LONG-TERM CHANGES IN SICKNESS AND HEALTH: FURTHER EVIDENCE FROM THE HAMPSHIRE FRIENDLY SOCIETY*

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The last two decades have witnessed a growing interest in the development of new ways to examine the health of past generations. Robert Woods has compiled a much more detailed picture of mortality changes in the 614 registration districts of England and Wales between 1851 and 1900 (Woods and Shelton 1997; Woods 2000), and anthropometric historians have shed new light on changes in both height and – to a much lesser extent – weight since the mid-eighteenth century (Floud and Wachter 1982; Floud, Wachter and Gregory 1990; Harris 1994; 1995; Floud and Harris 1997; Johnson and Nicholas 1997; Komlos 1993; Cinnirella 2008; Horrell, Meredith and Oxley 2009). However, neither height nor mortality provides a comprehensive index of health (see also Oddy 1982). Although average heights provide 'a powerful tool with which to monitor the health of a population' (Eveleth and Tanner 1990: 1), they tell us little about the impact of either environmental or nutritional conditions after maximum height has been achieved and mortality rates,

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by definition, can only shed light on the effects of the illnesses, injuries and other conditions which result in death. It is therefore very important to find new evidence which is capable of shedding light on the mass of non-fatal illnesses and injuries which affected the adult population.

In a series of publications, James Riley has argued that it is possible to reconstruct the history of sickness for at least one section of the population using friendly society records (see e.g. Riley 1987; 1989; 1997). During the eighteenth and nineteenth centuries, friendly societies and other mutual-aid organisations played a vital role in providing financial and often medical assistance to large numbers of men, and some women, who were forced to take time off work as a result of ill-health (see e.g. Harris 2004: 76-87), and Riley argued that these records provided an accurate guide to sickness experience. In 1997, he used the records of one of the largest British friendly societies, the Ancient Order of Foresters, to examine trends in age-specific sickness rates between 1870 and 1914 and, to many people's surprise, he concluded that age-specific morbidity had started to rise just as mortality rates were falling (Riley 1997).

A number of other writers have also examined the health statistics generated by friendly societies and similar organisations, though with mixed results. Southall and Garrett (1991) investigated the relationship between morbidity and mortality among members of the Steam Engine Makers' Society between 1836 and 1845. They found that the average duration of sickness episodes increased with age and that both morbidity and mortality followed similar seasonal patterns. Edwards, Gorsky, Harris and Hinde (2003) used the Hampshire Friendly Society's records to challenge Riley's argument that morbidity rates rose after 1870. They argued that the Society's records provided little evidence of any significant change in morbidity rates, once age had been taken into account. Gorsky and Harris (2005) extended this analysis by examining the history of sickness rates in interwar Britain, and

Gorsky, Harris and Hinde (2006) conducted a preliminary analysis of the relationship between individual sickness histories and later-life mortality.

Although some authors agree that friendly society records might provide an accurate reflection of sickness experience, others have been more sceptical. John Macnicol (1998: 125-31) argued that the apparent increase in morbidity rates at higher ages owed more to changes in the labour market than to any objective changes in health status. His conclusion echoed earlier arguments by T.S. Ashton (1916) and Noel Whiteside (1987). John Murray (2003; 2005; 2007) argued that friendly society statistics measured absence from work, rather than sickness *per se*, and that the most important influence on recorded sickness rates was an organisation's capacity to fund sickness benefits (see also Bertillon 1892). Sheila Ryan Johansson (1991; 1992) claimed that the decision to submit a sick claim was inherently subjective, and that Riley's statistics owed more to culture than to medicine or biology.

We have argued previously that the Hampshire Friendly Society data enable us to go beyond Riley in a number of ways. In the first place, although his findings were largely dependent on the analysis of aggregated branch records, many of our findings were based on individual sickness histories. Secondly, we were also able to draw on a much more detailed set of information about the proximate causes of individual sickness claims. We suggested that these factors would enable us to draw more robust conclusions about the relationship between sickness and age and changes in the pattern of sickness claims over time, as well as shedding new light on the circumstances which induced people to take time off work because they believed themselves to be ill (Edwards, Gorsky, Harris and Hinde 2003).

This paper extends our previous work in a number of ways. Section 1 describes the construction of a new and greatly-expanded dataset which provides a much larger amount of information about the individual sickness histories of more than

five thousand men between 1824 and 1989. Section 2 examines the seasonality of sickness claims within this population and compares it with a range of historical and more contemporary studies. Section 3 explores the relationship between sickness and age and considers the extent to which the 'age-sickness profile' may have changed over time. Section 4 discusses the methodological challenges associated with the measurement of the incidence, duration and prevalence of sickness in our dataset and presents new evidence of age-specific changes in all three gauges of morbidity between 1870 and 1949. Section 5 examines the conditions and diseases which were directly associated with individual sickness claims from the mid-1890s. Section 6 explores the relationship between the individual causes of sickness and age-specific morbidity rates and section 7 offers some general conclusions and pointers for further research.

1. Sources and methods

Our earlier work was based on the Society's published reports and preliminary analysis of the sickness experience of men who joined the assurance section and were eligible for sickness benefit at different points in time between 1871 and 1912.[1] However, the total number of individual joiners was only 704, and it was only possible to follow 160 of these individuals to death (Gorsky, Harris and Hinde 2006: 576, 587). The current paper draws on a much larger body of information. It is based on the records of 5552 individuals who joined the Society between 1825

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[1] Our first paper (Edwards, Gorsky, Harris and Hinde 2003) utilised data on men who joined the Society in 1871 and 1881. The next two papers also used data relating to men who joined between 1895 and 1899, and in 1911-12 (Gorsky and Harris 2005; Gorsky, Harris and Hinde 2006). All these papers were confined to the study of male morbidity because women were prevented from assuring for sick pay, except as deposit members, from 1877 onwards (Hampshire Friendly Society 1877: Rule 48).

and 1939, and were eligible for sickness benefit between 1825 and 1981. These men constituted approximately ten per cent of all the individuals who joined the Society's assurance section over this period, including 1667 men who were followed until death.

As we have already noted, the data have been drawn from the records of the Hampshire Friendly Society. Although the great majority of British friendly societies were mutual-aid organisations, this was a county or 'patronised' society, founded by a small group of 'leading gentlemen and clergy' in Winchester in 1824 (Thick 1990: 56).[2] When it was first established, it offered a range of benefits, including sickness benefits, pensions, death benefits and childhood endowments. During much of the nineteenth century, it seems likely that the majority of members subscribed for sickness pay but an increasing proportion of new members only subscribed for pensions and death benefits from the 1890s onwards. Despite this, the Society still had more than 7500 members who qualified for some form of sickness pay on the eve of the First World War (Edwards, Gorsky, Harris and Hinde 2003: 136).

Although the Society was originally designed as an assurance society for members who paid into and drew benefits from a common fund, its range of operations expanded significantly in later years. It introduced a deposit scheme, combining sickness assurance with a personal savings scheme, in 1867, and established separate assurance and deposit schemes for juvenile members in 1883 and 1897 respectively. The Society changed its name to the Hampshire and General Friendly Society in 1901 as part of a largely unsuccessful attempt to establish a

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[2] Edwards, Gorsky, Harris and Hinde (2003: 135) suggested that 'the Hampshire Friendly Society was founded in Romsey in 1824' (p. 135). However, the Society was actually *founded* in Winchester, and the first branch was set up in Romsey in the following year (Thick 1990: 56).

more national profile, and became an approved society when statutory health insurance was introduced in 1911 (Thick 1990: 56-8).

