Trends in primary care in the United Kingdom

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SUMMARY Trends in primary care in the United Kingdom were studied using the diagnostic information available at Intercontinental Medical Statistics Ltd (IMS) for 1969–80. Total consultation rates overall showed an increase until 1978 when they started to decline. Diseases of the respiratory system showed a decline for first consultations. Diseases of the musculoskeletal and connective tissue and diseases of the nervous system and sense organs showed an increase. Diseases of the respiratory system, circulatory system, and mental disorders accounted for 15.4%, 11.2%, and 9.6% respectively of the total consultations in 1980. Neuroses and personality disorders accounted for the highest consultation rates in general practice. This study identifies areas for further research in general practice and the potential of this data base, if expanded, for the continuous monitoring of morbidity in primary care.

Mortality statistics have been published in England and Wales for every year since 1837¹ but information on morbidity in the population is of comparatively recent origin. Population morbidity was measured in the 1940s in the survey of sickness² conducted by the General Register Office. Further population based morbidity is also available from 1971 in the General Household Survey³ (GHS) conducted by the social survey division of the Office of Population Censuses and Surveys (OPCS). Morbidity encountered in primary care has been the focus of two national morbidity studies^{4–6} conducted by the Royal College of General Practitioners and the OPCS. Hospital statistics measuring morbidity as encountered at the level of secondary care was first published for the year 1949 for selected hospitals in the country.⁷ In 1952 a system was introduced to collect information on a 10% sample of all non-psychiatric and non-maternity discharges in England and Wales.⁸ Knowledge of patterns of morbidity in primary care are essential as the system of health care in this country is based on the general practitioner. These patterns are also the best proxy for morbidity in the general population. Sufficient information on morbidity is also needed to monitor changes in disease patterns and workload of general practitioners. This information could aid in the equitable distribution of scarce resources and consequently in an improved system of health care. The aim of this study was to investigate the trends of primary care in the United Kingdom using data collected by Intercontinental Medical Statistics.

Materials and methods

Intercontinental Medical Statistics collect data on the prescribing of drugs in general practice and on the diagnoses on presentation to the general practitioners. These data are compiled into a quarterly medical data index (MDI), which was made available for this study. The medical data index is based on records of consultations kept by 2000 general practitioners in each year since 1967. It is supported by regular subscription of the pharmaceutical manufacturers. Intercontinental Medical Statistics also support and encourage medical research.

The general practitioners are selected by stratified sampling for standard regions and years since qualification. Five hundred of the selected general practitioners record for seven consecutive days spread as evenly as possible in each quarter and these particular general practitioners are not approached again for at least a further two years. The participants are telephoned by trained interviewers who explain the survey and the method of reporting. Each doctor completes a page for each patient who consults him during the study period, and information is collected on the age, sex of the patient, place of visit, date, consultation (either first or second or subsequent for the particular diagnosis), diagnosis, referral, drug prescribed, desired therapeutic action of drug, and treatment from earlier consultations. The diagnostic information is coded to the eighth revision of the International Classification of Diseases (ICD) by a

team of trained nurses.

The data collected in the 500 doctor weeks/quarter are coded and stored in computer. The figures obtained are projected to annual national figures by using two projection factors, one for doctors in the United Kingdom and the other for the number of weeks in a quarter.

Data were extracted from the medical data index for first and total consultations for all ICD chapter headings such as mental disorders 290–315; selected three digit aggregations within the chapters—for example psychoses (290–299), neuroses and personality disorders (300–309), and mental retardation (310–315); and specific diseases of interest such as schizophrenia—295 for 1969–80.

The figures for the first consultation for a particular category represent the crude incidence for that category or the number of new cases appearing in that year. The figures for total consultations only indicates the doctor's workload attributable to the disease category.

Selected diseases were also analysed for the 13 local government regions in the United Kingdom (Northern Ireland, Scotland, Wales, Northern, Yorkshire and Humberside, North Western, Midlands, East Midlands, East Anglia, Greater London, South Eastern, Southern, and South Western). Consultation rates were calculated by relating the number of consultations to the mid-year population of the United Kingdom or the respective regions for that year. A crude validation of the data was done by comparing the proportions of consultations attributed to selected diseases in the study with that of the second national morbidity study (1970–1) and the General Household Survey (1971).

