-Ireland Mortality Data. Prepared by Kevin P Balanda.
Belfast: The Institute of Public Health in Ireland; October 2001.

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Introduction

The Institute of Public Health in Ireland has been set up to promote co-operation for public health between Northern Ireland and the Republic of Ireland. Its priority is to reduce inequalities in health.

The Institute recently produced a report on mortality and mortality data on the island of Ireland (1) to promote dialogue about what could be done to protect and promote health.

Further to this, the institute was asked to undertake a small study comparing the CAWT region and the rest of the island, as part of a CAWT Health Profile which is currently being developed.

The CAWT region comprises the health and social services boards that share the North/South border. These are the Southern Health and Social Services Board and the Western Health and Social Services Board in Northern Ireland, and the North Eastern Health Board and North Western Health Board in the Republic of Ireland.

Like the main report, this report is based on nearly half a million deaths which occurred on the island of Ireland during 1989-1998. It describes mortality from sixty five causes of death for the whole island, the CAWT region and the rest of the island. Results presented here can be compared directly with those in the main report, including those for Northern Ireland, the Republic of Ireland and the (combined) fifteen countries of the European Union.

This report contains a summary of the methods used as well as the key findings and Part Three presents, with the aid of figures and tables, directly standardised mortality rates and rate ratios for each of sixty five causes of death.

The report shows that the all causes mortality rate in the CAWT region is comparable to that in the rest of the island. Both are significantly higher than the rate in the (combined) EU-15 countries. However the patterns of death in the CAWT region and the rest of the island are quite different, highlighting the special needs of the region.

The common challenge of high mortality rates compared to our European neighbours, offers the opportunity for greater North/South co-operation in public health.

For several specific causes of death there were important differences between the CAWT region and the rest of the island. Better understanding of these differences may suggest ways to improve the prevention and treatment of underlying conditions.

1 Methods

1.1 Overview

The report describes mortality on the island of Ireland for the ten year period 1989-1998. Mortality rates are presented for the whole island, the CAWT region and the rest of the island.

The CAWT region comprises the health and social services boards that share the North/South border. These are the Southern Health and Social Services Board and the Western Health and Social Services Board in Northern Ireland, and the North Eastern Health Board and North Western Health Board in the Republic of Ireland.

The methodology used here follows that used in the main report (1). Direct comparisons with Northern Ireland, the Republic of Ireland and the (combined) countries of the European Union are thus possible.

Results are presented for each of the sixty five categories in the European Shortlist of Cause of Death Categories (2). For each cause of death category, the Northern Ireland Statistics and Research Agency and the Central Statistics Office in the Republic provided the number of deaths occurring in the period 1989-1998 disaggregated by age, gender, region and occupational class. 1994 population estimates corresponding to the midpoint of the study period were taken as denominators for mortality rates (3, 4).

Direct standardisation is used to adjust for age differences. The results are expressed as directly standardised (mortality) rates per 100,000 population (DSRs) (5). The standard population was taken to be the World Health Organisation's Standard European Population (6). In order to compare the mortality experiences of two populations, we used directly standardised (mortality) rate ratios (DSRRs). These are ratios of directly standardised rates, expressed as a percentage, where the denominator serves as the base for the comparison. For regional analyses, CAWT region DSRs were compared to those for the rest of the island.

Confidence intervals for directly standardised rates and directly standardised rate ratios were derived using standard formulae. The statistical significance of a difference between two directly standardised rates was assessed through an inspection of the 99% confidence interval (adjusted for multiple comparisons) for the corresponding directly standardised rate ratio (5).

More details about methods, and definitions and conventions, can be found in Parts 3 and 4 of the main report (1).

1.2 Limitations

Underlying limitations in the data used have certainly affected death counts and mortality rates. Until the methodological issues described in Part Three of the main report (1) are better understood, some of the results presented here are best interpreted cautiously.

Differences in the data collection protocols and procedures used in Northern Ireland and the Republic of Ireland affect not only comparisons of the CAWT region and the rest of the island, but also within CAWT investigations. The main report (1) highlighted the following differences:

- death certification practices amongst the elderly, particularly with regard to pneumonia and chronic respiratory diseases
- the use of other information to establish external cause of death, particularly with regard to suicides and self-harm, homicides/assaults and accidental poisonings
- cause of death coding practices, particularly with regard to asthma and diabetes mellitus

These examples are known differences in methodology; other important differences might surface if a systematic review of protocols and procedures was undertaken.

The main report made some specific recommendations to support the data collections within each jurisdiction and to reduce North/South differences in data collection protocols and procedures, so that North/South data can be combined and compared in a more meaningful way. These recommendations included establishing an All-Ireland group to advise on the further development of the island's mortality collections and to co-ordinate these developments across the border. In addition, the main report recommended that the quality of occupation data on the mortality collections should be reviewed and strengthened with particular focus on females, those outside the working ages and the unemployed. Part Three of the main report (1) gives more details.

Finally, we should recognise that patterns in mortality reflect not only underlying disease and disability in a population, but also the care seeking behaviors of its members, the way it locates and operates its health care services, the practices of its health care workers, its methods of death registration, and patterns of internal migration. Consideration of these and other issues is required when interpreting regional differences in mortality.

2 Key Findings

No difference in all causes mortality

For both males and females, there was no meaningful difference between the directly standardised mortality rate in the CAWT region and the rest of the island. The crude all causes mortality rates in the CAWT region were 680.3 per 100,000 females and 1046.4 per 100,000 males, compared to 680.1 per 100,000 females and 1045.7 per 100,000 males in the rest of the island. As a consequence, the CAWT region (like the whole island) compared unfavourably to Europe during the period 1989-1998.