In addition to its status as a County society, the Society was also distinctive in terms of its occupational structure and the characteristics of the area in which the great majority of its members lived. Although we only possess information about the occupations of members when they joined the Society, the available information suggests that a high proportion of the men who joined the Society between 1825 and 1938 were manual workers engaged in agriculture, forestry and fishing, transport and communication or miscellaneous services, and that only a small proportion were employed in industrial occupations, public administration or defence (Table 1). Although the Society established a small number of branches outside Hampshire towards the end of the nineteenth century, the vast majority continued to reside within the County, which was widely regarded as one of the most healthy in England. In 1899, the Society's Actuary suggested that the occupations pursued by the Society's members and the favourable environment in which they lived enabled them to enjoy 'a remarkable vitality' when compared with the Manchester Unity of Oddfellows (Edwards, Gorsky, Harris and Hinde 2003: 136). In 1910-12, the standardised mortality rate for employed and retired agricultural workers was forty per cent lower than the average for the country as a whole (Gorsky, Harris and Hinde 2006: 575).

Table 1. Occupations of men joining the Hampshire Friendly Society, 1825-1938.

		1825	1831	1841	1851	1861	1871	1881	1891	1901	1911	1921	1931	1938
1	Agriculture, forestry, fishing	4.10	5.56	1.72	4.64	4.25	7.11	10.71	6.82	10.26	11.90	8.16	8.24	10.42
1a	Labourers	12.30	11.11	17.24	50.33	32.55	31.47	33.16	29.55	15.38	19.05	11.22	0.00	8.33
2	Mining and quarrying	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.57	0.00	0.00	0.00	0.00	0.00
3	Food, drink, tobacco	2.46	2.78	1.72	4.64	8.02	4.57	4.08	6.25	5.13	4.76	9.18	9.41	11.46
6	Metal manufacture	0.82	2.78	3.45	1.32	3.77	4.57	0.51	3.98	0.00	0.00	3.06	3.53	4.17
7	Mechanical engineering	0.82	0.00	0.00	0.00	0.00	0.00	1.02	0.00	2.56	9.52	3.06	3.53	7.29
10	Shipbuilding, marine engineering	0.00	2.78	0.00	0.00	0.47	0.51	0.51	0.00	0.00	0.00	0.00	0.00	1.04
11	Vehicles	0.00	0.00	0.00	0.00	1.42	1.02	1.02	0.00	0.00	0.00	2.04	3.53	1.04
12	Metal goods	0.00	0.00	0.00	1.32	0.00	0.00	0.00	1.14	0.00	0.00	1.02	1.18	0.00
12	Other metal goods	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	Textiles	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	2.56	2.38	0.00	0.00	1.04
14	Leather, fur	1.64	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	Clothing, footwear	6.56	13.89	8.62	5.30	2.36	1.52	1.53	0.00	0.00	0.00	0.00	1.18	1.04
17	Timber, furniture	1.64	16.67	3.45	3.31	8.02	3.05	4.08	2.27	5.13	0.00	7.14	4.71	5.21
18	Paper, printing, publishing	0.82	0.00	1.72	1.32	1.42	1.52	0.51	0.57	0.00	0.00	3.06	0.00	1.04
20	Construction	1.64	0.00	0.00	1.32	5.66	6.09	1.53	1.70	0.00	2.38	1.02	8.24	7.29
21	Gas, electricity and water	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.35	3.13
22	Transport, communication	1.64	5.56	1.72	4.64	8.49	15.23	18.88	15.91	23.08	9.52	14.29	9.41	7.29
23	Distributive trades	0.00	2.78	0.00	0.00	0.00	0.51	0.00	1.70	2.56	0.00	5.10	2.35	0.00
24	Insurance, banking, finance	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	7.06	0.00
25	Professional, scientific	2.46	2.78	3.45	3.31	2.36	1.02	3.06	4.55	0.00	7.14	2.04	1.18	1.04
26	Miscellaneous services	15.57	13.89	27.59	9.93	15.57	15.74	12.24	13.64	23.08	19.05	13.27	9.41	11.46
27	Public administration, defence	0.00	5.56	0.00	0.66	1.42	0.51	0.51	1.70	2.56	2.38	4.08	3.53	2.08
	Not classified	0.00	0.00	0.00	0.00	0.00	1.02	2.04	6.25	5.13	7.14	6.12	11.76	12.50
	Not occupied	0.00	0.00	0.00	0.00	0.47	4.06	3.57	1.70	0.00	4.76	2.04	2.35	1.04
	Not stated	47.54	13.89	29.31	7.95	3.30	0.00	0.51	1.70	2.56	0.00	4.08	7.06	2.08
	Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Total (N)	122	36	58	151	212	197	196	176	39	42	98	85	96

Notes: The figures for 1825–1861 and for 1921–38 are based on the occupations of all the men who joined the Society's assurance scheme, whether or not they contracted for sickness benefit. The figures for 1871–1911 are based on those who were eligible for sickness benefit. The figures for 1871 are derived from information on the occupations of *circa* 30% of new members; the figures for 1881 and 1891 are based on information about the occupations 25 and 50% of new members respectively. The figures for other years are based on 100% of the surviving data.

Sources: 1825–91: Hampshire Friendly Society Assurance Ledgers; 1901–38: Hampshire and General Friendly Society Proposal Forms.

The main source of information about the sickness histories of HFS members is the Society's assurance ledgers and record forms. The assurance ledgers recorded the names of new members, their policy numbers, place and date of birth, date of admission, branch affiliation and the various benefits to which they were entitled. They were divided into three series. The ledgers in series one contained information about the total amount of sick pay received by each member over the whole of the period from 1825 to 1867, together with information about the total amount of pay received in each year from 1868 to 1894 inclusive. By comparing these payments with the details of each individual's benefit entitlements, we were able to calculate the total number of days on which sick pay was received in each calendar year from 1868 onwards. The second and third series of ledgers covered the period from 1895 to 1931. These documents contained direct information about the number of sick-days in each quarter, together with information about the medical conditions which caused payments to be made. The Society recorded information on sickness claims on individual record cards from 1931 onwards. The first series of record cards enabled us to reconstruct the sickness histories of individual members between 1931 and 1981. We were also able to incorporate some material from the second series of record cards, but the final part of this series will remain closed until 2020.

In order to construct the dataset, we aimed to sample every tenth member who joined the Society's assurance section from 1825 onwards. However, as not all the individuals who joined the assurance section were either male or eligible for sickness benefits, it was often necessary to skip one or more records in order to locate the next eligible member. We then used the information in the assurance ledgers to identify every occasion on which the selected members received sickness benefits during their membership of the Society. As a result, we were able to

compile complete 'sickness histories' for 5552 men, with the equivalent of 106,395 man-years of sickness exposure.

Although our sample is broadly representative of those members of the Society who were eligible for sickness benefit, there is one important difference. As we have already explained, the sample consists of approximately ten per cent of all those who joined the Society's assurance section between 1825 and 1939, but not all the men who joined the assurance section were eligible for sickness benefits, and the proportion of new joiners who were eligible for sickness benefits changed over time (Edwards, Gorsky, Harris and Hinde 2003: 137). As a result, the proportion of eligible joiners who were included in the dataset probably started to increase from the 1890s onwards. As new members were almost invariably younger than the majority of existing members, the average age of the individuals in our dataset fell in comparison with the average age of the individuals who were eligible for sickness benefit in the Society as a whole. Although this has not affected our analysis of age-specific morbidity rates, it does mean that our aggregate figures are not directly comparable with the figures which the Society itself published in its annual reports (see also section 4).