Results

Apart from the drop in 1970–1, the total consultations for all conditions steadily increased until 1978 when they started to decline (fig 1). First consultations for all diseases, however, have remained virtually constant over these 12 years at around 140 000 consultations a year. Figure 2 shows changes in the rate of total consultations for individual chapter headings of the ICD. Total consultation rates for diseases of the respiratory system (460–519) have fluctuated around 1150. Diseases of the circulatory system (390–458), of the musculoskeletal system and connective tissue (710–738), and of the nervous system and sense organs (320–389) have all been increasing over the same period. Total consultation rates for mental disorders (290–315) increased until 1975 but thereafter declined. There are no demonstrable changes seen in the diseases of the digestive system (520–577) or in infective and parasitic diseases (000–136).

Trends in first consultation rates were less distinct for the chapter headings of the ICD. Diseases of the musculoskeletal system and connective tissues (710–738) and of the nervous system and sense organs (320–389) show a parallel increase as for total consultation, whereas mental disorders (290–315), endocrine nutritional metabolic diseases (240–279), and diseases of the circulatory system (390–458) show a decline. First consultations for diseases of the respiratory system also show a decline.

Table 1 shows the proportions of total consultations attributed to each chapter heading of the ICD for 1969 and 1980. The share taken by diseases of the respiratory system (460–519) has

Table 1 Numbers and proportions of total consultations attributed to each chapter heading of the ICD

	1969		1980	
	No	%	No	%
Infective and parasitic diseases (000–136)	16 532	4.9	16 344	4.1
Neoplasms (140–239)	3 437	1.0	4 281	1.1
Endocrine, nutritional, and metabolic diseases (240–279)	8 858	2.6	11 413	2.9
Diseases of blood and blood forming organs (280–289)	6 562	2.0	4 546	1.2
Mental disorders (290–315)	33 082	9.8	37 894	9.6
Diseases of nervous system and sense organs (320–389)	20 892	6.2	24 723	6.3
Diseases of circulatory system (390–458)	31 477	9.4	44 228	11.2
Diseases of respiratory system (460–519)	71 450	21.2	60 874	15.4
Diseases of digestive system (520–577)	18 661	5.5	20 060	5.1
Diseases of genitourinary system (580–629)	12 332	3.7	13 396	3.4
Complication of pregnancy, childbirth, and puerperium (630–678)	2 375	0.7	1 148	0.3
Diseases of skin and subcutaneous tissue (680–709)	21 528	6.4	22 266	5.6
Diseases of musculoskeletal system and connective tissue (710–738)	22 248	6.6	30 154	7.6
Congenital anomalies (740–759)	435	0.1	602	0.2
Certain causes of perinatal morbidity and mortality (760–779)	44	0.0	32	0.0
Symptoms and ill defined conditions (780–796)	27 381	8.1	58 756	14.9
Accidents, poisonings, and violence (external cause) (E800–N999)	14 748	4.4	14 355	3.6
Supplementary classifications (Y00–Y89)	24 291	7.2	29 662	7.5

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Fig 1 Trends in total and first consultations for all causes 1969-80.

Fig 2 Trends in total consultation rates for chapter headings of the International Classification of Diseases 1969-80.

fallen from 21.2% to 15.4% and diseases of the circulatory system (390-458) increased from 9.4% to 11.2% over this period. Symptoms and ill defined conditions (780-796) were the second commonest chapter after diseases of the respiratory system in 1980. The proportion of total consultations attributed to this chapter increased from 8.1% to 14.9%.

The regional data were analysed for total consultations, and the percentage change in 1980 over that of 1969 for diseases of the circulatory system (390-458) and diseases of the respiratory system (460-519) are presented in fig 3. The total consultations for diseases of the circulatory system show an increase in all regions with the percentage increase ranging from 10% to 50% in 10 out of the 11 regions. Respiratory disease, on the other hand, decreased in all regions except Greater London, where it shows an increase of 14%. First consultations were not studied by the region, as numbers were again too small.