Although all causes mortality rates in the CAWT region and the rest of the island were comparable, there were significant differences in the contributing causes of death. For some causes of death, the directly standardised mortality rates in the CAWT region were significantly higher than they were for the rest of the island. Offsetting these, the directly standardised mortality rates for other causes of death in the CAWT region were significantly lower than they were in the rest of the island.

Most of the significant regional differences were observed amongst both females and males. The chief exceptions were respiratory diseases, and external causes of injury and poisoning. For these, the significant regional differences were only observed amongst males.

Higher mortality for circulatory diseases and other causes

Compared to the rest of the island, the directly standardised mortality rate for diseases of the circulatory system was (significantly) 4% higher in the CAWT region. This excess mortality in the CAWT region was also statistically significant for ischaemic heart disease and cerebrovascular disease.

The directly standardised mortality rate was also (significantly) higher in the CAWT region for other causes of death:

- for respiratory diseases, it was 4% higher (particularly pneumonia)
- for injuries and poisonings, it was 14% higher (particularly transport accidents and homicides/assaults)

The largest excess in directly standardised mortality rates in the CAWT region was for homicides/assaults: the rate was 57% higher in the CAWT region than it was in the rest of the island.

Lower mortality for malignant neoplasm and other causes

Compared to the rest of the island, the directly standardised mortality rate for malignant neoplasms was (significantly) 4% lower in the CAWT region. This was true for many of the cancer sites included in the study, particularly for cancers of the larynx and trachea/bronchus/lung and the ovary.

The directly standardised mortality rate was also significantly lower in the CAWT region for other causes of death:

- for diabetes mellitus, it was 19% lower
- for mental and behavioral disorders, it was 40% lower (particularly for drug dependence, toxicomania)
- for diseases of the nervous system and the sense organs, it was 22% lower
- for rheumatoid arthritis and osteoarthritis, it was 28% lower

Future action

The common challenge of high mortality rates compared to our European neighbours, offers the opportunity for greater North/South co-operation in public health.

For several specific causes of death there were important differences between the CAWT region and the rest of the island. Better understanding of these differences may suggest ways to improve the prevention and treatment of underlying conditions.

3 Summary Mortality Figures and Tables

3.1 Explanatory notes

The numbers of deaths reported in Table 1 are annual numbers of deaths. Rate calculations were based on the total numbers of deaths for the period 1989-1998, which were ten times (10 x) the numbers in the table.

All mortality rates are annual rates, expressed as number of deaths per 100,000 population per year.

In all tables and figures, annual numbers of deaths were rounded to the nearest unit and rates were rounded to the first decimal place. Rate ratios used in the text were based on the unrounded values of two rates, and then rounded to the nearest unit.

When interpreting the results presented here it is important to distinguish between a 'statistically significant' difference and a difference that may be 'practically important' or interesting.

All directly standardised rates (DSRs) are standardised to the WHO's Standard European Population. This report uses five year age groups 0-4 years, ..., 70-74 years with the last age group being 75+ years. See Appendix 3.

In Table 1 on page 14, the 'PERSONS' entry in the NUMBER column may not be the sum of the 'FEMALES' and 'MALES' entries because of rounding error.

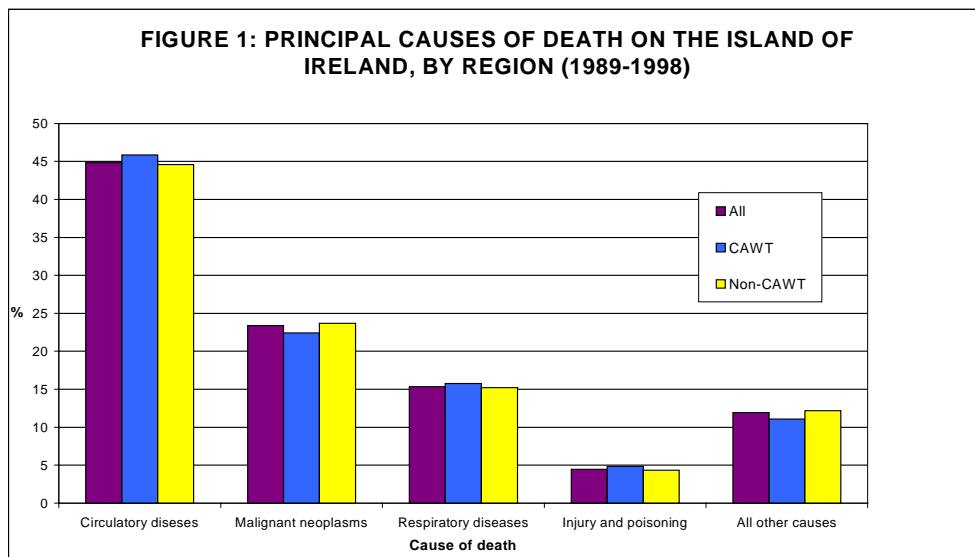
Rate ratios in Table 1 on page 14, are shaded red if they are significantly high, shaded green if they are significantly low.