Table 2. The Hampshire Friendly Society (HFS) dataset: individual joiners, 1825-1939

Year of joining	Joiners in dataset	Year of joining	Joiners in dataset	Year of joining	Joiners in dataset	Year of joining	Joiners in dataset	Year of joining	Joiners in dataset
1825	1	1848	5	1871	86	1894	53	1917	25
1826	2	1849	7	1872	87	1895	49	1918	32
1827	2	1850	6	1873	88	1896	43	1919	54
1828	3	1851	8	1874	86	1897	46	1920	55
1829	1	1852	10	1875	94	1898	45	1921	45
1830	1	1853	12	1876	109	1899	46	1922	41
1831	1	1854	8	1877	77	1900	42	1923	54
1832	1	1855	12	1878	60	1901	32	1924	68
1833	0	1856	17	1879	51	1902	52	1925	127
1834	4	1857	20	1880	50	1903	43	1926	116
1835	2	1858	24	1881	44	1904	53	1927	125
1836	1	1859	28	1882	40	1905	53	1928	111
1837	2	1860	19	1883	48	1906	52	1929	125
1838	1	1861	17	1884	38	1907	59	1930	131
1839	3	1862	21	1885	40	1908	56	1931	125
1840	1	1863	26	1886	66	1909	56	1932	106
1841	1	1864	31	1887	75	1910	54	1933	103
1842	1	1865	34	1888	66	1911	56	1934	127
1843	1	1866	43	1889	60	1912	95	1935	122
1844	2	1867	48	1890	82	1913	37	1936	143
1845	4	1868	61	1891	83	1914	33	1937	126
1846	3	1869	76	1892	95	1915	32	1938	129
1847	4	1870	88	1893	63	1916	31	1939	93

Source: Hampshire Friendly Society dataset.

2. Sickness and seasonality

Sheila Ryan Johansson (1991: 58) has argued that as mortality rates have fallen, the populations of developed countries have begun to attach far more importance to 'trivial' conditions such as colds and influenza, but Riley's data implied that such diseases already played a leading role in the causes of sickness claims at the start of the twentieth century (Riley 1997: 192). This conclusion is reinforced by our own analysis of the Hampshire data. As we can see from Table 3, colds, catarrh and influenza accounted for between one-seventh and almost one-third of all recorded claims in selected years between 1875 and 1910, even without including the epidemic year of 1891, when 35.91 per cent of all claims were initiated under these

headings, and the proportion of claims which were associated with these causes over the period as a whole (based on the average statistics for the years for which we have data) was 21.73 per cent.

The significance of the role played by these diseases in the genesis of sickness claims provides the most plausible explanation for another enduring feature of sickness and morbidity surveys. As we have already seen, the HFS data enable us to measure the number of days on which benefit was received by individual members in each quarter of each year, and we can use this information to investigate the seasonal pattern of the claims submitted by individuals who joined the Society at different points in its history. Figures 1 and 2 show the seasonal pattern of sickness claims among men who joined the Society between 1825 and 1879, between 1880 and 1914, and between 1915 and 1939, and who received sickness benefits between 1895 and 1981. Figure 1 shows the number of sickness episodes in each quarter[3] and Figure 2 shows the number of sick days in each quarter. Both graphs reveal a remarkable consistency in the seasonal distribution of both sickness episodes and sick days across all these cohorts. In each case, sickness rates peaked during the first quarter of the year, fell during the second and third quarters, and rose during the final quarter.

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[3] If a man received sick pay in a given quarter, the total number of 'sick-days' in that quarter has been counted as a single quarterly sickness episode. This issue is discussed in more detail in section 4 below.

Table 3. Leading causes of sickness claims among members of the Hampshire Friendly Society, 1875-1910.

Number of claims	1875		1876		1877		1878		1879		1881		1887		1891		1910	
	No. of claims	%	No. of claims	%	No. of claims	%	No. of claims	%	No. of claims	%	No. of claims	%	No. of claims	%	No. of claims	%	No. of claims	%
Abscess	70	8.28	81	6.81	59	4.87	80	6.45	61	4.57	66	5.45	60	4.05	71	3.39	38	2.02
Affections of the stomach/stomach derangement	0	0.00	55	4.62	12	0.99	2	0.16	10	0.75	7	0.58	0	0.00	1	0.05	0	0.00
Affections of the throat/sore throat	0	0.00	55	4.62	31	2.56	44	3.55	56	4.19	39	3.22	19	1.28	18	0.86	1	0.05
Bronchitis	40	4.73	0	2.35	42	3.47	42	3.38	40	3.00	39	3.22	62	4.18	70	3.34	97	5.17
Catarrh	100	11.83	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Colds	103	12.19	158	13.28	191	15.76	230	18.53	269	20.15	196	16.18	183	12.34	311	14.84	164	8.74
Debility	55	6.51	50	4.20	54	6.52	57	4.42	52	4.46	49	4.05	65	4.38	80	3.82	62	3.30
Influenza	49	5.80	20	1.68	0	0.00	0	0.00	20	1.50	11	0.91	6	0.40	441	21.05	262	13.96
Injuries & accidents	153	18.11	232	19.50	190	15.68	170	13.70	197	14.76	170	14.04	276	18.61	275	13.13	333	17.74
Lumbago	25	2.96	35	2.94	27	2.23	26	2.10	34	2.55	38	3.14	63	4.25	56	2.67	66	3.52
Rheumatism	84	9.94	99	8.32	97	8.00	92	7.41	98	7.34	86	7.10	116	7.82	130	6.21	118	6.29
Others	166	19.65	405	31.68	509	39.92	498	40.30	498	36.73	510	42.11	633	42.69	642	30.64	736	39.21
Total	845	100.00	1190	100.00	1212	100.00	1241	100.00	1335	100.00	1211	100.00	1483	100.00	2095	100.00	1877	100.00

Source: Edwards, Gorsky, Harris and Hinde 2003: 152.

Figure 1. HFS: Sickness episodes per quarter

Source: Hampshire Friendly Society/Hampshire and General Friendly Society, Assurance Ledgers and Record Cards.

Figure 2. HFS: Sickness days per quarter

Source: Hampshire Friendly Society/Hampshire and General Friendly Society, Assurance Ledgers and Record Cards.

The general pattern is also remarkably consistent with the results obtained from other sources, taken from different parts of the country and covering a very long period. Harvey and Oeppen (2001: 230) calculated the number of patient-days among Benedictine monks who received treatment, either as in-patients or out-patients, at Westminster Abbey infirmary between 1297 and 1355, and between 1381 and 1417. Although there were some variations in the monthly rates, they found that 'all the indices show[ed] a clear pattern of high values in spring, followed by a summer trough'. Southall and Garrett (1991: 249) found that the incidence of sickness claims among members of the Steam Engine Makers' Society between 1835 and 1869 reached its highest level between January and March; it declined between March and September and rose between October and December. In 1953, the Registrar-General found that sickness rates for both men and women tended to peak during the first quarter of the year before falling during the second and third quarters and rising during the fourth quarter (General Register Office 1953: 15-27). Whilst these results do not invalidate the general assumptions which lie behind the 'cultural inflation of morbidity' thesis, they also suggest that there is rather more continuity in the history of morbidity than some commentators have been inclined to suggest.

3. Sickness and age

Our previous work looked at variations in the incidence, duration and prevalence of sickness claims at each year of age among men who joined the Hampshire Friendly Society in 1871, 1881, 1895-9 and 1911-12. Although all three gauges of morbidity rose with age and there was a significant increase in the prevalence of sickness from the age of 55 onwards, we found little evidence to suggest that the

precise nature of the relationship between age and morbidity changed between cohorts (see Edwards, Gorsky, Harris and Hinde 2003: 144-8; Gorsky and Harris 2005: 147-52; Gorsky, Harris and Hinde 2006: 578-86). However, we are now able to re-examine this question using a much larger body of data. We have therefore calculated the number of sick-years per man-year for each five-year age-group from 20 to 70. We have also calculated average sickness rates for each age-group in each quinquennium from 1870 to 1949. We have then aggregated the results for successive quinquennia to produce new estimates showing the relationship between age and morbidity in each of the periods 1870-89, 1890-1909, 1910-29 and 1930-49.

