BRONCHITIS IN THE INSURED POPULATION OF NORTHERN IRELAND

BY

C. W. KIDD AND A. T. PARK

Ministry of Health and Local Government and Ministry of Finance, Northern Ireland

Oswald (1958) raises a doubt whether bronchitis is an English disease or an English diagnosis. This emphasizes the fact that most of the present knowledge of this and other chronic diseases is derived from mortality statistics and judged on this basis bronchitis ranks extremely high in the United Kingdom. England and Wales head the list, with Northern Ireland second, followed by Scotland and Spain; Denmark occupies the lowest place. It is difficult to explain why the recorded mortality rates in the other European countries, Canada, and the United States should be so much lower. Christensen and Wood (1958), after examining the variables, including diagnostic habits in both countries, conclude that there is a real excess of the disease labelled bronchitis in England and Wales as compared with Denmark.

It is clear that morbidity data on bronchitis, from whatever source it may be derived, should give a better picture of the incidence of the disease and its incapacitating effect on the population. Several valuable *ad hoc* studies have been carried out, of which recent notable contributions are from Newcastle-upon-Tyne (Ogilvie and Newell, 1957) and Salford (Hughes, 1957).

Stuart-Harris (1954) has shown that it is possible to use the analyses derived from national insurance data as a basis for estimating the size of the problem. Digests of statistics analysing certificates of incapacity are issued annually by the Ministry of Pensions and National Insurance and show, under fifty main diagnostic headings, the causes of incapacity for work for virtually the entire working population of Great Britain, including both employed and self-employed persons. This information

is based on doctors' certificates issued for purpose of sickness benefit.

Separate and similar analyses are carried out in Northern Ireland by the Ministry of Labour and National Insurance with a much smaller population at risk. Using this data, Park and Kidd (1958), in a general study on morbidity in the insured population in Northern Ireland, have shown that in terms of the duration of spells of incapacity bronchitis takes a high place and has a longer median duration than that experienced in Scotland.

Having full regard to the limitations of morbidity studies derived from national insurance sources, it was still felt worthwhile to record further statistical data of this widespread disease.

Information was available on a 20 per cent. sample basis for the three complete years ending May 31, 1955, 1956, and 1957, in the form of new spells commencing each year, the duration of spells completed each year, and the number of spells lasting more than one year. The diagnoses were coded according to the Abridged List of the International Statistical Classification of Diseases.

Morbidity was heaviest in the middle year under review and this was reflected in the bronchitis figures. For men the only diagnostic groups with inception rates higher than bronchitis were influenza, diseases of the stomach, arthritis, and accidents. For married women, the complications of pregnancy, childbirth, and puerperium, anaemia, and arthritis and for other women anaemia, influenza, and tonsillitis had higher inception rates.

Table I (overleaf) shows that the inception rate for bronchitis is about one and a half times higher for married women than for men, whereas for other

TABLE I
NUMBER OF NEW SPELLS OF INCAPACITY AND INCEPTION RATES FOR BRONCHITIS; SHOWING NUMBER OF SPELLS OF SICKNESS PER 1,000 EXPOSED TO RISK, BY AGE AND SEX (20 PER CENT. SAMPLE)

Sex	Age Group (yrs)	1954-55		1955-56		1956-57	
		No. of Spells	Inception Rates	No. of Spells	Inception Rates	No. of Spells	Inception Rates
Men	15-19	112	15.8	106	14.9	104	14.4
	20-29	159	11.4	167	12.0	183	13.2
	30-39	206	14.1	254	17.4	231	15.7
	40-49	329	22.4	343	23.3	367	24.8
	50-59	450	36.0	488	39.0	419	33.5
	60-64	161	35.0	234	50.9	191	35.7
	Total	1,417	21.0	1,592	23.6	1,495	22.0
Women ..	Married .. .	15-19	8	—	6	—	—
		20-29	65	26.0	78	31.2	70
		30-39	66	34.7	76	40.0	62
		40-49	78	39.0	75	37.5	64
		50-59	50	35.7	70	50.0	56
		60-64	—	—	—	—	—
	Total	267	33.3	305	38.1	258	32.3
	Other .. .	15-19	129	17.7	119	16.3	126
		20-29	144	19.0	139	18.3	139
		30-39	39	13.0	76	25.3	49
		40-49	44	16.9	59	22.7	56
		50-59	58	20.7	61	21.8	63
		60-64	—	—	—	—	—
	Total	414	17.8	454	19.5	433	18.6

TABLE II
RATIOS OF INCEPTION RATES FOR BRONCHITIS FOR THE THREE SEX-MARITAL GROUPS, BY AGE

Age Group (yrs)	1954-55			1955-56			1956-57		
	M.W.	O.W.	M.W.	M.W.	O.W.	M.W.	M.W.	O.W.	M.W.
	M	M	O.W.	M	M	O.W.	M	M	O.W.
15-19	—	1.1	—	—	1.1	—	—	1.2	—
20-29	2.3	1.7	1.4	2.6	1.5	1.7	2.3	1.4	1.4
30-39	2.5	0.9	2.7	2.3	1.5	1.6	2.3	1.0	2.2
40-49	1.7	0.8	2.3	1.6	1.0	1.7	1.4	0.9	1.6
50-59	1.0	0.6	1.7	1.3	0.6	2.3	1.2	0.7	1.8
All Ages	1.6	0.8	1.7	1.6	0.8	2.0	1.5	0.8	1.7

women it is lower than for men. After age 20 male inception rates increase steadily with age; for women there is a slight increase with age, but this is by no means consistent. The ratios of inception rates for the three sex-marital groups shown in Table II demonstrate some interesting points. Why, for example, should young married women have so much more bronchitis than the other two groups?