3.2 Main causes of death.

Principal causes of death (Figure 1)

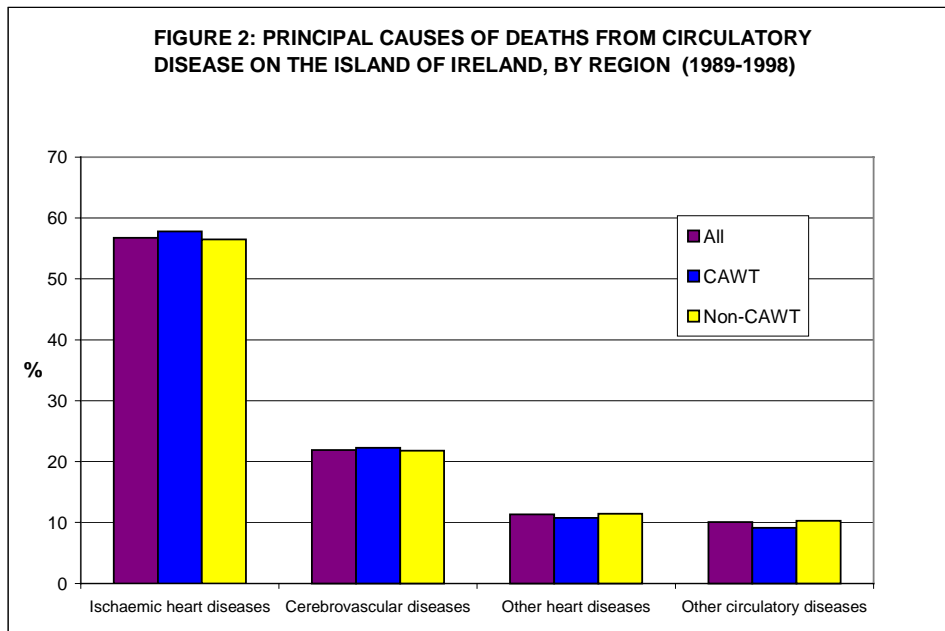
In both regions, the leading causes of death (in order of the number of deaths) were circulatory diseases (45%), malignant neoplasms (24%), respiratory diseases (15%), and injuries and poisonings (4%). These four categories accounted for nearly 90% of all deaths on the island.

The percentages of deaths due to diseases of the circulatory system and respiratory disease, injury and poisoning, were all slightly higher in the CAWT region while the percentage of deaths due to malignant neoplasms was slightly lower.



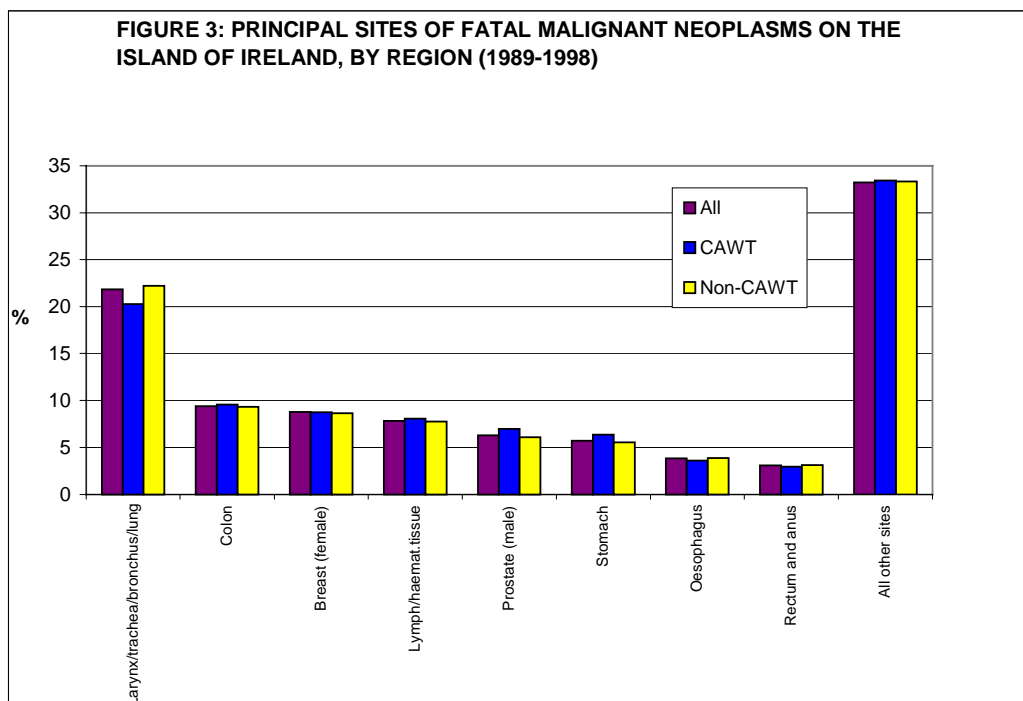
Circulatory diseases (Figure 2)

In both regions, ischaemic heart disease was responsible for more than half of all deaths due to circulatory diseases. Cerebrovascular diseases accounted for another 20% of such of deaths.