As we have already seen, our information about the number of sick days experienced by these individuals has been based on a number of different calculations and the Society introduced a number of administrative and regulatory changes which may also have affected the levels of sickness which were recorded (see also Edwards, Gorsky, Harris and Hinde 2003: 143-4), and these factors need to be borne in mind when considering the results. One important difference concerns the way in which sickness was recorded. In the case of injuries and illnesses contracted before 1895, we have inferred the number of sick days from the amount of benefit which each member received, but members who were ill for long periods (i.e. for more than six or twelve months) only received half or even a quarter of their normal rate, and we may have underestimated the total number of sick days during this period. However, it also important to remember that in 1887 the Society decided that it would only pay benefits to its members for six days in every week, and this may have tended to offset any tendency to underestimate the length of sickness episodes in the earlier period. We also need to remember that our measure of sickness claims is actually a measure of the number of days on which a particular individual received sick pay during the course of each year,

regardless of whether these days covered a number of different sickness episodes (for the same or even for different injuries or illnesses), and also regardless of whether a single sickness episode lasted for more than one quarter or more than one year.[4]

Although these are all important issues, we do not believe that they are likely to have made a substantial difference to our immediate findings. However, some of the results in Figure 3 may seem slightly surprising. The figures for 1870-89 show a much smaller increase in sickness with age than might have been expected. However, the number of men who were eligible for sick pay in this period was still quite small, and this was particularly true at higher ages. The results for the later periods probably provide a much better indicator of the relationship between sickness and age but also display some slightly surprising features. The figures for 1910-29 show very little increase in average sickness rates before the age of 55, with a sharp increase thereafter. The figures for 1890-1909 and 1930-49 show a much more consistent pattern of increase, although there was a noticeable acceleration in the rate of age-related morbidity in both periods above the age of fifty. However, the level of morbidity between 1930 and 1949 was also consistently lower than the level recorded between 1890 and 1909. If these figures were taken in isolation, they might appear to provide clear evidence of a long-term decline in sickness prevalence during the first half of the twentieth century.

Whilst these results are certainly suggestive, they are by no means conclusive. In order to get a better picture of changes in age-specific morbidity rates over time, we also need to examine the ways in which sickness rates changed across membership cohorts.

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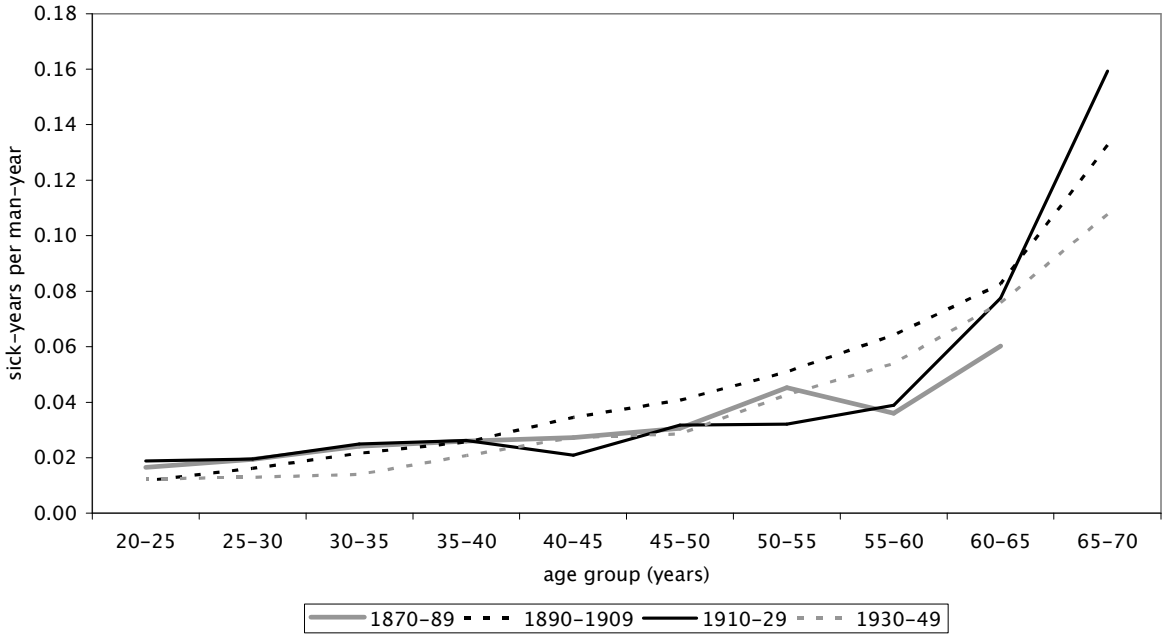
[4] We discuss this point in more detail in section 4.

Figure 3. Sickness prevalence by age, 1870-1949



Source: Hampshire Friendly Society/Hampshire and General Friendly Society, Assurance Ledgers and Record Cards..

4. Age-specific sickness rates

One of the main aims of this research has been to investigate changes in the age-specific incidence, duration and prevalence of sickness among members of the Hampshire Friendly Society from the late-nineteenth century onwards. However, it is also necessary to define our interpretation of these terms. For the purposes of this paper, the *incidence* of sickness episodes refers to the number of episodes experienced during a given time-period, and the *duration* of each episode refers to its length. We use the term *prevalence* to describe the number of sick-days experienced within a given time-period as a proportion of the number of man-days exposed to risk.

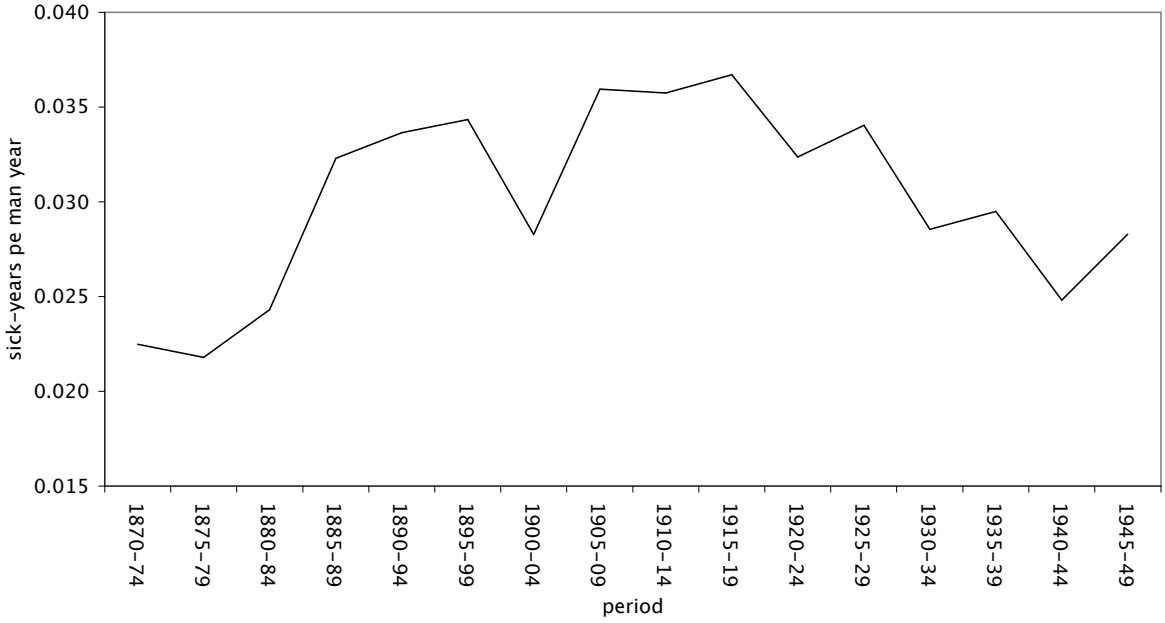
Although the measurement of sickness prevalence is relatively straightforward, the measurement of the other two gauges is rather more complicated. However, as James Riley (1999: 102) has pointed out, all three gauges are linked because the prevalence of sickness is equal to the product of the incidence and duration of sickness episodes, and by estimating the value of the first, we can also infer the value of the second.

