THE AUTUMN INFLUENZA OUTBREAK IN ENGLAND AND WALES

BY

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The impression, gathered from various general sources, of the recent outbreak of influenza is that it first appeared in Yorkshire, spread almost immediately to the north and then more slowly to the south of the country, and that the northern section had the more severe experience. The attack rate, particularly in schools and closed communities, appears to have been very large, with a low fatality rate. It has been shown* that influenza epidemics are invariably accompanied by a rise in the number of deaths attributed to other causes, particularly to diseases of the respiratory and circulatory systems, and that the deaths from influenza account for only one-quarter to one-third of the increased mortality occurring in the epidemic period. It seemed of interest to examine the available data to see whether there were any indications of regional differences in size or severity of the epidemic.

TABLE I.—Deaths and Notifications of Acute Pneumonia in the Great Towns, 1957

Week No.	Date	No. of Deaths			Notifi- cations of Acute Pneu- monia	Increases of 1957 over 1956		
		All Causes	Pneu- monia	In- fluenza		All Causes Deaths	Pneu- monia Deaths	Pneumonia Notifi- cations
35	Aug. 31	4,474	144	2	101	105	0	18
36	Sept. 7	4,689	177	8	125	33	19	21
37	" 14	4,692	245	47	210	44	84	86
38	" 21	5,211	273	121	447	651	121	352
39	" 28	5,410	418	282	809	869	266	630
40	Oct. 5	6,070	493	442	1,078	1,496	337	930
41	" 12	6,761	572	591	1,226	1,869	380	1,065
42	" 19	6,544	552	600	1,359	1,416	347	1,190
43	" 26	6,263	507	396	1,059	1,457	345	859
44	Nov. 2	5,706	406	263	782	464	207	598
45	" 9	5,661	306	149	435	346	102	258
46	" 16	5,779	328	102	365	280	92	140
47	" 23	5,947	353	70	293	340	120	68
48	" 30	6,248	338	84	294	335	39	38
49	Dec. 7	6,999	468	88	390	1,077	142	63

Although the outbreak was unusual in time of appearance the mortality was not exceptional. The number of deaths attributed to influenza in the great towns in the 11-weeks period (September 14 to November 23) centred on the week of the maximum was 3,063 compared with 2,844 and 7,752 in the spring outbreaks of 1953 and 1951, the previous two

*Mortality in Influenza Years, *Med. Offr.*, 1952, 87, 127.

influenza epidemics. The rise in the influenza mortality can, at present, be shown only from the data of the great towns, which in recent years have contributed about 55% of the deaths from all causes in the whole country. The deaths from all causes, influenza, and pneumonia, and the notifications of pneumonia in the great towns are shown in Table I.

Deaths from all causes and from pneumonia were at a maximum in week 41, and they were 1.4 and 3.0, respectively, times the number of deaths in the corresponding week of 1956. The maximum for influenza deaths and for the notifications of acute pneumonia occurred a week later. The number of notifications of pneumonia was 8.0 times the number in the same week of 1956, and only five deaths from influenza were registered in the 42nd week of 1956. During weeks 40–43 influenza accounted for 32.5% of the 6,238 deaths in excess of the 1956 total, and the excess of pneumonia deaths formed 22.6% of the rise in deaths.

The death rates from influenza in the great towns by region and week of registration are shown in Table II. It is clear that influenza first appeared in the north of the country, and in week 38 the three northern regions had 85% of the 121 deaths. The maximum occurred in week 40 in the East and West Ridings and the North-west, in the following week in the North, Midlands, and Wales, and in the week after in the remainder of the country. The lowest death rates were in London and the South-east Region and in the Eastern Region, with maximum rates of 19 and 21 respectively. The South-western towns had a very high rate of 62 per million in week 42; this was due to Bristol C.B., where 16 of the 38 deaths were registered. For the remaining regions the maximum rate ranged from 31 to 45. A regional comparison of the epidemic by means of deaths and in time, and it is possible that the fatality rate was different in the areas first attacked and those attacked later. Moreover, the great towns form a varying proportion of the