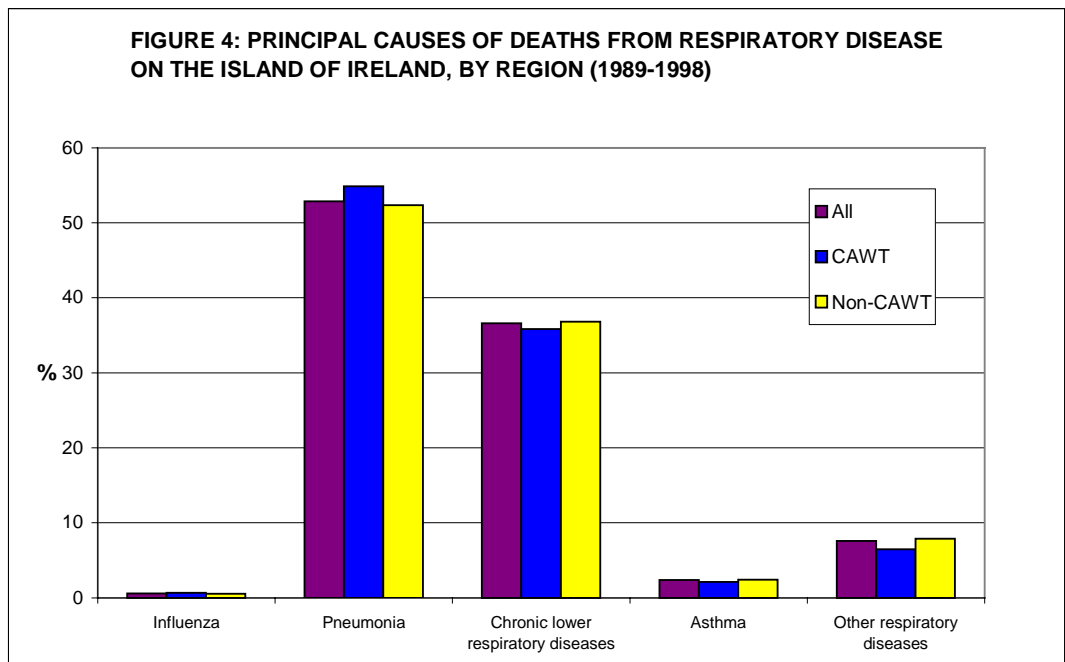
Malignant neoplasms (Figure 3)

The largest percentage of fatal cancers occurred in the larynx/trachea/bronchus/lung. They accounted for about one fifth of all cancer deaths, with a slightly lower percentage in the CAWT region. This was followed by the colon (9% of all cancer deaths), female breast (9% of all cancer deaths), the lymph/haematopoietic tissue (8%), the male prostate (6% of all cancer deaths) and the stomach (6% of all cancer deaths). These sites accounted for two-thirds of all cancer deaths on the island.



Respiratory diseases (Figure 4)

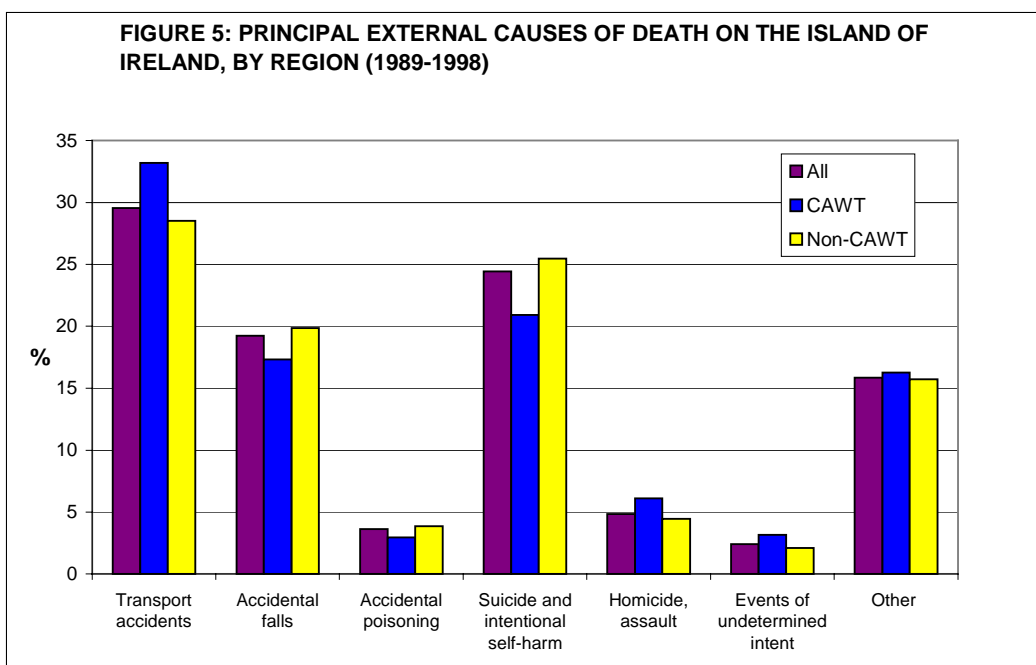
Over half of all deaths from respiratory diseases on the island were due to pneumonia, with the percentage being slightly higher in the CAWT region. Chronic lower respiratory disease accounted for another third of such deaths, with the percentage in the CAWT region being slightly lower than



on the rest of the island.

Injuries and poisonings (Figure 5)

Transport accidents accounted for nearly a third of all injury and poisoning deaths, with the percentage being higher in the CAWT region. Similarly, homicides/assault also accounted for a greater percentage of injury and poisoning deaths in the CAWT region. Offsetting these, the percentages of all injury and poisoning deaths due to accidental falls and suicides and international self-harm were all lower in the CAWT region.



3.3 Directly standardised rates and ratios

Table 1, on pages 14-20, presents the annual directly standardised mortality rates across the island for the sixty five cause of death categories in the European Shortlist. It also presents the directly standardised mortality rate ratios that show differences between the CAWT region and the rest of the island.