As we have already seen, the HFS records enable us to calculate the total number of days on which each member received sick pay in each year between 1868 and 1894, and in each quarter of each year from 1895 onwards. However, we do not know how many separate episodes may have occurred within a given year or quarter, and therefore we have had to assume that all the days associated with a given time-period formed part of a single episode. The second problem is that if a man was sick in two consecutive time-periods, we do not know whether these episodes actually formed part of a single episode or two separate episodes. However, for the purposes of this analysis, we have assumed that they formed part of a single episode unless we have clear evidence to the contrary. This may mean that we have underestimated the 'true' level of sickness incidence in any period and that we have overestimated the true level of sickness duration but we have no reason to believe that the extent of any bias will have changed over time, and we can therefore be confident that our estimates are likely to provide an accurate reflection of the way in which the different gauges changed between one period and the next.

In the second section of this paper, we highlighted the fact that the age-structure of the population in our dataset differed from the age-structure of the population which was eligible for sickness benefits in the Society as a whole, and we suggested that this would make it difficult to compare the aggregate level of sickness in the dataset with the Society's own published figures. We can provide a

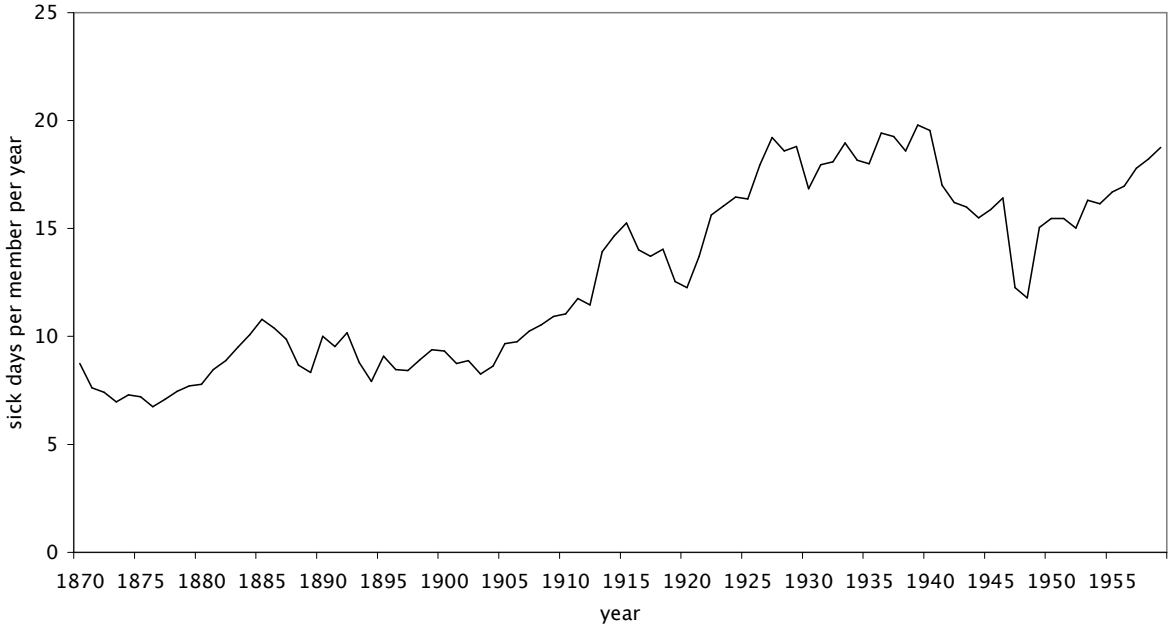
further illustration of this point by comparing the two estimates of aggregate morbidity in Figures 4 and 5. These figures show that the aggregate level of sickness in our dataset peaked during the First World War and declined throughout the interwar period. By contrast, the Society's published figures show that aggregate sickness rates continued to rise well into the 1930s.

Figure 4. HFS dataset: aggregate sickness prevalence, 1870–1949



Source: HFS dataset.

Figure 5. HFS: Sick days per member, 1870-1959



Source: Gorsky and Harris 2005: 141.

We can however obtain a more meaningful picture of changes in sickness experience from the estimates of age-specific morbidity in Figures 6-8. These figures suggest that there was a small increase in the incidence of sickness episodes among those aged 20-50 between 1870 and 1914, but a decline in the incidence of sickness episodes between the ages of 50 and 65. They also suggest that there was a small decline in the duration of sickness episodes at younger ages and a small increase at older ages. Taken together, these changes meant that there was little change in the prevalence of sickness below the age of fifty, although there may have been a small increase in sickness prevalence above that age.[5]

Although there was a small reduction in the incidence of sickness episodes between the ages of 20 and 35 after 1914, there was little change in sickness

[5] These figures probably need to be interpreted with some care. Although we have combined the results for men aged 50-55, 55-60 and 60-65, the proportion of men in this group who were aged 55 or over increased significantly between 1870 and 1914. In the quinquennium 1870-4, 43.9 per cent of the men aged 50-65 were aged 55 or over. In 1910-14, this figure was 57.6 per cent.

duration and the impact on sickness prevalence was relatively minor. There is some evidence of a reduction in both the incidence and duration of sickness episodes among those aged 50–65 during the first half of the 1920s, but little change over the period as a whole. Figures 6–8 also suggest that there was a reduction in the incidence of sickness episodes among those aged 65 to 70 and an increase in the average duration of those episodes, but this may also reflect the impact of administrative changes within the HFS and the development of new forms of statutory welfare provision, such as contributory pensions, from the mid-1920s onwards (see Edwards, Gorsky, Harris and Hinde 2003: 143–4; Harris 2004: 215–6).

Figure 6. Incidence of sickness episodes by age-group over time

Source: HFS dataset.

Figure 7. Trend in average duration of recorded sickness (minimum incidence)

Source: HFS dataset.

Figure 8. Trends in recorded sickness prevalence by age

Source: HFS dataset.

These findings have implications for those who have argued that there was an increase in age-specific morbidity over the course of this period and for those who have sought to attribute such an increase to cultural factors. James Riley argued that if the apparent increase in recorded morbidity had been caused by a lowering of the 'sickness threshold', this should have resulted in an increase in the incidence of sickness episodes rather than an increase in sickness duration, but the reverse was the case when he looked at patterns of sickness among members of the Ancient Order of Foresters (Riley 1997: 198; 1999: 106-7). However, this finding has not been reflected in our own data. Insofar as there was any change in age-specific sickness rates among HFS members before 1914, it was sickness incidence which increased, whilst duration declined.

This finding may appear to suggest that the recorded level of morbidity was being inflated by cultural factors but it also raises a somewhat larger issue. When the concept of the 'cultural inflation of morbidity' was first invoked, it was designed to answer the question of why recorded morbidity rates were rising, but our findings suggest that there was actually very little change in morbidity, once age has been taken into account. This could imply either that cultural factors were obscuring a real decline in 'objective' levels of age-specific morbidity or that the significance of the concept of the 'cultural inflation of morbidity' has itself been exaggerated.

5. The proximate causes of sickness claims

As we have already seen, much of the previous work on the history of morbidity has focused on the analysis of changes in the incidence, duration and prevalence of sickness episodes but the HFS data also provide an opportunity to examine their

proximate causes. This is because the Society's officers not only recorded the number of days on which members received sick pay but also provided brief summaries of the reasons for these payments. However, it is also important to recognise the potential limitations of these data. The Society's officers only provided very brief accounts of the medical diagnoses and their handwriting was sometimes unclear. This may therefore have led to some errors in data transcription, although we have no reason to believe that they will have made a significant difference to our overall findings.