TABLE II.—Death Rates from Influenza Per Million in the Great Towns

Week	Date	North	East and West Ridings	North-west	North Midlands	Midlands	East	London and South-east	South	South-west	Wales
35	Aug. 31	—	0.4	0.3	—	—	—	—	—	—	—
36	Sept. 7	—	0.4	1	—	0.4	1	—	—	—	—
37	" 14	3	6	4	2	3	—	0.5	—	—	—
38	" 21	11	12	17	17	3	2	0.2	—	—	—
39	" 28	21	28	31	12	10	3	—	—	—	—
40	Oct. 5	30	34	42	26	22	6	—	—	—	—
41	" 12	38	21	38	43	45	14	14	18	10	16
42	" 19	30	17	29	37	43	21	19	31	62	34
43	" 26	9	7	17	19	27	18	16	31	20	19
44	Nov. 2	8	6	8	17	17	18	12	18	13	10
45	" 9	3	2	5	7	7	10	7	13	15	6
46	" 16	3	2	5	6	3	7	4	9	5	7
47	" 23	3	2	3	4	2	3	3	6	7	7
48	" 30	1	1	3	4	3	5	4	8	3	1
49	Dec. 7	1	2	3	6	1	3	5	8	3	1

TABLE III.—New Claims to Sickness in England and Wales Expressed as a Percentage of the Number in Week 35

Week	Date	England and Wales	North	East and West Ridings	North-west	North Midlands	Midlands	East	London South-east	South	South-west	Wales
35	Aug. 31	100	100	100	100	100	100	100	100	100	100	100
36	Sept. 7	116	113	136	129	114	108	107	109	100	104	113
37	" 14	145	148	200	175	136	121	122	119	113	112	149
38	" 21	193	216	256	274	179	150	139	135	120	127	223
39	" 28	356	453	483	545	341	290	217	205	182	202	431
40	Oct. 5	436	550	450	612	463	434	333	295	284	329	489
41	" 12	454	499	333	506	470	527	478	427	418	535	400
42	" 19	436	357	237	347	405	473	591	573	584	700	318
43	" 26	339	238	179	231	284	320	502	506	549	565	242
44	Nov. 2	260	178	153	177	214	227	393	393	422	260	197
45	" 9	192	145	131	144	164	162	276	274	284	187	147
46	" 16	161	141	127	416	144	141	206	200	202	187	151
47	" 23	160	142	129	158	148	147	187	187	193	187	155
48	" 30	164	139	126	163	149	150	189	195	198	194	155
49	Dec. 7	172	136	124	157	152	155	209	225	213	204	155

population exposed to risk in the different regions—for example, in the region of East and West Ridings 56.3% of the population live in the large towns, while in the South-west Region the percentage is only 25.4. A more general picture of the amount of sickness experienced can, however, be obtained from the new claims to sickness benefit under the National Insurance Act. These claims, expressed as a percentage of the claims in week 35, are shown in Table III.

The week of the maximum and the order of occurrence agree with the distribution of the maximum deaths in Table II. The largest rises between week 35 and the week of the maximum were in the regions of the South-west, 700%, and the North-west, 612%, while the lowest were Wales, 459%, and the East and West Ridings, 463%. Table III is based on the population of working ages and excludes married women who elected not to be insured in their own right. The most important omission is the child population, which was severely attacked by influenza. An indirect estimate of the severity of the influenza epidemic in the whole population can be obtained from the notifications of acute pneumonia; Table I shows that there is a correlation between influenza mortality and pneumonia mortality and incidence. The notifications of acute pneumonia per million population are shown in Table IV.

TABLE IV.—Notifications of Acute Pneumonia in England and Wales, 1957. Rates Per Million

Week	Date	North	East and West Ridings	North-west	North Midlands	Midlands	East	London and South-east	South	South-west	Wales	Total
35	Aug. 31 ..	4	9	4	4	6	2	3	2	3	3	4
36	Sept. 7 ..	5	11	6	4	5	5	4	2	5	5	7
37	" 14 ..	7	21	12	7	4	5	2	4	5	7	17
38	" 21 ..	24	44	30	14	14	9	4	2	6	17	16
39	" 28 ..	38	94	50	31	23	13	10	9	12	41	31
40	Oct. 5 ..	70	88	67	43	39	45	17	12	22	33	42
41	" 12 ..	88	76	63	54	66	51	27	28	44	41	51
42	" 19 ..	53	59	46	59	61	59	42	45	64	41	51
43	" 26 ..	44	37	24	45	52	66	43	39	58	31	43
44	Nov. 2 ..	11	24	16	20	30	72	38	31	51	38	32
45	" 9 ..	9	13	11	16	13	40	18	18	20	11	17
46	" 16 ..	10	16	11	7	12	28	14	12	18	13	14
47	" 23 ..	12	18	9	10	12	19	8	8	13	11	11
48	" 30 ..	11	19	9	5	9	16	8	19	14	9	11
49	Dec. 7 ..	19	22	11	16	11	23	12	14	16	9	15