**TABLE 1 AVERAGE ANNUAL NUMBER OF DEATHS (1989-1998) ,
ANNUAL DIRECTLY STANDARDISED MORTALITY RATES (PER 100,000)
AND RATE RATIOS (AS PERCENTAGES)**

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
00	ALL CAUSES OF DEATH							
	Females	22,622	680.3	4,555	681.1	1,8067	680.1	100.1
	Males	24,219	1,046.4	5,197	1,049.0	1,9022	1,045.7	100.9
	Persons	46,841	841.4	9,752	847.8	3,7090	839.3	
01	INFECTIOUS AND PARASITIC DISEASES							
	Females	105	3.4	21	3.5	84	3.4	101.4
	Males	122	5.2	25	4.9	97	5.3	92.9
	Persons	227	4.2	46	4.1	181	4.3	96.4
02	Tuberculosis							
	Females	29	0.9	5	0.4	23	0.3	119.3
	Males	41	1.8	7	0.4	34	0.4	95.2
	Persons	70	1.3	12	0.4	57	0.4	106.7
03	Meningococcal infection							
	Females	9	0.4	2	0.4	7	0.3	119.0
	Males	10	0.4	2	0.4	8	0.4	95.2
	Persons	19	0.4	4	0.4	15	0.4	106.7
04	AIDS (HIV-disease)							
	Females	5	0.2	0	0.0	5	0.2	8.7
	Males	21	0.8	1	0.2	20	1.0	20.8
	Persons	26	0.5	1	0.1	25	0.6	19.0
05	Viral hepatitis							
	Females	4	0.1	0	0.1	3	0.1	33.1
	Males	5	0.2	1	0.2	5	0.3	81.8
	Persons	9	0.2	1	0.1	8	0.2	59.9
06	NEOPLASMS							
	Females	5,199	179.3	1,014	175.0	4,185	180.4	97.0
	Males	5,903	260.4	1,208	250.3	4,695	263.1	95.1
	Persons	11,102	212.7	2,222	207.1	8,880	214.2	96.6
07	Malignant neoplasms							
	Females	5,129	177.1	995	171.9	4,135	178.4	96.4
	Males	5,839	257.6	1,190	246.7	4,649	260.5	94.7
	Persons	10,968	210.2	2,185	203.7	8,783	211.9	96.1
08	Of the lip, oral cavity, pharynx							
	Females	52	1.7	18	1.6	35	1.8	90.4
	Males	130	5.9	32	5.4	98	6.1	87.7
	Persons	183	3.7	50	3.3	133	3.7	89.4

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
09	Of the oesophagus							
	Females	166	5.2	29	4.6	137	5.4	85.3
	Males	254	11.4	51	10.7	204	11.6	92.6
	Persons	420	8.1	79	7.5	341	8.2	90.8
10	Of the stomach							
	Females	253	8.0	53	8.3	200	7.9	104.0
	Males	37	16.5	86	17.9	287	16.2	110.0
	Persons	626	11.8	139	12.7	487	11.5	109.8
11	Of the colon							
	Females	501	16.2	101	16.5	400	16.1	102.6
	Males	530	23.4	108	22.5	422	23.7	94.8
	Persons	1,030	19.3	209	19.2	822	19.4	98.7
12	Of the rectum and anus							
	Females	136	4.4	27	4.5	109	4.4	100.4
	Males	205	9.1	39	8.2	166	9.4	87.7
	Persons	341	6.5	65	6.2	275	6.6	93.6
13	Of the liver and the intrahepatic bile ducts							
	Females	80	2.6	16	2.6	63	2.6	98.4
	Males	102	4.5	20	4.0	83	4.6	86.4
	Persons	182	3.4	36	3.2	146	3.5	91.7
14	Of the pancreas							
	Females	252	8.2	52	8.4	201	8.1	103.6
	Males	261	11.6	54	11.3	208	11.7	96.5
	Persons	514	9.7	105	9.8	408	9.7	100.2
15	Of the larynx and trachea/bronchus/lung							
	Females	790	27.4	131	22.9	658	28.5	80.3
	Males	1,606	71.6	312	65.7	1,294	73.2	89.8
	Persons	2,396	46.7	443	42.1	1,952	47.8	88.1
16	Of the skin							
	Females	49	1.7	10	1.7	39	1.7	100.8
	Males	38	1.7	7	1.4	31	1.7	81.2
	Persons	86	1.7	17	1.6	70	1.7	91.1
17	Of the (female) breast							
		954	36.6	191	36.1	762	36.3	99.4
18	Of the cervix uteri							
		105	4.2	21	4.1	84	4.2	97.4
19	Of other parts of uterus							
		97	3.3	20	3.3	78	3.3	98.6

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
20	Of the ovary	302	11.5	52	10.2	249	11.9	86.0
21	Of the prostate	689	29.2	153	29.9	536	29.1	102.7
22	Of the kidney							
	Females	72	2.5	15	2.6	57	2.4	106.6
	Males	117	5.3	24	5.2	93	5.3	98.2
	Persons	189	3.7	39	3.8	150	3.7	102.2
23	Of the bladder							
	Females	81	2.4	16	2.5	65	2.4	100.5
	Males	170	7.4	35	7.1	135	7.5	94.5
	Persons	252	4.5	51	4.2	201	4.5	98.3
24	Of the lymph/haematopoietic							
	Females	385	13.0	76	13.1	309	13.0	100.4
	Males	473	20.6	100	20.6	373	20.6	99.9
	Persons	859	16.4	176	16.4	682	16.4	100.6
25	DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS, IMMUNOLOGICAL DISORDERS							
	Females	77	2.3	14	2.1	63	2.3	89.8
	Males	68	2.9	17	3.3	51	2.8	116.5
	Persons	145	2.5	31	2.6	114	2.5	102.9
26	ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES							
	Females	327	10.0	59	9.1	268	10.2	88.7
	Males	313	13.5	55	11.1	258	14.2	78.2
	Persons	640	11.5	114	9.9	527	11.9	83.2
27	Diabetes mellitus							
	Females	239	7.1	42	6.2	197	7.4	84.2
	Males	243	10.5	42	8.6	201	11.1	77.8
	Persons	482	8.6	84	7.3	397	9.0	81.4
28	MENTAL AND BEHAVIOURAL DISORDERS							
	Females	189	5.5	22	3.2	167	6.1	52.7
	Males	170	7.3	25	5.2	145	7.8	65.9
	Persons	359	6.5	46	4.2	313	7.1	59.7
29	Alcohol abuse (including alcoholic psychosis)							
	Females	24	1.1	3	0.7	21	1.2	55.6
	Males	50	2.3	10	2.2	40	2.3	93.8
	Persons	73	1.7	12	1.4	61	1.7	81.6
30	Drug dependance, toxicomania							
	Females	11	0.4	1	0.3	10	0.5	56.2
	Males	38	1.5	3	0.7	35	1.7	43.1
	Persons	49	1.0	5	0.5	44	1.1	45.6