There are also two more fundamental questions which are directly relevant to our analysis. In the first place, it is important to recognise that there have been many changes in diagnostic practice over the last 150 years (see e.g. Hardy 1994), and therefore one cannot be sure that symptoms which were interpreted in one way at the start of the twentieth century would necessarily have been interpreted in the same way by doctors practising at the end of the century. It is therefore entirely possible that some of the changes we have observed may reflect changes in diagnosis rather than changes in the distribution of disease hazards.

This issue is also directly relevant to a second difficulty. After allowing for the use of different abbreviations, legibility problems and the use of multiple diagnoses, we have estimated that the doctors who examined the men in our dataset used more than 2400 different terms to describe the conditions they observed, and it would clearly be very difficult to identify broad trends in sickness history with this level of detail. We have therefore attempted to simplify the analysis by recoding the original diagnoses using the latest iteration of the World Health Organisation's International Classification of Diseases.[6]

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[6] This can be accessed electronically at http://apps.who.int/classifications/apps/icd/icd10online/.

During the last two decades, the use of ICD codes to interpret historical changes in morbidity and the causes of mortality has attracted considerable controversy. Alter and Carmichael (1996: 48) argued that 'there has been a natural tendency among demographers to try to fit the description of deaths in earlier periods into the current International Classification of Diseases' but 'most historians of medicine reject this approach and find the results unpersuasive for both present and historical concerns'. However, Anderton and Leonard (2004) attempted to test the argument by comparing the 'literal' causes of death in two Massachusetts towns between 1850 and 1912 with the results which would have emerged if the original data had been reclassified using the Ninth ICD Revision. They found that although 'literal causes of death offer[ed] a more adequate picture of disease as understood at the time', ICD codes 'provide[d] a view of disease trends that were perhaps not fully understood or of recognised importance' when the original details were recorded.

In addition to the problems associated with the interpretation of diagnostic categories, most individuals only joined the Society in their late-teens or early-20s, and we only have data on the causes of sickness episodes from 1895 onwards. In order to make the greatest use of the information at our disposal, we have therefore decided to restrict our analysis of long-term trends in the causes of sickness episodes to men aged forty and over. We have also decided to discount episodes which occurred at the ages of 65 and over. If we did not do this, our results would also be distorted by changes in the age-structure of this group as the proportion of older men in the dataset as a whole grew larger.

Consequently, the following tables show the main changes in the incidence, duration and prevalence of the quarterly sickness episodes experienced by men between the ages of 40 and 64 who joined the Hampshire Friendly Society (or Hampshire and General Friendly Society) between 1871 and 1939, and experienced

sickness episodes between 1895 and 1981. The men have been divided into three groups, based on the year in which they joined the Society, and their sickness episodes have been classified using the Tenth Revision of the International Classification Diseases. We have also subdivided two of the ICD categories in order to distinguish between phthisis, or respiratory tuberculosis, and other infectious and parasitic diseases, and between a number of different respiratory diseases. The tables are based on the sickness records of 1265 HFS members with a total of 11,466 quarterly sickness episodes between them.

Although the tables show a high level of continuity in the overall pattern of morbidity across all three cohorts, some changes can be observed. So far as the incidence of sickness episodes is concerned, Table 4 shows that the proportion of sickness episodes attributed to phthisis, neoplasms, nervous diseases and asthma appears to have declined over time, whilst the proportion of sickness episodes attributed to bronchitis and circulatory conditions appears to have increased. There were also some intriguing changes in the average duration of the episodes attributed to different causes. Table 5 suggests that the average duration of the quarterly episodes associated with phthisis, mental and behavioural disorders, nervous diseases, diseases of the eyes and ears, asthma and circulatory diseases declined, whilst the average duration of endocrine, nutritional and metabolic disorders, musculoskeletal and genito-urinary conditions and 'symptoms, signs and abnormal findings' grew larger. The overall effect of these changes on the causes of sickness-time is shown in Table 6. This Table shows that the proportion of all sick-days associated with infectious and parasitic diseases, neoplasms, nervous conditions and asthma declined, whereas circulatory conditions, bronchitis and other respiratory diseases, digestive and genito-urinary conditions increased in importance.

It is also possible to compare these results with changes in the cause-structure of mortality in the whole of England and Wales between 1901/10 and 1979/95 (see Table 7). Although many of the leading causes of sickness, such as colds, injuries and accidents and musculoskeletal complaints, were unlikely, under most circumstances, to lead to death, some of the changes in the HFS dataset were reflected in the national mortality data. For example, infectious diseases declined in importance both as causes of sickness and as causes of death, whereas circulatory conditions increased under both headings. However, some of the differences between the two sets of data are also striking. For example, neoplasms appear to have made a very small contribution to the overall profile of sickness in the HFS dataset, despite their increasing importance in the mortality returns. This could reflect the fact that doctors may have been slow to identify the early signs of cancer when they signed workers off on the basis of other causes,[7] but it also provides a further illustration of the need to distinguish between the history of morbidity and the history of mortality.

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[7] Riley (1997: 191) made a similar point when discussing the low proportion of sickness attributed to tuberculosis at the start of the twentieth century.

Table 4. HFS: Causes of sickness episodes among men who joined the Society between 1871 and 1939, and were aged 40-64 at the time of each sickness episode

		Quarterly episodes				Quarterly episodes (% of total)			
Aged 40–64 at time of sickness	ICD chapter coding	1871–90 Joiners	1891–1914 Joiners	1915–39 Joiners	Total	1871–90 Joiners	1891–1914 Joiners	1915–39 Joiners	Total
Phthisis, etc.	I (phthisis, etc.)	98	164	27	289	3.21	4.52	0.56	2.52
Other infectious & parasitic diseases	I (other)	46	58	69	173	1.51	1.60	1.44	1.51
Neoplasms	II	51	31	27	109	1.67	0.85	0.56	0.95
Diseases of the blood, etc.	III	9	13	13	35	0.30	0.36	0.27	0.31
Endocrine, nutritional and metabolic diseases	IV	19	4	54	77	0.62	0.11	1.13	0.67
Mental and behavioural disorders	V	77	93	166	336	2.52	2.56	3.47	2.93
Diseases of the nervous system	VI	211	129	115	455	6.92	3.55	2.40	3.97
Diseases of the eyes and ears	VII–VIII	54	149	56	259	1.77	4.10	1.17	2.26
Diseases of the circulatory system	IX	234	392	563	1,189	7.67	10.79	11.77	10.37
Asthma	X (asthma)	83	36	63	182	2.72	0.99	1.32	1.59
Bronchitis, etc.	X (bronchitis, etc.)	176	241	410	827	5.77	6.64	8.57	7.21
Colds, etc.	X (colds, etc.)	417	523	540	1,480	13.67	14.40	11.29	12.91
Other diseases of the respiratory system	X (other)	49	116	183	348	1.61	3.19	3.83	3.04
Diseases of the digestive system	XI	145	289	380	814	4.75	7.96	7.94	7.10
Diseases of the skin, etc.	XII	96	107	128	331	3.15	2.95	2.68	2.89
Diseases of the musculoskeletal system	XIII	612	466	864	1,942	20.07	12.83	18.06	16.94
Diseases of the genitourinary system	XIV	45	62	130	237	1.48	1.71	2.72	2.07
Symptoms, signs etc.	XVIII	216	194	322	732	7.08	5.34	6.73	6.38
Injuries etc.	XIX	291	498	535	1,324	9.54	13.71	11.18	11.55
Unclassified	No information	5	3	0	8	0.16	0.08	0.00	0.07
No information	Unclassified	116	64	139	319	3.80	1.76	2.91	2.78
	Total	3,050	3,632	4,784	11,466	100.00	100.00	100.00	100.00