The peak incidence was reached earlier in the three northern regions than in the remainder of the country. The largest maxima were 94 per million in East and West Ridings and 88 in the Northern Region, and the lowest were 41 in Wales and 43 in London and the South-east. The somewhat different picture given by Table IV from that of Table III may be due to differences in severity of the attacks between regions.

From the above comparisons it seems that London and the South-east Region had a relatively light attack and the East, South, and Wales also had a more favourable experience than the remainder of the country. The South-west Region, with very high values for new claims to sickness, number of notifications of acute pneumonia, and mortality in the large towns, was the exception to the north/south distribution of incidence.

In proportion to its population, Northern Ireland was doing three times as much as Great Britain in the field of medical welfare, said Dr. J. OLIVER, of the Northern Ireland Ministry of Health and Local Government, at a meeting in Belfast last week. There were 2,000 more hospital beds in Northern Ireland than ten years ago and four completely new hospitals were under construction, which was something without parallel in the rest of the United Kingdom. The number of medical specialists in Belfast had increased 60% since 1948, and in the rest of Northern Ireland by 200%. Infant mortality had fallen from 106 per 1,000 live births in 1913 to 29 in 1956.

SUDDEN DEATH DUE TO FULMINATING INFLUENZA

BY

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It has been stated in both the lay and the medical press that the Asian influenza epidemic was mild in nature. Certainly the reports by Lim *et al.* (1957) and Guthrie *et al.* (1957) of the epidemics in Singapore and Kuwait recorded only two deaths; and Smith *et al.* (1957) stated that in Malaya deaths were few, and the mortality was certainly low among the cases from several general practices reported in the *Journal* of November 2, 1957 (p. 1057). In Britain, however, a considerable number of deaths attributed to influenza were notified. For example, in the six-weeks period ending October 19 2,083 deaths were reported from England and Wales. Although a major factor in many of these was probably underlying pulmonary or cardiovascular disease, nevertheless a certain percentage must have been due primarily to pulmonary complications of influenza, particularly to staphylococcal and pneumococcal pneumonia. It is pertinent to note that 8,338 cases of acute pneumonia were notified from England and Wales in October, 1957. This represents a weekly average of 2,084 as against 275 in October, 1956.

Roberts (1957) described nine cases of fatal fulminating influenza in a Glasgow hospital; a further three cases seen over a 10-day period are reported here. The devastatingly sudden and unexpected manner in which death occurred in all three cases, reminiscent of the 1918-20 epidemic, justifies placing them on record; in no case was there clinical evidence of severe illness, much less impending death. In Cases 1 and 2 the patients died at home and were examined at the instance of the Procurator Fiscal, Glasgow, and the third patient died in hospital.

Case 1

A man aged 22 was found dead in bed at home early one morning approximately four hours after returning from a dance. On the day before his death he had felt slightly unwell and complained of pain in his neck. (This was found at necropsy to be due to a small furuncle on the lower jaw.) There was no relevant past history.

Post-mortem Appearances.—The body was that of a muscular, normally developed young man. The larynx, trachea, and main bronchi were intensely congested and contained some frothy blood-stained fluid. Numerous small petechial haemorrhages were evident on the pleural surfaces of the lungs, which were practically airless, grossly congested, and oedematous throughout; blood-stained frothy fluid exuded freely from the cut surface. All five lobes were an intense crimson, and both lower lobes were consolidated and so friable as to disintegrate on light finger-pressure. There was no free fluid in the pleural sacs. The heart showed no obvious abnormality apart from petechial haemorrhages over the pericardial surface. The abdominal viscera, particularly stomach and kidneys, were grossly congested. The gastric veins were greatly engorged, and appeared as though injected with indian ink. The kidneys were uniformly dark red, almost purplish. The brain was congested and oedematous.

Case 2

A man of 36 had no past history of serious illness. Three weeks before his death he had an attack of "flu" which was not severe enough to necessitate a visit by his