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
31	DISEASES OF THE NERVOUS SYSTEM AND THE SENSE ORGANS							
	Females	414	12.9	66	10.7	348	13.5	78.8
	Males	392	16.6	68	13.6	324	17.4	78.0
	Persons	806	14.5	134	12.0	672	15.2	78.0
32	MENINGITIS (OTHER THAN MENINGOCOCCAL INFECTION)							
	Females	10	0.4	1	0.2	8	0.4	48.2
	Males	8	0.3	1	0.2	7	0.4	59.6
	Persons	18	0.3	2	0.2	16	0.4	53.4
33	DISEASES OF THE CIRCULATORY SYSTEM							
	Females	10,281	290.8	2,129	299.9	8,152	288.5	103.9
	Males	10,732	467.3	2,345	477.0	8,387	464.7	102.6
	Persons	21,013	370.1	4,473	381.6	16,539	367.1	103.9
34	Ischaemic heart disease							
	Females	5,106	147.3	1,095	157.4	4,011	144.8	108.8
	Males	6,817	299.7	1,491	307.6	5,326	297.6	103.4
	Persons	11,922	215.4	2,586	226.6	9,336	212.5	106.6
35	Other heart disease							
	Females	1,331	35.8	264	35.0	1,067	36.0	97.3
	Males	1,044	44.6	218	43.0	826	45.0	95.6
	Persons	2,375	39.9	422	38.8	1,893	40.1	96.7
36	Cerebrovascular disease							
	Females	2,745	75.9	573	78.9	2,172	75.2	105.0
	Males	1,853	79.9	423	83.8	1,431	78.0	107.4
	Persons	4,598	77.9	996	81.6	3,602	77.0	106.1
37	DISEASES OF THE RESPIRATORY SYSTEM							
	Females	3,658	101.0	7,34.9	101.7	2,914	100.9	100.8
	Males	3,530	149.9	794	155.6	2,736	148.3	104.9
	Persons	7,188	120.9	1,538	124.5	5,650	119.9	103.8
38	Influenza							
	Females	26	0.7	6	0.8	21	0.7	116.4
	Males	16	0.7	5	0.9	12	0.6	142.7
	Persons	43	0.7	10	0.8	32	0.7	125.9
39	Pneumonia							
	Females	2,212	57.8	469	60.6	1,743	57.1	106.2
	Males	1,588	67.0	375	72.6	1,213	65.4	111.0
	Persons	3,800	61.8	844	65.9	2,956	60.7	108.5
40	Chronic lower respiratory disease							
	Females	1,054	32.1	204	31.0	850	32.3	95.7
	Males	1,577	67.3	346	68.7	1,230	67.0	102.5
	Persons	2,631	46.1	550	46.6	2,080	45.9	101.5

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
41	Asthma							
	Females	89	3.1	16	2.9	73	3.2	91.3
	Males	79	3.5	17	3.5	63	3.5	101.1
	Persons	169	3.3	33	3.2	136	3.3	95.5
42	DISEASES OF THE DIGESTIVE SYSTEM							
	Females	711	21.3	149	22.1	562	21.2	104.4
	Males	620	27.1	130	26.6	490	27.2	97.6
	Persons	1,331	24.0	279	24.2	1,052	23.9	101.0
43	Ulcer of stomach, duodenum and jejunum							
	Females	141	3.9	31	4.2	110	3.9	109.6
	Males	150	6.5	33	6.5	118	6.5	101.0
	Persons	291	5.0	63	5.3	228	5.0	105.2
44	Chronic liver disease							
	Females	84	3.3	17	3.2	67	3.4	96.2
	Males	102	4.8	18	4.1	84	5.0	82.4
	Persons	186	4.0	35	3.7	151	4.1	89.3
45	DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE							
	Females	65	1.8	14	2.0	51	1.8	111.3
	Males	38	1.6	8	1.5	30	1.6	92.1
	Persons	102	1.7	21	1.8	81	1.7	102.9
46	DISEASES OF THE MUSCULOSKELETAL SYSTEM/CONNECTIVE TISSUE							
	Females	151	4.5	25	3.6	127	4.7	77.0
	Males	70	3.0	12	2.4	58	3.2	75.8
	Persons	221	3.9	37	3.1	185	4.1	77.1
47	Rheumatoid arthritis and osteoarthritis							
	Females	80	2.3	13	1.8	67	2.5	73.1
	Males	34	1.5	5	1.1	29	1.6	69.8
	Persons	114	2.0	18	1.5	96	2.1	72.3
48	DISEASES OF THE GENITO-URINARY SYSTEM							
	Females	436	12.1	92	12.7	344	11.9	106.7
	Males	405	17.2	88	17.1	317	17.2	99.5
	Persons	841	14.1	180	14.5	661	14.0	103.5
49	Diseases of the kidney and ureter							
	Females	325	9.1	69	9.6	256	9.0	106.5
	Males	300	12.8	64	12.4	236	12.9	96.9
	Persons	625	10.6	133	10.8	492	10.5	102.0
50	COMPLICATIONS OF PREGNANCY, CHILDBIRTH AND PUERPERIUM (FEMALE)							
		2	0.1	0	0.1	2	0.1	129.0
51	CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD							
	Females	80	3.4	18	3.4	62	3.4	100.9
	Males	110	4.4	27	4.8	84	4.3	111.7
	Persons	191	3.9	45	4.1	146	3.9	107.1