Table 2 shows 10 disease categories (three digit aggregations within chapter) most commonly encountered in general practice and their total consultations (numbers and rate/1000 persons). Neuroses and personality disorders (300-309) accounted for most consultations with 627 consultations per 1000 people. Figure 4 shows the time trends of some of these conditions over the study period. Hypertensive diseases (400-404) shows a sharp increase over this period with persistent increases also being evident in the consultation rate for arthritis and rheumatism (710-718) and symptoms referable to systems or organs (780-789). Neuroses and personality disorders (300-309) having increased until 1975 have since shown a decline. Figure 5 gives the individual diseases that show the greatest variation in total consultation rates in the study period. Osteoarthritis (713.0) has shown a dramatic increase, and other diseases that show consistent increase are diabetes mellitus (250),

Fig 3 Percentage change in total consultations rate per 1000 persons between 1969 and 1980 for standard regions.

Table 2 The 10 disease categories (three digit aggregations within chapter) most commonly encountered in general practice in 1980 with their total consultations (numbers rate per 1000 persons)

	No in 000s	Consultation* rate/1000 persons
Neuroses and personality disorders (300-309)	35 065	627
Symptoms referable to systems or organs (780-789)	26 012	465
Acute respiratory infection except influenza (460-466)	25 825	462
Arthritis and rheumatism except rheumatic fever (710-718)	22 962	410
Bronchitis emphysema and asthma (490-493)	22 504	402
Hypertensive disease (400-404)	18 461	330
Other inflammatory conditions of skin and subcutaneous tissue (690-698)	11 749	210
Maternal and well baby care (Y60-Y69)	9 665	173
Diseases of ear and mastoid process (380-389)	9 598	172
Diseases of oesophagus, stomach, and duodenum (530-537)	9 372	168

*Total consultation rate is a measure of general practitioner workload and not of incidence as the same patients are repeatedly counted within the study period.

Fig 4 Trends of disease categories (three digit aggregations with the chapters) that are most common in general practice in the United Kingdom.

angina pectoris (413), asthma (493), and congestive cardiac failure (427.0). Chronic bronchitis (491) and obesity (277), on the other hand, show a consistent decrease over this period.

The percentage of total consultations attributed to different ICD chapters in the study were compared with those in the second national morbidity study (1970-1) and the General Household Survey (1971) as a crude evaluation of the data and is presented in table 3. These percentages showed a close similarity between the data of national morbidity study and Intercontinental Medical Statistics with, for example, diseases of the respiratory system accounting for 18.9% and 18.5% of the total consultations, respectively.

Discussion

Trends in morbidity over time may reflect both real and apparent variations in the incidence of disease. Changes in the general standard of living with improved nutrition, housing, and better health care facilities could bring about changes in the incidence of diseases such as infective and parasitic diseases.

On the other hand, changing lifestyles could contribute to the emergence of others such as ischaemic heart disease and obesity. The shift in the demographic structure of the population is another factor that would be expected to present changing patterns in morbidity encountered in general practice. Quite differently, other issues such as the changing expectations of the population and the profession, availability of alternate modes of care, provision of, and accessibility to, institutions, new medical technology, and drugs, changing diagnostic fashions, and classification of diseases could be reflected in the time trends of morbidity rates.

In this study the total consultations for all conditions have been gradually increasing until 1978 when they started to fall. In 1970-1, however, there was a drop that is probably explained by the introduction of prescription charges in 1969. First consultations for all conditions, however, suggest that the overall incidence has not increased. The total consultations reflect the workload of doctors, and the increase could result from changing expectations both of the population and the professional. There are no obvious reasons for this fall since 1978 but it could

Fig 5 Individual diseases (three digit categories) showing the greatest variation over the study period.

perhaps reflect the changing practice attitudes of general practitioners in the country.

The diseases of the respiratory system show a decline for first consultations over the study period. This could be related to the decreasing atmospheric pollution and improved occupational hygiene among

other factors. This decline is reflected in the regional data with the exception of Greater London, where there was an increase in the total consultations by 14% in 1980 over that of 1969.