Table III (opposite) shows that the duration of spells of incapacity for married women are on the average longer than for men and for other women. In 1956-57, 38 per cent. of the spells for married women lasted less than 3 weeks; the corresponding figure for men was 44 per cent. and for other women 54 per cent.

Table IV (opposite) shows the number of spells of bronchitis which caused the patient to be incapacitated for more than one year; from the known age distribution of the three groups it is clear that the incidence of long-term bronchitis increases with age. It is difficult to draw conclusions from this Table as the actual numbers in the sample are small, but married women seem to have, overall, a worse experience than the other two groups and this is supported by the age-specific rates. There are, in fact, relatively more married women than men in this category and only about one per 1,000 other women are incapacitated for more than one year. In males there is an appreciable increase in long-term bronchitic illness from about age 50.

TABLE III
DURATION OF COMPLETED SPELLS FOR BRONCHITIS, BY SEX (20 PER CENT. SAMPLE)

Sex	Duration (days)	1954-55			1955-56			1956-57		
		No. of Spells	Percentage	Cumulative Percentage	No. of Spells	Percentage	Cumulative Percentage	No. of Spells	Percentage	Cumulative Percentage
Men	1-3	16	1.1	—	35	2.2	—	16	1.0	—
	4-6	131	9.0	10.1	142	9.1	11.3	161	10.4	11.4
	7-12	283	19.5	29.6	270	17.2	28.5	258	16.7	28.1
	13-18	256	17.7	47.3	261	16.6	45.1	249	16.1	44.2
	19-24	169	11.7	59.0	162	10.3	55.4	167	10.8	55.0
	25-48	296	20.4	79.4	360	22.9	78.3	339	22.0	77.0
	49-78	136	9.4	88.8	147	9.4	87.8	137	8.9	85.9
	59-156	82	5.6	94.4	110	7.0	94.7	107	6.9	92.8
	157-312	39	2.7	97.1	34	2.2	96.9	50	3.2	96.0
	312+	42	2.9	100.0	49	3.1	100.0	61	4.0	100.0
	Total	1,450	100.0	—	1,570	100.0	—	1,545	100.0	—
Women ..	Married ..	1-3	2	.8	3	1.0	—	3	1.1	—
		4-6	19	7.5	18	6.1	7.1	21	7.7	8.8
		7-12	33	13.1	55	18.6	25.7	39	14.2	23.0
		13-18	48	19.1	54	18.3	44.0	42	15.3	38.3
		19-24	33	13.1	25	8.5	52.5	27	9.9	48.2
		25-48	57	22.6	67	22.7	75.2	66	24.1	72.3
		49-78	24	9.5	27	9.2	84.4	26	9.5	81.8
		59-156	18	7.1	24	8.1	92.5	26	9.5	91.3
		157-312	10	4.0	12	4.1	96.6	13	4.7	96.0
		312+	8	3.2	10	3.4	100.0	11	4.0	100.0
	Total	252	100.0	—	295	100.0	—	274	100.0	—
	Other ..	1-3	1	.2	4	.9	—	—	—	—
		4-6	38	9.1	38	8.5	9.4	50	11.2	—
		7-12	100	23.9	98	21.8	31.2	104	23.3	34.5
		13-18	82	19.6	78	17.4	48.6	87	19.5	54.0
		19-24	48	11.5	57	12.7	61.3	46	10.3	64.3
		25-48	86	20.5	86	19.2	80.5	81	18.1	82.4
		49-78	34	8.1	52	11.6	92.1	29	6.5	88.9
		59-156	19	4.5	20	4.5	96.6	26	5.8	94.7
		157-312	7	1.7	11	2.4	99.0	14	3.1	97.8
		312+	4	.9	5	1.0	100.0	10	2.2	100.0
	Total	419	100.0	—	449	100.0	—	447	100.0	—

TABLE IV
NUMBER OF SPELLS FOR BRONCHITIS LASTING MORE THAN A YEAR, BY AGE AND SEX (20 PER CENT. SAMPLE)

Sex ..	Men			Women					
				Married			Other		
	1954-55	1955-56	1956-57	1954-55	1955-56	1956-57	1954-55	1955-56	1956-57
Age Group (yrs)									
20-29	7	4	3	3	4	3	3	3	4
30-39	6	6	5	7	12	9	2	2	3
40-49	24	18	17	7	14	12	12	13	7
50-59	96	92	76	15	14	15	10	15	14
60-64	46	62	57	—	—	—	—	—	—
Total ..	179	182	158	32	44	39	27	33	28
Total per 1,000 Exposed to Risk ..	2.6	2.7	2.3	4.0	5.5	4.9	1.2	1.4	1.2

These Tables are of considerable general interest, especially because the expected pattern is disturbed by the experience of married women. When one considers that the mortality rate for bronchitis in Northern Ireland is appreciably greater for men than for women, it is surprising that this is not reflected in the inception rates and long-term rates in this

morbidity experience. The ratio of male to female mortality at all ages is about 3 : 1. In married women as a class it may be true to say that the duration of incapacity for work may be determined by factors unrelated to health.

It is appreciated that with the limited numbers available it is impossible to draw firm conclusions.

However, a broad pattern is given indicating general trends and the approximate size of the problem. It is estimated that for the year ending April 31, 1958, the number of working days lost through bronchitis in Northern Ireland was 820,000. In the absence of data on occupation it has been impossible to give information on social class experience in Northern Ireland. Regionalized statistics will shortly be available and these will be of assistance in relating this disease to environment and atmospheric pollution. It is not possible with the data at present available to consider seasonal variations, which would enable a comparison to be made with mortality experience and climatic conditions, but further studies of the

problem of bronchitis in Northern Ireland are at present under consideration from many angles.

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