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
52	CONGENITAL MALFORMATIONS AND CHROMOSOMAL ABNORMALITIES							
	Females	135	5.5	30	5.5	105	5.5	101.6
	Males	154	6.1	38	6.8	116	5.9	113.9
	Persons	289	5.8	67	6.2	221	5.7	108.3
53	Congenital malformations of the nervous system							
	Females	28	1.1	7	1.2	22	5.5	101.6
	Males	27	1.0	7	1.2	20	5.9	113.9
	Persons	55	1.1	13	1.2	44	5.7	108.3
54	Congenital malformations of the circulatory system							
	Females	44	1.8	10	11.9	35	1.8	105.5
	Males	56	2.2	13	2.3	43	2.2	107.1
	Persons	100	2.0	23	2.1	78	2.0	106.3
55	SYMPTOMS, SIGNS, ABNORMAL FINDINGS, ILL-DEFINED CAUSES							
	Females	156	4.6	25	3.8	131	4.8	78.4
	Males	122	5.1	21	4.0	101	5.4	73.6
	Persons	278	4.9	46	3.9	232	5.2	75.5
56	Sudden infant death syndrome							
	Females	25	1.1	4	0.7	21	1.2	63.7
	Males	41	1.6	6	1.1	35	1.8	59.9
	Persons	66	1.4	10	0.9	56	1.5	61.4
57	Unknown and unspecified causes							
	Females	56	1.6	9	1.4	47	1.6	90.8
	Males	39	1.7	7	1.4	32	1.8	80.6
	Persons	95	1.6	16	1.4	79	1.7	85.4
58	EXTERNAL CAUSES OF INJURY AND POISONING							
	Females	633	21.6	134	22.8	498	22.3	107.2
	Males	1,450	58.0	338	64.9	1,112	56.2	115.4
	Persons	2,083	39.6	473	44.0	1,610	38.5	114.2
59	Accidents							
	Females	498	16.1	107	17.4	391	15.8	109.7
	Males	919	36.7	219	41.7	700	35.4	117.8
	Persons	1,417	26.3	326	29.6	1,091	25.5	116.1
60	Transport accidents							
	Females	161	5.9	40	7.3	121	5.5	132.9
	Males	454	17.2	116	21.2	338	16.2	130.9
	Persons	616	11.4	157	14.3	459	10.7	132.9
61	Accidental falls							
	Females	223	6.1	44	6.0	179	6.2	75.1
	Males	178	7.7	37	7.5	141	7.7	93.6
	Persons	401	7.0	82	6.9	320	7.1	87.1

	DISEASE OR EXTERNAL CAUSE	ALL IRELAND (ALL)		CAWT REGION		NON-CAWT REGION		RATE RATIO (CAWT: NON-CAWT)
		Number	Rate	Number	Rate	Number	Rate	%
62	Accidental poisoning							
	Females	24	1.0	4	0.8	20	1.0	75.1
	Males	52	2.1	10	2.0	41	2.1	93.6
	Persons	76	1.5	14	1.4	62	10.3	87.1
63	Suicide and intentional self-harm							
	Females	103	4.2	18	3.6	86	4.4	82.8
	Males	406	16.3	82	15.8	324	16.4	96.4
	Persons	509	10.2	99	9.7	410	10.3	94.7
64	Homicide/assault							
	Females	16	0.6	4	0.8	12	0.6	133.8
	Males	85	3.3	25	4.7	60	3.0	158.1
	Persons	101	2.0	29	2.8	72	1.8	156.6
65	Events of undetermined intent							
	Females	14	0.5	4	0.9	9	0.5	185.9
	Males	36	1.5	11	2.2	25	1.3	168.7
	Persons	50	1.0	15	1.5	34	0.9	173.8