Source: HFS dataset

Table 5. HFS: Duration of quarterly sickness episodes among men who joined the Society between 1871 and 1939, and were aged 40-64 at the time of each sickness episode

Age 40-64		Joiners 1871-1890	Joiners 1891-1914	Joiners 1915-39	All Joiners
	ICD chapter coding	Days	Days	Days	Days
Phthisis, etc.	I (phthisis, etc.)	68.08	71.29	58.05	69.10
Other infectious & parasitic diseases	I (other)	18.80	21.67	18.28	19.54
Neoplasms	II	47.94	46.65	43.64	46.50
Diseases of the blood, etc.	III	42.33	39.40	40.25	40.58
Endocrine, nutritional and metabolic diseases	IV	38.94	58.25	47.22	45.68
Mental and behavioural disorders	V	66.60	57.91	50.04	55.95
Diseases of the nervous system	VI	74.24	72.09	61.66	70.59
Diseases of the eyes and ears	VII-VIII	45.17	57.36	32.92	49.47
Diseases of the circulatory system	IX	61.34	54.59	54.66	55.97
Asthma	X (asthma)	51.05	27.31	29.37	38.87
Bronchitis, etc.	X (bronchitis, etc.)	30.66	31.25	31.27	31.14
Colds, etc.	X (colds, etc.)	17.35	17.35	16.57	17.07
Other diseases of the respiratory system	X (other)	21.23	29.16	23.77	25.21
Diseases of the digestive system	XI	29.22	37.31	28.91	31.92
Diseases of the skin, etc.	XII	24.90	22.50	20.99	22.62
Diseases of the musculoskeletal system	XIII	32.81	27.04	40.48	34.70
Diseases of the genitourinary system	XIV	35.52	37.84	49.72	43.93
Symptoms, signs etc.	XVIII	25.74	28.79	29.30	28.11
Injuries etc.	XIX	23.72	32.22	26.45	28.01
Unclassified	Unclassified	43.96	32.60	40.02	39.95
No information	No information	10.00	22.67	0.00	16.33
Total		36.60	36.12	34.59	35.62
Average age of members experiencing sickness		53.54	53.10	52.26	52.87

Source: HFS dataset

Table 6. HFS: Proportion of sickness time associated with different causes among by men who joined the Society between 1871 and 1939, and were aged 40-64 at the time of each sickness episode

Age 40-64		Joiners 1871-1890	Joiners 1891-1914	Joiners 1915-39	All Joiners
	ICD chapter coding	Total days	Total days	Total days	Total days
Phthisis, etc.	I (phthisis, etc.)	5.98	8.91	0.95	4.89
Other infectious & parasitic diseases	I (other)	0.77	0.96	0.76	0.83
Neoplasms	II	2.19	1.10	0.71	1.24
Diseases of the blood, etc.	III	0.34	0.39	0.32	0.35
Endocrine, nutritional and metabolic diseases	IV	0.66	0.18	1.54	0.86
Mental and behavioural disorders	V	4.59	4.11	5.02	4.60
Diseases of the nervous system	VI	14.03	7.09	4.28	7.87
Diseases of the eyes and ears	VII-VIII	2.18	6.52	1.11	3.14
Diseases of the circulatory system	IX	12.86	16.31	18.60	16.30
Asthma	X (asthma)	3.80	0.75	1.12	1.73
Bronchitis, etc.	X (bronchitis, etc.)	4.83	5.74	7.75	6.31
Colds, etc.	X (colds, etc.)	6.48	6.92	5.41	6.19
Other diseases of the respiratory system	X (other)	0.93	2.58	2.63	2.15
Diseases of the digestive system	XI	3.79	8.22	6.64	6.36
Diseases of the skin, etc.	XII	2.14	1.84	1.62	1.83
Diseases of the musculoskeletal system	XIII	17.98	9.60	21.13	16.50
Diseases of the genitourinary system	XIV	1.43	1.79	3.91	2.55
Symptoms, signs etc.	XVIII	4.98	4.26	5.70	5.04
Injuries etc.	XIX	6.18	12.23	8.55	9.08
Unclassified	Unclassified	0.20	0.07	0.00	0.08
No information	No information	1.04	1.11	0.00	1.28
Total		100.00	100.00	100.00	100.00

Source: HFS dataset

Table 7. Causes of mortality among men aged 45-64 in England and Wales, 1901/10-1979/95

	Number		%	
ICD-9 TITLE	1901-10	1979-95	1901-10	1979-95
Infectious diseases	103,289	5,413	18.31	0.57
Neoplasms	62,594	308,251	11.10	32.67
Endocrine, nutritional and metabolic diseases, and immunity disorders	8,331	11,578	1.48	1.23
Diseases of the blood and blood-forming organs	583	1,789	0.10	0.19
Mental disorders	9,939	3,040	1.76	0.32
Diseases of the nervous system and sense organs	14,616	12,674	2.59	1.34
Diseases of the circulatory system	150,165	457,362	26.62	48.47
Diseases of the respiratory system	99,221	60,168	17.59	6.38
Diseases of the digestive system	33,307	29,147	5.90	3.09
Diseases of the genito-urinary system	37,471	5,182	6.64	0.55
Complications of pregnancy, childbirth and the puerperium	0	0	0.00	0.00
Diseases of the skin and subcutaneous system	869	338	0.15	0.04
Diseases of the musculoskeletal system and connective tissue	2,543	2,345	0.45	0.25
Congenital anomalies	11	2,318	0.00	0.25
Certain conditions originating in the perinatal period	0	15	0.00	0.00
Symptoms, signs and ill-defined conditions	4,827	1,517	0.86	0.16
Injury and poisoning	35,833	42,524	6.35	4.51
Other specified	4	0	0.00	0.00
Unspecified	448	0	0.08	0.00
Total	564,051	943,661	100.00	100.00

Source: Office for National Statistics 1997.

6. Sickness-cause and sickness-age

We can also use the information in the HFS dataset to investigate the relationship between the causes of sickness episodes and age. Although the incidence of sickness episodes rose with age, this increase was much less pronounced than the age-related increase in sickness duration. Our data enable us to examine the extent to which this resulted from an increase in the length of the sickness

episodes associated with the different causes of disease as opposed to a change in the share of sickness episodes associated with different causes.

The results of this exercise are shown in Tables 8 and 9. Table 8 shows that how the profile of sickness causes changed with age. The following categories – colds, catarrh, coughs, coryza and influenza; other diseases of the respiratory system (excluding bronchitis); infectious and parasitic diseases; diseases of the skin and subcutaneous system; and injuries and accidents – declined in importance, whilst the proportions of episodes associated with diseases of the nervous system, the eyes and ears, bronchitis, circulatory diseases and musculoskeletal conditions increased. The fact that many of these conditions tended to be associated with episodes of longer duration suggests that at least part of the explanation for the overall increase in age-related sickness duration lay with changes in the nature of the conditions from which people suffered. However, Table 9 shows that the average duration of sickness episodes increased with age in all the major categories and sub-categories of disease except for diseases of the blood and blood-forming organs. This suggests that changes in the causes of sickness episodes were less important than changes in the average duration of the episodes associated with different causes in shaping the overall pattern of age-related morbidity. In fact, our estimates suggest that changes in the cause-structure of sickness probably accounted for approximately one-third of the overall increase in sickness duration with age, and that changes in the average duration of the episodes associated with the same set of causes were responsible for approximately two-thirds.