Diseases of the respiratory system accounted for the highest percentage (15.4%) of the total

Table 3 Percentage distribution of total consultations by ICD chapters in three studies

	NMS 1970-1	GHS 1971	IMS 1971
Infective and parasitic diseases (000-136)	3.7	5.6	4.6
Neoplasms (140-239)	1.5	0.5	1.2
Endocrine, nutritional, and metabolic diseases (240-279)	2.2	1.6	3.1
Diseases of blood and blood forming organs (280-289)	1.0	1.1	1.8
Mental disorders (290-315)	7.9	4.9	11.5
Diseases of the nervous system and sense organs (320-389)	6.9	5.2	6.4
Diseases of the circulatory system (390-458)	8.5	7.5	10.2
Diseases of the respiratory system (460-519)	18.9	19.6	18.5
Diseases of the digestive system (520-577)	5.4	6.1	5.7
Diseases of genitourinary system (580-629)	5.1	4.2	3.7
Diseases of musculoskeletal system and connective tissue (710-738)	6.8	4.9	7.2
Symptoms and ill defined conditions (780-796)	6.7	6.8	9.4

NMS = National Morbidity Study.

GHS = General Household Survey.

IMS = Intercontinental Medical Statistics.

consultations. Acute respiratory infections (460–466) and bronchitis, emphysema, and asthma (490–493) were the third and fifth commonest categories with total consultation rates of 462/1000 and 402/1000 in 1980 respectively. Bronchial asthma, however, showed an increase in the total consultations, most likely due to the availability of both prophylactic and therapeutic medications through the general practitioner. Chronic bronchitis, however, showed a consistent drop over this period.

Diseases of the circulatory system, on the other hand, showed an increase for total consultations that is reflected in all the regions. This increase is most pronounced in East Anglia where the increase in 1980 over 1969 was twofold. Overall, the diseases in this chapter accounted for 10.2% of the total consultations in 1980, being third after the diseases of the respiratory system and symptoms and ill defined conditions. Hypertensive disease (400–404), the sixth commonest category seen in general practice, also showed a consistent increase in rates. Active screening and greater role of general practitioners in the management of hypertension would contribute to this, though a true increase cannot be ruled out. Other conditions that showed persistent increase were angina pectoris and congestive cardiac failure, which reflect our aging population.

Mental disorders showed an increasing trend in the total consultation up to 1978 when they started to decline. There was a corresponding modest decrease in first consultations over this time. Overall, mental disorders were responsible for 9.6% of the consultations, with neuroses and personality disorders (300–309) being the commonest category for which consultation is sought in general practice with a consultation rate of 627/1000 in 1980. It could be that general practitioners are playing a lesser part in recent times with the availability of psychiatric and other supportive services, which account for the drop in the total consultation rates since 1978.

Musculoskeletal and connective tissue diseases show an increase in both the first and total consultations, suggesting an increase in the incidence of these diseases. Arthritis and rheumatism (710–718) show the fourth highest consultation rate overall in general practice with osteoarthritis being the condition with the most dramatic increase in the total consultation rate over the period of the study. This is an expected finding with the increase in the elderly population and the recent availability of many antirheumatic agents for symptomatic relief.

This analysis, using the diagnostic information available in the medical data index of Intercontinental Medical Statistics, shows some

interesting findings and points to further areas towards which research in general practice could be directed. The diagnostic information that is entered on the form by the general practitioner could be argued to have a bias. Also, the general practitioners participating in such a system could be selective and not representative of general practitioners as a whole. These factors, nevertheless, would operate in any study of this nature but to different degrees; however, this is the best information available on morbidity encountered in primary care over a continuous period.

It is encouraging to see that the crude validation (table 3) shows acceptable similarity to the national morbidity study data. The national morbidity study also suffers from the problem of self-selected general practitioners and in addition fails to provide regional data. These routinely available data at Intercontinental Medical Statistics currently provide supplementary information on morbidity and, if expanded, could provide useful information for the country, both as a whole and by regions.

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