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Appendix 1

The European Shortlist of Cause of Death Categories

	DISEASE OR EXTERNAL CAUSE	ICD-9 CODES
00	ALL CAUSES OF DEATH	001-E999
01	INFECTIOUS AND PARASITIC DISEASES	001-139
02	Tuberculosis	010-018,137
03	Meningococcal infection	036
04	AIDS (HIV-disease)	042-044
05	Viral hepatitis	070
06	NEOPLASMS	140-239
07	Malignant neoplasms	140-208
08	Malignant neoplasms of the lip, oral cavity, pharynx	140-149
09	Malignant neoplasms of the oesophagus	150
10	Malignant neoplasms of the stomach	151
11	Malignant neoplasms of the colon	153
12	Malignant neoplasms of the rectum and anus	154
13	Malignant neoplasms of the liver and the intrahepatic bile ducts	155
14	Malignant neoplasms of the pancreas	157
15	Malignant neoplasms of the larynx and trachea/bronchus/lung	161-162
16	Malignant neoplasms of the skin	172
17	Malignant neoplasms of the (female) breast	174
18	Malignant neoplasms of the cervix uteri	180
19	Malignant neoplasms of other parts of uterus	179,182
20	Malignant neoplasms of the ovary	183.0
21	Malignant neoplasms of the prostate	185
22	Malignant neoplasms of the kidney	189.0
23	Malignant neoplasms of the bladder	188
24	Malignant neoplasms of the lymph/haematopoietic tissue	200-208
25	DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS, IMMUNOLOGICAL DISORDERS	279-289
26	ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES	240-278
27	Diabetes mellitus	250
28	MENTAL AND BEHAVIOURAL DISORDERS	290-319
29	Alcohol abuse (including alcoholic psychosis)	291,303
30	Drug dependence, toxicomania	304-305
31	DISEASES OF THE NERVOUS SYSTEM AND THE SENSE ORGANS	320-389
32	Meningitis (other than meningococcal infection)	320-322
33	DISEASES OF THE CIRCULATORY SYSTEM	390-459
34	Ischaemic heart disease	410-414
35	Other heart disease	420-423,425-

36	Cerebrovascular disease	429 430-438
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	DISEASE OR EXTERNAL CAUSE	ICD-9 CODES
37	DISEASES OF THE RESPIRATORY SYSTEM	460-519
38	Influenza	487
39	Pneumonia	480-486
40	Chronic lower respiratory disease	490-494,496
41	Asthma	493
42	DISEASES OF THE DIGESTIVE SYSTEM	520-579
43	Ulcer of stomach, duodenum and jejunum	531-534
44	Chronic liver disease	571.0-571.9
45	DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE	680-709
46	DISEASES OF THE MUSCULOSKELETAL SYSTEM/CONNECTIVE TISSUE	710-739
47	Rheumatoid arthritis and osteoarthritis	714-715
48	DISEASES OF THE GENITO-URINARY SYSTEM	580-629
49	Diseases of the kidney and ureter	580-594
50	COMPLICATIONS OF PREGNANCY, CHILDBIRTH AND PUERPERIUM (FEMALE)	630-676
51	CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD	760-779
52	CONGENITAL MALFORMATIONS AND CHROMOSOMAL ABNORMALITIES	740-759
53	Congenital malformations of the nervous system	740-742
54	Congenital malformations of the circulatory system	745-747
55	SYMPTOMS, SIGNS, ABNORMAL FINDINGS, ILL-DEFINED CAUSES	780-799
56	Sudden infant death syndrome	798.0
57	Unknown and unspecified causes	798.1-9,799
58	EXTERNAL CAUSES OF INJURY AND POISONING	E800-E999
59	Accidents	E800-E929
60	Transport accidents	E800-E848
61	Accidental falls	E880-E888
62	Accidental poisoning	E850-E869
63	Suicide and intentional self-harm	E950-E959
64	Homicide/assault	E960-E969
65	Events of Undetermined Intent	E980-E989

Appendix 2 Population estimates (1994)

CAWT REGION	GENDER	Age0-4	Age5-9	Age10-14	Age15-19	Age20-24	Age25-29	Age30-34	Age35-39	Age40-44	Age45-49	Age50-54	Age55-59	Age60-64	Age65-69	Age70-74	Age75+	All Ages
	Females	41,984	46,748	51,065	45,819	37,768	36,794	38,268	35,654	33,234	31,065	25,114	22,233	20,999	20,614	19,443	32,743	53,9542
	Males	44,586	49,379	53,492	48,868	42,957	38,351	37,815	35,953	34,180	32,162	26,065	22,468	20,373	18,498	15,956	21,109	54,2207
NON-CAWT REGION	GENDER	Age0-4	Age5-9	Age10-14	Age15-19	Age20-24	Age25-29	Age30-34	Age35-39	Age40-44	Age45-49	Age50-54	Age55-59	Age60-64	Age65-69	Age70-74	Age75+	All Ages
	Females	146,840	161,219	180,633	176,884	165,386	151,531	155,804	143,676	132,580	124,092	101,012	89,599	85,149	82,541	76,567	129,639	2,103,147
	Males	155,259	169,732	191,581	184,521	173,295	149,251	148,574	140,401	132,456	124,882	101,822	87,973	79,933	70,396	59,577	74,452	2,044,101
ISLAND OF IRELAND	GENDER	Age0-4	Age5-9	Age10-14	Age15-19	Age20-24	Age25-29	Age30-34	Age35-39	Age40-44	Age45-49	Age50-54	Age55-59	Age60-64	Age65-69	Age70-74	Age75+	All Ages
	Females	188,823	207,966	231,698	222,703	203,154	188,325	194,071	179,330	165,814	155,157	126,126	111,832	106,148	103,155	96,009	162,382	2,642,689
	Males	199,845	219,111	245,073	233,388	216,252	187,602	186,389	176,354	166,635	157,043	127,887	110,441	100,305	88,894	75,533	95,560	2,586,308

Appendix 3

WHO Standard European Population

Age (in years)	European standard population
0-4	8,000
5-9	7,000
10-14	7,000
15-19	7,000
20-24	7,000
25-29	7,000
30-34	7,000
35-39	7,000
40-44	7,000
45-49	7,000
50-54	7,000
55-59	6,000
60-64	5,000
65-69	4,000
70-74	3,000
75+	4,000
Total	100,000