Table 8. Incidence of sickness episodes by cause and age, 1895-1981

% of all episodes in each group	Age at time of sickness episode	Percentage of sickness episodes in each age group in each quarter								
		<20	20–29	30–39	40–49	50–59	60–69	70–79	>79	All ages
Phthisis, etc.	I (phthisis, etc.)	0.66	3.16	3.72	3.60	1.90	0.88	0.28	0.00	2.04
Other infectious & parasitic diseases	I (other)	8.18	5.49	3.45	1.69	1.61	1.11	0.99	0.11	2.60
Neoplasms	II	0.17	0.05	0.41	0.38	1.22	1.08	1.79	1.31	0.80
Diseases of the blood, etc.	III	0.28	0.05	0.34	0.14	0.45	0.23	0.09	0.00	0.22
Endocrine, nutritional and metabolic diseases	IV	0.00	0.00	0.02	0.36	0.76	1.29	1.27	0.00	0.59
Mental and behavioural disorders	V	0.66	1.39	3.21	2.86	2.80	2.01	1.24	1.75	2.17
Diseases of the nervous system	VI	0.50	0.25	2.52	3.89	3.79	5.07	6.74	8.21	3.67
Diseases of the eyes and ears	VII–VIII	0.88	1.47	1.03	2.15	1.92	3.47	5.85	6.13	2.59
Diseases of the circulatory system	IX	1.49	1.62	3.14	3.63	9.15	21.81	23.60	15.55	10.48
Asthma	X (asthma)	0.11	0.75	1.30	1.34	1.44	1.53	1.55	0.22	1.22
Bronchitis, etc.	X (bronchitis, etc.)	2.49	2.98	3.07	5.18	8.02	8.62	12.12	15.01	6.68
Colds, etc.	X (colds, etc.)	23.16	20.71	19.22	17.02	12.12	6.24	2.51	1.10	13.04
Other diseases of the respiratory system	X (other)	7.74	7.04	5.45	3.41	2.91	1.54	0.87	0.00	3.60
Diseases of the digestive system	XI	5.75	7.09	7.65	6.61	7.65	6.71	7.15	7.78	7.06
Diseases of the skin, etc.	XII	7.52	6.22	5.45	4.34	2.37	1.98	2.10	0.66	3.77
Diseases of the musculoskeletal system	XIII	4.59	8.18	11.37	17.52	18.33	17.75	20.72	30.56	15.52
Diseases of the genitourinary system	XIV	1.05	1.07	1.42	1.46	2.45	2.40	1.24	2.85	1.75
Symptoms, signs etc.	XVIII	7.52	8.65	7.53	6.90	6.93	5.34	3.53	3.72	6.47
Injuries etc.	XIX	24.49	21.38	16.58	14.30	11.36	7.77	4.48	5.04	12.99
Unclassified	Unclassified	2.54	2.36	3.02	3.06	2.78	3.09	1.89	0.00	2.66
No information	No information	0.22	0.10	0.10	0.14	0.02	0.10	0.00	0.00	0.09
	Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: HFS dataset

Table 9. Duration of sickness episodes by cause and age, 1895-1981

ICD chapter coding	Age at time of sickness episode	Average number of sick days per sickness episode in each quarter								
		<20	20–29	30–39	40–49	50–59	60–69	70–79	>79	All ages
Phthisis, etc.	I (phthisis, etc.)	36.09	53.57	56.98	67.96	70.48	69.51	56.33	–	61.68
Other infectious & parasitic diseases	I (other)	16.82	20.58	16.74	16.24	21.22	27.79	47.37	30.00	20.37
Neoplasms	II	19.67	22.00	32.76	37.81	48.78	49.00	62.08	52.64	49.41
Diseases of the blood, etc.	III	48.00	23.00	39.54	40.60	46.67	26.75	20.33	–	38.77
Endocrine, nutritional and metabolic diseases	IV	–	–	8.00	40.79	42.17	65.28	63.67	–	56.82
Mental and behavioural disorders	V	33.55	36.50	56.34	58.65	55.73	56.50	72.72	65.87	55.45
Diseases of the nervous system	VI	48.38	47.80	71.33	70.73	71.02	69.56	71.75	74.23	70.53
Diseases of the eyes and ears	VII–VIII	23.50	22.50	21.43	37.92	48.69	64.95	70.79	73.14	54.51
Diseases of the circulatory system	IX	18.22	30.42	38.52	41.07	52.71	62.88	66.13	61.06	58.71
Asthma	X (asthma)	22.00	24.50	32.20	28.39	35.00	55.47	69.61	78.00	42.66
Bronchitis, etc.	X (bronchitis, etc.)	16.16	20.36	21.90	24.74	29.55	42.04	53.43	62.93	37.75
Colds, etc.	X (colds, etc.)	12.23	12.99	13.00	15.29	17.86	20.31	29.05	33.00	15.20
Other diseases of the respiratory system	X (other)	14.39	14.81	17.13	20.20	25.14	32.86	39.77	–	19.57
Diseases of the digestive system	XI	22.24	22.22	28.27	27.23	30.84	46.21	63.96	67.60	36.03
Diseases of the skin, etc.	XII	13.07	15.06	17.56	19.71	26.52	36.79	56.00	35.20	22.11
Diseases of the musculoskeletal system	XIII	17.99	23.75	25.01	30.76	34.22	48.59	63.90	69.65	41.38
Diseases of the genitourinary system	XIV	26.63	31.62	26.51	27.78	49.85	49.59	57.58	58.00	42.79
Symptoms, signs etc.	XVIII	13.05	17.96	16.10	22.21	29.67	39.36	45.16	67.35	26.09
Injuries etc.	XIX	16.27	20.32	21.16	22.85	29.21	41.34	61.70	74.34	26.37
Unclassified	Unclassified	17.89	27.47	32.21	42.73	38.63	49.44	51.82	–	39.25
No information	No information	12.50	12.25	25.00	18.00	8.00	–	–	–	16.50
	Average (all causes)	15.86	20.10	24.34	29.09	35.27	49.47	61.51	66.53	35.98

Source: HFS dataset

7. Conclusions

This paper has provided new evidence about the nature and extent of changes in morbidity during the course of the late-nineteenth and twentieth centuries. Our analysis has shown that there was very little change in either the seasonality of sickness episodes or the overall level of age-specific morbidity. We have found some evidence of changes in the cause-structure of morbidity but these changes were much less pronounced than the equivalent changes in the cause-structure of age-specific mortality.

We have also been able to pay more attention to the relationship between changes in the incidence and duration of sickness episodes and their overall prevalence. Riley (1997: 198; 1999: 106-7) argued that the incidence of sickness episodes declined among members of the Ancient Order of Foresters whilst their duration increased, and he used this to reject allegations that the overall rise in sickness prevalence was caused by changes in the willingness of individuals to declare themselves ill. By contrast, our findings suggest that there was little change in either the incidence or the duration of sickness episodes once age had been taken into account. This suggests either that there was a real decline in the 'objective' level of morbidity which was obscured by the 'cultural inflation of morbidity', or that the significance of the cultural inflation of morbidity has itself been exaggerated.

We have also addressed the question of how far changes in the duration of sickness episodes with age were associated with changes in the cause-structure of morbidity with age, or with increases in the duration of all types of sickness episode. Although changes in the overall profile of sickness causes accounted for some of

the age-related increase in sickness duration, the main reason why sickness rates increased with age was that when people became ill, they remained off work for longer. Although it is possible that older workers were in a better position to afford extended periods of illness, this is more likely to reflect the impact of 'insult accumulation' (Riley 1989: 47-57) on their speed of recovery.

Although this analysis has focused on what might be regarded as the medical and epidemiological aspects of sickness behaviour, the HFS records also contain information on such factors as date and place of birth, branch affiliation, contributions and benefit entitlements and year of death, as well as information relating to the financial position of the Society itself. This information can be used to shed further light, not only other aspects of sickness behaviour, but also on aspects of working-class life in Hampshire more generally, in the future.

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